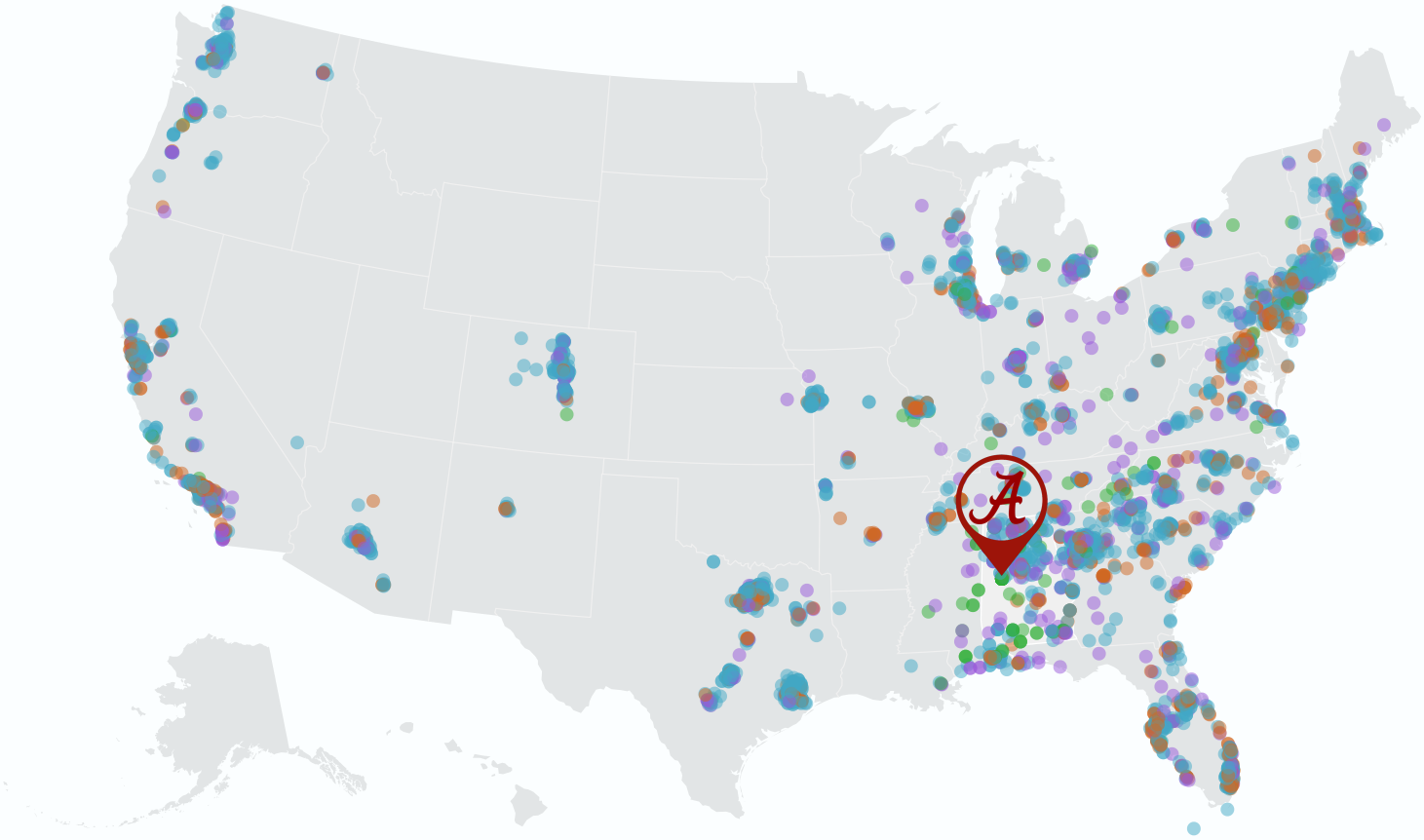
RECRUITING THE OUT-OF-STATE UNIVERSITY

Off-campus recruiting by public research universities



Public High School · Private High School · Community College · Other

Crystal Han, UCLA
Ozan Jaquette, UCLA
Karina Salazar, University of Arizona

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AUTHORS

EXECUTIVE SUMMARY

Despite a historical mission of social mobility for meritorious state residents, public research universities increasingly enroll an affluent student body that is unrepresentative of the socioeconomic and racial diversity of the states they serve. Mainstream policy debates about the causes of access inequality focus on "deficiencies" of students and K-12 schools (e.g., the "achievement gap," "under-matching"). Public universities position themselves as remaining committed to access despite state funding cuts and despite student deficiencies, pointing to the adoption of access-oriented policies (e.g., need-based financial aid, outreach programs) as evidence of this commitment. In turn, policy discourse assumes that doubling the number of high-achieving, under-represented students who apply to a university will double their enrollment. Therefore, policy interventions to increase college access tend to focus on changing student behavior rather than university behavior.

An alternative explanation for access inequality is that the enrollment priorities of some public research universities are biased against poor communities and communities of color. Decades of research on organizational behavior finds that formal policy adoption is often a ceremonial effort to appease external stakeholders, while internal resource allocation is a reliable indicator of organizational priorities, suggesting a "trust but verify" approach to university rhetoric about access. Scholarship on "enrollment management" shows that universities are very purposeful about which students they pursue and expend substantial resources crafting their class. Therefore, knowing which student populations are targeted by university recruiting efforts can yield insights about university enrollment priorities.

This report analyzes off-campus recruiting visits (e.g., visit to a local high school) by 15 public research universities as a means of understanding university enrollment priorities. We collected data on recruiting visits by "scraping" data from university admissions websites (e.g., webpages advertising admissions representatives coming to a "neighborhood near you") and by issuing public records requests.

Findings

Out-of-state recruiting

- **Most public research universities prioritize recruiting out-of-state students rather than students from their home state**. 12 of 15 universities made more out-of-state visits than in-state visits and 7 of 15 universities made more than twice as many out-of-state visits than in-state visits.

- Out-of-state visits are concentrated in affluent communities within major metropolitan areas, ignoring rural communities.
- All universities were much more likely to visit out-of-state public high schools in high-income communities than schools in low-income communities, even after controlling for factors related to recruiting visits such as enrollment size and student achievement.
- Most universities were significantly less likely to visit out-of-state public high schools with a high percentage of Black, Latinx, and Native American students, even after controlling for other factors.
- Most universities visit a disproportionate number of out-of-state private schools.

In-state recruiting

- "Coverage" of in-state public high schools and community colleges varied dramatically across universities, even after considering state size and population (e.g., University of Nebraska visited 88% of high schools while University of Alabama visited 33%).
- Most universities were more likely to visit in-state public high schools in high-income communities than schools in low-income communities, even after controlling for other factors. However, income bias for in-state visits was smaller than income bias for out-of-state visits.
- The presence of racial bias in in-state visits to public high schools varied across universities, with some universities less likely to visit schools with a high share of Black/Latinx/Native students and other universities more likely to visit schools with a high share of Black/Latinx/Native students.

Overall patterns

- **Recruiting patterns are tied to state funding**. Universities with the weakest state funding (e.g., University of Alabama, University of South Carolina) heavily focused recruiting efforts to out-of-state schools and communities. These universites made the largest number of out-of-state visits and these visits made up the largest proportions of total recruiting visits for each university. Universities with nonresident enrollment caps (e.g., UC Irvine, NC State) made the least number of out-of-state visits and these visits made up less than half of total recruiting visits for each university. Additionally, universities with stonger state funding (e.g., NC State, Nebraska) had better coverage of in-state public high schools and/or more equitable coverage of in-state public high schools.

- However, universities facing similar state funding and demographic trends (e.g., UC Berkeley and UC Irvine) often exhibited substantially different recruiting patterns with respect to out-of-state focus, income bias, and racial bias. Therefore, **university enrollment priorities are choices made by leadership rather than mere functions of environmental conditions**.

Summary and implications. In contrast to rhetoric from university leaders, our findings suggest strong socioeconomic and racial biases in the enrollment priorities of many public research universities. A small number of universities exhibit recruiting patterns broadly consistent with the historical mission of social mobility for meritorious state residents. However, most universities concentrated recruiting visits in wealthy, out-of-state communities while also privileging affluent schools in in-state visits. Although most universities did not exhibit racial bias in in-state visits, out-of-state visits consistently exhibited racial bias. Since most universities made many more out-of-state visits than in-state visits, overall recruiting visit patterns for most universities contribute to a student composition where low-income students of color feel increasingly isolated amongst growing cohorts of affluent, predominantly White, out-of-state students.

These recruiting patterns are a function of university enrollment priorities. In turn, these enrollment priorities are a function of a broken system of state higher education finance, which incentivizes universities to prioritize rich out-of-state students with lack-luster academic achievement. This is not a meritocracy. We suggest recommendations to policymakers, access advocates, and university leaders to reverse this vicious cycle.

- **State policymakers**. Universities make up for state budget cuts by prioritizing affluent students. If state policymakers want flagship public universities to prioritize meritorious state residents, they must re-invest in public higher education by growing state appropriations and/or by boosting the purchasing power of poor students through growth in need-based grant aid.
- **Access advocates**. Advocates for access can use our research to start a dialogue with university leaders about the disconnect between stated commitments and actual enrollment priorities. Armed with systematic data about university recruiting behavior, access advocates will no longer be deterred by lofty rhetoric or the adoption of opaque programs with unclear resources. Therefore, the data and findings from this report enable access advocates to hold universities accountable, creating a foundation for an authentic debate about university priorities.
- **University leaders**. Research shows that generous need-based financial aid combined with aggressive outreach dramatically increases the number of high-achieving, low-income students who apply to and attend public research universities. Therefore, access inequality is not simply a consequence of student deficiencies, but rather a deficit of will by universities. University leaders serious about access for under-represented students must put their money where their mouth is, rather than putting their money where the money is.

INTRODUCTION

The University of Alabama-Tuscaloosa exemplifies that transformation from state flagship university to out-of-state flagship. Nonresident freshman enrollment exploded from 626 in 2002-03, to 1,895 in 2008-09, and to 5,001 by 2017-18, while resident freshmen declined from 3,221 in 2008-09 to 2,406 by 2017-18 (Author calculations based on IPEDS data). This period also witnessed the erosion of state appropriations, which declined from $232 million in 2007-08 to $153 million in 2010-11, increasing only modestly to $158 million by 2016-17 despite years of economic recovery following the Great Recession (2018 CPI). By contrast, net tuition revenue increased dramatically – driven by nonresident enrollment growth – from $105 million in 2002-03 to $225 million by 2007-08 to $493 million by 2016-17.

Nonresident enrollment growth at the University of Alabama also coincided with declining socioeconomic and racial diversity. The percent of full-time freshmen receiving Pell Grants declined from 21.2% in 2010-11 to 17.0% in 2016-17. Additionally, while the percent of 18-24 year-olds in Alabama who identify as Black increased from 31.4% in 2010 to 32.3% in 2017, the percent of full-time freshmen at the University of Alabama who identify as Black declined from 11.9% in 2010-11 to 7.5% in 2017-18.

While most research on college access focuses on student behavior, the transformation of student composition at the University of Alabama did not result from sudden, unexpected shifts in student demand. Rather, the University developed arguably the most sophisticated and extensive approach to student recruiting in public higher education. Utilizing the "data science" expertise of enrollment management consulting firms, the University identifies desirable "prospects" and plies these prospects with a targeted cocktail of emails, brochures, paid advertising (e.g., pay-per-click ads from Google), off-campus recruiting visits to "feeder" high schools, and a savvy social media campaign.

Figure 1 provides descriptive statistics about off-campus recruiting visits (e.g., visits to local high schools, community colleges, hotel receptions) by the University of Alabama in the 2017 calendar year. Admissions representatives made 4,349 off-campus recruiting visits. However, only 392 of these visits occurred in Alabama. Further, the University visited only 33% of Alabama public high schools. These in-state public high school visits were concentrated in relatively affluent, predominantly White communities, largely avoiding high schools in Alabama's "Black Belt," which enroll the largest concentration of students of color. In-state recruiting efforts were dwarfed by the 3,957 out-of-state recruiting visits, which spanned metropolitan areas across the U.S. The University made 2,312 visits to out-of-state public high schools. These visits focused on schools in affluent communities, with visited schools having a much higher percent of White students than non-visited schools. Incredibly, the University made 934 visits to out-of-state private high schools, more than double the total number of in-state recruiting visits.

The University of Alabama represents an extreme case of a transformation occurring at many public research universities across the nation. Public research universities were founded to provide upward mobility for high-achieving state residents (Haycock, Mary, & Engle, 2010) and designated the unique responsibility of preparing the future professional, business, and civic leaders of the state. Quoting 19th century

University of Michigan President James Angell, these institutions provided "an uncommon education for the common man" (as cited in Rudolph, 1962, p. 279) who could not afford tuition at elite private institutions. Unfortunately, public research universities increasingly enroll an affluent student body that is unrepresentative of the socioeconomic and racial diversity of the states they serve (Huelsman, 2018; Jaquette, 2017; Jaquette, Curs, & Posselt, 2016; Nichols & Schak, 2019). Many public research universities have dramatically increased nonresident enrollment (Jaquette & Curs, 2015) and have adopted financial aid policies that specifically target nonresident students with modest academic achievement (Burd, 2015, 2018; DesJardins, 2001; Leeds & DesJardins, 2015). Meanwhile, many high-achieving, low-income students are funneled to community colleges (Dillon & Smith, 2017), which dramatically lower their probability of obtaining a BA (B. T. Long & Kurlaender, 2009; Mountjoy, 2018). These trends raise concerns that public research universities have transformed from "engine[s] of social mobility" (Gerald & Haycock, 2006, p. 3) to "engines of inequality."

Contemporary policy debates about racial and socioeconomic inequality in college access tend to focus on the "achievement gap" and on "undermatching," the idea that high-achieving, low-income students fail to

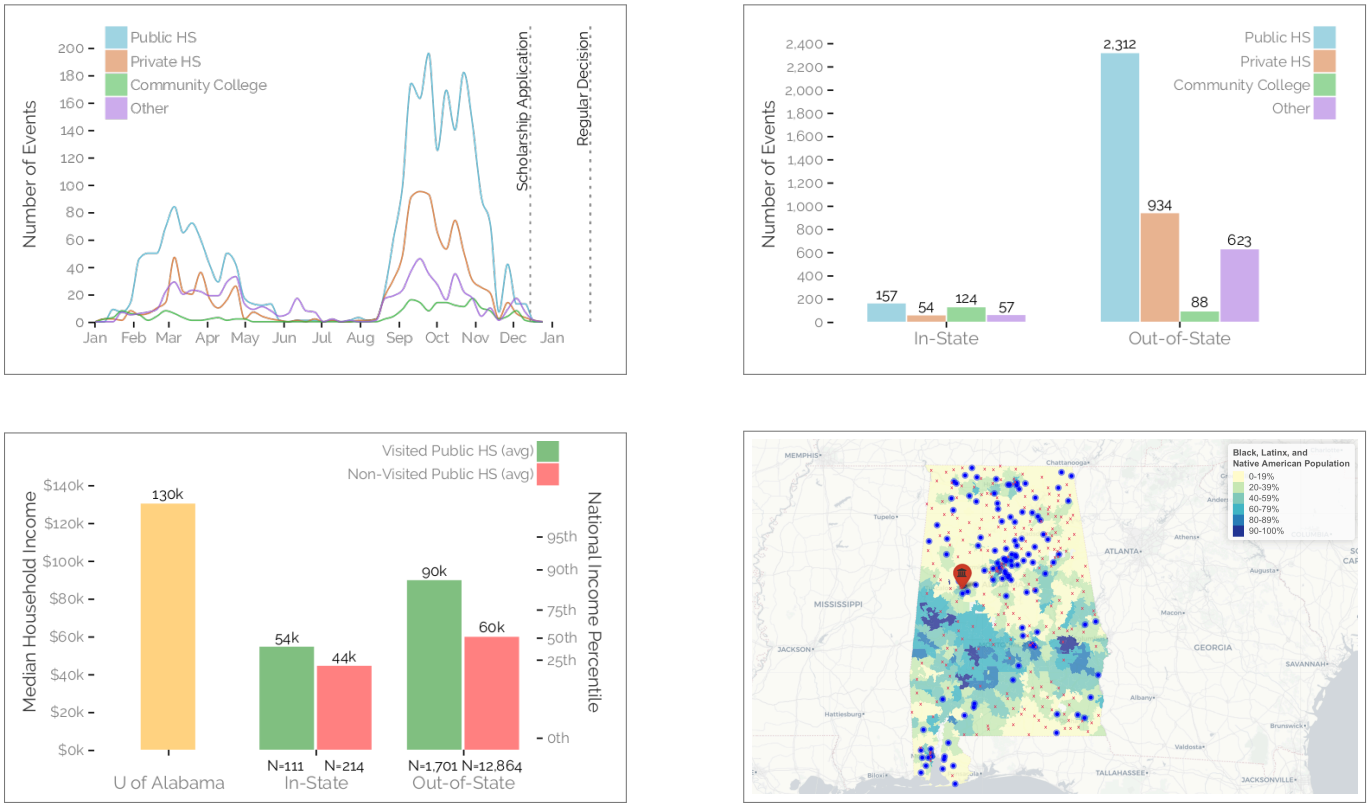


FIGURE 1: UNIVERSITY OF ALABAMA 2017 OFF-CAMPUS RECRUITING CHARACTERISTICS.

apply to good colleges because they have bad guidance at home and at school (The White House, 2014b). These explanations focus on "deficiencies" of students and K-12 schools. As such, policy interventions to increase college access mostly focus on student academic achievement and decision-making (Page & Scott-Clayton, 2016). Policy debates also highlight affordability as an important barrier to access. In recent decades, particularly following the Great Recession of 2008, states disinvested in public universities, and these state budget cuts have been associated with steep rises in tuition price.

Within this policy discourse, public research universities position themselves as progressive actors that remain committed to the access mission despite state funding cuts and despite the deficiencies of students and K-12 schools. Universities point to the adoption of policies such as holistic admissions, need-based financial aid, and outreach/pipeline programs as evidence of their commitment to access (The White House, 2014a). However, decades of research on organizational behavior shows that formal policy adoption (e.g., outreach, financial aid programs) is often a symbolic effort to appease external stakeholders rather than a substantive effort to solve the problem (Davis, 2005).

Recent trends in enrollment and funding suggest an alternative explanation for growing racial and socioeconomic inequality in access to public research universities: university enrollment priorities privilege affluent students and are biased against low-income students and communities of color. Drawing from scholarship on organizational behavior (e.g., Meyer & Rowan, 1977; Thompson, 1967; Weber, Davis, & Lounsbury, 2009), we argue that knowing which student populations are actually targeted by university recruiting efforts is a more credible indicator of enrollment priorities than university rhetoric or policy adoption. In turn, scholarship that analyzes recruiting behavior as an indicator of enrollment priorities has important policy implications; if university enrollment priorities – the "supply side" of higher education – are biased against low-income students and communities of color, then policy solutions that focus solely on students and K-12 schools – the "demand side" – will fail to overcome access inequality.

Unfortunately, research on recruiting is rare because data on university recruiting behavior are difficult to obtain. This report represents the first systematic, quantitative analysis of university recruiting behavior. Specifically, we investigate off-campus recruiting visits by 15 public research universities. We collected data on recruiting visits by "scraping" the "travel schedules" of admissions officers from university admissions websites (e.g., webpages advertising admissions representatives coming to a "neighborhood near you") and also by issuing public records requests to public universities. We merged recruiting visit data to secondary data on high schools, community colleges, and communities in order to investigate the characteristics of schools and communities that receive visits.

