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Student and Faculty Same-Race Matching at Research Universities

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Abstract

Racial disparities in college persistence and completion remain substantial, yet relatively little evidence exists on how student–faculty interactions contribute to these gaps in research universities. This study examines the prevalence and consequences of student–faculty same-race matching using administrative data covering first-time, first-year students enrolled in 10 Texas public research universities between 2011 and 2021. Linking students and instructors at the course level yields more than 1.9 million student–course–instructor observations. Descriptive analyses show that same-race matching is highly uneven: while White students frequently experience same-race instructors, such matches are rare for Black and Hispanic students due to persistent disparities in faculty representation. Leveraging within-student variation in course assignments and models with student and classroom fixed effects, we estimate the causal effects of same-race matching on academic outcomes. Same-race matching improves course performance and reduces course withdrawal, with particularly large effects for Black students, and is associated with modest gains in persistence. These findings highlight how faculty diversity may influence student success in research universities.

1 Introduction

Earning a college credential yields a host of public and private benefits (Heckman et al., 2018a,b; Ma and Pender, 2023; Oreopoulos and Petronijevic, 2013). These benefits are particularly salient for individuals given increased labor market participation and earnings (Andrews et al., 2024; Cellini and Chaudhary, 2014; Jepsen et al., 2014; Odle and Russell, 2024). In this way, higher education serves as one mechanism to increase individual social and economic mobility (Chetty et al., 2017). However, college enrollment and completion rates remain widely unequal, where students of color are particularly less likely to enroll in college and earn a degree at any level (Baker et al., 2018; Dynarski et al., 2022). Indeed, only 28% of Black and 21% of Hispanic adults in the United States hold a bachelor's degree or higher compared to 42% of White adults (U.S. Census Bureau, 2023). Even conditional on college enrollment, the average six-year bachelor's degree graduation rate among Black and Hispanic students ranges from 46-59% compared to 68% for their White peers (National Center for Education Statistics, 2023). These inequalities in completion lead to inequalities in social and economic mobility and have increased the focus of institutions and policymakers alike on raising and equalizing completion rates through a variety of mechanisms (Taylor et al., 2020; Reber, 2024). One understudied yet promising area—particularly for raising outcomes among students of color—is the role of same-race matching.

1.1 Same-Race Matching

Same-race matching, or when an instructor and student in a given course share the same race or ethnicity, has been shown to transmit a variety of benefits for students in both K-12 schools and on college campuses. Students who experience matching with a same-race K-12 teacher, on average, have higher academic achievement and attendance rates alongside lower school dropout rates and disciplinary referrals (Clotfelter et al., 2007; Dee, 2004; Delhommer, 2022; Egalite and Kisida, 2018; Egalite et al., 2015; Hart and Lindsay, 2024). Likewise, college students with same-race instructors, on average, achieve higher course grades, earn more credits, are more likely to major in the course field, are retained at higher rates, and are less likely to dropout (Fairlie et al., 2014; Lusher et al., 2018; Odle et al., 2025). These benefits of same-race matching in college are particularly pronounced for Black and Hispanic students, raising enrollment, course grades, and persistence

rates (Birdsall et al., 2020; Kofoed and mcGovney, 2019; Price, 2010).

One potential mechanism through which same-race student–faculty interactions may influence student outcomes is through their effects on students' sense of belonging and perceptions of institutional climate. Research in higher education and social psychology suggests that students from underrepresented groups may experience uncertainty about whether they belong in academic settings, particularly in environments where few faculty or peers share their background (Walton and Cohen, 2007; Hausmann et al., 2009). Exposure to instructors who share similar racial or ethnic identities may help reduce these uncertainties by signaling that individuals from similar backgrounds can succeed in academic environments.

Despite this evidence, our understanding of same-race matching in higher education still remains incomplete. As with any "treatment" or phenomenon, the relationship between same-race matching and students' college outcomes likely varies on multiple margins, such as (a) *whether and how often* students experience matching, including extensive and intensive exposure; (b) the *instructors* students match with, including roles and qualifications; (c) *where* such matches occur, including different subject areas and institutional settings; and (d) features of *students themselves*, including how matching and its impacts vary across racial/ethnic groups (Odle et al., 2025). Because existing research on same-race matching in higher education has yet to fully explore these important domains (typically due to data limitations constraining researchers' ability to observe student and instructor race—and link those at the course level), our work carefully investigates each with complementary descriptive and causal inference tools in a large and broadly diverse setting over time: the universe of students and instructors in Texas public universities from 2011 to 2021. In doing so, we provide a more holistic assessment of if, when, how, for whom, and to what extent same-race matching occurs in higher education—and how it relates to college persistence and degree completion. Such information provides critical insights to policymakers and practitioners when considering the role of same-race matching in promoting college access and success, as well as how same-race matching relates to other ongoing initiatives, such as growing efforts to increase and monitor faculty diversity (Griffin, 2019b; Fries-Britt et al., 2011; Weinberg, 2008).

Beyond our focus on expanding the understanding of how the incidence and impacts of same-race matching vary across students, instructors, and institutions in a novel setting, we also improve upon existing works in three primary ways. First, while instructive, many prior works have relied

exclusively on descriptive tools to explore these relationships, limiting our ability to draw clear inferences around whether and to what extent same-race matching shapes students' trajectories. Our robust data allow us to exploit within-student and across-course variation in exposure to same-race instructors, allowing us to estimate plausibly causal impacts. Second, prior works have also almost exclusively focused on immediate or very short-term outcomes concerning students' course grades, major selection, and subsequent persistence but failed to consider longer-run outcomes such as degree completion, which is of particular interest to policymakers. Our data allow us to observe important intermediate and longer-run outcomes, including course pass and drop rates, course grades, GPA, retention rates, and degree completion, including across majors. Third, and often again due to data limitations and available populations, prior works have also generally focused on very specific subpopulations of the higher education sector—sampling from individual military academies, graduate schools, highly selective four-year universities, and one or more community colleges—and treated racially and ethnically minoritized populations as a single "minority" group compared to White peers. Given a sample of over 1.9 million student-instructor pairs and a population view of enrollments in all public institutions in Texas, we are able to fully disaggregate impacts across racial/ethnic groups and explore these relationships in a novel setting: research universities.

