

## Understanding Diversity within the Higher Education Faculty Pipeline

An Essay for the Learning Curve by Sarah Parsons  
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At colleges and universities across the United States, incoming freshman classes look different than they ever have before. The 2020 US Census showed that for the first time, no racial or ethnic group makes up a majority of people younger than 18, and that trend is unlikely to reverse anytime soon.<sup>1</sup> As a result, incoming cohorts of students will continue to be more racially and ethnically diverse. But for now, their teachers remain overwhelmingly white.

Among all students attending degree-granting postsecondary institutions, the proportion of underrepresented students of color—which includes Black, Hispanic, American Indian or Alaska Native, and multiracial students—increased from 16 percent in 1990 to 39 percent in 2018.<sup>2</sup> The proportion of faculty members from these racial and ethnic groups increased only from 8.3 percent in 1992 to 11.3 percent in 2018.<sup>3</sup>

Racial and ethnic diversity among faculty members holds several benefits for college students. First, exposure to people of different backgrounds within campus communities prepares college students to live and work with others in an increasingly global society. Additionally, emerging evidence has found that having diverse professors and teachers positively affects academic success for students of color and students of other underrepresented backgrounds, both at the college level and within K–12 settings.<sup>4</sup> As more underrepresented students attend college, their academic success will be supported by having diverse instructors.

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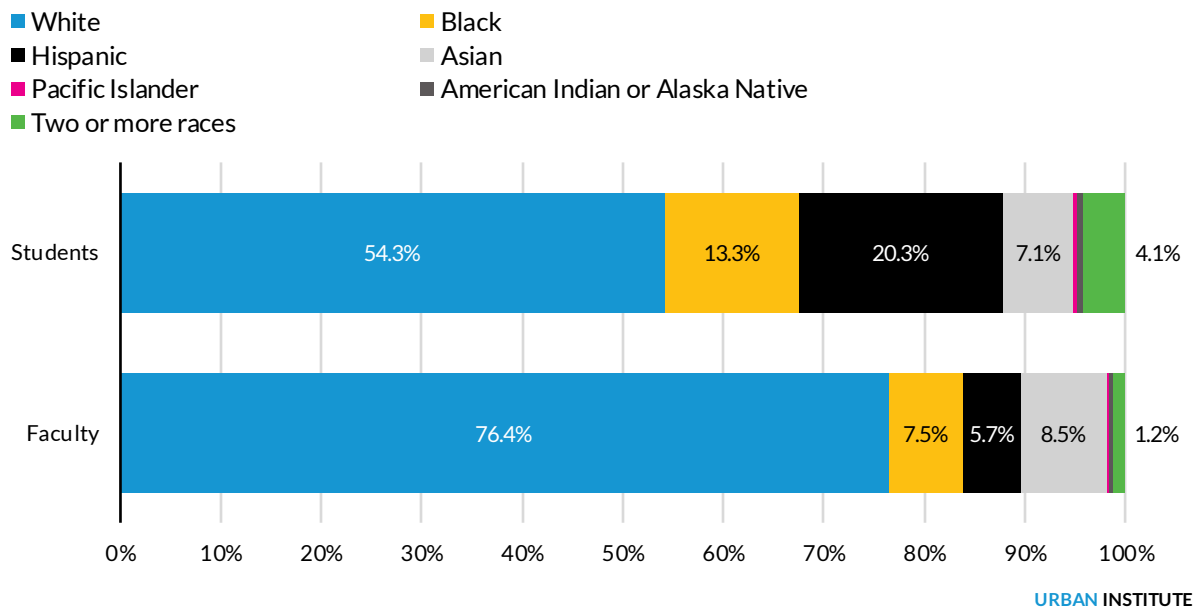
<sup>1</sup> Mike Schneider, “Census Data: US Is Diversifying, White Population Shrinking,” Associated Press, August 13, 2021, <https://apnews.com/article/race-and-ethnicity-census-2020-7264a653037e38df7ba67d3a324fc90d>.

<sup>2</sup> Thomas D. Snyder, Cristobal de Brey, and Sally A. Dillow, *Digest of Education Statistics 2017* (Washington, DC: US Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2019).