This report is organized as follows. First, we provide an overview of the "enrollment management" industry and situate off-campus recruiting within the broader set of recruiting interventions employed by universities. Next, we describe our research methodology and present our findings. The majority of public universities in our sample made far more out-of-state recruiting visits than in-state visits. We find that universties with weak state funding (e.g. The University of Alabama, University of South Carolina, University of Pittsburgh, CU Boulder) heavily focus their recruiting

efforts in out-of-state schools and communities. Out-of-state visits consistently revealed dramatic income bias and strong racial bias against majority-minority schools. For most universities, in-state recruiting visits revealed significant income bias but not racial bias. However, since most universities made many more out-of-state visits than in-state visits, overall recruiting patterns for most universities revealed bias against state residents, low-income students, and communities of color. A handful of universities (e.g., University of Nebraska, North Carolina State University) – notably those with stronger state funding – had better coverage of in-state schools and/or more equitable in-state coverage.

Finally, we discuss implications for policymakers and university leaders, with the goal of reversing the vicious cycle of states disinvesting in public universities and public universities disinvesting in the state. State policymakers often rationalize funding cuts to public research universities on the grounds that these organizations can generate their own revenue sources (Delaney & Doyle, 2011). Policymakers concerned about access must understand that state funding cuts incentivize public research universities to prioritize affluent, out-of-state students.

Collecting concrete data on university recruiting behaviors also has important implications for university leaders. University leaders can no longer trumpet a commitment to access while simultaneously focus recruiting efforts on affluent prospects because we are releasing these data to the public. Armed with these data, internal and external constituents committed to access will not be placated by lofty rhetoric and ceremonial action. Therefore, the time is now for leaders of public research universities to resurrect the historic role as the state's preeminent engine of opportunity and social mobility.

ENROLLMENT MANAGEMENT

Understanding the relationship between university enrollment behaviors and access inequality requires a basic understanding of the enrollment management industry. Enrollment management (EM) is a profession that integrates techniques from marketing and economics in order to "influence the characteristics and the size of enrolled student bodies" (Hossler & Bean, 1990, p. xiv). EM is also a university administrative structure (e.g., "The Office of Enrollment Management") that coordinates the activities of admissions, financial aid, and marketing and recruiting.

The broader enrollment management industry consists of professionals working within universities (e.g., vice president for enrollment management, admissions counselors), the associations EM professionals belong to (e.g., National Association for College Admission Counseling), and the marketing and EM consultancies universities hire (e.g., Hobsons, Ruffalo Noel Levitz).

The enrollment funnel

Figure 2 depicts the "enrollment funnel," a conceptual tool the EM industry uses to describe stages in student recruitment in order to inform targeted recruiting interventions. While scholarship and policy debate about college access focuses on the final stages of the enrollment funnel – when applicants are admitted (e.g., Alon, 2009) and financial aid "leveraging" is used to convert admits to enrollees (e.g., McPherson & Schapiro, 1998) – the EM industry expends substantial

FIGURE 2: THE ENROLLMENT FUNNEL.

resources on earlier stages of the funnel. "Prospects" are "all the potential students you would want to attract to your institution" (Campbell, 2017). "Inquiries" are prospects that contact the university. These include inquiries who respond to initial solicitation by the universities (e.g., email, brochure) and unsolicited inquiries who reach out on their own (e.g., sending SAT/ACT scores to the university, completing a form on the university admissions website). Most universities hire EM consulting firms, which utilize sophisticated, data-intensive methodologies, to help universities identify prospects, solicit inquiries, convert prospects and inquiries into applicants, etc. For example, from 2010 to 2018 the University of Alabama paid $4.4 million to the EM consulting firm Hobsons (University of Alabama, 2019) (2018 CPI).

Universities identify prospects primarily by purchasing "student lists" from College Board and ACT. For example, from 2010 to 2018, the University of Alabama paid $1.9 million to College Board and $349k to ACT, Inc (University of Alabama, 2019). Ruffalo Noel-Levitz (2017) found that the median public university purchases about 64,000 names. Student lists contain contact details and background information (demographic, socioeconomic, and academic) about individual prospects. Universities control which prospects are included in the list by selecting on criteria such as zip code, race, and academic achievement.

Once identified, prospects are plied with recruiting interventions aimed at soliciting inquiries and applications (Clinedinst & Koranteng, 2017). Non face-to-face interventions include emails, brochures, and text messages. Face-to-face interventions include on-campus visits and off-campus visits. Additionally, universities utilize paid advertising (e.g., pay-per-click ads from Google, cookie-driven ads targeting prospects who visit your website) and social media (e.g., Twitter, Instagram, YouTube) as a means of generating inquiries and creating positive "buzz" amongst prospects (Noel-Levitz, 2016). Given the rise in "stealth applicants" who do not inquire before applying (Dupaul & Harris, 2012), social media enables universities to tell their story to prospects who do not want to be contacted.

Given the focus of this report, what is the role of off-campus visits in student recruitment? In the admissions world, "travel season" refers to the mad dash between Labor Day and Thanksgiving when admissions officers host hotel receptions, college fairs, and

visit high schools across the country (Stevens, 2007). Research by both EM consulting firms and by scholars describe off-campus recruiting as a means of simultaneously identifying prospects and connecting with prospects already being targeted through mail/email (e.g., Clinedinst & Koranteng, 2017; Ruffalo Noel-Levitz, 2016; Stevens, 2007). With respect to efficacy, Ruffalo Noel-Levitz (2018) found that off-campus visits were the second highest source of inquiries (after student list purchases), accounting for 19.0% of inquiries for the median public university. Off-campus visits were also the third highest source of enrollees (after stealth applicants and on-campus visits), accounting for 16% of enrollees (Ruffalo Noel-Levitz, 2018).

Additionally, research finds that high school visits are instrumental for maintaining warm relationships with guidance counselors at "feeder schools." Ruffalo Noel-Levitz (2018) found that face-to-face meetings were the most effective means of engaging high school guidance counselors. Stevens (2007) worked as a regional admissions recruiter for a selective liberal arts college as part of his broader ethnography on college admissions. Relationships with counselors were essential because "The College's reputation and the quality of its applicant pool are dependent upon its connections with high schools nationwide" (Stevens, 2007, p. 53). The College visited the same schools year after year because successful recruiting depends on long-term relationships with high schools. Further, the College tended to visit affluent schools, and private schools in particular, because these schools enroll high-achieving students who can afford tuition and because these schools have the resources and motivation to host a successful visit (Stevens, 2007).

Holland (2019) analyzed high school visits from the student perspective. High school visits influenced where students applied and where they enrolled. The strength of this finding was modest for affluent students with college-educated parents. These students tended to be more concerned about college prestige and less influenced by overtures from colleges. However, high school visits strongly influenced decisions by first-generation students and under-represented students of color. These students often felt that "school counselors had low expectations for them and were too quick to suggest that they attend community college" and were drawn to colleges that "made them feel wanted" by taking the time to visit. While Holland (2019) shows that college choice for underserved student populations often hinges on which colleges and universities take the time to visit, prior research has not systematically investigated which high schools receive visits by which colleges and universities.

Enrollment goals and recruiting

While the EM industry provides tools for identifying and targeting prospects at each stage of the enrollment funnel, university enrollment priorities dictate which prospects universities actually pursue. The "iron triangle" of enrollment management states that universities pursue the broad enrollment goals of academic profile, revenue, and access (Cheslock & Kroc, 2012). "Academic profile" refers to enrolling high-achieving students – particularly with respect to standardized test scores – who help the university move up the rankings. "Revenue" refers to students who generate high net tuition revenue. For public universities, the "access" goal refers to access for state residents, first-generation students, low-income students, and students of color from historically under-represented racial/ethnic groups. Because resources are scarce, the imagery of the iron triangle suggests

that pursuing one goal involves trade-offs with other goals: "most enrollment management policies...do not advance all three objectives; instead they lead to gains in some areas and declines in others" (Cheslock & Kroc, 2012, p. 221). Enrollment managers view these trade-offs as an inevitable consequence of organizational enrollment priorities, thereby motivating the question, "what are the enrollment priorities of public universities?"

Drawing from theories of organizational behavior, we argue that university recruiting behavior is an indicator of enrollment priorities. New institutional theory argues that organizations face pressure to publicly adopt goals demanded from constituencies in the external environment (e.g., move up in the rankings, increase socioeconomic and racial diversity) (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). However, organizations have scarce resources and cannot easily pursue goals that conflict with one another. Rather than publicly rejecting a goal demanded by the external environment, organizations resolve conflicts between stated goals by substantively adopting some goals and symbolically adopting others. Under substantive adoption, organizations allocate substantial resources towards achieving the goal. Under symbolic adoption, organizations adopt policies and rhetoric that signal commitment to the goal, but do not allocate substantial resources to achieving the goal. This perspective on organizational priorities is stated succinctly by the Joe Biden quote, "don't tell me what you value. Show me your budget and I'll tell you what you value."

Off-campus recruiting visits by university admissions staff represent a substantial allocation of resources (e.g., staff salary and benefits, travel costs). Therefore, we argue that comparing the characteristics of schools and communities that receive recruiting visits to those that do not can yield insights about university enrollment priorities. By contrast, speeches and policy adoption (e.g., holistic admissions, "outreach" programs) (The White House, 2014a) show which goals are publicly adopted, but do not indicate which goals have been adopted substantively versus symbolically.

DATA AND METHODS

This report presents descriptive results from a broader project that collects data on off-campus recruiting by colleges and universities. Many universities advertise off-campus recruiting events on their admissions websites (e.g. "coming to your area" links). We used "web-scraping" to collect data on recruiting events. We "scraped" webpages containing recruiting event data once per week from 1/1/2017 to 12/31/2017, thereby capturing recruitment of spring juniors and fall seniors. Here, we provide a broad overview of our data collection, data processing, and analysis sample.

The data collection sample for the broader project was drawn from the population of public research-extensive universities (2000 Carnegie Classification). Out of all public research-extensive universities (N=102), the project collected data for those that posted off-campus recruiting events on their admissions websites (N=49). We also collected recruiting visit data from selective private research universities and from selective private liberal arts colleges.[1] For each university in the data collection sample, we investigated the entire university website, searching for URLs that contain data on off-campus recruiting events. This

[1]Out of all private universities in the top 100 of U.S. News and World Report National Universities rankings (N=58) and all private colleges in the top 50 of U.S. News and World Report Liberal Arts Colleges rankings (N=47), we collected data on 49 private research universities and 42 private liberal arts colleges.

process was conducted independently by two members of the research team to avoid missing any relevant URLs. Our programs also scraped data about participation in national college fairs from the National Association for College Admission Counseling (NACAC) website. We also collected data about participation in "group travel tours" from websites advertising joint recruiting events by multiple universities (e.g., Peach State Tour by Georgia State University, Georgia Tech, and the University of Georgia). Since URLs containing data on off-campus recruiting events often change (e.g., a university creates a new URL or changes the formatting of an existing URL), we completed this investigation process for each university every three months and data collection scripts were updated accordingly.

Defining off-campus recruiting

We categorized off-campus recruiting events based on event *type*, *host*, and *location*. Event type includes college fairs (in which multiple colleges attend), day-time high school visits, group travel visits, formal admissions interviews, admitted student events, and committed student events. Event hosts include paid staff, paid consultants (e.g., a regional recruiter contracted by the university), alumni, and current students. Event locations include high schools, community colleges, hotels, conference/convention centers, and other public places (e.g., cafes).

For the purpose of our research, we define off-campus recruiting events as those that focused on soliciting undergraduate admissions applications and were hosted by paid personnel or consultants at any off-campus location. This definition includes off-campus events targeted at guidance counselors. We also included virtual events (e.g., webinar, video call) with a target audience at a specific off-campus location (e.g., students from a particular high school). However, our definition excludes admitted and committed student events. Additionally, we excluded formal one-on-one interviews because these events focus on determining admissions eligibility of a particular prospect; they are not events that focus on soliciting applications from many prospective students. We excluded events hosted by alumni or student volunteers because theories of organizational behavior suggest that the activities of paid staff are better indicators of organizational priorities than activities allocated to volunteers (Thompson, 1967).

Analysis sample

The analysis sample for this report consists of 15 public research universities. These cases were selected from the larger project sample and selected based on "completeness" of recruiting event data posted on admissions websites. Based on prior market and scholarly research (e.g., Holland, 2019; Ruffalo Noel-Levitz, 2017, 2018; Stevens, 2007) and conversations with admissions professionals, nearly all colleges and universities convene three broad types of off-campus recruiting events: (1) receptions/college fairs at hotels and convention centers; (2) evening college fairs at local high schools; and (3) day-time visits at local high schools. However, some institutions we collected data from did not post all three types of recruiting events. Of the 49 public research universities we collected data on, these 15 universities posted all three broad types of off-campus recruiting events on their website.

Table 1 shows how the median university in our sample compares to the median university in the pop-

ulation of public "Doctoral/Research Universities-Extensive," as defined by the 2015 Carnegie Classification. Overall, our analysis sample appears fairly similar to the population. However, our sample institutions are slightly larger in size and have a higher tuition and state revenue.

Data processing and data quality

We took a multi-step approach to processing information scraped from admissions webpages. First, automated Python scripts scrape all text from admissions webpages, storing the information as HTML text in a Structured Query Language (SQL) database on a remote server. Separate scripts parse the HTML text into tabular data (e.g., columns for event date, event time, school name, address). Third, we "geocode" recruiting events, converting limited location information (e.g., school name, city, state) into geographic coordinates. Geocoding scripts take location information, query the Google Maps Application Program Interface (API), and return more detailed geographic information for each event (e.g., latitude and longitude coordinates, county, city, state, full street address, zip code).

We conducted two additional data quality checks. First, we manually checked each scraped recruiting event, ensuring that event "type" (e.g., public high school visit) was correctly categorized and that each event was merged to the correct secondary data source (e.g., the correct NCES school ID).

Second, we checked the completeness of web-scraped data by issuing public records requests to universities for their list of off-campus recruiting events and then comparing the two data sources. Though we requested this data from all universities, our request was denied by the University of Alabama and University of Arkansas because statutes in these states only permit public records requests from state residents. The University of Pittsburgh also cited that state-related universities are exempt from Pennsylvania's Right-to-Know Law, and the University of Nebraska claimed they do not have the records we requested and are not required by law to produce them. Of the remaining 11 universities, we have received data

	Sample (N=15)	**Population** (N=80)
US News & World Report Ranking	92	94
25th Percentile SAT/ACT Composite Score	1,126	1,085
75th Percentile SAT/ACT Composite Score	1,334	1,300
Total Enrolled Freshmen	5,433	4,957
Percent Out-of-State Freshmen	26.9%	25.4%
In-State Tuition + Fees	$11,706	$11,026
Out-of-State Tuition + Fees	$30,414	$29,441
Percent Pell Recipients	20.3%	24.0%
Total Net Tuition Revenue	$463,142,400	$379,065,984
Percent of Total Revenue from Tuition	25.5%	26.3%
Total State Appropriations	$286,740,832	$267,926,000
Appropriation per Student	$9,548	$7,903
Percent of Total Revenue from State Appropriations	19.5%	16.7%
Total State Revenue	$295,350,848	$290,634,448
Revenue per Student	$11,347	$8,970
Percent of Total Revenue from State (All Sources)	21.1%	19.4%

TABLE 1: MEDIAN 2016-17 CHARACTERISTICS OF STUDY SAMPLE COMPARED TO POPULATION OF PUBLIC RESEARCH UNIVERSITIES CATEGORIZED AS HIGHEST RESEARCH ACTIVITY BY 2015 CARNEGIE CLASSIFICATION.

from nine and two universities have not sent us data at the time of this report. However, public records data we received from North Carolina State University cannot be used because these data did not contain event date. For the eight universities that sent us complete data, the analyses below use "requested data" rather than "scraped data." Requested data was also manually checked to ensure that event type was correctly categorized and that each event was merged to the correct secondary data source. A summary of the data collection and quality checks is provided in Appendix Table A1. Broad patterns were similar across requested data versus scraped data and results based on scraped data are available upon request. Detailed information about our data methodology is available at https://emraresearch.org/methodology.

Limitations

Our data collection has several limitations. First, off-campus visits encompasses only one university recruiting effort. Universities may also be recruiting students via other interventions (e.g., direct mailings, emails, specific outreach programs). Second, despite our best efforts to collect and triangulate off-campus recruiting data from more than one source to validate completeness, our data may not capture all off-campus recruiting events by each university. Third, prior research suggests that the capacity of a high school to host an event (e.g., having high school guidance counselors focused on college access) affects which universities visit it (Stevens, 2007). Unfortunately, the National Center for Education Statistics collects high school finance data and personnel data on guidance counselors at the district-level rather than the school-level. Therefore, our analyses do not account for differences in high school-level capacity to host recruiting visits. Fourth, for events hosted at community colleges, we cannot infer whether the event targets all prospective students in the local community or whether the event specifically targets prospective transfer students enrolled at that community college.

STATE AND INSTITUTIONAL CONTEXT

Before presenting results on university recruiting behavior, we provide a brief overview of state and institutional contexts across universities. Revenue sources for public universities have shifted in recent decades. Figure A2 in the Appendix shows change over time in state appropriations and tuition revenue for all 15 universities from 2003-04 through 2016-17. Many universities experienced declines in state appropriations and growth in tuition revenue. However, generosity of state appropriations differs substantially across universities. For example, Figure 3 shows that state appropriations per full time equivalent (FTE) student declined from $25,000 in 2003-04 to $21,000 in 2016-17 for SUNY-Stony Brook. Figure 4 shows the University of Pittsburgh experienced smaller declines in state appropriations than Stony Brook during this same time; however, the University of Pittsburgh only received $6,000 per student FTE in 2016-17.

Figure 5 plots all universities according to their 2016-17 revenue from state appropriations (X Axis) and tuition revenue (Y Axis) per full-time equivalent student. Four universities receive more revenue from state appropriations than tuition (Stony Brook, North Carolina State University, Nebraska, Arkansas). Three universities receive about equal revenue from state appropriations and tuition (Kansas, Georgia, UMass Amherst). The remaining seven universities receive more revenue from

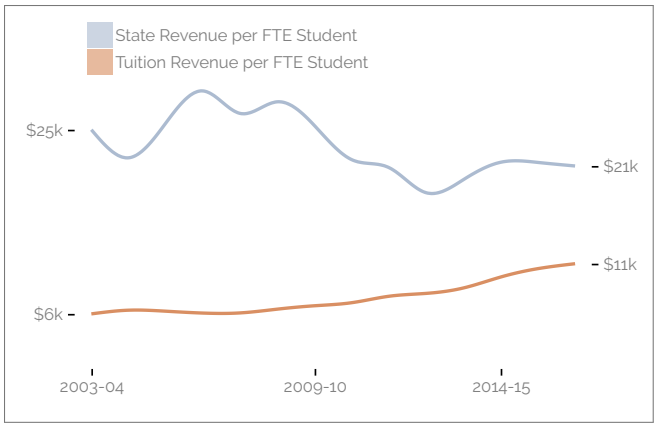


FIGURE 3: STONY BROOK REVENUES PER FTE STUDENT, 2003-04 THROUGH 2016-17.