1.2 Research Universities and Faculty Diversity

In addition to expanding the body of evidence on same-race matching in higher education, our focus on research universities is unique and policy-relevant. Research universities are a critical yet broadly understudied sector of higher education. These institutions transfer considerable monetary and nonmonetary benefits to students and yield, on average, among the highest earnings premia for any college graduate (Black et al., 2023; Dale and Krueger, 2011; Monks, 2000; Mountjoy, 2024; Zimmerman, 2014). This reality alone underscores the need to raise and equalize completion rates at research universities. Same-race matching is one possible mechanism—disproportionately so among racially minoritized students—and our study provides the first evidence on whether and to what extent same-race matching raises student outcomes at research universities. However, research universities face a competing challenge: They must employ racially minoritized faculty to serve as same-race matches for racially minoritized students. While research universities have undertaken significant efforts to racially diversify their faculty over the past decade (Trust, 2022; Parsons,

2023), progress has been limited. Recent evidence shows that the share of Black and Hispanic faculty at public universities has increased only modestly and has not kept pace with demographic changes among students, contributing to persistent student–faculty racial disparities (Baker and Koedel, 2024; Matias et al., 2022; Davis and Fry, 2019; Cochran, 2024). This is due to a variety of challenges—from disparities in graduate student enrollment and completion through faculty recruitment and retention (Fries-Britt et al., 2011; Griffin, 2019a; Weinberg, 2008). Prior research also suggests that faculty diversity can shape the broader campus climate and student engagement by signaling institutional commitment to inclusion and providing opportunities for mentorship and identity affirmation (Hurtado and Ruiz, 2012; Gurin et al., 2002; Garces and Jayakumar, 2014).

While a full discussion of the challenges to training, recruiting, and retaining racially diverse faculty at research universities is well beyond the scope of this work, one point is clear: A relative lack of faculty diversity means effective strategies like same-race matching are structurally limited. This competing opportunity (i.e., same-race matching) and challenge (i.e., stagnant or falling faculty diversity) not only underscore the importance of our work in identifying the role of same-race matching in explaining students' outcomes at research universities but also identify barriers institutions and policymakers will face when using this evidence to guide policy and practice around student success and faculty diversity.

Recent policy changes have also altered the institutional context in which colleges pursue faculty diversity. In Texas and several other states, legislation enacted in 2023 and 2024 has limited or restructured diversity, equity, and inclusion (DEI) initiatives in public universities, while other states and institutions have expanded efforts aimed at diversifying the professoriate. Because many diversity initiatives have historically focused on recruiting, mentoring, and retaining faculty from historically underrepresented backgrounds, these policy shifts may influence the composition of faculty and the likelihood that students encounter instructors who share their racial or ethnic background. As a result, understanding the extent to which same-race student–faculty interactions occur—and whether such interactions influence student outcomes—has become increasingly relevant for policymakers and institutional leaders seeking to improve student success in a rapidly changing policy environment.

1.3 Same-Race Matching at Research Universities

In this study, we explore the incidence and impacts of same-race matching at research universities. We leverage data on the universe of students, instructors, and courses across Texas from fall 2011 through fall 2021, which captures over 1.9 million student-instructor pairs representing over 465,000 unique students and 19,100 unique instructors. Importantly, these data allow us to link students (by race/ethnicity) with instructors (by race/ethnicity) at the course level and observe those students' short- and long-run academic outcomes. We also observe a host of student, instructor, and course features over time. Our study begins by descriptively documenting the incidence of same-race matching, including how matching varies by racial/ethnic group, course type, and instructor. We show that, while 36% of all student-instructor pairs are same-race matches, this rate varies widely by race/ethnicity, ranging from 73% among White students to just 4% among Black and 13% among Hispanic students. While the rates of same-race matching are, on average, higher at flagship universities compared to other research institutions, these wide gaps in matching persist. We show that this is largely driven by the population of instructors, where racially minoritized instructors are underrepresented relative to student populations: While 7% of students are Black, only 4% of instructors are Black. Likewise, only 11% of instructors are Hispanic compared to 33% of students. Conversely, White instructors are relatively overrepresented (61% of instructors compared to 42% of students).

Our work also shows that matching varies widely across courses, where racially minoritized students are even less likely to experience a same-race match in Biology and Math (both 1% among Black students) and Computer Science (5% among Hispanics). When Black students specifically do experience same-race matches, however, they are more likely to match with tenured or tenure-track faculty. Over time, we also show that rates of same-race matching have increased, albeit slightly for Black and Hispanic students (up by 2 and 3 percentage points, respectively) while falling 4 percentage points for White students.