<sup>3</sup> Snyder, de Brey, and Dillow, *Digest of Education Statistics 2017*. Similarly, a study from The Education Trust found that more than half of US colleges and universities had large discrepancies between the share of Black and Latino students and the share of Black and Latino faculty. See Jinann Bitar, Gabriel Montague, and Lauren Ilano, *Faculty Diversity and Student Success Go Hand in Hand. So Why Are University Faculties So White?* (Washington, DC: The Education Trust, 2022). The data were not better when looking to the future either, as a quarter of institutions had significant differences in the share of Black and Latino faculty members who were hired with tenure or on the tenure track compared with those who were hired without either.

<sup>4</sup> Rebecca Stout, Cephas Archie, David Cross, and Carol A. Carman, “The Relationship between Faculty Diversity and Graduation Rates in Higher Education,” *Intercultural Education* 29, no. 3 (2018): 399, <https://doi.org/10.1080/14675986.2018.1437997>; and Anna J. Egalite, Brian Kisida, and Marcus A. Winters, “Representation in the Classroom: The Effect of Own-Race Teachers on Student Achievement,” *Economics of Education Review* 45 (April 2015): 44, <https://doi.org/10.1016/j.econedurev.2015.01.007>.

**FIGURE 1**  
**Students Are More Racially and Ethnically Diverse Than Faculty**



**Source:** Author's calculations from Integrated Postsecondary Education Data System data.

Currently, however, higher education institutions are increasing faculty from underrepresented backgrounds at a rate of only 0.23 percentage points a year.<sup>5</sup> In part, this slow change stems from barriers to entry. Teaching faculty at higher education institutions generally must hold doctoral degrees. The “pipeline” for faculty, then, depends on which candidates make the jump from earning their bachelor’s degree to earning their doctoral degree.

Part of the reason that faculty hiring has not remained in step with increasing student diversity is the racial and ethnic makeup of many PhD programs. Universities seeking to diversify their academic faculty face a shortage of candidates from underrepresented racial and ethnic groups in many academic fields. Although student enrollment has become more diverse across the board, these shifts are not uniform across degree programs. To better understand what implications racial and ethnic disparities in PhD programs may hold for equitable faculty hiring, I compared the graduation rates for common degree programs at the bachelor’s level and the doctoral level across race and ethnicity.

## Some Academic Disciplines Are Losing Qualified Doctoral Degree Candidates

The wide variation across fields in the racial and ethnic breakdowns of research doctoral programs has important implications for the diversity of potential new faculty hires. Previous findings have

<sup>5</sup> J. Nathan Matias, Neil A. Lewis, and Elan C. Hope, “US Universities Are Not Succeeding in Diversifying Faculty,” *Nature Human Behavior* 6 (December 2022): 1606.

highlighted the underrepresentation of Black and Hispanic faculty by academic discipline.<sup>6</sup> But to rectify this problem, colleges and universities must overcome supply limits produced by small numbers of PhD completers who are Black and Hispanic.

But this pipeline problem stretches back even further: doctoral degree programs are also constrained in their admissions decisions by the number of students who have completed bachelor's degrees in relevant fields. Although students do not necessarily attend graduate school in the same subject area as their undergraduate degree, understanding differences in the share of bachelor's degree completers and doctoral degree completers by race and ethnicity may help conceptualize which subject areas do or do not successfully recruit Black and Hispanic PhD students.

For my analysis, I examine the 2019 Integrated Postsecondary Education Data System Completions Survey<sup>7</sup> for doctoral degrees and bachelor's degrees, broken down by subject area<sup>8</sup> and student race and ethnicity, all accessed via the Urban Institute's Education Data Portal.<sup>9</sup> Among the 25 fields with the most degrees awarded, I examine the shares of PhDs awarded by student race and ethnicity and compare the proportion of earned doctoral degrees with the proportion of earned bachelor's degrees in the same degree fields.

Appendix figures A.1 through A.3 present comparisons between the portion of doctoral degrees and bachelor's degrees awarded to each race and ethnicity group by subject in the 10 most common fields for each racial and ethnic group. For all analyses, I examine degree completions, rather than enrollments. Bachelor's degree and doctoral degree completions are reported in greater detail than enrollments, which fluctuate frequently because of students switching majors and stopping out.