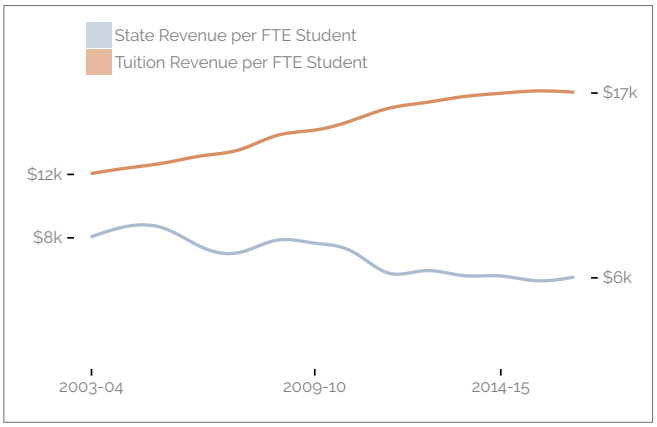


FIGURE 4: UNIVERSITY OF PITTSBURGH REVENUES PER FTE STUDENT, 2003-04 THROUGH 2016-17.

tuition than state appropriations per FTE student. Of these, CU Boulder, the University of Pittsburgh, University of South Carolina, University of Alabama, and University of Cincinnati are particularly reliant on tuition revenue in that they receive very low state appropriations per FTE student.

Appendix Figure A3 shows the percent of freshmen who are nonresident and the percent of freshmen who are federal grant recipients for all 15 universities from 2003-04 to 2016-17.[2] Many universities experienced significant nonresident enrollment growth, consistent with research showing that public universities respond to state disinvestment by pursuing nonresident students who pay higher tuition (Jaquette & Curs, 2015). For example, Figure 6 shows that percent of nonresident freshmen at the University of Pittsburgh increased from 14% in 2003-04 to 31% in 2016-17. Some universities experienced similar increases in nonresident enrollment (Stony Brook, Alabama, Nebraska, South Carolina, UC Berkeley, UC Irvine, Kansas, Arkansas), whereas other universities had more mod-

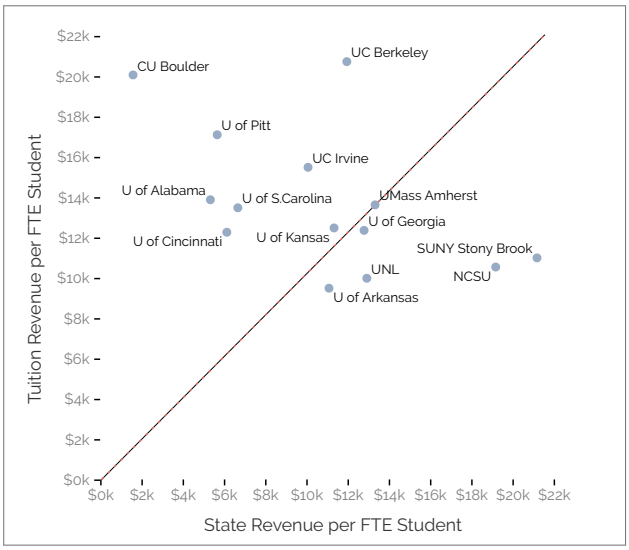


FIGURE 5: STATE AND TUITION REVENUE PER FTE STUDENT FOR SAMPLE INSTITUTIONS IN 2016-17.

[2]Appendix Figure A3 uses the percent of full-time freshmen that receive federal grants rather than the percent of full-time freshmen that receive Pell grants because data on freshman Pell recipients is not available for years prior to 2007-08. However, the measures of federal grant recipients and Pell grant recipients are extremely close.

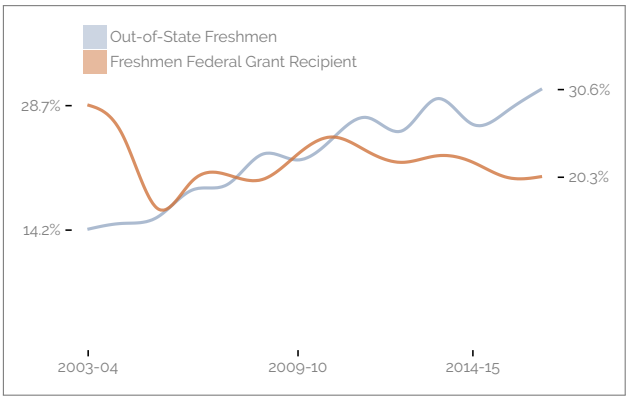


FIGURE 6: UNIVERSITY OF PITTSBURGH PERCENT OUT-OF-STATE FRESHMEN AND FEDERAL GRANT RECIPIENT, 2003-04 THROUGH 2016-17

erate increases in enrollment from nonresident freshman students (Rutgers, Cincinnati, Georgia, North Carolina State University, CU Boulder, UMass Amherst).

Nationally, enrollment of Pell recipients increased substantially in 2008-09 following the expansion of Pell Grant funding by the Obama administration. Since 2010-11, however, the percent of federal grant recipients declined at several universities in our sample, as shown in Figure A3. Jaquette et al. (2016) show that growth in the share of nonresident students is associated with declines in the share of grant aid recipients. This relationship can be seen in Figure 6 for the University of Pittsburgh, where the the percent of full-time freshmen receiving federal grants decreased from 29% in 2003-04 to 20% in 2016-17.

The racial composition of state populations and freshman enrollments have also shifted over time for many universities. Appendix Figure A4 shows change over time in the percent of freshmen at each university who identify as Black and the percent of 18 year-olds in the state who identify as Black. Appendix Figure A5 shows the same trends for people who identify as Latinx. Most universities experienced modest (or no change) in the proportion of Black freshman-aged students in their state, but nearly all experienced relatively larger increases in the proportion of Latinx freshman-aged students. While changes in the proportion of Black and Latinx freshman enrollments have trended similar to state populations for most universities, no university matched the proportion of Black and Latinx freshman enrollments to the proportion of Black and Latinx freshman-age populations in their state.

RESULTS

Table 2 presents the total number of off-campus recruiting visits by visit "type" and by in-state or out-of-state location for each university. Nearly all universities made more out-of-state recruiting visits than in-state recruiting visits. The majority of out-of-state visits are made to public high schools and private schools. While in-state visits also include a large proportion of visits to public high schools, many universities also make a substantial number of in-state visits to community colleges.

We organize results around these initial findings. First, out-of-state analyses focus on the characteristics of public and private high schools because these events comprise the vast majority of out-of-state recruiting visits. Because public universities hold unique responsibilities to serving state residents and providing pathways for community college transfer students, we then assess each university's "coverage" of visiting in-state public high schools and in-state community colleges. Given our interest in using recruiting data to under-

	Total Events	Out-of-State				In-State				
		Total	Pub HS	Priv HS	Other	**Total**	Pub HS	Priv HS	CC	Other
NC State	**371**	**124**	72	20	32	**247**	157	3	55	32
Rutgers	**1,629**	**954**	560	231	163	**675**	477	72	89	37
Stony Brook	**1,101**	**664**	496	105	63	**437**	326	41	33	37
Alabama	**4,349**	**3,957**	2,312	934	711	**392**	157	54	124	57
Arkansas	**1,013**	**788**	483	204	101	**225**	162	21	16	26
UC Berkeley	**906**	**420**	188	134	98	**486**	269	35	121	61
UC Irvine	**939**	**172**	77	40	55	**767**	330	20	322	95
Cincinnati	**1,369**	**815**	491	204	120	**554**	408	79	22	45
CU Boulder	**1,568**	**1,102**	607	362	133	**466**	256	17	154	39
Georgia	**885**	**587**	287	233	67	**298**	203	69	1	25
Kansas	**1,419**	**1,004**	613	213	178	**415**	304	22	28	61
UMass	**1,137**	**784**	504	230	50	**353**	238	62	36	17
Nebraska	**1,421**	**874**	645	104	125	**547**	446	55	20	26
Pittsburgh	**1,233**	**906**	559	210	137	**327**	211	51	37	28
S.Carolina	**1,495**	**1,245**	676	328	241	**250**	197	22	2	29

TABLE 2: NUMBER OF OFF-CAMPUS RECRUITING EVENTS BY TYPE AND IN-STATE, OUT-OF-STATE.

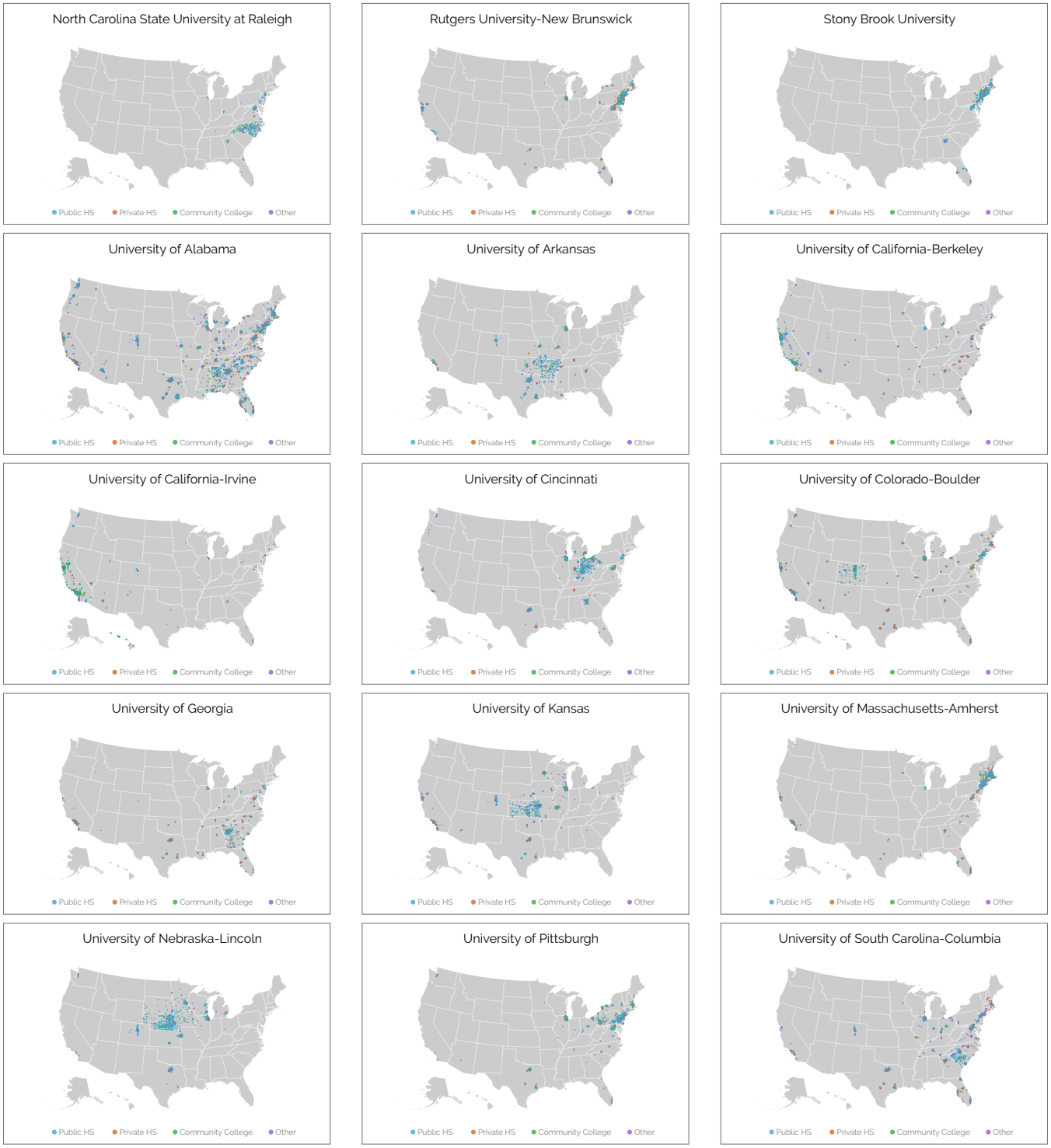
stand university enrollment priorities with respect to the iron triangle of enrollment management, our analyses focus on the income, race, and achievement characteristics of schools and communities that receive visits.

Out-of-state Recruiting

Table 2 shows that most cases in the study made more out-of-state recruiting visits than visits within their respective states. Alabama showcased the upper extreme of this trend with 3,957 out-of-state visits, which made up more than 90% of total recruiting visits by the university. While other universities made a relatively modest number of out-of-state visits in comparison to Alabama, these visits still made up large proportions of total visits by each university: Rutgers (59%), Stony Brook (60%), Arkansas (78%), Cincinnati (60%), CU Boulder (70%), Georgia (66%), Kansas (71%), UMass Amherst (69%), Nebraska (62%), Pittsburgh (73%), South Carolina (83%). However, three universities made less out-of-state visits than in-state visits. UC Berkeley's 420 out-of-state visits made up less than half of all recruiting visits (46%). NC State's 124 out-of-state visits made up only 33% of total recruiting visits. Lastly, UC Irvine's 172 visits out-of-state visits made up only 18% of total recruiting visits.

Figure 7 shows small-multiple maps of recruiting patterns for each university. Out-of-state recruiting visits focus on populous metropolitan areas, ignoring rural communities entirely. However, the geographic focus of these visits differed across universities. The University of Alabama and CU Boulder implemented a truly "national approach" to out-of-state recruiting, visiting every major metropolitan area in the country. The University of Alabama is unique in that it also made a substantive number of visits to smaller metropolitan areas across the country (e.g., Spokane Washington). Most universities (e.g., Rutgers, Kansas, Georgia, Cincinnati) followed a "regional and targeted national" approach, meaning that they visited major metropolitan areas in nearby states as well as specific metropolitan ar-

FIGURE 7: MAP OF VISITS.



eas in far-away states (e.g., visits to Los Angeles by the University of Georgia). Four universities followed a "regional approach" (Stony Brook, Arkansas, Nebraska, and NC State), meaning that they focused visits in-state and in nearby major metropolitan areas. With respect to specific metropolitan areas visited, all universities visited Chicago. The majority of universities also visited New York, Los Angeles, Dallas, Houston, Atlanta, Washington D.C., San Francisco, Boston, and Denver.

Public high school visits. The majority of out-of-state visits were visits to public high schools. Table 3 shows the characteristics of out-of-state public high schools that received and did not receive a visit by each university.[3]

For each university, the total number of out-of-state high schools in Table 3 includes all high schools in states that received at least one visit to a public or private high school from that university. Our rationale for this decision is that it is unhelpful to compare visited out-of-state schools to non-visited schools in states that the university ignored entirely. Thus, total number of out-of-state high schools differs across universities depending on the number of states the university visited. For example, the University of South Carolina visited high schools in 25 different states. All 12,086 public high schools in those states are included in the out-of-state public high school sample for South Carolina. An indicator is used to identify whether each school received at least one visit by South Carolina (576 visited and 11,510 non-visited).

[3]Schools that satisfied the following criteria were included in the sample: offers grades 9-12 and enrolls at least ten students in each grade; located in the 50 U.S. states, the District of Columbia, or land regulated by the Bureau of Indian Affairs; is not a special education school, alternative school, virtual school, or independent school.

Income. Table 3 shows that out-of-state public high schools that received a visit were in zip codes with much higher median household incomes, on average, than schools that did not receive a visit.[4] For example, CU Boulder visited out-of-state public high schools in zip codes where the average median household income was $115,000, whereas schools that did not receive a visit were located in areas with an average median household income of $63,000. This income disparity between visited and not visited schools ranged from a low of $24,000 for University of Nebraska to a high of $54,000 for NC State.

To show this income disparity at the local level, Figure 8 maps visits to public high schools in the New York City metropolitan area (NYC MSA) by the University of South Carolina. The first sub-figure simply shows an outline of the NYC MSA. The second sub-figure adds a color layer to show the distribution of income in the metro area. The color legend indicates the average median household income at the zip code level. Many of the lowest income communities are located in the center of the metro area and are surrounded by some of the highest income communities in the metro. The third sub-figure adds blue circle markers to represent public high schools that received at least one visit by South Carolina. The fourth sub-figure adds red "x" markers to indicate public high schools that did not receive a visit by South Carolina. South Carolina's visits to public high schools in the NYC MSA are located in the higher income communities, whereas the largest clusters of non-visited schools are located at the center of the metro in the lowest income communities.

We use linear probability regression models to exam-

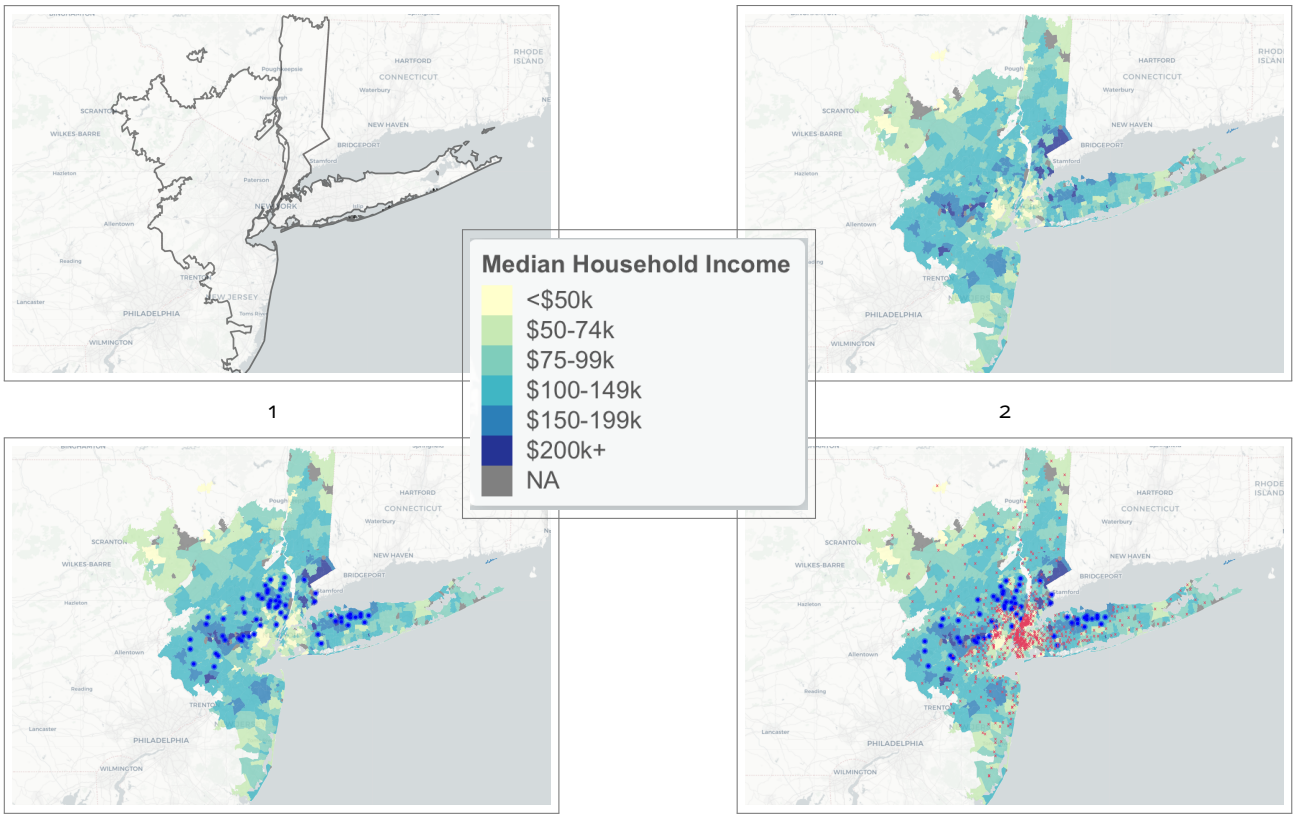
[4]Average median household income of age group 25-64 years olds in each zip code was used.