After documenting descriptive changes in the incidence of same-race matching across groups, course types, faculty profiles, and institutions over time, our study also leverage a series of student, course, and major fixed-effects models to estimate causal impacts of same-race matching on students' immediate course-level and longer-run persistence and degree attainment outcomes. Across a variety

of specifications, we exploit within-student (or major) and across-course (or cohort) variation in exposure to same-race matching to compare outcomes across matched and unmatched courses (or matched and unmatched students) over time—overall and across individual racial/ethnic groups. We consider the effects of a racially minoritized student (a) matching with any racially minoritized faculty member and (b) matching with a faculty member of that student's same race/ethnicity. We show that, overall, there are positive effects of same-race matching: Students who experience a same-race match, on average, have course grades that are 0.05 standard deviations higher than unmatched peers and are 2.3 percentage points more likely to earn a B- or higher in the course. Students also have a slightly *higher* likelihood of passing a course and a *lower* likelihood of withdrawing. These impacts are especially high for Black students. We also show that students who experience same-race matches are 1.5 points more likely to persist (driven by higher effects for Hispanic students)—and that Hispanic students who match are 2.3 percentage points more likely to graduate.

In all, our work contributes to a growing body of research on the benefits of same-race matching by exploring the incidence and impacts of same-race matching in an underexplored but important setting: public research universities in a large and diverse state. Our data also allow us to examine longer-term outcomes such as persistence and degree completion, that fewer studies have been able to explore. Our findings are broadly consistent with past research from more localized settings, suggesting that *students of color* benefit in both the short and long run from taking classes with instructors of their own race and ethnicity. These findings and the wider body of research suggest that efforts both in Texas and nationally to diversify the professoriate may be an important component of strategies to increase degree completion and narrow persistent gaps in educational attainment.

The remainder of the paper is organized as follows. Section 2 describes the data and presents summary statistics. Section 3 provides a descriptive analysis of the incidence of same-race matching across various dimensions. Section 4 outlines the empirical framework. Section 5 discusses both short- and long-term outcomes, along with a series of robustness checks. Finally, Section 6 concludes.

2 Data

Our analysis is based on administrative data from the Texas Higher Education Coordinating Board (THECB), which includes the universe of first-year, first-time-in-college (FTIC) students

from 10 public research universities in Texas. Research universities play a crucial role in promoting access to higher education and fostering individual and regional economic mobility. They are also associated with strong student outcomes and high institutional value. Given the diversity of both the state and its research institutions, Texas provides an ideal setting to examine the impacts of same-race matching in higher education. Additionally, since 2011, the THECB has collected transcript-level data from all public institutions in the state, enabling us to identify same-race instructor-student matching at the course level.

Our dataset covers all students enrolled at these 10 research institutions from fall 2011 to fall 2021, providing detailed demographic information, including race, gender, and age, alongside various other student characteristics. We identify FTIC students and link their records to course-level data, which includes course subjects, course grades, credits earned, and withdrawal behavior. We restrict our sample to courses that provide positive credit hours during the study period. Each course is also matched to the corresponding instructor record, which contains demographic details such as race, gender, academic rank, and tenure status. Additionally, our data captures long-term academic outcomes, including second-year persistence rates and degree completion. Overall, our sample comprises 1,969,072 student-course-instructor observations, representing 465,536 unique students and 19,127 unique instructors. This extensive dataset enables a robust investigation into the prevalence of same-race matching and its potential relationship with students' academic achievement.

Table 1 presents descriptive statistics. Panel A displays the racial and ethnic composition of the unique student and instructor body. Underrepresented minorities make up nearly 40% of the total student body, with 7% identifying as Black and 33% as Hispanic, while 42% are White. In contrast, the racial distribution of instructors differs substantially from that of students. A majority (61%) of instructors are White, while only 11% are Hispanic, and 4% are Black.

Panel B of Table 1 reports summary statistics for overall student-course-instructor observations. Among 1,969,072 observations, 63% of courses are classified as freshman-level, 35% as sophomore-level, 40% as Science, Technology, Engineering, and Mathematics (STEM) courses courses, and 87% as face-to-face courses. Regarding instructor demographics, 44% are female, and 75% hold full-time positions. Most instructors occupy non-tenure roles, with 75% in non-tenure positions, 21% in tenured positions, and 4% on the tenure track.

Table 1: Descriptive Statistics

Panel A

	Student		**Instructor**	
	Freq.	Percent	Freq.	Percent
Nat. American	951	0.20%	61	0.32%
Asian	53,947	11.59%	1,159	6.06%
Afr. American	31,984	6.87%	732	3.83%
Hispanic	154,625	33.21%	2,097	10.96%
White	196,986	42.31%	11,723	61.29%
International	8,452	1.82%	2,261	11.82%
Unknown	2,630	0.56%	880	4.60%
Two or More Races	15,961	3.43%	214	1.12%
Total	465,536	100.00%	19,127	100.00%

Panel B

Observations	1,969,072	**Instructor**	
		Nat. American	0.52%
Student		Asian	5.64%
Nat. American	0.20%	Afr. American	3.33%
Asian	11.91%	Hispanic	9.12%
Afr. American	7.02%	White	69.58%
Hispanic	32.98%	International	6.08%
White	42.00%	Unknown	4.77%
International	1.83%	Two or More Races	0.96%
Unknown	0.58%	Female	43.84%
Two or More Races	3.47%	Male	56.16%
Age	18.07	Rank: Full	11.90%
Female	52.56%	Rank: Associate	8.95%
Male	47.44%	Rank: Assistant	4.15%
		Rank: Instructor	0.02%
Course		Rank: Other	63.65%
Freshman	62.95%	Rank: Teaching Assistant	11.33%
Sophomore	35.46%	Status: Full-time	74.95%
STEM	40.49%	Status: Part-time	25.05%
Mode: Face-to-Face	86.73%	Tenure: Non-tenure	74.98%
Mode: Internet	10.23%	Tenure: Tenured	20.69%
Mode: Hybrid	2.17%	Tenure: On track	4.33%

Note: Data include the universe of courses for first-year FTIC students who enrolled from fall 2011 to fall 2021.