From these data, we can see that several academic disciplines produce a relatively high proportion of PhD graduates who are Black or African American (appendix figure A.1). Business, education, public administration, theology and religious studies, health professions, natural resources, and agriculture all produce larger shares of PhD completions than bachelor's degree completions, which may indicate that these programs are especially effective at recruiting Black students, given the smaller pool of candidates. Interestingly, doctoral recipients in education are the oldest, on average, of all doctoral recipients, according to the 2021 Survey of Earned Doctorates. This trend could stem from working professionals entering graduate school to position themselves to move out of the classroom and into

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<sup>6</sup> Diyi Li and Cory Koedel, "Representation and Salary Gaps by Race-Ethnicity and Gender at Selective Public Universities," *Educational Researcher* 46, no. 7 (2017): 343, <https://doi.org/10.3102/0013189X17726535>.

<sup>7</sup> Ninety-five percent of US faculty jobs are held by candidates whose terminal degrees were earned at American universities (National Study of Postsecondary Faculty: 2004 Faculty). The Integrated Postsecondary Education Data System collects data on all US colleges and universities receiving Title IV student aid. Thus, these data capture the near universe of US doctoral degrees.

<sup>8</sup> Degree subject area is determined by the Classification of Instructional Program codes, using two-digit codes in all subject areas, except for social sciences and physical sciences, where four-digit codes are used.

<sup>9</sup> Race and ethnicity categories examined include Black or African American, Hispanic, non-Hispanic white, and all other race and ethnicity categories. In all analyses, I exclude nonresident international students from percentages. Although this category is the required reporting designation for all students who are not US citizens or permanent residents, it does not provide information about the student's race or ethnicity.

administrative roles, but it could also indicate that education programs foster a welcoming culture of inclusion for students from nontraditional and underrepresented backgrounds. Also of note, the field of public administration, which produces one of the highest shares of bachelor's degrees awarded to Black students (20 percent), awards an even greater percentage of doctoral degrees to Black candidates (24 percent).

Among the academic disciplines I examined, the only subject where Hispanic graduates have a higher share of doctoral degrees than bachelor's degrees is theology and religious studies (appendix figure A.2). In this field, the share of Hispanic doctoral degree recipients is about 0.3 percentage points higher than the share of bachelor's degree recipients. Most of the other subjects have a far lower proportion of Hispanic students earning doctoral degrees than bachelor's degrees, but the difference is less severe for education, agriculture, history, and natural resources. Several of these subject areas overlap with the subjects in which Black PhD students are well represented.

The fields in which Black and Hispanic students are proportionately well represented among doctoral degree graduates (education, business, theology, health professions, public administration, agriculture, natural resources) have several commonalities. Nearly all of these subjects are in applied or professional fields rather than liberal arts, and they include the largest degree-awarding disciplines. Several fields also have the lowest share of Black and Hispanic doctoral degree graduates compared with their share of earned bachelor's degrees. These include sociology, communication, political science, and visual and performing arts. Sociology and communication awarded the second- and third-highest shares of bachelor's degrees to Black students, with sociology having the largest difference between bachelor's and doctoral shares (7 percentage points). These fields have a sizeable pool of prospective Black graduate students, but Black students are not matriculating or graduating from doctoral programs.

For Hispanic students, the underrepresentation of PhDs is striking for nearly all subject areas. In sociology, more than a quarter of bachelor's degrees are earned by Hispanic students, yet the share of completed doctoral degrees is 16 percentage points lower. About 24 percent of foreign language bachelor's degrees are earned by Hispanic students, but the share for doctoral degrees is 14 percent. Similar trends can be observed for anthropology, communication, multidisciplinary studies, psychology, and political science.

## **Diversity of PhD Candidates at Research Universities Lags Further Behind**

To better contextualize where the pipeline of potential graduate candidates falls short, I also examined the total number of PhDs awarded to Black and Hispanic students compared with the total awarded by universities with the highest level of research activity, as recognized under the Carnegie Classification

system. Research-intensive universities produce most doctoral degrees and are the source of most faculty candidates, particularly new faculty joining prestigious academic departments.<sup>10</sup>

When considering only research-intensive universities, the shortages of Black and Hispanic graduates for some fields look bleak: in 2019, 8 Black candidates and 20 Hispanic candidates earned economics PhDs. In physics, only 7 Black candidates received PhDs. In computer science, 20 Black candidates and 24 Hispanic candidates earned PhDs. For hiring departments seeking to increase their faculty diversity in these subjects, the number of potential new hires is low.