TABLE 3: DESCRIPTIVE STATISTICS FOR OUT-OF-STATE PUBLIC HIGH SCHOOL VISITS.

	NC State		Rutgers		Stony Brook		Alabama		Arkansas		UC Berkeley		UC Irvine	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	70	5,185	445	6,635	407	3,613	1,711	13,255	329	6,301	178	10,893	74	7,521
Miles from University	339	437	717	1,003	196	506	831	836	406	630	1,933	1,917	1,155	1,805
Grade 12 Enrollment	403	201	428	214	332	215	384	169	427	186	459	183	471	191
Median Household Income ($000)	$121	$67	$113	$66	$110	$66	$90	$60	$87	$59	$104	$62	$93	$66
Percent Free or Reduced Lunch	21.5	49.2	22.9	52.0	22.8	48.8	30.4	51.7	31.4	55.8	23.1	49.2	29.3	46.9
Percent Enrollment by Race														
Black, Latinx, Native American	28.7	37.1	26.2	45.6	24.0	37.0	30.3	38.0	32.5	44.3	30.4	37.4	29.9	35.5
White	58.7	57.2	57.1	48.2	64.7	58.0	59.9	56.8	57.8	50.1	51.7	57.6	44.5	58.4
Black	15.9	22.1	10.1	15.4	11.8	22.1	13.8	16.3	10.8	16.4	15.0	18.1	8.1	15.7
Latinx	12.6	14.7	15.9	29.6	12.0	14.6	16.1	20.5	19.2	26.0	15.1	18.1	21.3	18.3
Native American	0.2	0.3	0.2	0.6	0.2	0.3	0.4	1.2	2.5	1.9	0.3	1.2	0.5	1.5
Asian	9.7	3.4	13.7	3.9	9.0	2.8	6.7	2.8	6.2	3.1	14.1	2.6	16.4	3.4
Other Race	2.9	2.3	3.0	2.3	2.3	2.3	3.2	2.4	3.5	2.4	3.8	2.3	9.1	2.7
School Type														
0/1 is a Charter School	0.01	0.07	0.02	0.11	0.02	0.07	0.04	0.11	0.04	0.10	0.06	0.08	0.03	0.10
0/1 is a Magnet School	0.07	0.06	0.08	0.08	0.07	0.09	0.09	0.05	0.05	0.05	0.18	0.06	0.14	0.06
0/1 is a Regular School	0.91	0.87	0.90	0.81	0.90	0.84	0.88	0.84	0.91	0.85	0.76	0.86	0.84	0.85
Locale														
In a City	0.17	0.26	0.29	0.31	0.14	0.22	0.25	0.25	0.30	0.24	0.45	0.24	0.51	0.25
In a Suburb	0.64	0.35	0.64	0.31	0.73	0.39	0.58	0.23	0.49	0.20	0.48	0.26	0.39	0.32
In a Town	0.03	0.11	0.01	0.11	0.01	0.12	0.04	0.15	0.07	0.15	0.02	0.14	0.03	0.13
In a Rural Area	0.16	0.27	0.07	0.28	0.11	0.27	0.13	0.37	0.14	0.41	0.05	0.36	0.07	0.30

TABLE 3: DESCRIPTIVE STATISTICS FOR OUT-OF-STATE PUBLIC HIGH SCHOOL VISITS. (CONT)

	Cincinnati		CU Boulder		Georgia		Kansas		UMass		Nebraska		Pittsburgh		S.Carolina	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	401	8,717	575	12,820	249	9,333	438	8,090	496	8,797	420	6,003	433	7,316	576	11,510
Miles from University	406	720	1,139	1,116	920	808	519	685	675	1,102	374	548	411	614	658	806
Grade 12 Enrollment	430	199	431	186	490	201	458	172	380	208	391	144	406	188	431	192
Median Household Income ($000)	$101	$64	$115	$63	$102	$62	$96	$62	$115	$64	$85	$61	$114	$64	$105	$63
Percent Free or Reduced Lunch	28.3	50.9	20.5	49.5	22.6	51.2	26.1	49.6	21.4	51.7	31.1	46.6	21.0	50.0	22.6	50.5
Percent Enrollment by Race																
Black, Latinx, Native American	28.9	40.5	25.4	37.6	29.6	40.9	25.4	38.2	24.5	43.6	27.1	28.8	24.3	39.7	26.7	37.9
White	57.1	53.6	59.2	56.5	56.1	53.4	63.6	56.1	61.6	50.1	63.9	67.2	61.6	55.1	61.9	56.5
Black	14.6	16.7	6.6	14.9	10.3	17.1	9.8	11.7	8.5	17.7	10.2	11.6	10.7	18.7	12.0	16.3
Latinx	14.0	23.2	18.5	21.3	19.0	22.3	15.0	24.3	15.7	25.0	16.0	16.1	13.3	20.4	14.4	21.0
Native American	0.2	0.6	0.3	1.3	0.3	1.5	0.5	2.2	0.2	0.8	0.9	1.1	0.2	0.6	0.3	0.6
Asian	10.8	3.7	12.0	3.3	11.2	3.2	7.6	3.2	11.5	3.9	6.1	1.7	11.4	2.8	8.2	3.3
Other Race	3.2	2.2	3.4	2.7	3.1	2.6	3.4	2.5	2.4	2.5	2.9	2.3	2.7	2.4	3.1	2.4
School Type																
0/1 is a Charter School	0.03	0.10	0.03	0.11	0.05	0.10	0.01	0.12	0.02	0.10	0.02	0.07	0.01	0.06	0.03	0.10
0/1 is a Magnet School	0.11	0.06	0.09	0.05	0.12	0.06	0.03	0.03	0.09	0.07	0.03	0.04	0.08	0.06	0.10	0.06
0/1 is a Regular School	0.86	0.85	0.88	0.84	0.83	0.84	0.95	0.85	0.89	0.84	0.95	0.89	0.91	0.87	0.88	0.84
Locale																
In a City	0.25	0.27	0.32	0.25	0.41	0.24	0.33	0.22	0.22	0.28	0.31	0.18	0.19	0.26	0.21	0.26
In a Suburb	0.63	0.28	0.62	0.27	0.52	0.29	0.56	0.22	0.68	0.28	0.46	0.17	0.70	0.28	0.68	0.28
In a Town	0.03	0.13	0.01	0.14	0.00	0.13	0.03	0.16	0.02	0.12	0.10	0.17	0.02	0.12	0.01	0.13
In a Rural Area	0.09	0.32	0.05	0.34	0.07	0.34	0.08	0.40	0.08	0.31	0.14	0.48	0.08	0.33	0.09	0.33



1 2 3 4

FIGURE 8: UNIVERSITY OF SOUTH CAROLINA-COLUMBIA IN NEW YORK CITY.

ine whether the relationship between income and the probability of receiving a visit persists after controlling for other factors that likely affect whether a public high school receives a visit. Regression models are run separately for each university. Specifically, we control for: the percent enrollment from Black, Latinx, and Native American students; the number of 12th grade students; whether a school is located in a suburb, city, town, or rural area; whether a school is a charter, magnet school, or traditional school; and distance from the university. Additionally, we control for student achievement using the number of students scoring at proficient levels in state math assessments. These assessments differ across states on several dimensions (e.g., what is tested, what counts as proficient, who is required to take the test). In turn, these differences across states may be correlated with other variables of interest in ways that affect regression coefficients. Nevertheless, we include this measure of achievement to avoid the potential criticism that universities

do not visit low-income schools or schools with predominantly students of color because these schools have few "college ready" students.

Table 4 shows regression results of the relationship between school characteristics and the probability of receiving a visit. Results for variables that are not central to this report (e.g., urbanization, distance from the university) are available upon request. Looking at the column of results for Alabama, the constant represents a high school falling within the reference category across all variables: a high school located in a zip code with less than $50,000 average median income; with 0-20% enrollment from Black, Latinx, and Native American students; with less than 50 students in grade 12; with less than 50 students proficient in the math state assessment; and is a traditional school located in a suburb within 10 miles of the university. We can interpret the coefficient on the constant as the overall probability receiving a visit for schools with these characteristics by multiplying the coefficient on the constant (0.073) by 100. This would suggest that a high school consistent with the characteristics above has an overall 7% likelihood of receiving a visit by Alabama.

Using results for the University of Alabama as an example, we can interpret coefficients on the categorical measures of income by multiplying the coefficient on the specific category by 100 to indicate the percentage point change in the probability of receiving a visit for the specified category in comparison to the reference category. A school that has the value of the reference category for income (i.e., average median household income less than $50,000) and all other variables has an overall 7% chance of receiving a visit by Alabama. By contrast, a school located in a community with a $75,000-$99,000 average median household income has an overall 15% chance of receiving a visit (or 8% more likely if we interpret the coefficient directly). This probability increases to 21% ($p<0.001$) more likely for schools in areas with $100,000-$149,000 average median incomes, to 42% ($p<0.001$) more likely for schools in areas with $150,000-$199,000 incomes, to finally 48% ($p<0.001$) more likely to receive a visit for schools located in communities with more than $200,000 average incomes. In other words, a school located in a community with an average median income of $200,000 has an overall 55% likelihood of receiving a visit by Alabama in comparison to the overall 7% likelihood for a school with an average median income less than $50,000, all other variables held constant to reference values.

Overall, the regression results from Table 4 show that public high schools located in communities with higher average median incomes are much more likely to receive a visit than schools in low-income communities across recruiting by all universities. Generally, the magnitude of this relationship is larger for higher income bands than lower income bands. For example, schools in all income ranges greater than $75,000 average median incomes are significantly more likely to receive a visit by the University of Pittsburgh than schools with less than $50,000 average median incomes. However, this probability increases from only 3% more likely to receive a visit for schools with $75,000-$99,000 average median household incomes to 55% more likely to receive a visit for schools located in communities with more than $200,000 average incomes.

Race. Out-of-state visits to public high schools by most universities also show evidence of racial bias. Table 3 shows the the racial composition of visits to out-of-state public high schools. All universities in the study visited schools that on average enrolled smaller pro-

TABLE 4: REGRESSION: PROBABILITY OF OUT-OF-STATE PUBLIC HIGH SCHOOL RECEIVING A VISIT.

	NC State	Rutgers	Stony Brook	Alabama	Arkansas	UC Berkeley	UC Irvine
Income (ref=<$50k)							
$50k-$74k	-0.001	-0.011**	-0.020**	0.004	0.002	-0.003	-0.001
	(0.002)	(0.004)	(0.007)	(0.004)	(0.004)	(0.002)	(0.002)
$75k-$99k	0.005	0.019*	0.016	0.081***	0.044***	0.006	0.006
	(0.005)	(0.008)	(0.013)	(0.009)	(0.010)	(0.004)	(0.004)
$100k-$149k	0.047***	0.173***	0.185***	0.207***	0.184***	0.060***	0.042***
	(0.009)	(0.014)	(0.021)	(0.014)	(0.023)	(0.009)	(0.008)
$150k-$199k	0.166***	0.393***	0.433***	0.415***	0.066	0.193***	0.033
	(0.047)	(0.050)	(0.057)	(0.041)	(0.047)	(0.045)	(0.020)
$200k+	0.104	0.398***	0.482***	0.481***	0.398**	0.241**	0.005
	(0.077)	(0.089)	(0.120)	(0.075)	(0.141)	(0.089)	(0.005)
Black, Latinx, Native American Enrollment (ref=<20%)							
20-39%	0.002	0.001	-0.010	0.030***	0.026**	-0.002	-0.004
	(0.006)	(0.010)	(0.015)	(0.008)	(0.008)	(0.004)	(0.004)
40-59%	-0.012*	-0.038***	-0.028	-0.011	-0.00004	-0.015***	0.002
	(0.005)	(0.010)	(0.016)	(0.008)	(0.008)	(0.004)	(0.005)
60-79%	0.007	-0.048***	-0.054**	-0.047***	-0.007	-0.013**	-0.004
	(0.008)	(0.011)	(0.017)	(0.009)	(0.009)	(0.005)	(0.005)
80-89%	0.005	-0.070***	-0.078***	-0.042***	-0.022*	-0.021***	-0.011*
	(0.009)	(0.011)	(0.020)	(0.011)	(0.009)	(0.005)	(0.005)
90%+	-0.0004	-0.075***	-0.087***	-0.073***	-0.026**	-0.027***	-0.011**
	(0.005)	(0.010)	(0.015)	(0.008)	(0.008)	(0.004)	(0.004)
Number of 12th Grade Enrollment (ref=<50)							
50-99	-0.003	-0.001	0.014	0.006	0.014***	0.001	0.006**
	(0.002)	(0.004)	(0.009)	(0.004)	(0.004)	(0.002)	(0.002)
100-199	-0.001	-0.001	0.016	0.015**	0.032***	-0.0004	0.009**
	(0.004)	(0.006)	(0.011)	(0.005)	(0.006)	(0.002)	(0.003)
200-299	-0.012*	0.030**	0.065***	0.075***	0.043***	0.001	0.018***
	(0.005)	(0.010)	(0.016)	(0.009)	(0.010)	(0.004)	(0.005)
300-399	0.010	0.080***	0.085***	0.162***	0.078***	0.013*	0.031***
	(0.008)	(0.014)	(0.019)	(0.013)	(0.014)	(0.007)	(0.007)
400-499	0.008	0.086***	0.138***	0.198***	0.105***	0.040***	0.031***
	(0.011)	(0.016)	(0.025)	(0.016)	(0.018)	(0.009)	(0.009)
500+	0.016	0.125***	0.125***	0.201***	0.124***	0.059***	0.075***
	(0.013)	(0.017)	(0.026)	(0.017)	(0.018)	(0.012)	(0.013)
Constant	0.020*	0.059***	0.136***	0.073***	0.080***	0.009	0.011
	(0.008)	(0.009)	(0.016)	(0.010)	(0.012)	(0.007)	(0.007)
Observations	5,255	7,080	4,020	14,966	6,630	11,071	7,595
Akaike Inf. Crit.	-8,194.420	-1,519.028	795.540	4,098.966	-2,687.272	-15,443.180	-14,152.570

Note: *p<0.05; **p<0.01; ***p<0.001. Robust standard errors in parentheses. Coefficients and errors for math proficiency, school type, locale, and distance are not shown in the table. Schools that satisfied the following criteria were included in the sample: offers grades 9-12 and enrolls at least ten students in each grade; located in the 50 U.S. states, the District of Columbia, or land regulated by the Bureau of Indian Affairs; is not a special education school, alternative school, virtual school, or independent school. Non-visited schools include only out-of-state schools in states that received at least one high school visit.

TABLE 4: REGRESSION: PROBABILITY OF OUT-OF-STATE PUBLIC HIGH SCHOOL RECEIVING A VISIT. (CONT)

	Cincinnati	CU Boulder	Georgia	Kansas	UMass	Nebraska	Pittsburgh	S.Carolina
Income (ref=<$50k)								
$50k-$74k	0.001 (0.003)	-0.008*** (0.002)	-0.004 (0.003)	-0.003 (0.004)	-0.011*** (0.003)	0.001 (0.005)	-0.010** (0.003)	-0.001 (0.003)
$75k-$99k	0.030*** (0.007)	0.024*** (0.005)	0.008 (0.006)	0.051*** (0.008)	0.022** (0.007)	0.049*** (0.010)	0.032*** (0.008)	0.031*** (0.006)
$100k-$149k	0.115*** (0.012)	0.170*** (0.011)	0.068*** (0.011)	0.183*** (0.017)	0.178*** (0.013)	0.191*** (0.025)	0.153*** (0.014)	0.155*** (0.012)
$150k-$199k	0.276*** (0.045)	0.501*** (0.044)	0.168*** (0.041)	0.231*** (0.051)	0.444*** (0.049)	0.225* (0.089)	0.480*** (0.050)	0.314*** (0.043)
$200k+	0.248*** (0.075)	0.766*** (0.066)	0.362*** (0.108)	0.385** (0.118)	0.654*** (0.078)	0.084 (0.129)	0.550*** (0.095)	0.265*** (0.079)
Black, Latinx, Native American Enrollment (ref=<20%)								
20-39%	0.012 (0.007)	0.007 (0.005)	0.003 (0.005)	0.028*** (0.007)	-0.016* (0.008)	0.023* (0.009)	-0.001 (0.008)	0.026*** (0.007)
40-59%	0.012 (0.008)	-0.015** (0.006)	-0.011* (0.005)	-0.016* (0.007)	-0.030*** (0.008)	0.002 (0.011)	-0.020* (0.009)	-0.010 (0.007)
60-79%	-0.0004 (0.009)	-0.036*** (0.006)	-0.027*** (0.005)	-0.032*** (0.008)	-0.040*** (0.008)	0.011 (0.012)	-0.040*** (0.008)	-0.021** (0.007)
80-89%	-0.007 (0.009)	-0.052*** (0.006)	-0.035*** (0.006)	-0.034*** (0.009)	-0.056*** (0.008)	-0.023 (0.014)	-0.042*** (0.010)	-0.028*** (0.007)
90%+	-0.012 (0.007)	-0.051*** (0.005)	-0.036*** (0.005)	-0.032*** (0.007)	-0.062*** (0.007)	-0.006 (0.011)	-0.050*** (0.008)	-0.031*** (0.006)
Number of 12th Grade Enrollment (ref=<50)								
50-99	0.001 (0.003)	0.004 (0.002)	-0.001 (0.002)	0.014*** (0.003)	-0.005 (0.004)	0.006 (0.005)	-0.004 (0.004)	0.001 (0.002)
100-199	0.006 (0.005)	-0.001 (0.003)	-0.002 (0.003)	0.036*** (0.006)	0.002 (0.005)	0.026** (0.008)	-0.003 (0.006)	0.001 (0.003)
200-299	0.024*** (0.007)	0.012* (0.005)	-0.007 (0.004)	0.076*** (0.010)	0.017* (0.008)	0.065*** (0.014)	0.014 (0.009)	0.018** (0.006)
300-399	0.063*** (0.010)	0.042*** (0.008)	0.014 (0.008)	0.148*** (0.014)	0.019 (0.010)	0.143*** (0.020)	0.056*** (0.013)	0.049*** (0.009)
400-499	0.135*** (0.015)	0.071*** (0.011)	0.046*** (0.011)	0.200*** (0.017)	0.012 (0.012)	0.190*** (0.024)	0.096*** (0.018)	0.058*** (0.012)
500+	0.149*** (0.016)	0.128*** (0.013)	0.094*** (0.012)	0.249*** (0.016)	0.048*** (0.013)	0.283*** (0.028)	0.175*** (0.022)	0.126*** (0.015)
Constant	0.053*** (0.008)	0.048*** (0.007)	0.008 (0.006)	0.108*** (0.010)	0.080*** (0.009)	0.146*** (0.014)	0.060*** (0.009)	0.043*** (0.007)
Observations	9,118	13,395	9,582	8,528	9,293	6,423	7,749	12,086
Akaike Inf. Crit.	-4,444.550	-8,207.670	-9,137.670	-3,973.770	-3,464.868	-1,616.831	-2,627.812	-5,393.591