Table 1 continued

Panel C

	Asian	Black.	Hispanic	White	All
Passed Course	0.97	0.89	0.91	0.95	0.93
Obs: 1,888,506	(0.18)	(0.31)	(0.28)	(0.22)	(0.25)
Good Grade (above B-)	0.8	0.59	0.64	0.75	0.71
Obs: 1,844,346	(0.40)	(0.49)	(0.48)	(0.43)	(0.45)
Grade Point	3.27	2.6	2.77	3.07	2.96
Obs: 1,844,492	(1.00)	(1.28)	(1.24)	(1.10)	(1.17)
Dropped Course	0.03	0.04	0.05	0.04	0.04
Obs: 1,969,072	(0.17)	(0.20)	(0.21)	(0.19)	(0.20)
Persistence to the Second Year	0.91	0.8	0.79	0.86	0.84
Obs: 465,592	(0.28)	(0.40)	(0.40)	(0.34)	(0.37)
Degree Completion	0.8	0.6	0.6	0.75	0.69
Obs: 240,674	(0.40)	(0.49)	(0.49)	(0.43)	(0.46)
STEM Degree Completion	0.41	0.14	0.17	0.23	0.22
Obs: 240,674	(0.49)	(0.35)	(0.38)	(0.42)	(0.42)

Note: Data include the universe of courses for first-year FTIC students who enrolled from fall 2011 to fall 2021.

In Panel C of Table 1 we document academic outcomes across student racial groups. On average, Asian and White students demonstrate stronger academic performance compared to their Black and Hispanic peers. At the course level, Black and Hispanic students are less likely to pass their classes, earn lower grades on average, and are less likely to achieve a grade above B-. These disparities extend to long-term academic outcomes, as Black and Hispanic students exhibit lower second-year persistence rates and lower degree completion rates within a 6-year period.

3 Descriptive Study

One critical gap in previous research is that most studies focus on examining the effects of same-race matching without first documenting its prevalence. Without understanding how frequently same-race matching occurs, it is difficult to fully assess its implications for student outcomes and equity in higher education. We recognize that exploring access to the benefits of same-race matching is just as important as identifying what those benefits are. If certain groups of students have systematically lower access to same-race instructors, they may be disproportionately excluded from potential advantages associated with such matching. Our study seeks to address this shortcoming by systematically documenting the incidence of same-race matching within the context of 4-year research universities. By analyzing patterns across institutions, course types, and demographic groups, we provide a comprehensive understanding of the extent to which students experience same-race matching.

We first identify same-race matching for first-year FTIC students in the courses they took during their first (fall) semester of university attendance. That is, our analysis identifies matching at the course level. We create a dummy variable to capture this incidence, assigning a value of 1 if a student shares the same race as the course instructor and 0 otherwise. Additionally, we construct an alternative measure of same-race matching, which is used in our causal analysis. This variable represents the proportion of a student's total credit hours in which they experience same-race matching, providing a broader measure of their overall exposure to instructors of the same race.

Table 2 presents the incidence of same-race matching overall and across various dimensions. The prevalence of same-race matching varies significantly by racial group. Across all research institutions and first-semester courses, 36% of student-instructor pairs are same-race matches. However, this

rate differs notably among racial groups: 8% of Asian students and only 4% of Black students experience same-race matching, while the rate is 13% for Hispanic students. In contrast, 73% of White student-instructor pairs are same-race matches. Among international students, the same-race matching rate is 7%.[1] The same-race matching rate also differs between flagship universities and emerging research universities (ERUs). At flagship institutions, the overall matching rate is 43%, ranging from 6% for Hispanic students to 76% for White students, 7% for Black students, and 8% for Asian students. In contrast, at ERUs, the overall matching rate is lower at 33%, with Black students experiencing the lowest matching rate at 3%, while White students match at 70%, Hispanic students at 16%, and Asian students at 9%. International students experience similar levels of same-race matching at both types of institutions, with rates of 8% at flagship universities and 7% at ERUs.

The occurrence of same-race matching across different course types generally corresponds with overall patterns of same-race matching. However, underrepresented minority students are less likely to have an instructor of the same race in first-semester STEM courses, with matching rates below 2% for Black students and 12% for Hispanic students. In contrast, Asian and international students experience higher same-race matching rates in these courses, both at 12%. White students also have a lower same-race matching rate in STEM courses, at 68%. Additionally, Black students are less likely to experience same-race matching in freshman-level courses (3%) compared to sophomore-level courses (6%). In contrast, Hispanic students have higher matching rates in freshman-level courses (16%) than in sophomore-level courses (8%).

Rates of same-race matching for underrepresented minority groups in freshman-level courses vary significantly across fields of study. Among the 9 most enrolled fields, Black students experience matching rates ranging from 1% to 14%. They have relatively higher rates in Computer Science (9%), Education (9%), Social Science (8%), and Business (14%) but notably lower rates in Biology (1%) and Math (1%). For Hispanic students, same-race matching rates range from 3% to 19% across fields. Unlike their Black peers, Hispanic students have lower match rates in Computer Science (5%), Education (5%), and Business (3%) but experience higher rates in Math (16%), English (16%), and Social Science (19%).

[1]THECB records do not provide information on race or ethnicity for international students. Our analysis is constrained by this reality.

