

CREATING MORE INCLUSIVE WATERS IN THE AQUATIC SCIENCES

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In 2018, 1.4% of the U.S. population earned a Ph.D. (US Census Bureau). When we look at the number of Ph.D.s. across all fields held by Black, Indigenous, and People of Color (BIPOC), we see that the percentages are very low. In 2018, 35,404 total doctorate degrees were awarded in the United States to U.S. citizens and permanent residents (NSF, see <https://nces.nsf.gov/pubs/nfs20301/data-tables>). Of those, only 0.3% were awarded to American Indian or Alaska Native students, 6.9% were awarded to Black or African American students, 7.3% awarded to Hispanic or Latino students, and 9.3% awarded to Asian students compared to 70.5% awarded to White students (NSF). When looking at STEM degrees, specifically, we see that similar trends are seen with BIPOC students representing far fewer Ph.D.s. than White students (Fig. 1). It cannot be argued that much progress needs to be made to ensure that BIPOC students reach completion of their degrees. One way to encourage this process is to create more inclusive and welcoming fields.

As BIPOC early career researchers, we have taken it upon ourselves to try to make progress towards these efforts by helping graduate students interested in being involved in interna-

tional research collaborations feel supported. Through our leadership involvement within ASLO's Limnology and Oceanography Research Exchange (LOREX) program, we have identified a necessity to provide resources, support, guidance, and share our experiences with other BIPOC participants and allies in the program. As BIPOC, we often face anxiety about how we will be treated based on our racial identity when traveling to new places. We often ask ourselves questions about how smoothly the interaction will go or if we will be welcomed (Fig. 2). These thoughts may seem surprising, but they are the reality BIPOC individuals face when considering traveling. This anxiety alone prevents many people from participating in the same ways that their White counterparts actively engage.

To minimize the shock and prepare future LOREX cohorts and other students in their international research experience with a written guide, we helped create the ASLO Handbook for Interna-

tional Collaboration Advice (<https://www.aslo.org/resources/international-collaboration-advice/>). We hope that this living handbook will continue to be updated, especially the cultural considerations chapter, where we discuss how to create a mutual understanding between cultures. Additionally, the Handbook has a chapter where LOREX Fellows share their experiences abroad. In the chapter, you can also find the perspectives of BIPOC LOREX Fellows sharing their time abroad. Lastly, LOREX students and others are working on establishing an anti-racist handbook for the aquatic sciences.

For far too long, BIPOC individuals and their contributions have been silenced. In response to the increased international awareness of racial injustice and oppression in the US, many people have stepped up to try to help amplify their Black and People of Color colleagues in the aquatic sciences. Although well intentioned, statements of support without action will not result in change. We hope that compiling a list of resources and specific actions in an anti-racist handbook will allow people to move past the "thoughts and prayers" statements to direct actions to make a more just, equitable, diverse, and inclusive field.

It is often acknowledged that there is a lack of diversity and racial acceptance in the aquatic sciences. Through an increase in diversity, it has been shown that everyone benefits. Furthermore, many organizations have made strides toward addressing the lack of diversity within their organizations this year. We are far from achieving our goals of removing barriers for BIPOC scientists. Although the issue at hand may seem discouraging at times, there is much hope that we can, and we will continue to make positive changes. We challenge our fellow aquatic scientists to ask themselves, their labs, their academic departments and their professional societies what they are actively doing to be anti-racist and ensure a more diverse and equitable future.

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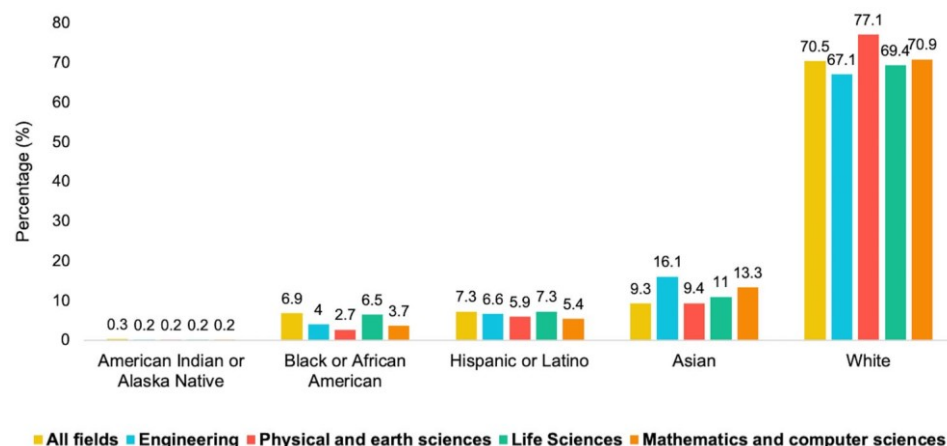


FIG. 1. Percentage of U.S. citizens and permanent residents who received Ph.D.s in STEM in 2018. Data taken from NSF Survey of Earned Doctorates (<https://nces.nsf.gov/pubs/nfs20301/data-tables>).



FIG. 2. There are many questions that we as BIPOC ask ourselves when planning to travel abroad. We have to consider and be prepared for anything to happen.