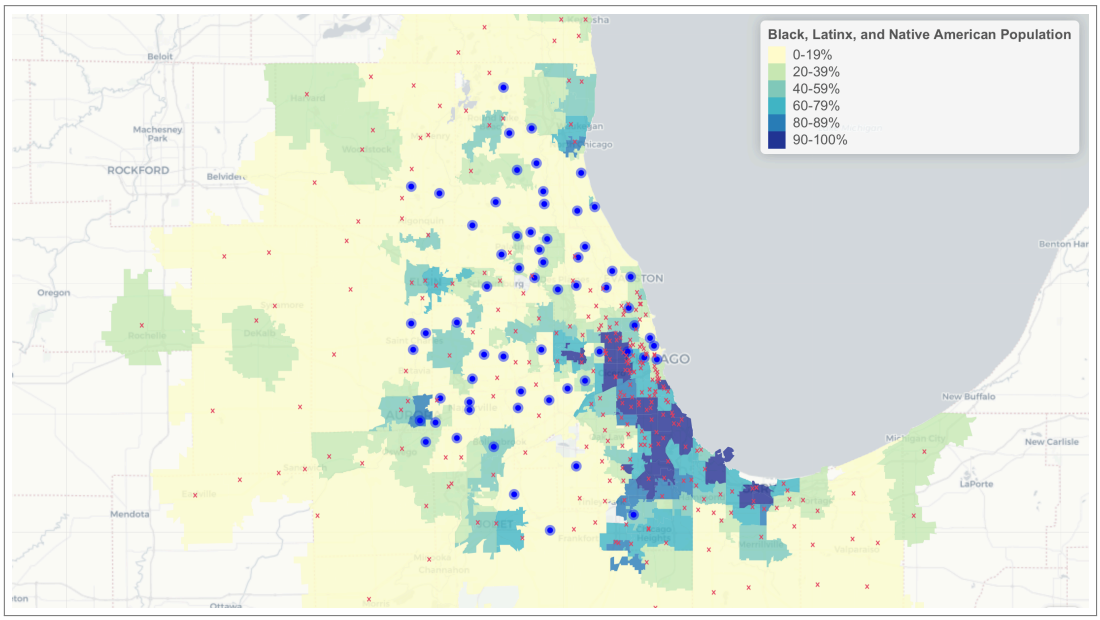


FIGURE 9: UNIVERSITY OF PITTSBURGH IN CHICAGO.

portions of Black, Latinx, and Native American students than schools not visited. For example, UMass Amherst visited out-of-state public high schools where Black, Latinx, and Native American students, on average, made up 25% of total student enrollments. Whereas Black, Latinx, and Native American students made up, on average, 44% of total enrollments at schools that did not receive a visit by UMass Amherst. This difference was modest for the University of Nebraska, which visited schools where Black, Latinx, and Native American students made up 27% of total enrollments in comparison to 29% of total enrollments at non-visited schools. However, this result is partially a function of University of Nebraska visiting Whiter states than other universities.

To convey racial disparity at the local level, Figure 9 maps visits by the University of Pittsburgh to the Chicago metropolitan area. The color legend indicates the proportion people in the zip code who identify as Black, Latinx, or Native American. Focusing on communities near the city proper, communities of color are located in the south-eastern part of the city. Predominantly White communities tend to be located in the northern and western part of the city. Blue circle markers represent public high schools that received a visit by the University of Pittsburgh red “x” markers indicate public high schools that did not receive a visit. The majority visited high schools are located in whitest communities of the metro, with only a few visits to predominantly communities of color. Additionally, the largest clusters of non-visited high schools are located in predominantly communities of color near the south and far south areas of Chicago. However, it is worthwhile to note that most high schools in predominantly White communities far away from the city proper also

did not receive visits.

We use the regression results from Table 4 to explore whether the relationship between the racial composition of public high schools and receiving a visit persists after controlling for factors that are likely to affect a school's probability of receiving a visit (summarized above). Using visits by UMass Amherst as an example, a high school that has the value of the reference category for all variables – including less than 20% enrollment from Black, Latinx, and Native American students – has an overall 8% chance of receiving a visit by UMass Amherst. By contrast, a school with more than 90% enrollment from Black, Latinx, and Native American students has an overall 2% chance of receiving a visit (or 6% less likely if we interpret the coefficient directly).

For most universities, the regression results from Table 4 show that public high schools with larger proportions of Black, Latinx, and Native American students are less likely to receive visits than schools with smaller proportions of these students even after controlling for other factors related to recruiting visits. For example, the column for the University of Colorado-Boulder shows that schools with 20-39% Black, Latinx, and Native students were not significantly less likely to receive visits than schools with less than 20% Black, Latinx, and Native students. However, schools with 40-59% were 2% ($p<0.01$) less likely to receive a visit, schools with 60-79% were 4% ($p<0.001$) less likely to receive a visit, schools with 80-89% were 5% ($p<0.001$) less likely to receive a visit, and schools with greater than 90% were 5% ($p<0.001$) less likely to receive a visit.

Generally speaking, the magnitude of the negative relationship between school racial composition and the probability of receiving a visit was higher for schools with higher percentages of Black, Latinx, and Native students (e.g., 80-89% and greater than 90%). However, the magnitude of the coefficients on race were generally smaller than the magnitude of the coefficients on income. For example, the University of Pittsburgh was 5% less likely to visit schools that were greater than 90% Black/Latinx/Native, compared to schools that were less than 20% Black/Latinx/Native. However, Pittsburg was 55% more likely to visit schools located in communities with average income greater than $200,000, compared to schools with average income less than $50,000. Additionally, results for three universities – NC State, Cincinnati, and Nebraska – do not show substantial evidence of racial bias.

Other characteristics. We also explore relationships between out-of-state visits public high schools and other school characteristics. Unsurprisingly, Table 3 shows that public high schools that receive visits have, on average, larger grade 12 enrollments than not visited schools. Regression results in Table 4 echo this finding. We also find that the majority of universities are more likely to visit high schools that are closer to the university, ad more likely to visit suburban schools than urban or rural schools, and we do not find a consistent relationship between visits and whether the high school is a charter, magnet, or regular school (results available upon request).

Private high school visits. We find that out-of-state recruiting efforts across nearly all universities visited a disproportionate number of private schools. We measure "disproportionate" by using school totals from Table 3 (characteristics of visited and non-visited out-of-state public schools) and Table 5 (characteristics of visited and non-visited out-of-state private schools) to calculate the *hypothetical* number of public and private high schools that would have been visited if each

TABLE 5: DESCRIPTIVE STATISTICS FOR OUT-OF-STATE PRIVATE HIGH SCHOOL VISITS.

	NC State		Rutgers		Stony Brook		Alabama		Arkansas		UC Berkeley		UC Irvine	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	19	1,535	188	1,723	83	1,206	681	2,788	144	1,256	130	2,444	37	1,852
Grade 12 Enrollment	161	70	156	64	144	66	125	55	123	59	123	64	188	69
Percent Enrollment by Race														
Black, Latinx, Native American	21.1	22.5	16.9	24.8	17.2	23.8	17.0	21.1	16.6	22.0	16.4	21.0	16.7	20.6
White	69.8	68.0	68.2	62.3	69.8	66.2	71.0	68.4	73.8	65.7	69.8	70.0	49.4	68.7
Black	15.1	13.3	8.9	10.9	7.1	14.3	7.1	11.0	7.4	9.7	7.8	11.4	5.6	10.8
Latinx	5.8	9.0	7.7	13.6	9.8	9.3	9.5	9.6	8.6	11.8	8.1	9.2	9.6	9.3
Native American	0.2	0.3	0.4	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.6	0.4	1.4	0.6
Asian	5.4	5.9	9.3	8.5	9.2	6.4	7.2	6.9	6.0	8.0	8.2	5.7	15.5	6.9
Other Race	3.7	3.5	5.6	4.4	3.9	3.6	4.9	3.6	3.5	4.4	5.6	3.3	18.5	3.8
Locale														
In a City	0.32	0.37	0.43	0.45	0.25	0.29	0.49	0.38	0.65	0.44	0.57	0.38	0.54	0.38
In a Suburb	0.68	0.45	0.50	0.40	0.66	0.49	0.41	0.38	0.29	0.30	0.36	0.40	0.30	0.45
In a Town	0.00	0.04	0.01	0.03	0.00	0.04	0.02	0.07	0.00	0.08	0.01	0.06	0.03	0.04
In a Rural Area	0.00	0.13	0.06	0.12	0.08	0.17	0.09	0.17	0.06	0.18	0.06	0.16	0.14	0.13

TABLE 5: DESCRIPTIVE STATISTICS FOR OUT-OF-STATE PRIVATE HIGH SCHOOL VISITS. (CONT)

	Cincinnati		CU Boulder		Georgia		Kansas		UMass		Nebraska		Pittsburgh		S.Carolina	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	167	2,059	327	2,780	192	2,152	150	1,414	218	2,254	66	951	172	1,828	285	2,660
Grade 12 Enrollment	145	64	145	62	134	62	164	60	149	63	169	60	145	62	140	63
Percent Enrollment by Race																
Black, Latinx, Native American	14.6	20.8	17.5	21.4	13.5	22.8	16.1	21.3	16.1	23.0	14.9	20.1	15.3	21.9	15.0	22.0
White	73.9	67.3	65.9	66.8	74.5	65.8	73.0	65.6	69.4	65.2	76.5	71.2	71.9	68.4	74.3	66.7
Black	8.3	10.4	6.5	10.7	5.9	11.3	6.0	8.8	6.6	11.3	4.0	9.6	8.1	11.1	7.2	11.1
Latinx	6.1	10.0	10.5	10.2	7.2	11.2	9.5	12.0	9.1	11.3	9.1	10.1	6.8	10.5	7.4	10.6
Native American	0.2	0.3	0.4	0.5	0.5	0.3	0.6	0.4	0.4	0.3	1.8	0.4	0.4	0.3	0.3	0.3
Asian	7.7	7.7	9.2	7.6	6.8	7.3	6.0	8.6	8.6	7.7	5.1	5.6	8.3	6.2	6.7	7.3
Other Race	3.8	4.2	7.3	4.1	5.2	4.1	4.9	4.5	5.9	4.1	3.5	3.1	4.6	3.5	4.0	4.0
Locale																
In a City	0.49	0.43	0.52	0.41	0.60	0.38	0.57	0.41	0.47	0.41	0.62	0.42	0.41	0.41	0.47	0.41
In a Suburb	0.44	0.37	0.42	0.39	0.33	0.41	0.41	0.34	0.42	0.40	0.29	0.33	0.52	0.40	0.45	0.40
In a Town	0.02	0.05	0.01	0.06	0.00	0.06	0.02	0.09	0.01	0.05	0.02	0.10	0.01	0.04	0.01	0.05
In a Rural Area	0.05	0.15	0.06	0.14	0.07	0.15	0.01	0.16	0.10	0.14	0.08	0.14	0.06	0.15	0.07	0.14

school had an equal probability of receiving a visit as compared to the *actual* number of public and private schools that received a visit.

We demonstrate this calculation using the University of Georgia, which made at least one visit to 249 out-of-state public schools and at least one visit to 192 out-of-state private schools, for a total of 441 out-of-state high schools that received at least one visit. In the states (excluding Georgia) that received at least one high school visit from the University of Georgia, there are 9,582 public high schools and 2,344 private schools. Proportionately, public schools make up 80% (9,582 of 11,926) of total schools in these states and private schools make up 20% (2,344 of 11,926) of total schools in these states. We use this proportion to hypothetically estimate how many of the 441 out-of-state schools that received a visit by the University of Georgia would have been private schools and how many would have been public schools if each school had an equal probability of receiving a visit. Specifically, the University of Georgia would have visited 354 public high schools (80% of 441 total visits) and 87 private high schools (20% of 441 total visits) if each school had an equal probability of receiving a visit. In actuality, however, the University of Georgia visited 192 private high schools.

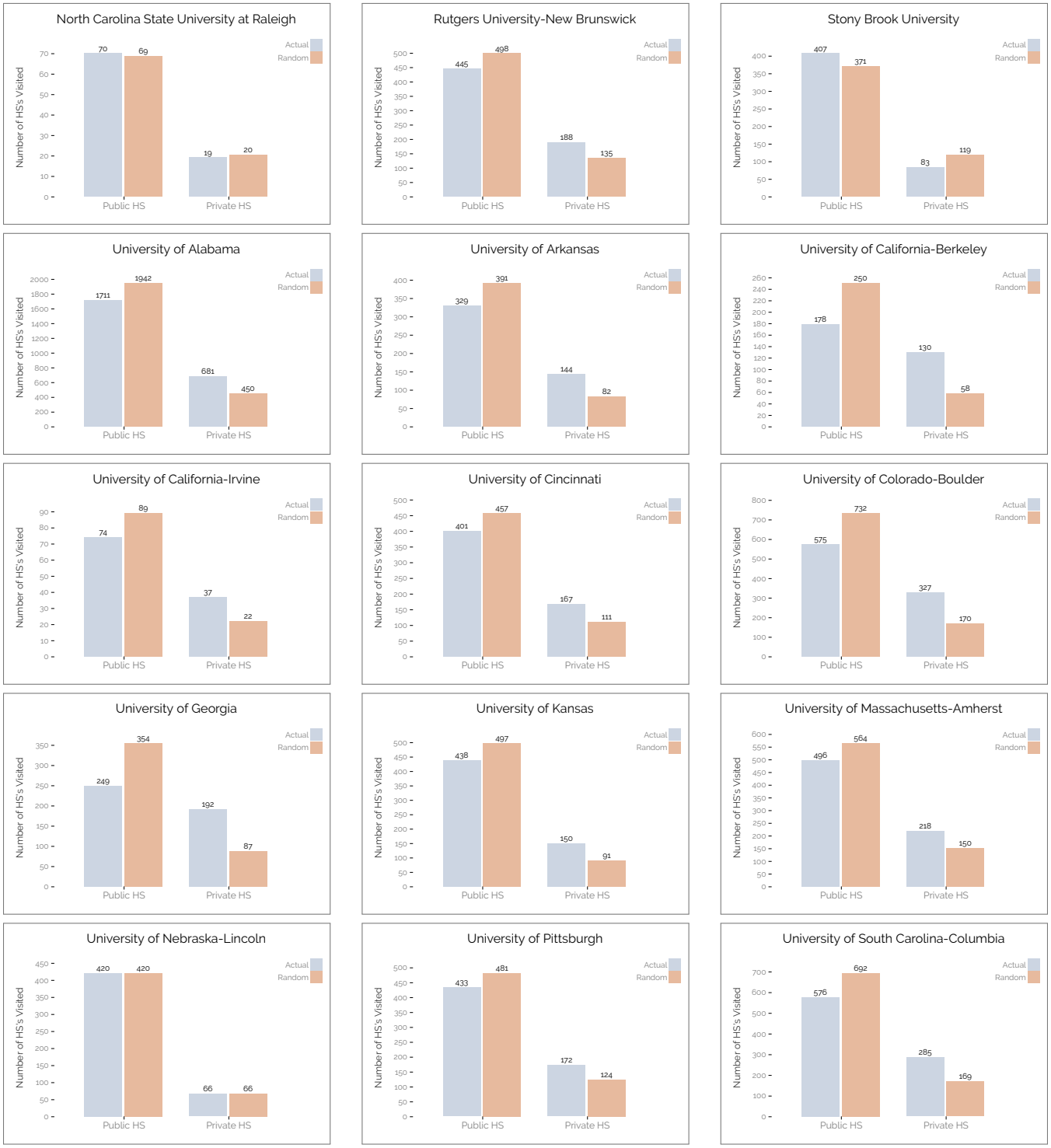
Applying this calculation to each university, Figure 10 shows that the actual number of private school visits exceeded the estimated number of visits under equal probability for 12 of the 15 universities. Given that private school students tend to be more wealthy than public school students, these findings coincide with patterns of income bias in out-of-state recruiting visits to public high schools. Further, these findings are consistent with research by Stevens (2007), which found that a selective private liberal arts college visited a disproportionate number of private high schools because these schools enrolled wealthy students and were eager and able to host recruiting visits.

Table 5 shows descriptive statistics for out-of-state private high schools that received visits compared to those that did not. Nationally, private high schools tend to be disproportionately White and for most universities visited private high schools enrolled a higher proportion of White students than non-visited high schools. Additionally, Table 5 shows that visited private schools have much higher 12th grade enrollment than non-visited high schools. However, visited out-of-state private schools have much lower 12th grade enrollment than visited out-of-state public schools. For out-of-state visits by the University of Georgia, for example, the mean 12th grade enrollment at visited private schools was 134 compared to mean 12th grade enrollment of 490 at visited public schools. This difference in mean 12th grade enrollment is consistent across all universities. While this difference is partially a function of private schools tending to be smaller than publics, the findings show that universities are willing to make out-of-state recruiting visits to private high schools with much smaller cohorts of 12th graders than the typical visited public school.

In-State Recruiting

Public high school visits. Because public universities hold unique responsibilities in providing educational opportunities to state residents and transfer pathways for community college students, we assess universities on their "coverage" of public high schools and community colleges in their respective states. We define coverage as the proportion of visited public high schools or community colleges to the total number of schools

FIGURE 10: NUMBER OF PUBLIC HS VS PRIVATE HS VISITED COMPARED TO NUMBER IF VISITS WERE RANDOM



or colleges within the state.

Table 6 presents descriptive statistics for in-state public high schools that received and did not receive visits by each university. For example, of the 504 public high schools in North Carolina, 28% received at least one recruiting visit by NC State. Four other cases also had limited coverage of public high schools in their states: Alabama (33% of 341 high schools), Cincinnati (43% of 817 high schools), Georgia (41% of 418 high schools), and Pittsburgh (28% of 652 high schools). Some universities had a relatively greater coverage of high schools, including Arkansas (52%), Kansas (66%), UMass Amherst (62%), South Carolina (57%), CU Boulder (58%), and Rutgers (63%). Only one university amongst the 15 had extensive coverage of their state's public high schools. Nebraska visited nearly 9 of every 10 public high schools in the state.

Universities in very large, populous states cannot reasonably be expected to visit every public high school in the state. For example, Stony Brook is part of the State University System of New York (SUNY) system and may be reasonably expected to cover public high schools in its surrounding counties. While Stony Brook only visited 20% of the 1,156 public schools in New York, it has extensive coverage of its SUNY system jurisdiction of Long Island (95% in Suffolk and Nassau counties; 47% when including Queens and Brooklyn). Given California is the most populous state in the country, we also restrict UC Berkeley's and UC Irvine's coverage to their respective metropolitan areas. Restricting coverage to local public high schools in their surrounding metropolitan areas, we find that UC Berkeley and UC Irvine have 45% and 26% coverage, respectively.

Achievement. It may be reasonable for admissions officers to visit in-state public schools with larger numbers of high-achieving students. We use the number of students scoring proficient on state math assessments as a proxy for a school's academic achievement.

Table 6 reports the mean number of students scoring proficient on state math assessments for in-state public high schools that received a visit and for those that did not receive a visit by each university. Across all universities, schools that received a recruiting visit had a higher average number of students scoring at proficient levels than schools that did not receive a visit. However, Table 6 also shows that schools that receive visits also tend to have a greater number of grade 12 students than schools that did not receive a visit.