Table 2: Same-Race Matching Rate

	Overall	**Flagships**	**ERUs**
Asian	8.28%	7.86%	8.65%
Black	4.13%	7.45%	3.42%
Hispanic	13.39%	6.09%	15.85%
White	72.55%	76.11%	69.88%
International	7.43%	7.69%	7.35%
Overall	36.36%	42.20%	33.22%
Obs	1,969,072	687,904	1,281,168

	STEM Course		**Freshman**	**Sophomore**
	Yes	No		
Asian	12.31%	4.00%	7.16%	9.33%
Black	1.52%	5.49%	3.42%	5.54%
Hispanic	11.51%	14.49%	15.66%	8.02%
White	67.72%	75.90%	70.26%	76.15%
International	12.09%	4.08%	7.73%	6.92%
Overall	34.50%	37.62%	35.20%	38.31%

Freshman-Level Course by Fields

	CS	Education	Engineering	English	Biology	Math	Social Sci	Health	Business
Asian	12.63%	13.71%	5.37%	2.45%	8.69%	8.31%	2.42%	-	0.48%
Black	9.49%	9.24%	4.19%	3.20%	0.68%	1.18%	7.58%	3.79%	13.50%
Hispanic	5.03%	5.27%	13.98%	16.17%	10.41%	16.28%	19.17%	12.49%	3.27%
White	65.18%	82.19%	61.16%	76.87%	71.79%	58.42%	72.16%	63.79%	65.19%
International	4.47%	1.45%	16.70%	5.20%	7.22%	19.46%	3.15%	11.11%	1.70%
Overall	28.28%	31.48%	35.67%	35.37%	31.20%	31.93%	35.97%	28.72%	34.21%

Note: Table reports the same-race matching rate.

Table 3: Faculty Tenure Status When Matched

	Overall	Freshman	Sophomore	STEM
All				
Non-tenure	72.13%	79.41%	61.13%	71.95%
Tenured	23.54%	17.64%	32.43%	24.88%
On-track	4.33%	2.95%	6.44%	3.16%
Black				
Non-tenure	60.89%	77.42%	37.52%	92.25%
Tenured	33.20%	16.24%	57.99%	5.39%
On-track	5.91%	6.34%	4.49%	2.35%
Hispanic				
Non-tenure	84.13%	87.77%	67.49%	84.09%
Tenured	12.71%	10.29%	23.96%	14.13%
On-track	3.16%	1.95%	8.55%	1.78%

Note: Table reports the tenure status distribution of faculty when matched.

While Black and Hispanic students are less likely to experience same-race matching across all dimensions, the tenure status distribution of faculty they match with follows a similar pattern to the overall tenure status distribution of matched faculty. Table 3 presents the distribution of faculty tenure status when same-race matching occurs. Across all first-semester courses, when students are matched with instructors of the same race, 72% of instructors hold non-tenure positions, 24% are tenured faculty, and 4% are on the tenure track. In general, students are more likely to match with non-tenure faculty in freshman-level courses than in sophomore-level courses, a pattern that also holds for Black and Hispanic students. Notably, Black students match with tenured faculty at a higher rate (33%) than the overall average across all courses. However, in STEM courses, they are overwhelmingly matched with non-tenure faculty, with 92% of these matches occurring in non-tenure positions.

Table 4 presents same-race matching rates in first (fall) semester courses at research universities over time. These rates have fluctuated but have gradually increased for underrepresented minority groups. For instance, over an 11-year period, the matching rate for Black students increased from 3% to 5%, while for Hispanic students, it increased from 13% to 16%. In contrast, the rate for White students declined from 75% to 71%. Matching rates for Asian and international students also saw slight increases, rising from 6% to 9% and from 6% to 7%, respectively.

Table 4: Same-Race Matching Rate Over Time

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Asian	6.47%	8.29%	9.06%	8.31%	7.37%	8.39%	7.65%	8.92%	8.39%	8.29%	9.06%
Black	3.23%	2.99%	3.75%	2.86%	4.19%	4.17%	4.42%	4.37%	4.20%	5.75%	4.99%
Hispanic	13.10%	12.83%	12.50%	13.93%	13.14%	12.70%	12.34%	12.55%	13.56%	14.75%	15.52%
White	74.86%	73.26%	71.06%	73.71%	74.31%	74.07%	74.40%	71.49%	69.74%	69.27%	71.32%
International	6.14%	6.65%	6.28%	9.49%	7.90%	8.74%	7.53%	7.49%	7.87%	5.83%	6.53%
Total	41.58%	39.87%	37.86%	38.44%	37.75%	36.50%	35.51%	34.04%	33.09%	33.35%	33.88%

Note: Table reports the same-race matching rate over time.

4 Econometric Specifications

Our primary analyses examine the effects of same-race matching on several outcome measures using two model specifications. The first specification, focusing on course-level outcomes, is given by Equation (1):

$$Y_{ijkst} = \alpha + \beta minStud_i \times minInstr_{jkst} + \lambda_i + \lambda_{jkst} + \epsilon_{ijkst}, \tag{1}$$

where Y_{ijkst} resents an outcome for student i in cohort t from school s, attending course k delivered by instructor j. The variables $minStud_i$ and $minInstr_{jkst}$ indicate whether student i and instructor j belong to an underrepresented minority group, respectively. λ_i denotes student fixed effects, while λ_{jkst} captures classroom fixed effects, defined by instructor j, course k, school s, and term t. ϵ_{ijkst} is the error term. Since we include both student and classroom fixed effects, we omit student- and class-level covariates to avoid multicollinearity. We categorize students and instructors as either belonging to an underrepresented minority group or not. Our analysis considers student-instructor interactions at both an aggregated minority level and a disaggregated level. At the aggregated level, we estimate the effect of minority students being matched with any minority instructor, assuming that both Black and Hispanic students may be influenced by instructors from either minority group. At the disaggregated level, we estimate the effect of a minority student being matched with an instructor of the same specific race. The coefficient of interest, β, captures the average outcome gain for minority students, relative to nonminority students, from being assigned to a minority instructor.