## Conclusions

Other research has documented the underrepresentation of Black and Hispanic faculty in science, technology, engineering, and mathematics (STEM) disciplines, particularly in selective universities.<sup>11</sup> The low absolute numbers of Black and Hispanic PhD students in these disciplines, particularly at research-intensive universities, align with low numbers of Black and Hispanic bachelor's degree students in these disciplines. As such, the first step to diversifying STEM faculty requires enrolling and supporting more students of color in bachelor's-level STEM programs.

My analysis, however, shows that it is a different story for the social sciences and humanities. Although these fields are also not particularly diverse at the faculty level, bachelor's-level constraints are not the reason. Unlike in STEM, where students of color earn doctoral degrees at roughly the same rate they earn bachelor's degrees, students of color earn doctoral degrees at lower rates than they earn bachelor's degrees in the social sciences and humanities. This indicates that these students are either not enrolling in PhD programs, are not admitted at proportional rates, or are not completing their programs. To diversify the faculty pool, we must understand what drives the drop-off between those who earn bachelor's degrees and those who earn doctoral degrees.

Ultimately, creating a higher education faculty pool that matches the rapidly changing racial and ethnic makeup of enrolling students will require more than bolstering the number of PhD completions. One study found that more than 45,000 PhD earners after 2007 who are from underrepresented backgrounds were not hired into tenure-track positions.<sup>12</sup> Ensuring a more diverse pool of potential faculty hires increases faculty diversity only if they are actually hired. My analysis shows that there is work to be done in bridging the gaps between earned bachelor's and doctoral degrees for Black and Hispanic students, but additional student support to increase completions and changed hiring practices to bring on more faculty of color are also needed.

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<sup>10</sup> Aaron Clauset, Samuel Arbesman, and Daniel B. Larremore, "Systematic Inequality and Hierarchy in Faculty Hiring Networks," *Science Advances* 1, no. 1 (February 2015), <https://doi.org/10.1126/sciadv.1400005>.

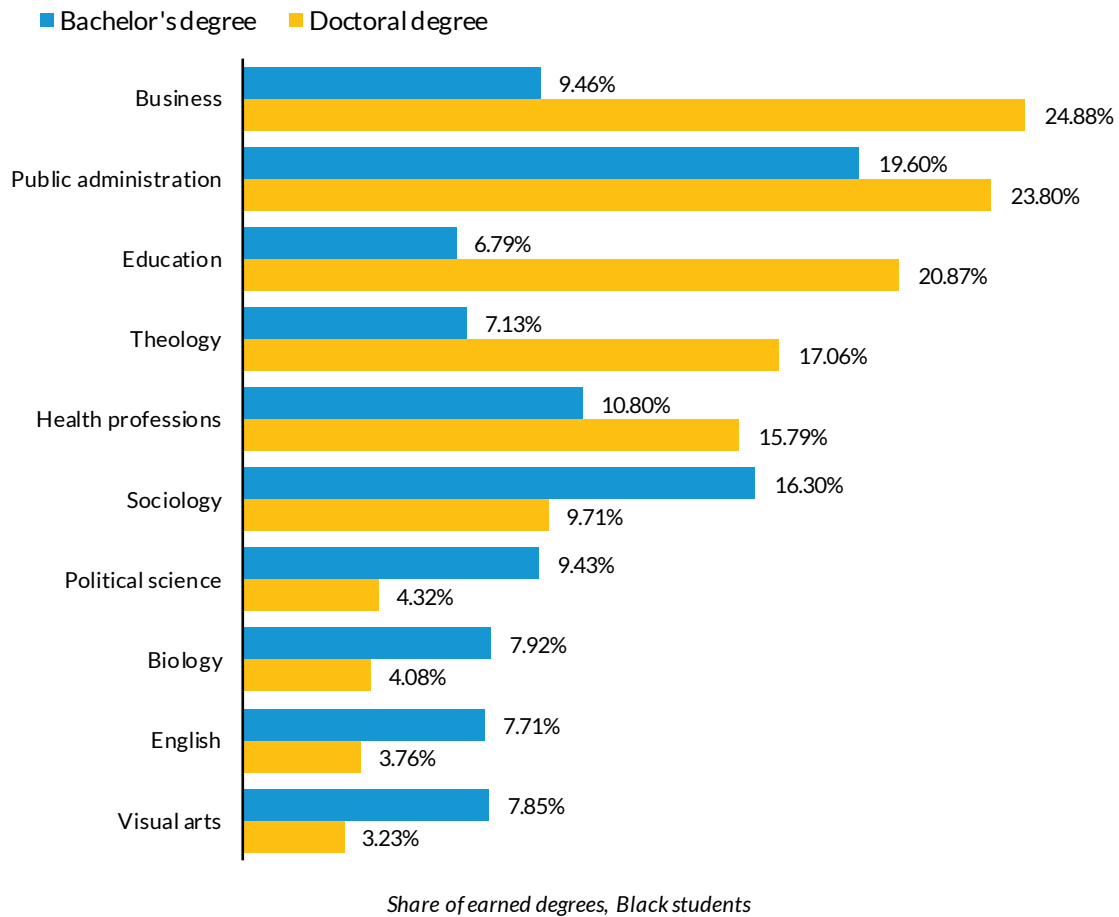
<sup>11</sup> Li and Koedel, "Representation and Salary Gaps."