We use regression results for in-state high schools in Table 7 to explore whether the probability of visiting a school is driven by achievement and/or enrollment size. After controlling for 12th grade enrollment, the number of students scoring proficient in math has a positive and significant relationship with the probability of receiving a visit for about half the universities in our sample. Although regression coefficients on enrollment size are not shown due to space limitations, results suggest that 12th grade enrollment is a stronger driver of recruiting visits than math proficiency for the majority of universities in our sample (results available upon request).

Income. For most universities, we find that recruiting visits to in-state public high schools demonstrated patterns of income bias. Table 6 presents descriptive statistics for in-state public high schools that received and did not receive visits by each university. With the exception of recruiting by NC State and UC Irvine, the average median income of visited schools across all

TABLE 6: DESCRIPTIVE STATISTICS FOR IN-STATE PUBLIC HIGH SCHOOL VISITS.

	NC State		Rutgers		Stony Brook		Alabama		Arkansas		UC Berkeley		UC Irvine	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	143	361	253	147	229	927	113	228	124	113	244	1,160	232	1,172
Percent of High Schools	28.4	71.6	63.2	36.8	19.8	80.2	33.1	66.9	52.3	47.7	17.4	82.6	16.5	83.5
Miles from University	87	103	31	35	35	144	98	101	131	137	171	250	131	216
Grade 12 Enrollment	239	169	259	186	318	118	204	97	132	66	446	272	467	269
Number Proficient-Math	109	76	105	59	303	103	53	14	51	20	143	74	129	77
Median Household Income ($000)	$52	$53	$95	$86	$103	$64	$54	$44	$46	$45	$86	$67	$69	$71
Percent Free or Reduced Lunch	53.3	50.9	35.1	34.0	37.3	55.6	44.3	60.3	59.2	65.6	50.6	58.4	61.6	56.2
Percent Enrollment by Race														
Black, Latinx, Native American	38.8	41.6	42.6	40.5	37.7	45.0	33.0	38.8	24.7	26.8	54.9	59.7	68.4	56.9
White	55.9	52.6	46.7	53.2	48.7	50.0	64.3	59.8	72.5	71.1	25.6	28.9	17.5	30.5
Black	24.4	27.8	19.5	17.9	13.9	21.8	27.2	33.4	16.9	21.1	6.1	6.5	8.6	6.0
Latinx	11.8	12.7	22.9	22.4	23.5	22.5	4.7	4.2	7.0	5.0	48.2	51.9	59.2	49.7
Native American	2.7	1.1	0.1	0.1	0.4	0.7	1.2	1.3	0.8	0.6	0.6	1.2	0.6	1.2
Asian	1.9	2.4	9.7	5.2	12.4	3.9	1.4	0.4	1.2	0.9	15.3	8.0	11.1	8.9
Other Race	3.4	3.4	1.0	1.1	1.2	1.2	1.2	1.0	1.6	1.3	4.2	3.4	3.0	3.7
School Type														
0/1 is a Charter School	0.02	0.08	0.04	0.06	0.00	0.04	0.00	0.00	0.06	0.04	0.07	0.31	0.06	0.31
0/1 is a Magnet School	0.02	0.04	0.00	0.00	0.03	0.01	0.04	0.03	0.01	0.02	0.12	0.09	0.15	0.09
0/1 is a Regular School	0.96	0.88	0.96	0.94	0.96	0.94	0.96	0.97	0.93	0.94	0.81	0.60	0.78	0.60
Locale														
In a City	0.13	0.28	0.13	0.08	0.31	0.47	0.19	0.10	0.08	0.11	0.46	0.41	0.44	0.41
In a Suburb	0.16	0.19	0.78	0.76	0.62	0.12	0.19	0.06	0.08	0.04	0.47	0.36	0.50	0.36
In a Town	0.17	0.11	0.01	0.04	0.02	0.10	0.14	0.13	0.33	0.07	0.04	0.10	0.03	0.11
In a Rural Area	0.54	0.41	0.08	0.12	0.05	0.31	0.49	0.72	0.51	0.78	0.03	0.13	0.03	0.13

TABLE 6: DESCRIPTIVE STATISTICS FOR IN-STATE PUBLIC HIGH SCHOOL VISITS. (CONT)

	Cincinnati		CU Boulder		Georgia		Kansas		UMass		Nebraska		Pittsburgh		S.Carolina	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	353	464	181	132	173	245	209	108	216	132	217	30	185	467	119	90
Percent of High Schools	43.2	56.8	57.8	42.2	41.4	58.6	65.9	34.1	62.1	37.9	87.9	12.1	28.4	71.6	56.9	43.1
Miles from University	119	157	61	108	85	98	118	168	61	65	112	149	131	155	65	80
Grade 12 Enrollment	199	83	257	53	313	207	135	31	214	158	101	27	288	134	264	127
Number Proficient-Math	183	80	91	16	141	71	36	6	179	116	58	14	205	76	226	112
Median Household Income ($000)	$67	$53	$75	$61	$61	$50	$65	$57	$95	$82	$63	$62	$79	$59	$53	$45
Percent Free or Reduced Lunch	40.1	53.6	36.8	46.1	55.5	68.0	42.9	47.5	32.9	48.2	37.3	44.2	31.5	51.8	49.8	65.7
Percent Enrollment by Race																
Black, Latinx, Native American	22.0	21.1	37.7	34.6	50.1	52.2	17.5	14.2	21.8	33.6	13.8	15.6	15.7	25.6	42.1	52.5
White	72.4	75.0	56.1	61.7	43.1	43.7	77.4	82.6	70.4	60.9	83.4	82.0	78.3	71.0	54.1	44.8
Black	18.4	17.2	4.3	2.9	40.3	42.2	4.2	2.6	8.6	12.4	2.1	3.8	11.4	17.7	36.1	47.4
Latinx	3.4	3.7	32.5	30.9	9.6	9.7	12.1	10.2	13.0	20.9	9.6	7.8	4.2	7.8	5.7	4.9
Native American	0.1	0.1	1.0	0.8	0.2	0.2	1.2	1.4	0.2	0.3	2.1	4.0	0.1	0.1	0.3	0.3
Asian	2.0	0.7	2.9	1.2	4.0	1.5	1.5	0.5	5.4	2.9	1.0	0.5	4.0	1.7	1.3	0.7
Other Race	3.7	3.2	3.2	2.5	2.8	2.6	3.6	2.7	2.4	2.5	1.7	1.9	2.0	1.7	2.5	2.0
School Type																
0/1 is a Charter School	0.02	0.18	0.08	0.19	0.05	0.04	0.00	0.01	0.10	0.09	0.00	0.00	0.02	0.13	0.05	0.10
0/1 is a Magnet School	0.00	0.00	0.01	0.01	0.09	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.19	0.14
0/1 is a Regular School	0.98	0.82	0.91	0.80	0.86	0.88	0.99	0.99	0.90	0.91	1.00	1.00	0.97	0.87	0.76	0.77
Locale																
In a City	0.18	0.22	0.36	0.20	0.16	0.20	0.13	0.06	0.15	0.20	0.08	0.07	0.12	0.23	0.15	0.13
In a Suburb	0.43	0.18	0.31	0.11	0.42	0.27	0.07	0.01	0.67	0.64	0.04	0.00	0.66	0.27	0.35	0.20
In a Town	0.14	0.17	0.15	0.11	0.17	0.16	0.26	0.10	0.02	0.04	0.17	0.07	0.11	0.14	0.13	0.14
In a Rural Area	0.25	0.42	0.18	0.59	0.25	0.36	0.54	0.83	0.16	0.12	0.71	0.87	0.10	0.36	0.37	0.52

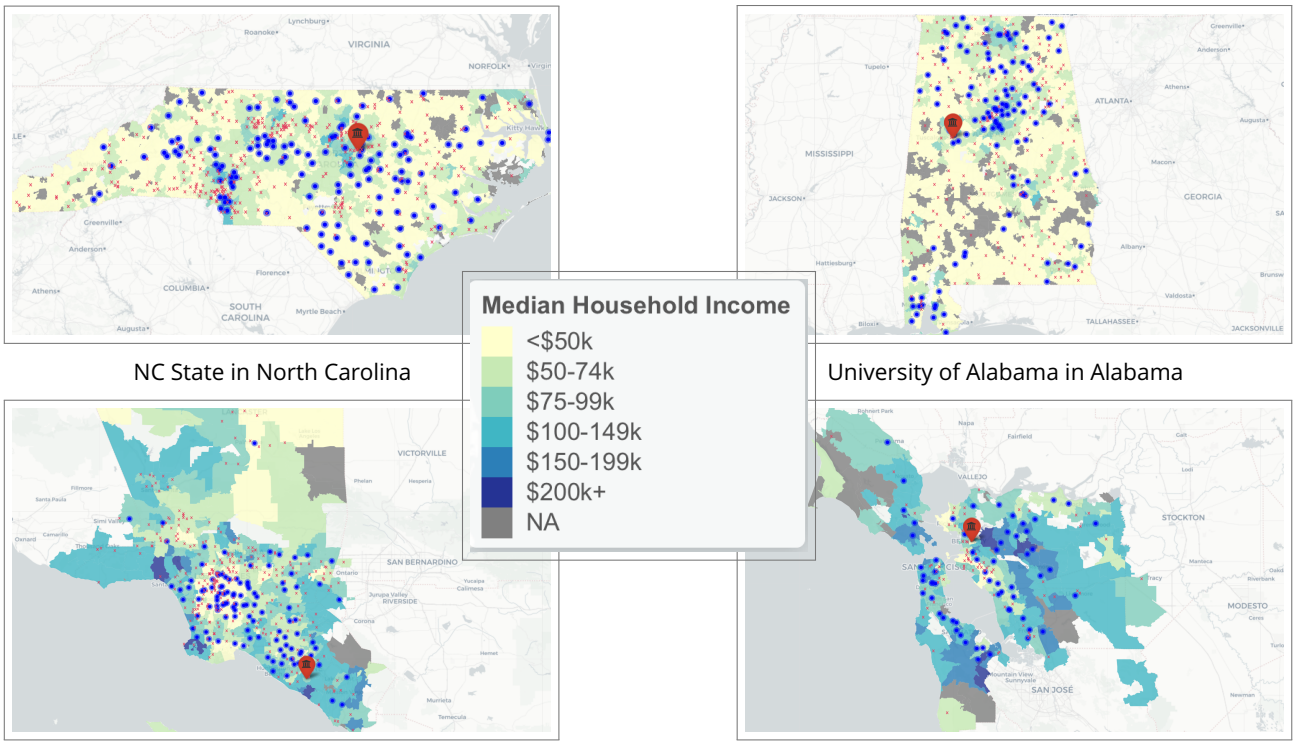
TABLE 7: REGRESSION: PROBABILITY OF IN-STATE PUBLIC HIGH SCHOOL RECEIVING A VISIT.

	NC State	Rutgers	Stony Brook	Alabama	Arkansas	UC Berkeley	UC Irvine
Income (ref=<$50k)							
$50k-$74k	-0.131**	-0.153	-0.025	-0.043	0.038	0.079***	-0.056*
	(0.042)	(0.106)	(0.021)	(0.057)	(0.078)	(0.021)	(0.024)
$75k-$99k	0.081	-0.140	-0.023	0.016	0.144	0.114***	-0.059*
	(0.102)	(0.114)	(0.035)	(0.117)	(0.274)	(0.029)	(0.030)
$100k-$149k	-0.145	-0.067	0.112***			0.097*	-0.092*
	(0.135)	(0.121)	(0.031)			(0.042)	(0.041)
$150k-$199k		0.131	0.347***			0.352***	-0.251***
		(0.146)	(0.087)			(0.097)	(0.062)
$200k+		0.192	-0.009			-0.099	-0.292***
		(0.156)	(0.175)			(0.131)	(0.056)
Black, Latinx, Native American Enrollment (ref=<20%)							
20-39%	-0.157**	0.079	0.165***	-0.046	-0.157	0.005	0.020
	(0.059)	(0.072)	(0.038)	(0.061)	(0.084)	(0.044)	(0.032)
40-59%	-0.064	0.189*	0.143*	-0.089	-0.123	0.069	0.087*
	(0.073)	(0.093)	(0.055)	(0.084)	(0.110)	(0.046)	(0.034)
60-79%	-0.068	0.252**	0.063	0.078	-0.041	0.046	0.118**
	(0.077)	(0.087)	(0.061)	(0.103)	(0.191)	(0.046)	(0.038)
80-89%	-0.117	0.073	-0.009	0.051	-0.320	0.069	0.124**
	(0.107)	(0.154)	(0.060)	(0.131)	(0.171)	(0.049)	(0.047)
90%+	-0.108	0.100	-0.116*	-0.241***	-0.136	0.166***	0.192***
	(0.086)	(0.113)	(0.055)	(0.065)	(0.168)	(0.049)	(0.043)
Number of Students Proficient in Math (ref=<50)							
50-99	0.006	0.112	0.043*	0.093	0.222	0.006	0.045
	(0.061)	(0.067)	(0.018)	(0.100)	(0.122)	(0.032)	(0.036)
100-199	0.071	0.156*	0.134***	0.382**	-0.004	0.081	0.037
	(0.093)	(0.077)	(0.039)	(0.119)	(0.196)	(0.042)	(0.045)
200-299	0.097	0.308***	0.182*	0.243	0.354	0.129*	0.125*
	(0.148)	(0.085)	(0.089)	(0.169)	(0.199)	(0.059)	(0.062)
300-399	0.017	0.230	0.357**		0.126	0.049	0.172
	(0.197)	(0.179)	(0.116)		(0.300)	(0.088)	(0.093)
400+	0.611	0.410***	0.599***		0.367	0.109	0.231
	(0.391)	(0.124)	(0.157)		(0.343)	(0.140)	(0.124)
Constant	0.195	0.352	0.423***	0.314**	0.336	0.092	0.062
	(0.100)	(0.181)	(0.045)	(0.117)	(0.193)	(0.052)	(0.053)
Observations	504	400	1,156	341	237	1,404	1,404
Akaike Inf. Crit.	575.111	541.538	309.406	364.784	328.378	994.316	1,033.760

Note: *p<0.05; **p<0.01; ***p<0.001. Robust standard errors in parentheses. Coefficients and errors for grade 12 enrollment, school type, locale, and distance are not shown in the table. Schools that satisfied the following criteria were included in the sample: offers grades 9-12 and enrolls at least ten students in each grade; located in the 50 U.S. states, the District of Columbia, or land regulated by the Bureau of Indian Affairs; is not a special education school, alternative school, virtual school, or independent school.

TABLE 7: REGRESSION: PROBABILITY OF IN-STATE PUBLIC HIGH SCHOOL RECEIVING A VISIT. (CONT)

	Cincinnati	CU Boulder	Georgia	Kansas	UMass	Nebraska	Pittsburgh	S.Carolina
Income (ref=<$50k)								
$50k-$74k	0.090*	0.147*	-0.058	0.079	0.181	-0.020	0.007	0.019
	(0.035)	(0.060)	(0.062)	(0.070)	(0.103)	(0.076)	(0.034)	(0.076)
$75k-$99k	0.319***	0.164*	-0.010	0.254***	0.114	-0.115	0.203***	0.177
	(0.051)	(0.077)	(0.115)	(0.073)	(0.111)	(0.107)	(0.056)	(0.125)
$100k-$149k	0.419***	0.129	0.096	0.264**	0.206	-0.049	0.323***	0.270
	(0.064)	(0.085)	(0.133)	(0.093)	(0.112)	(0.104)	(0.074)	(0.142)
$150k-$199k			0.431***		0.288*		0.422***	
			(0.118)		(0.141)		(0.126)	
$200k+					-0.625***			
					(0.137)			
Black, Latinx, Native American Enrollment (ref=<20%)								
20-39%	0.089	-0.021	0.045	0.016	0.024	0.052	0.034	0.227*
	(0.058)	(0.052)	(0.078)	(0.070)	(0.085)	(0.056)	(0.062)	(0.104)
40-59%	0.054	0.051	0.062	-0.009	0.033	-0.172	-0.043	-0.002
	(0.072)	(0.076)	(0.083)	(0.107)	(0.119)	(0.133)	(0.073)	(0.103)
60-79%	0.016	-0.032	0.132	-0.003	0.053	-0.136	-0.179*	-0.012
	(0.082)	(0.079)	(0.098)	(0.116)	(0.132)	(0.200)	(0.085)	(0.130)
80-89%	0.035	0.130	-0.070	0.132	-0.088	-0.272	-0.107	0.230
	(0.079)	(0.108)	(0.111)	(0.097)	(0.146)	(0.144)	(0.082)	(0.130)
90%+	0.244***	-0.054	0.250*		-0.172	-0.217	0.003	-0.102
	(0.074)	(0.103)	(0.103)		(0.152)	(0.298)	(0.067)	(0.119)
Number of Students Proficient in Math (ref=<50)								
50-99	0.106*	0.118	0.153	-0.068	0.171	0.064	0.006	-0.150
	(0.053)	(0.072)	(0.079)	(0.049)	(0.102)	(0.069)	(0.037)	(0.134)
100-199	0.066	0.153*	0.278**	-0.179*	0.317*	0.001	0.213***	-0.340
	(0.071)	(0.065)	(0.098)	(0.071)	(0.138)	(0.111)	(0.056)	(0.228)
200-299	-0.024	0.097	0.319*	-0.236*	0.335	0.001	0.369***	-0.395
	(0.108)	(0.087)	(0.141)	(0.095)	(0.179)	(0.173)	(0.089)	(0.261)
300-399	-0.060	0.093	0.489**		0.528*	-0.096	0.487***	-0.522
	(0.130)	(0.075)	(0.182)		(0.212)	(0.184)	(0.131)	(0.305)
400+	-0.099	0.088	0.352		0.618*	-0.135	0.548**	-0.849*
	(0.135)	(0.072)	(0.220)		(0.251)	(0.227)	(0.177)	(0.374)
Constant	0.343***	0.183	-0.067	0.349***	0.227	0.657***	0.276***	0.282
	(0.065)	(0.107)	(0.125)	(0.099)	(0.157)	(0.164)	(0.058)	(0.158)
Observations	817	313	418	317	348	247	652	209
Akaike Inf. Crit.	798.974	252.223	563.412	373.616	475.712	166.755	480.002	250.649



NC State in North Carolina

University of Alabama in Alabama

UC Irvine in Los Angeles

UC Berkeley in San Francisco

FIGURE 11: INCOME AND IN-STATE PUBLIC HIGH SCHOOL VISITS.

cases was larger than schools that did not receive visits. For example, the difference in average median income between visited and not visited schools ranged from $1,000 for Nebraska ($63,000 for visited schools and $62,000 for not visited schools) to $20,000 for Pittsburgh ($79,000 for visited schools and $59,000 for not visited schools). In general, however, the magnitude of the income difference between visited and not visited in-states schools was much smaller than that of out-of-state schools.