Our identification strategy relies on student and classroom fixed effects, which address several potential threats to internal validity. Classroom fixed effects account for unobserved factors that vary across classrooms and may influence student outcomes. Specifically, they implicitly control for instructor fixed effects, mitigating concerns that minority students may systematically enroll in courses taught by instructors who differ in aspects such as teaching style or grading strictness. Classroom fixed effects also encompass course fixed effects, capturing factors like course difficulty. Additionally, they account for other classroom-level characteristics as well, such as homework load or testing procedures, since all students in the same classroom complete identical assignments and

exams. By leveraging classroom fixed effects, we compare students within the same classroom, ensuring they experience the same instructional environment and class-level shocks. Meanwhile, student fixed effects control for individual differences in ability, addressing the possibility that students who take courses with minority instructors may differ systematically from those who do not.

A primary concern with our identification strategy is the potential for self-selection into courses based on instructor race. This could create a correlation between unobserved factors in the error term ϵ_{ijkst} and the interaction term $minStud_i \times minInstr_{jkst}$, leading to biased estimates. Since students do not enroll in courses randomly, failing to account for this selection mechanism could bias our results. For instance, if highly motivated minority students systematically choose courses taught by minority instructors, while highly motivated nonminority students select courses taught by nonminority instructors, our estimates would reflect these preexisting differences rather than causal effects. To mitigate selection bias, we follow prior research by restricting our sample to students and courses where these concerns are minimized. Specifically, we focus on first-year FTIC students and the courses they take during their first fall semester, a context in which students have limited ability to deliberately sort across courses.

The extent of selection can be theoretically assessed through balancing tests. We test for selection on observables that may be correlated with the error term ϵ_{ijkst} by examining whether an instructor's racial category in a classroom is associated with observable student characteristics. Specifically, we collapse the data to the class level and estimate a difference-in-differences model, similar to Equation (1), with course field, school, and year fixed effects. This approach allows us to explore whether the difference in average student characteristics between minority and nonminority students varies with the instructor's minority status. Results are presented in Table 5. In column 1, we use the class average SAT score as the outcome variable, where the coefficient captures the difference in average SAT scores between minority and nonminority students in courses taught by minority instructors. Column 2 examines the class average male share as the outcome variable. Of the two outcomes, only the estimate in column 1 is marginally significant, and its magnitude is small. However, SAT scores are an imperfect measure of student ability due to inherent limitations (e.g., students can improve scores by retaking the test, or they may only aim to meet the minimum admission requirement), making this estimate less informative. Therefore, we interpret these findings

Table 5: Test for Selection

	(1) SAT	(2) Male
Interaction	2.593*	-0.002
	(1.327)	(0.004)
N	173,588	176,256
R-sq	0.567	0.123
Fixed effects		
Course Field	X	X
School	X	X
Year	X	X

Note: The table reports the results of a regression where the dependent variable is the average student outcome for either minority or nonminority students in a classroom. Only the coefficient on the interaction term is reported here. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

as suggestive evidence that our primary variable of interest is likely unaffected by selection.

Our second regression specification for long-term outcomes is given by Equation (2):

$$Y_{ist} = \alpha + \beta_1 minStud_i + \beta_2 minInstrShr_{ist} + \beta_3 minStud_i \times minInstrShr_{ist} + \theta X_{ist} + \lambda_i + \lambda_s + \lambda_t + \epsilon_{ist}, \tag{2}$$

where $minInstrShr_{ist}$ represents the share of student i's total credit hours delivered by underrepresented minority instructors in the first term t at school s. X_{ist} is a vector of observable variables, and λ_i, λ_s, and λ_t are students' major fixed effect, school fixed effects, and year fixed effects, respectively. The coefficient β_3 captures the average outcome gain for minority students relative to nonminority students when all of a student's credit hours are taught by minority instructors instead of nonminority instructors.

We use our two regression specifications to analyze seven different student outcome variables, with Equation (1) examining four course-level outcomes and Equation (2) focusing on three long-term outcomes. The four course-level outcome variables include an indicator for whether a student passes the course, an indicator for whether a student attains a good grade (above B-), an indicator for whether a student drops the course after the census date, and a standardized course grade variable, which is normalized within each class to have a mean of 0 and a standard deviation of 1. The three long-term outcome variables include a dummy variable indicating whether a student persists to the second fall semester, a dummy variable indicating whether a student completes a degree within six

years after initial college enrollment, and a dummy variable indicating whether a student completes a degree in a STEM field within the same period.

5 Results

5.1 Course-Level Outcomes

Table 6 presents our main results for course-level outcomes. "Same-Race Interaction" reports the estimated effects of same-race matching. Columns 1 to 3 include different sets of fixed effects and controls to assess the sensitivity of the results. Column 3 reports our preferred specification from Equation (1), which includes student and classroom fixed effects. Additionally, Column 1 presents a specification that includes course field and student fixed effects along with instructor-level controls, while Column 2 includes classroom fixed effects and student-level controls.