<sup>12</sup> Matias, Lewis, and Hope, "US Universities Are Not Succeeding in Diversifying Faculty."

## Appendix

FIGURE A.1

### Business and Education Doctoral Programs May Be Better at Recruiting Black Candidates

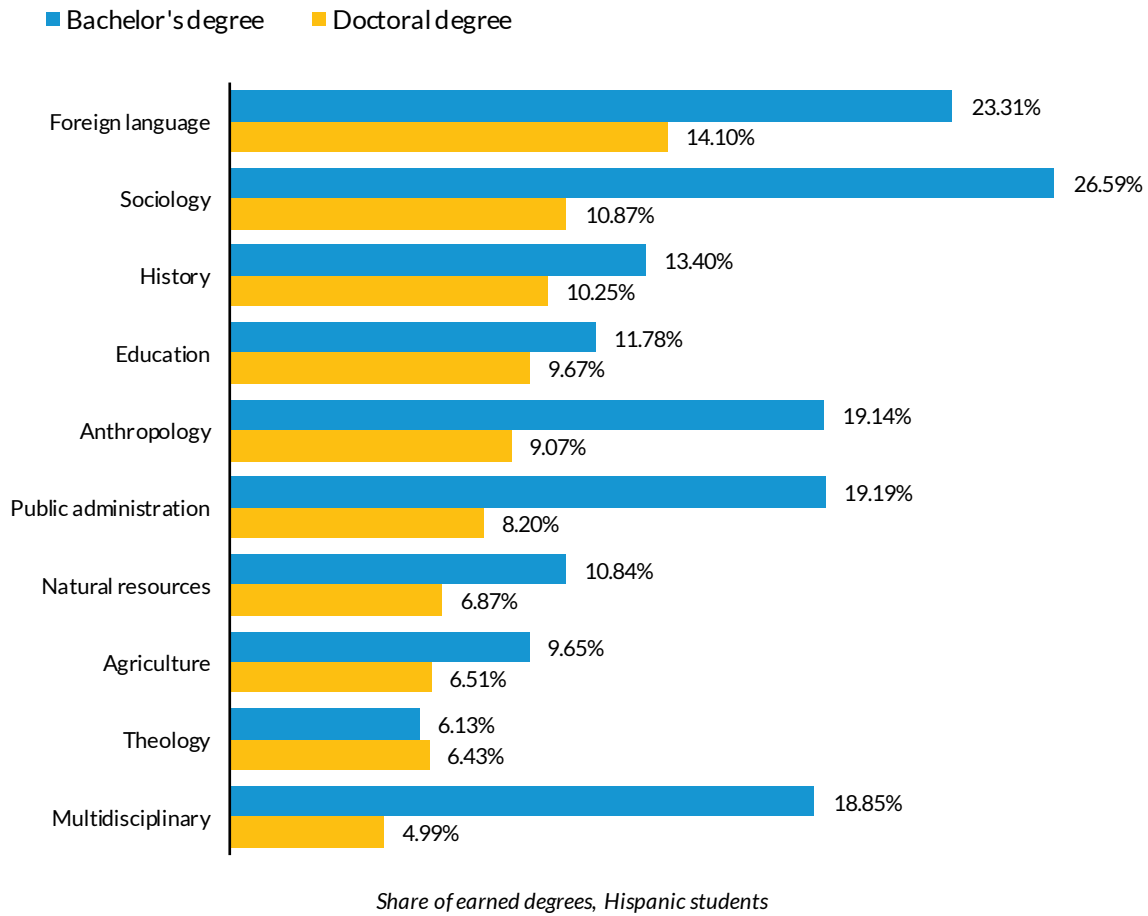


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Source: Author's calculations from Integrated Postsecondary Education Data System data.