We again use a series of maps to visualize the relationship between income and the probability of receiving a visit. Figure 11 shows in-state recruiting for NC State, Alabama, UC Irvine, and UC Berkeley. For UC Irvine and UC Berkeley we show recruiting within the Los Angeles and San Francisco metropolitan areas rather than all of California, respectively. Similar to out-of-state maps, these figures use color layers to indicate the average median household income at the zip code level, blue dots represent visited high schools, and red "x's" represent non-visited public high schools. These maps confirm the descriptive results above. NC State's visits are geographically distributed across all

income ranges in the state and schools that did not receive a visit are located in both high and low-income communities. In-state schools visited by Alabama are clustered in the highest income communities of the state whereas non-visited schools are geographically distributed across the state, much of which is made up of low-income communities. UC Irvine's visits are generally located in low-income communities throughout the Los Angeles metropolitan area. Additionally, many schools in the highest income communities in the metro did not receive visits. Lastly, UC Berkeley's visits in the San Francisco metropolitan area are generally distributed across low-income and high-income communities. However, the largest cluster of non-visited schools are located in low-income communities near Oakland whereas a relatively smaller number of schools in high-income coastal areas of the metro did not receive a visit.

Regression results in Table 7 suggest that income bias by most universities persists after controlling for other factors. However, the magnitude of this relationship varies across income bands for different universities. For some universities only the most affluent schools are significantly more likely to receive a visit. For example, only schools located in communities with $150,000-$199,000 average median household incomes are significantly more likely (by 43%) to receive a visit by Georgia than schools located in areas with less than $50,000 incomes. For several universities (Rutgers, Alabama, and Arkansas, and South Carolina), the income bias in descriptive results faded after controlling for other factors. Also consistent with descriptive relationships above, schools in more affluent communities were significantly *less* likely to receive recruiting visits by NC State and UC Irvine.

Race. Patterns of racial bias within in-state recruiting differed across universities. Table 6 shows the the racial composition of visits to in-state public high schools. Some universities on average visited in-state public high schools with smaller proportions of Black, Latinx, and Native American students than non-visited schools (NC State, Stony Brook, Alabama, Arkansas, UC Berkeley, Georgia, UMass Amherst, Nebraska, Pittsburgh, South Carolina). However, other universities on average visited in-state public high schools with larger proportions of Black, Latinx, and Native American students than non-visited schools (Rutgers, UC Irvine, Cincinnati, CU Boulder, Kansas). However, in comparison to out-of-state visits to public high schools, the difference in average racial composition of visited schools versus non-visited schools was relatively small across all cases.

Figure 12 show in-state recruiting for NC State, Alabama, UC Irvine, and UC Berkeley, using color layers to indicate the proportion of the total zip code population that is made up by Black, Latinx, and Native American subpopulations. These figures illustrate the differences in racial bias across universities. For NC State, visits and non-visits are geographically distributed across predominantly white communities and predominantly communities of color in the state. The map for Alabama shows that visits are clustered in the predominantly white communities in the northern and southern regions of the state, while few schools in the "Black Belt" region received a visit. The majority of UC Irvine's visits to public high schools in the Los Angeles metropolitan are located within predominantly communities of color, with only a few visits to predominantly White communities in the metro. Lastly, UC Berkeley's visits in the San Francisco metropolitan area are geographically distributed across White communities and communities of color. However, given the

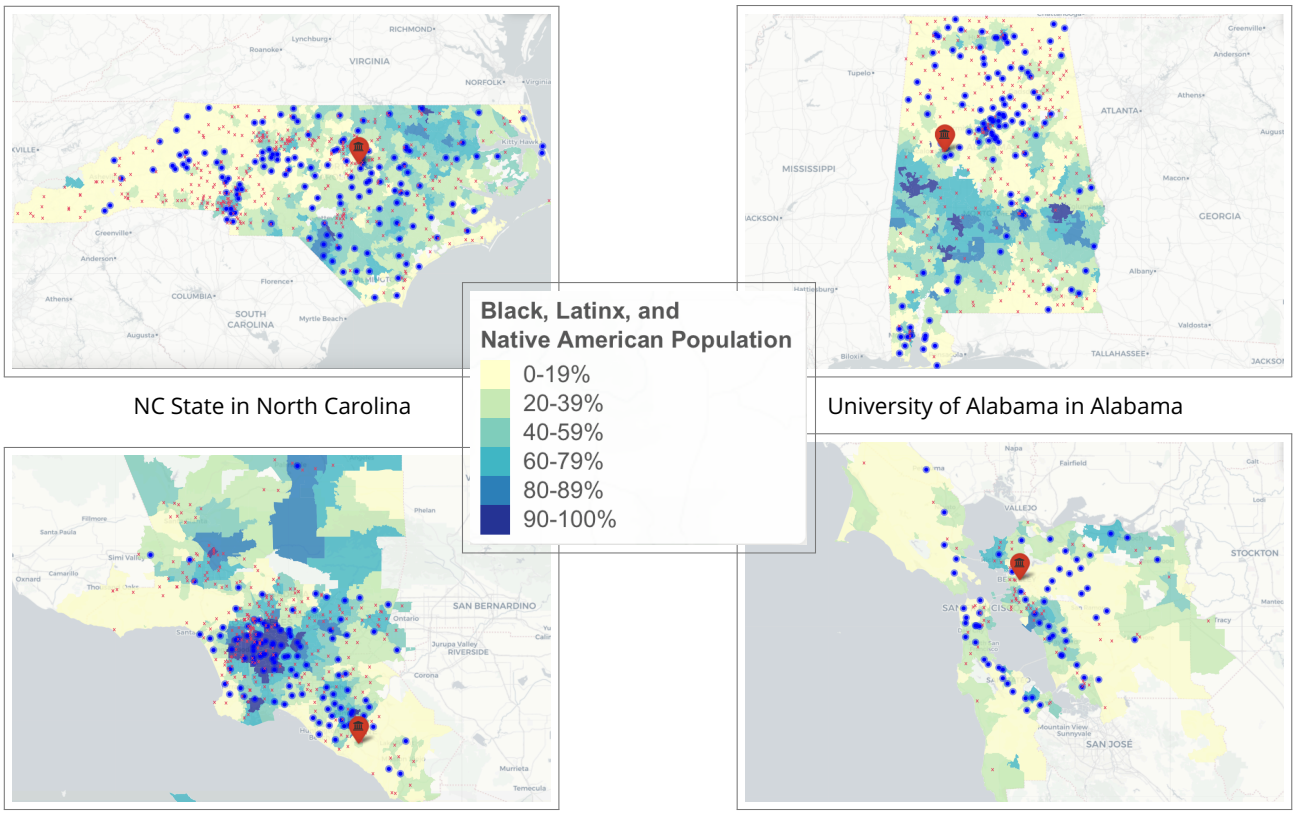


FIGURE 12: RACE AND IN-STATE PUBLIC HIGH SCHOOL VISITS.

largest clusters of non-visited high schools are located in some of the metro's only predominantly communities of color located in Oakland.

Regression results in Table 7 show whether racial bias in in-state public high school visits persist after controlling for other factors. Two universities – Alabama and Pittsburgh – show some evidence of bias against schools with higher shares of Black, Latinx, and Native students. At the University of Alabama, for example, schools with more than 90% Black/Latinx/Native students were 24% ($p < .001$) less likely to receive a visit than schools with less than 20% enrollment from these student groups, but regression coefficients were insignificant for other categories of racial composition (e.g., 40-59%, 80-89%). For the remaining universities, regression results suggest that racial bias does not persist after controlling for other school characteristics. Additionally, for four universities – UC Irvine, UC Berkeley, Cincinnati, Georgia – we find some evidence of schools with large proportions of Black, Latinx, and Native students being more likely to receive a

visit. This finding is particularly strong for UC Irvine.

Visits to rural communities. While out-of-state recruiting visits ignore rural communities entirely, we find that many universities make visits to rural communities within their respective states. Table 6 provides the proportion of visited and non-visited in-state public high schools by locale for each university. For most universities, the proportion of visited schools in rural communities was smaller than the proportion of non-visited schools in visited communities, suggesting that rural schools were less likely to receive a visit. For NC State and UMass Amherst, rural schools were more likely to receive a visit. For example, 54% of schools that received a visit by NC State were located in rural areas of North Carolina, whereas only 41% of non-visited schools were located in rural areas.

Community college visits. Lastly, we assess universities on their "coverage" of community colleges in their state jurisdictions.[5] Table 8 presents descriptive statistics for in-state community colleges that received and did not receive visits by each university. Results suggest that coverage varies substantially across universities. For example, Alabama was one of 7 universities that visited more than two thirds of community colleges in their state. The university visited nearly 90% of community colleges in the state (23 of 26). Other universities with extensive coverage included NC State (72%), Rutgers (75%), CU Boulder (82%), and Nebraska (75%). Coverage by UC Berkeley and UC Irvine, 73% and 77%, respectively, is quite impressive given the large number of community colleges in California. Arkansas (58%), UMass Amherst (54%), Kansas (58%) had relatively more modest coverage, including Stony Brook's coverage of community colleges in Long Island (29% in Suffolk and Nassau counties; 50% when including Queens and Brooklyn). Other universities had limited coverage of community colleges: Georgia (4%), Cincinnati (20%), Pittsburgh (20%), and South Carolina (10%).

[5]We define community college as any public, 2-year or public, less-than 2-year institution, which could be a campus of a Title IV institution.

DISCUSSION AND IMPLICATIONS

Summary

This study investigated off-campus recruiting visits by public research universities, which we argue are indicators of university enrollment priorities. The majority of universities in our sample experienced dramatic declines in state appropriations and made more than twice as many out-of-state recruiting visits than in-state recruiting visits. Four of the five universities with the weakest state funding (University of Alabama, University of South Carolina, CU Boulder, and University of Pittsburgh) had the largest out-of-state recruiting efforts. These universities made more out-of-state visits than other universities and out-of-state visits made up the largest proportions of total recruiting visits by each university. On the other hand, universities with non-resident enrollment caps (UC Berkeley, UC Berkeley, UC Irvine) made the fewest out-of-state visits, which made up less than 50% of total recruiting visits by each university. Out-of-state visits were almost exclusively in metropolitan areas, ignoring rural communities. Further, these out-of-state visits focused on affluent, predominantly White public schools and predominantly White private schools.

With respect to in-state visits, the majority of universities were more likely to visit public high schools in

TABLE 8: DESCRIPTIVE STATISTICS FOR IN-STATE COMMUNITY COLLEGE VISITS.

	NC State		Rutgers		Stony Brook		Alabama		Arkansas		UC Berkeley		UC Irvine	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of Colleges	43	17	18	6	10	61	23	3	14	10	93	34	98	29
Percent of Colleges	71.7	28.3	75.0	25.0	14.1	85.9	88.5	11.5	58.3	41.7	73.2	26.8	77.2	22.8
Miles from University	111	97	38	27	44	175	104	119	148	149	240	230	190	223
Enrollment by FTE	3,403	2,150	6,463	364	12,415	1,931	2,664	960	1,546	1,468	8,658	3,374	8,810	1,950
Median Household Income ($000)	$44	$42	$84	$87	$93	$57	$36	$50	$39	$38	$73	$58	$73	$57
Percent Pell	62.7	68.0	52.3	48.0	59.2	64.2	64.9	50.7	71.1	76.1	49.7	57.5	49.9	58.4
Percent Enrollment by Race														
Black, Latinx, Native American	29.5	30.0	40.2	34.0	51.9	27.4	35.9	54.6	25.2	35.7	53.4	53.3	53.6	52.4
White	61.8	57.4	43.8	56.8	32.8	60.4	59.0	41.6	70.8	57.2	23.2	28.6	22.9	30.4
Black	18.6	23.7	15.2	13.6	19.0	17.4	31.2	50.6	17.6	27.7	6.0	7.7	5.9	8.3
Latinx	8.6	6.1	24.5	20.2	32.5	11.3	3.8	2.6	7.0	6.9	46.9	48.4	47.3	47.2
Native American	2.3	2.0	0.4	0.1	0.4	0.6	0.9	1.3	0.6	1.1	0.5	0.6	0.4	0.8
Asian	1.6	1.2	4.5	3.3	8.4	1.4	1.0	0.2	0.5	1.0	11.7	6.2	11.8	4.7
Other Race	6.1	7.9	9.5	6.0	4.3	7.4	3.5	3.2	3.1	5.7	6.2	6.0	6.2	6.1
Locale														
In a City	0.23	0.18	0.11	0.00	0.40	0.16	0.30	0.33	0.07	0.30	0.44	0.35	0.47	0.24
In a Suburb	0.16	0.12	0.44	0.83	0.60	0.34	0.00	0.33	0.07	0.10	0.44	0.38	0.44	0.38
In a Town	0.28	0.24	0.06	0.00	0.00	0.16	0.35	0.00	0.50	0.40	0.02	0.12	0.01	0.17
In a Rural Area	0.33	0.47	0.39	0.17	0.00	0.33	0.35	0.33	0.36	0.20	0.10	0.15	0.08	0.21

TABLE 8: DESCRIPTIVE STATISTICS FOR IN-STATE COMMUNITY COLLEGE VISITS. (CONT)

	Cincinnati		CU Boulder		Georgia		Kansas		UMass		Nebraska		Pittsburgh		S.Carolina	
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of Colleges	15	60	14	3	1	26	15	11	15	13	6	2	10	39	2	19
Percent of Colleges	20.0	80.0	82.4	17.6	3.7	96.3	57.7	42.3	53.6	46.4	75.0	25.0	20.4	79.6	9.5	90.5
Miles from University	155	149	94	76	34	112	160	135	59	63	136	146	144	137	71	70
Enrollment by FTE	4,728	873	4,119	1,348	2,532	3,754	2,953	1,055	4,087	312	4,654	189	6,298	820	2,519	3,378
Median Household Income ($000)	$43	$50	$49	$43	$50	$38	$47	$49	$68	$79	$41	$37	$67	$55	$35	$37
Percent Pell	60.8	64.8	54.9	31.7	61.0	76.1	49.6	57.5	57.9	53.9	51.2	63.5	47.9	64.7	70.0	66.1
Percent Enrollment by Race																
Black, Latinx, Native American	16.4	13.1	29.0	39.0	22.9	41.5	27.9	24.0	32.6	23.5	19.3	51.1	17.4	13.7	45.6	41.0
White	73.9	82.2	56.2	37.3	71.5	47.1	61.0	62.0	55.5	67.2	69.5	45.6	67.3	81.0	45.3	52.0
Black	10.6	11.1	6.1	6.3	7.1	39.6	11.9	10.0	12.8	21.1	4.2	0.0	10.3	9.0	41.7	36.3
Latinx	5.3	2.2	21.7	31.4	15.2	6.9	14.3	12.8	19.5	4.3	14.4	3.9	6.5	5.3	3.2	4.2
Native American	0.5	0.2	1.3	1.3	0.6	0.4	1.7	1.2	0.4	0.0	0.8	47.2	0.6	0.1	0.8	0.5
Asian	0.8	0.8	1.6	2.3	1.2	1.8	1.5	1.3	3.9	1.6	1.4	0.0	2.1	1.2	1.2	1.0
Other Race	7.9	3.2	8.7	20.4	2.5	2.8	6.7	10.2	5.8	4.3	6.5	3.3	12.5	2.9	6.8	5.8
Locale																
In a City	0.33	0.12	0.36	0.67	0.00	0.35	0.13	0.18	0.33	0.00	0.50	0.00	0.20	0.13	0.00	0.32
In a Suburb	0.13	0.27	0.21	0.00	1.00	0.23	0.00	0.00	0.47	0.92	0.00	0.00	0.50	0.36	0.50	0.16
In a Town	0.20	0.22	0.36	0.00	0.00	0.23	0.60	0.64	0.07	0.00	0.50	0.00	0.10	0.21	0.00	0.26
In a Rural Area	0.33	0.40	0.07	0.33	0.00	0.19	0.27	0.18	0.13	0.08	0.00	1.00	0.20	0.31	0.50	0.26

affluent communities than poorer communities, even after controlling for other factors such as enrollment size and student achievement. The findings for race were inconsistent across universities, in both simple descriptive statistics and in regression models that controlled for other factors. Some universities were more likely to visit schools with higher percentages of Black, Latinx, and Native students (e.g., UC Irvine). Some universities were less likely to visit schools with predominantly students of color (e.g., University of Alabama). Other universities showed no relationship between racial composition and the probability of receiving a visit after controlling for other factors (e.g, CU Boulder, UMass Amherst).

With respect to in-state "coverage," most universities did not visit the majority of public high schools in their home state. However, we generally find that universities in states with better state funding have better coverage and/or more equitable coverage of in-state public high schools than universities with weak state funding. For example, the University of Nebraska-Lincoln visited most public high schools in Nebraska. Additionally, despite having limited coverage of in-state public high schools, both NC State and UC Irvine made more in-state recruiting visits than out-of-state visits and these in-state visits did not exhibit socioeconomic or racial bias. However, CU Boulder was an exception to the relationship between state funding and in-state coverage. Despite having extremely limited state funding, CU Boulder visited a relatively large proportion of in-state public high schools (58%). Lastly, limited coverage is not an indictment for universities in large, populous states that cannot be expected to visit every high school. For example, SUNY-Stony Brook visited most public high schools in its "home" jurisdiction of Suffolk and Nassau counties.

Viewing university recruiting patterns holistically, most universities exhibited income and racial biases. The income story is clearer and larger in magnitude; out-of-state visits showed dramatic bias towards affluent communities and in-state visits tended to show moderate, though significant bias towards affluent communities. The race story is more nuanced. In-state visits did not show consistent racial bias. However, out-of-state visits consistently showed racial bias. Since out-of-state visits dwarded in-state visits for most universities, overall recruiting patterns were biased against communities of color for most universities.

Rethinking Access Inequality

Mainstream policy discourse about access inequality draws heavily from scholarship by economists and places responsibility on students and K-12 schools rather than universities. For example, the 2014 White House "Access Summit" commissioned a literature review of the causes of access inequality (The White House, 2014b). This review highlighted the "achievement gap" and "under-matching" – the idea that high-achieving, low-income students do not apply to selective colleges because they do not obtain information and guidance about college choices at home or at school (Hoxby & Avery, 2013; J. Smith, Pender, & Howell, 2013). Economic theory rationalizes access inequality due to the achievement gap based on the idea that the most talented students make the most of learning opportunities afforded by universities with superior resources (Hoxby, 2009; Rothschild & White, 1995; Winston, 1999, 2003). By contrast, under-matching is antithetical to economic theory because the best "inputs" are not going to the best college. In turn, the under-matching literature has motivated dozens of interventions designed to change student behavior by

providing information and guidance (e.g., Castleman & Goodman, 2018; Cunha, Miller, & Weisburst, 2018; Page & Scott-Clayton, 2016).

Our findings about off-campus recruiting suggest an alternative explanation for under-matching. Holland (2019) shows that under-represented student populations are particularly sensitive to which universities take time to visit their high school. For many states, our findings paint a picture of poor or majority-minority high schools being unlikely to receive a recruiting visit from the state flagship university. Similarly, Means (2016, August 31) analysis of rural students at a predominantly African American high school in Georgia found that the military and local technical college were the only institutions that visited their high school. By contrast, affluent high schools are more likely to receive visits from their state flagship university and from selective public and private universities from across the country. When students attend a high school that does not receive a visit from a university, they are less likely to know the university is an option. Therefore, the recruiting patterns we observed create information asymmetries that are strongly related to race and class. These recruiting patterns also create differences in the extent to which students "feel wanted" – by specific universities and by higher education in general – that are correlated with race and class (Holland, 2019). Given these findings, we suggest that "under-matching" may often be caused by "under-recruiting" rather than lack of guidance.