The estimates of same-race matching effects on students' standardized course grades and the probability of attaining a good grade are both significant and robust across the different specifications. Our preferred estimates in Column 3 show a 5% of a standard deviation increase in course grades when minority students are taught by a minority instructor, along with a 2% increase in the probability of receiving a good grade. As a reminder, our coefficient of interest reflects the expected outcome gain for minority students relative to nonminority students. These estimates suggest that the minority gap in course performance is reduced when minority students are matched with minority instructors. Our preferred model also reveals significant effects of same-race interaction on course withdrawal behavior and the probability of passing courses, although the magnitudes of both effects are small. It's important to note that, as mentioned earlier, the course withdrawal variable captures records after the census date, which introduces a potential bias. Specifically, if nonminority students withdraw from the class before the census date due to a perceived mismatch with a minority instructor, our result could be attenuated because of this limitation.

To explore whether the effects of same-race interaction vary when we define matching differently, Table 7 presents the estimates using a definition of the student-instructor interaction at the disaggregated minority level. Our preferred model from Equation (1), which includes both student and classroom fixed effects, provides significant evidence in Columns 3 and 6 for interactions within the same specific race. Both Black and Hispanic students perform better when matched with an

Table 6: Effects on Course-Level Outcomes

	(1)	(2)	(3)
Standardized Course Grade			
Same-Race Interaction	0.037***	0.036***	0.047***
	(0.004)	(0.005)	(0.004)
N	1,766,714	1,701,517	1,766,558
R-sq	0.651	0.080	0.695
Good Grade (above B-)			
Same-Race Interaction	0.012***	0.018***	0.023***
	(0.002)	(0.002)	(0.002)
N	1,830,946	1,746,581	1,815,170
R-sq	0.557	0.235	0.648
Student Passed Course			
Same-Race Interaction	0.002	0.001	0.004***
	(0.001)	(0.001)	(0.001)
N	1,876,251	1,786,411	1,860,625
R-sq	0.582	0.119	0.630
Student Dropped Course			
Same-Race Interaction	-0.005***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)
N	1,958,521	1,861,720	1,942,997
R-sq	0.422	0.095	0.485
Fixed effects			
Course Fields	X		
Student	X		X
Classroom		X	X
Controls			
Student		X	
Instructor	X		

Note: The table reports the main results for course-level outcomes at the aggregated minority level. Only the coefficient on the interaction term is reported here.
$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

instructor from a similar background, but Black students experience particularly large benefits when taught by Black instructors. Specifically, when matched with an Black instructor, Black students are 4.4 percentage points more likely to receive a good grade, 1.3 percentage points more likely to pass a course, 0.9 percentage points less likely to withdraw from a course, and their course grades increase by 7.9% of a standard deviation. For Hispanic students, being taught by Hispanic instructors increases the likelihood of receiving a good grade by 1.5 percentage points and improves their course grade by 2.9% of a standard deviation. However, the effect on passing a course is not statistically different from zero, and the effect on withdrawing from a course is small and unlikely to have a meaningful impact.

5.2 Long-Term Outcomes

We now turn to long-term outcomes. While we have demonstrated that student-instructor interactions influence course-level outcomes, it is important to examine whether these interactions also shape longer-term educational outcomes, such as retention and degree completion—which are strongly linked to labor market success. Unlike course-level outcomes, where students take multiple courses and receive separate grades for each, long-term outcomes are aggregated at the student level. In other words, these outcome variables have only one unique observation per student, making it infeasible to use course-level matching variables to estimate models for these outcomes. Additionally, we cannot include classroom or student fixed effects in the model. To address these challenges, we estimate a model specification given by Equation (2), in which minority interactions are captured by the share of a student's total credit hours taught by minority instructors in their first term. The model also includes a comprehensive set of instructor- and student-level controls, along with fixed effects for students' initial major, institution, and year to mitigate potential endogeneity concerns.

Table 8 presents the estimates from Equation (2) for long-term outcomes. Columns 1 to 3 report results for minority interactions at different levels. The first outcome examined is student persistence to the second year. At the aggregated minority interaction level, the estimate in column 1 suggests that minority students are 1.5% more likely to persist if their share of credit hours taught by minority instructors increases from 0 to 1. A similar effect (1.5 percentage points) is observed for Hispanic students when all their credit hours are taught by Hispanic instructors instead of non-Hispanic instructors, while the effect for Black students is not statistically different than zero.

Table 7: Effects on Course-Level Outcomes

	Black			Hispanic		
	(1)	(2)	(3)	(4)	(5)	(6)
Standardized Course Grade						
Same-Race Interaction	0.069***	0.051***	0.079***	0.021***	0.036***	0.029***
	(0.012)	(0.016)	(0.012)	(0.004)	(0.006)	(0.005)
N	1,766,714	1,701,517	1,766,558	1,766,714	1,701,517	1,766,558
R-sq	0.651	0.079	0.695	0.651	0.079	0.695
Good Grade (above B-)						
Same-Race Interaction	0.042***	0.035***	0.044***	0.005**	0.014***	0.015***
	(0.006)	(0.007)	(0.006)	(0.002)	(0.003)	(0.002)
N	1,830,946	1,746,581	1,815,170	1,830,946	1,746,581	1,815,170
R-sq	0.557	0.235	0.648	0.557	0.235	0.648
Student Passed Course						
Same-Race Interaction	0.014***	0.009**	0.013***	-0.001	-0.002	0.001
	(0.003)	(0.004)	(0.003)	(0.001)	(0.001)	(0.001)
N	1,876,251	1,786,411	1,860,625	1,876,251	1,786,411	1,860,625
R-sq	0.582	0.118	0.630	0.582	0.118	0.630
Student Dropped Course						
Same-Race Interaction	-0.007**	-0.006**	-0.009***	-0.003***	-0.007***	-0.005***
	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
N	1,958,521	1,861,720	1,942,997	1,958,521	1,861,720	1,942,997
R-sq	0.422	0.095	0.485	0.422	0.095	0.485
Fixed effects						
Course Fields	X			X		
Student	X		X	X		X
Classroom		X	X		X	X
Controls						
Student		X			X	
Instructor	X			X		