FIGURE A.2

Doctoral Programs Do Not Recruit Hispanic Candidates Effectively across Disciplines

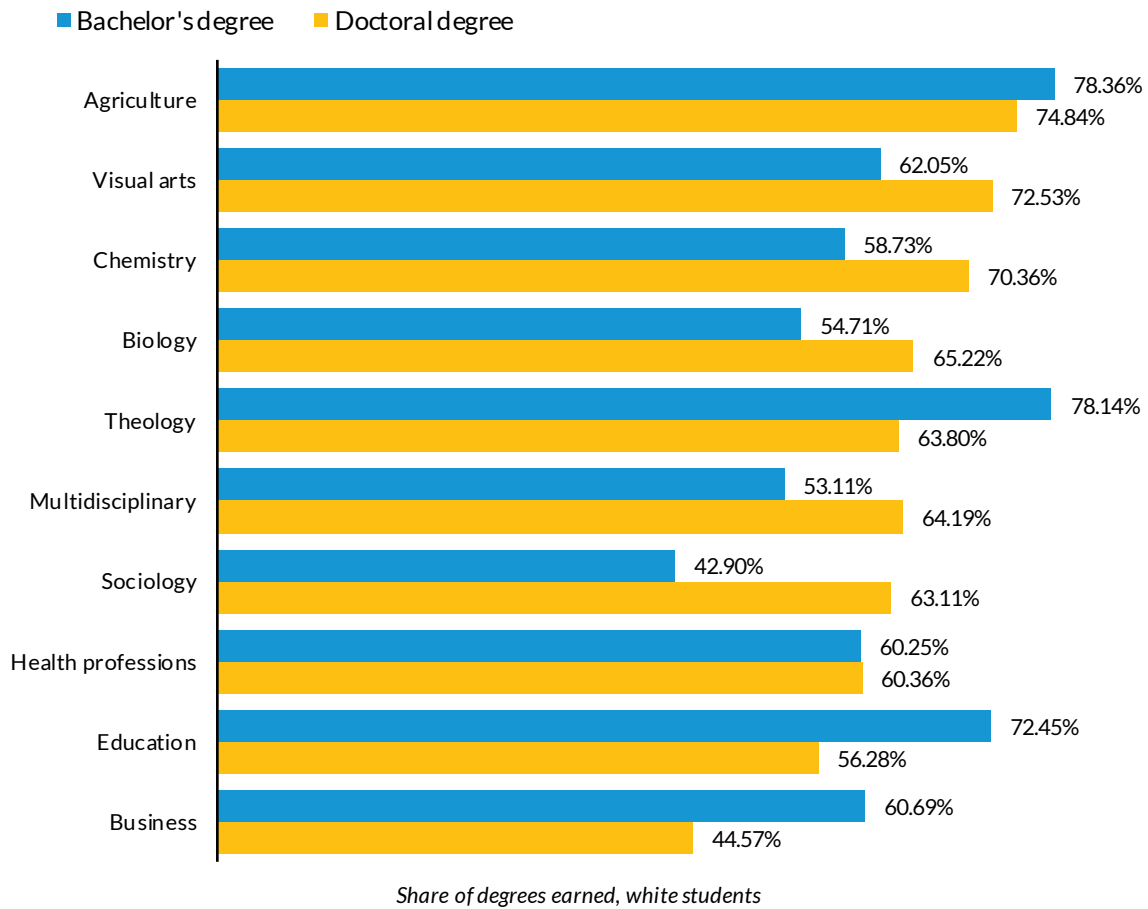


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Source: Author's calculations from Integrated Postsecondary Education Data System data.

FIGURE A.3

Doctoral Degree Program Recruitment of White Bachelor's Degree Students Offers a Mixed Bag



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Source: Author's calculations from Integrated Postsecondary Education Data System data.

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