Note: The table reports the results for course-level outcomes at the disaggregated minority level. Columns 1 to 3 report estimates for the Black group, and Columns 4 to 6 report estimates for the Hispanic group. Only the coefficient on the interaction term is reported here.
$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

The second outcome is an indicator variable for whether a student completes any degree within a six-year period. At the aggregated minority level, we find a small and insignificant effect. However, results at the other two levels are mixed. Column 2 indicates that Black students are 7.6% less likely to graduate if all their credit hours are taught by Black instructors instead of instructors from other racial groups. In contrast, column 3 suggests that Hispanic students are 2.3% more likely to complete a degree over the same period. The last outcome examined is STEM degree completion within six years. Across all three levels, estimates are small and insignificant. Overall, while racial matching in first-semester courses does not directly impact long-term outcomes, it may exert some influence through role model effects or other mechanisms. However, even when significant, these effects are small and unlikely to have meaningful implications, as our coefficient of interest assumes an extreme scenario where all of a student's credit hours are taught by minority instructors. In sum, the effects of same-race matching in first-semester courses appear to diminish over time.

6 Conclusion and Discussion

Despite consistent evidence on the benefits of same-race matching in the K12 sector and a growing evidence base on the impacts and incidence of same-race matching in a variety of post-secondary settings, existing research has not explored these trends and impacts in public research universities. Our findings are broadly consistent with those from studies conducted in other settings. Same-race matching varies widely across racial groups, and under-represented minority students are much less likely to experience a match. At the same time, we find positive impacts of same-race matching, particularly for minoritized students. In particular, students who experience a same-race match, on average, have course grades that are 0.05 standard deviations higher than unmatched peers and are 2.3 percentage points more likely to earn a B- or higher in the course. Students also have a slightly higher likelihood of passing a course and lower likelihood of withdrawing. These impacts are especially high for Black students. We also show that students who experience same-race matches are 1.5 points more likely to persist (driven by higher effects for Hispanic students)—and that Hispanic students who match are 2.3 percentage points more likely to graduate.

These findings are particularly relevant given recent policy shifts affecting diversity initiatives in higher education. In Texas and several other states, legislation has limited or restructured

Table 8: Effects on Long-Term Outcomes

	(1) Minority	(2) Black	(3) Hispanic
Persistence to the Second Year			
Same-Race Interaction	0.015**	-0.001	0.015**
	(0.006)	(0.021)	(0.007)
N	406,629	406,629	406,629
R-sq	0.058	0.058	0.058
Graduation			
Same-Race Interaction	0.009	-0.076**	0.023*
	(0.011)	(0.035)	(0.012)
N	234,866	234,866	234,866
R-sq	0.109	0.107	0.108
STEM Graduation			
Same-Race Interaction	-0.002	0.007	-0.002
	(0.007)	(0.048)	(0.008)
N	200,851	200,851	200,851
R-sq	0.293	0.293	0.293
Fixed effects			
Year	X	X	X
School	X	X	X
Student Major	X	X	X
Controls			
Student	X	X	X
Instructor	X	X	X

Note: The table reports the estimates for long-term outcomes. Columns 1 to 3 report estimates for the aggregated minority group, the Black group, and the Hispanic group, respectively. Only the coefficient on the interaction term is reported here.
$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

institutional DEI programs, many of which historically supported the recruitment, mentoring, and retention of faculty from underrepresented backgrounds. At the same time, other states and institutions have pursued expanded efforts to diversify the professoriate. Because such initiatives can shape the racial composition of faculty over time, policy changes affecting them may influence the likelihood that students encounter instructors who share their racial or ethnic background. Our results suggest that these interactions can modestly improve course performance and persistence for some students—particularly Black students—indicating that policies affecting faculty diversity may have downstream implications for student academic experiences.

Public research universities are a crucial stepping-stone for many low income and minority students, and these institutions have made laudable efforts to increase the diversity of their faculty over time to start to catch up with the great diversity of their student bodies. Unfortunately, these efforts have largely been unsuccessful, and the diversity of faculty at public research universities nationally has not increased appreciably over the past decades, due largely to the rapid pace of diversification of their student bodies. In our study, Texas made some progress in increasing the diversity of its faculty that translated to a small but notable increase in the rates of same-race matching for Hispanic and Black students (2 and 3 percentage points, respectively). The fact that, despite great efforts to attract and retain *faculty of color* in Texas and nationally, the diversity of the professoriate has largely not kept pace with the increasing diversity of students, suggests that colleges and states may want to consider strategies to increase the incidence of same-race matching that do not rely exclusively on increasing the diversity of the professoriate. For example, colleges could encourage *faculty of color* to teach more lower division courses and prioritize seats in those sections for same-race students; or offer course releases for *faculty of color* to stand up mentoring programs and support affinity groups for same-race students. In doing so, colleges should be mindful of the burden placed on *faculty of color* to take on these efforts and offer course releases or other supports for those in these roles, so that their research is not hampered. And efforts of *faculty of color* to serve as mentors to same-race students should be considered in tenure decisions.

Unfortunately, given the great diversity of students attending public research universities and the structural challenges colleges face in expanding the diversity of their faculty, even when coupled with efforts to increase the incidence of same-race matching and mentoring opportunities for *faculty of color*, same-race matching is unlikely to close racial gaps in college completion. Colleges should

couple a thoughtful approach to same-race matching with other research-based strategies to improve student success such as robust advising, tutoring, wraparound supports, and financial aid.

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