While recruiting behavior affects student opportunities, our research analyzes recruiting behavior as a means of gaining insight about university enrollment priorities. Mainstream policy discourse assumes that universities are passive recipients of applications or are progressive actors doing their best to increase access in spite of the deficiencies of students and K-12 schools (The White House, 2014a, 2014b). The implicit assumption here is that doubling the number of applications from high-achieving low-income students will double their enrollment. By contrast, our analyses suggests that the majority of public research universities prefer a mostly-affluent student body.

In particular, our findings coalesce with a growing enrollment management literature (e.g., Bosshardt, Lichtenstein, Palumbo, & Zaporowski, 2010; Burd, 2015, 2018; Jaquette et al., 2016) to suggest that many public research universities prioritize affluent, non-meritorious, out-of-state students. Aside from a handful of prestigious universities (e.g., University of Michigan), most public research universities (e.g., University of South Carolina, University of Alabama) compete for out-of-state prospects who could not gain admission to flagship public universities in their home state. Indeed, many public research universities have adopted institutional "merit" aid programs that target out-of-state prospects with moderate academic achievement (Burd, 2015, 2018; DesJardins, 2001; Leeds & DesJardins, 2015). These students do not take advantage of the unique opportunities public research universities offer. Meanwhile, high-achieving, low-income students are often diverted to regional state colleges and community colleges (Dillon & Smith, 2017), which have lower resources and offer fewer learning opportunities than public research universities (Kane & Orszag, 2003; Winston, 2003). This is not a meritocracy. As a consequence of the shift in enrollment priorities from merit to revenue, public research universities make diminished contributions to economic and civic development because they do not prioritize enrolling students with the most talent.

Policy efforts that focus solely on changing student

behavior (the "demand side") will fail to yield substantial increases in enrollment from under-represented student populations if they are not accompanied by policies that create incentives for universities to enroll these students (the "supply side"). For example, the under-matching literature has spawned a new population of "matching" organizations (e.g., QuestBridge, CollegePoint), which identify high-achieving, low-income students, reach out to these students and match them to selective colleges and universities which promise to provide four-year full scholarships. These organizations increase the "quality" of match between students and colleges but there is no reason to believe that these organizations increase the total number of low-income students that selective institutions are willing to enroll.

State Policy

State funding and university enrollment priorities. The transformation of enrollment priorities at public research universities is a response to a broken system of postsecondary education finance, led by state disinvestment in public universities. While state cuts to public research universities are often rationalized on the grounds that these organizations can generate alternative revenue sources (Delaney & Doyle, 2011), the unintended consequence is that universities respond by prioritizing students that generate the most net tuition revenue. Jaquette and Curs (2015) found that public research universities responded to state funding cuts by growing nonresident enrollment. Nonresident enrollment growth is not simply a function of enjoying excess demand and letting in more applicants; rather, our research shows that many universities aggressively incite nonresident enrollment demand by focusing recruiting efforts on out-of-state students.

Our results suggest a relationship between state support and university recruiting behaviors. Broadly speaking, universities with the least state funding per FTE (e.g., University of Alabama, University of South Carolina, University of Pittsburgh, CU Boulder) heavily focused recruiting efforts to out-of-state communities. We also find that universities with nonresident enrollment caps (UC Berkeley, UC Irvine, NC State) made the fewest out-of-state visits and these visits made up less than 50% of total recruiting visits for each university. Additionally, universities with relatively generous state funding (e.g., NC State, SUNY-Stony Brook, University of Nebraska) tended to have better in-state coverage and/or more equitable in-state coverage. CU Boulder is a partial exception in that it receives no state funding, made more than twice as many out-of-state visits than in-state visits, but nevertheless visited the majority of in-state public high schools and these in-state visits showed no evidence racial bias.

These findings raise important normative policy questions about public research universities and the public good. Should public research universities conceive of the public good in terms of serving the state – including the historic mission of social mobility for state residents – the nation, or the world? Or should public research universities focus on pursuing their self-interest (e.g., prestige, revenue generation) rather than providing value to society? However, statements about what the mission of public universities *should* be have little effect on organizational behavior. Rather, borrowing the old adage, "he who pays the piper calls the tune." Our results suggest that if state policymakers want public research universities to prioritize access for meritorious state residents – particularly students from poor communities and communities of color – they must increase state funding.

Increased state support could come in the form of more generous state appropriations. Prior research finds that growth in state appropriations increases access by placing downward pressure on resident tuition price (Koshal & Koshal, 2000), which in turn positively affects student demand (Hemelt & Marcotte, 2011). On the supply side, more generous state appropriations enables universities to be less reliant on tuition revenue from affluent students, thus incentivizing universities to enroll more low-income students.

Increased financial support could also come in the form of more generous federal or state need-based grant aid programs, which also affects both student demand and university supply. Grant aid increases student demand by reducing net price paid. On the supply side, more generous need-based grant aid increases the purchasing power of low-income students, incentivizing universities to enroll more low-income students because these students now generate more net tuition revenue and require less need-based institutional aid. If federal and state policymakers are unwilling to increase need-based grant aid, income-share agreements (ISAs) are a non-governmental approach to increasing the purchasing power of poor students.

Substantially increasing state spending on higher education is a tough "ask" because state budgets face demands from many worthy causes (Kane, Orszag, & Gunter, 2003) and because many states have enacted policies that make it difficult to raise taxes (Archibald & Feldman, 2006). However, recent midterm elections changed state legislatures and governors across the country. Perhaps these changes in state political environment – coupled with mounting evidence about the consequences of forcing public universities to rely on paying customers – will compel states to re-invest in public higher education.

Nonresident enrollment caps are another tool state policymakers can use to ensure that public research universities serve state residents. For example, public universities in North Carolina are subject to nonresident freshman enrollment cap of 18% of the freshman class and universities that violate this cap two years in a row are penalized through reductions in state appropriations (General Assembly of North Carolina, 2009). Following to pressure from state legislators, the University of California (UC) System "voluntarily" capped nonresident enrollment (University of California, 2017). Under this policy, nonresident enrollment is capped at 18% of undergraduate enrollment for campuses with less than 18% undergraduates in 2017-18, while campuses with more than 18% nonresident undergraduates in 2017-18 (Berkeley, San Diego, Los Angeles, and Irvine) cannot exceed their 2017-18 percent of nonresident undergraduates. Compared to other universities in our sample, NC State, UC Irvine, and UC Berkeley focused recruiting visits on their home state, suggesting that nonresident enrollment caps affect university enrollment behaviors.

However, we argue that nonresident enrollment caps should be contractually tied to an agreement that the state provides sufficient funding. This way, the responsibility of public universities to serve state residents depends on state responsibility to provide adequate funding to pay for the costs of educating state residents. Without such an agreement, states may simultaneously defund public research universities and forbid them from replacing state funds with nonresident tuition revenue, thereby resulting in fewer resources per student and a lower quality of education (Kane & Orszag, 2003).

Aside from changes in state funding and nonresident enrollment caps, "percent plans" and "automatic ad-

missions plans" are other policy levers to increase access at public research universities. Percent plans guarantee admission to some set of public universities for resident students who graduate near the top of their class (e.g., top 10%). Evaluations of percent plans – most of which draw from the Texas Top 10% Plan – tend to find that percent plans increase the probability of attending a public flagship university for high-achieving students from low-income schools and from schools with predominantly students of color (Arcidiacono & Lovenheim, 2016; Fletcher & Mayer, 2014; M. C. Long, Saenz, & Tienda, 2010; Niu & Tienda, 2010). More generally, automatic admissions plans – which include percent plans – guarantee admissions for students who meet specific academic achievement criteria (e.g., GPA and test score). Cortes and Lincove (2019), also drawing from the Texas Top 10% Plan, finds that guaranteed admissions plans increase the probability that high-achieving low-income students apply to and enroll in "high quality" universities.

Funneling students to community colleges. Many states have sought to increase baccalaureate attainment by growing community college enrollment and strengthening the transfer function (Boatman & Soliz, 2018; Schudde & Grodsky, 2018). In California, for example, legislators have pressured the UC system to enroll more community college transfer students (Gecker, 2018). Additionally, 20 states have adopted or are considering the adoption of free tuition programs at community colleges (Campaign for Free College Tuition, 2018; Paterson, 2019).

Although community colleges positively affect credential attainment and earnings of students who would otherwise not have attended postsecondary education (e.g., Mountjoy, 2018), empirical research unequivocally finds that they are a uniquely bad instrument for increasing BA attainment. About 81% of first-time community college students aspire to obtain a BA (Jenkins & Fink, 2016). However, only 33% of degree-seeking students transfer to a 4-year university within six years (Jenkins & Fink, 2016) and only 14% of these students earn a BA within six years, compared to 60% of degree-seeking students who start at a 4-year university (Jenkins & Fink, 2016). This negative relationship is causal (Doyle, 2009; B. T. Long & Kurlaender, 2009; Reynolds, 2012; Rouse, 1995). The most recent, cutting-edge research by Mountjoy (2018) finds that starting at a community college rather than a 4-year university reduces the probability of attaining a BA by 18 percentage points (e.g., from a 50% probability to 32% probability). No other policy intervention to affect BA attainment approaches this level of magnitude.

Further, there are great socioeconomic and racial inequities in which students transfer to state flagship universities (Dowd, Cheslock, & Melguizo, 2008; Jenkins & Fink, 2016). In California, a disproportionate number of transfers to the UC system completed a community college honors program. Students enrolled in community college honors programs have access to curricula, advising, and transfer opportunities unavailable to other community college students (Cohen, Brawer, & Kisker, 2014; Kisker & Outcalt, 2005). For example, the UCLA Transfer Alliance Program (TAP) gives "priority consideration for admission to UCLA" to students who have completed an honors program at a "TAP member college" (UCLA, 2019). However, prior research finds that access to community college honors programs is racially and socioeconomically stratified (Bulakowski & Townsend, 1995; Byrne, 1998; Laanan, 1998).

Therefore, this policy trend of funneling BA aspirants to community colleges and pressuring public universities to enroll more transfer students begins to feel like

a shell game designed to benefit all the players except low-income students and students of color. Policymakers can claim they are giving students an opportunity to obtain a BA; UC campuses can point to the growth in community college transfers as evidence of their commitment to access; and community colleges can enjoy a growth in enrollment. However, starting at a community college dramatically lowers the probability of obtaining a BA and the socioeconomic and racial inequities in access to community college honors programs suggest that UC campuses are skimming the cream rather than providing opportunity to students who have faced the greatest obstacles to college access.

If state policymakers are serious about increasing BA attainment for low-income students and students of color, they can no longer feign ignorance of the empirical fact that community colleges are terrible vehicles for BA attainment. Public policy to increase educational opportunity should not feel like the plot of an Ayn Rand novel. Rather, state policies should systematically funnel college-ready high school graduates with BA aspirations into 4-year institutions, a shift that would require investments in the enrollment capacity of public universities.

University Leaders

Although results indicate a relationship between state funding and university recruiting behavior, several universities facing similar environmental conditions exhibited substantially different recruiting patterns. For example, compared to UC Berkeley, UC Irvine did a much better job prioritizing low-income schools and schools with predominantly students of color in California despite receiving less state revenue per student than UC Berkeley. Additionally, UC Irvine made only 172 out-of-state visits compared to 420 by UC Berkeley, and out-of-state visits by UC Berkeley were more focused on affluent, predominantly White high schools. These findings show that university enrollment priorities and recruiting behaviors are choices made by leadership rather than mere functions of the state external environment.

Recent research by Dynarski, Libassi, Michelmore, and Owen (2018) found that aggressive outreach combined with the promise of four years of free tuition and fees dramatically increased applications and enrollment at the University of Michigan by high-achieving, low-income state residents. These findings prove that public research universities can dramatically increase the enrollment of low-income state residents if they direct resources towards this goal. Therefore, the problem is not a lack of qualified low-income students. The problem is a lack of will by universities to enroll these students. While all public research universities espouse a commitment to access and equality of opportunity for state residents, our findings suggest that this commitment is largely a public relations effort for many universities. The time is now for university leaders to put their money where their mouth is rather than putting their money where the money is. Failure to do so will only strengthen the vicious cycle of state disinvestment, university disinvestment in state residents, followed by further state disinvestment as a response to universities no longer serving the state.

Additionally, public research universities should prioritize enrolling racially and socioeconomically diverse cohorts of state residents because of the consequences for campus culture. Compared to resident students, nonresident students are more affluent, are less likely to be Black or Latinx, and often have lower

levels of academic achievement in high school (Jaquette et al., 2016). Further, recent growth in nonresident students at public research universities is associated with declines in the share of Pell recipients and underrepresented minority students (Jaquette et al., 2016). An extensive literature shows that low socioeconomic and racial diversity negatively affects that academic and social experiences of poor students and students of color (e.g., Fries-Britt & Turner, 2001; Hurtado & Ruiz, 2012; Oldfield, 2007; W. A. Smith, Allen, & Danley, 2007) and negatively affects learning outcomes for *all* students (e.g., Bowman, 2013; Gurin, 1999; Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012; Park, Denson, & Bowman, 2013). Armstrong and Hamilton (2013) show that enrolling large cohorts of affluent, predominantly White students with mediocre records of academic achievement create a campus culture where first-generation college students are chastised for trying hard in class and socially ostracized for their lack of financial resources. Considering the growth in "merit" aid for out-of-state students with mediocre academic achievement (e.g., Burd, 2015, 2018; Leeds & DesJardins, 2015) and our finding that most universities concentrate recruiting efforts on affluent, predominantly White, out-of-state communities, we argue that university enrollment management behaviors are explicitly creating a campus culture that is hostile to poor students and students of color.

Finally, university leaders genuinely concerned about access should make this priority clear to enrollment managers and play a role in the implementation of enrollment management policies. Several university presidents and trustees who has read our New York Times op-ed about off-campus recruiting expressed surprise when confronted with the recruiting patterns of their university. These anecdotes suggest that trustees and presidents set broad enrollment goals and delegate the achievement of these goals to enrollment management offices and the consulting firms they hire. Enrollment managers may conclude, for example, that the most effective means of satisfying orders from above is targeting affluent out-of-state high schools and pursuing racial diversity by visiting magnet schools but ignoring traditional public schools in communities of color. Therefore, university leaders must consider how broad enrollment goals create behavioral incentives for enrollment management offices.

Advocacy and Future Research

Although we initiated research on university recruiting behavior with the goal of shifting national policy debates about access inequality, an unanticipated effect is that a handful of local actors (e.g., at Emory University, University of Colorado-Boulder) began using our data to initiate discussions with university leadership about enrollment priorities and recruiting behaviors. These unexpected anecdotes helped us envision a new theory of change, one that operates at the local organization-level rather than the macro policy-level.

All public universities have local constituents – both internal and external to the organization – who care about access and demand that university leaders place a higher priority on access. Consistent with findings from broader literatures on organizational behavior (Davis, 2005), universities typically respond to stakeholder demands with lofty rhetoric and by adopting new policies or programs (e.g., holistic admissions, "no loan" tuition policies, "outreach" efforts) (The White House, 2014a). Often, stakeholders cannot determine whether these responses are earnest or ceremonial.

Without concrete evidence that an organizational response is symbolic, stakeholders feel compelled to accept the organizational response and demands for change lose energy.

Therefore, our theory of local change is to empower access advocates by collecting concrete, quantifiable data about university recruiting behaviors. These data yield insight about whether university commitments to access are earnest or ceremonial. Since the data we collect are public, we can release these data to the public. In turn, access advocates can present these data to university leadership when demanding stronger action on access. Armed with systematic data about university recruiting behavior, access advocates will no longer be pacified by lofty rhetoric or opaque programs with unclear resources. Therefore, these data provide the foundation for debate about what the university actually does rather than a debate about what the university says it does.

While off-campus recruiting encompasses only one facet of university recruiting efforts, presenting concrete data to university leadership raises the bar for what counts as evidence and shifts the burden of proof to the university. If university leaders claim other recruiting efforts (e.g., "outreach," direct mail) to target populations ignored by off-campus recruiting, access advocates can demand concrete data about these efforts. If leadership cannot produce these data, there is no reason to believe that inequities observed in off-campus recruiting visits are unrepresentative of other recruiting efforts.

We hope that our data on recruiting behavior is utilized by both internal and external stakeholders concerned with access. Offices of diversity, equity, and inclusion are particularly well positioned; these offices are charged with creating an inclusive campus climate but our data shows that university recruiting behavior is often antithetical to the representational diversity necessary for an inclusive campus climate. Other potential internal stakeholders include faculty senates, student groups, and board of trustee members. The power of an external stakeholder to demand change is a function of university dependence on resources controlled by the stakeholder (Pfeffer & Salancik, 1978). From this perspective, universities are particularly sensitive to demands from donors and from elected officials who control public funding and policies that regulate university behavior. Alumni are often well-represented on internal and external committees that have authority over university actions. Additionally, journalists, community organizers, and non-profit organizations have the capacity to inform public opinion and influence elected officials.

Finally, researchers create an empirical basis for local and national policy debates by collecting, analyzing, and disseminating data. Our research on off-campus recruiting stands on the shoulders of giants, particularly groundbreaking scholarship sociologists (e.g., Holland, 2019; Khan, 2011; Stevens, 2007). These studies tend to be broad in scope (e.g., encompassing the recruiting, admissions, and yield process) and are based on qualitative, ethnographic, and archival data from one or two organizations. By contrast, our research collects quantitative data on one facet of university recruiting from a larger number of organizations. A limitation of our research is that we ignore many recruiting interventions utilized by universities because collecting systematic data about one recruiting intervention is so time-intensive. However, policy debates tend to be swayed more by quantitative data from many organizations than qualitative data from one

organization. Therefore, we see great potential to inform policy debates by developing a set of successive studies, each collecting systematic, quantifiable data about a particular recruiting intervention. Over time, this research agenda will encompass the breadth of university recruiting behavior.

We have initiated several new data collections to capture the different means universities utilize to identify and target prospects. For example, we are using public records request to examine which student characteristics universities prioritize when purchasing the contact information of "prospects" from College Board and ACT. Second, following Hanson (2017) and Thornhill (in press), we are developing experimental audit studies to examine how universities respond to "inquiries" from prospects with different characteristics. For each of these data collections, we intend to make the results publicly available so that stakeholders can use these results to push for change at their local university. We also plan to publicly release all data we collect so that researchers and non-profit organizations can conduct their own analyses.

Other important questions about university recruiting behavior require qualitative analyses. For example, how do universities decide which schools and communities to visit and what role do enrollment management consulting firms play in this process? What difficulties do universities face when attempting to visit schools with fewer resources to host admissions visits and how have military recruiters and for-profit colleges been able to overcome these difficulties? Which prospective students are targeted by social media efforts and paid advertising?

Our hope is that a critical mass of scholars and policymakers become interested in university enrollment management behaviors. Once this happens, policy debates about access will shift from a focus on student "deficiencies" towards a focus on university enrollment priorities. In turn, policy debates will consider solutions to reduce biases in university enrollment priorities.

REFERENCES

Alon, S. (2009). The evolution of class inequality in higher education: competition, exclusion, and adaptation. *American Sociological Review*, *74*(5), 731-755.

Archibald, R. B., & Feldman, D. H. (2006). State higher education spending and the tax revolt. *Journal of Higher Education*, *77*(4), 618-644. Retrieved from <GotoISI>://000237907400003

Arcidiacono, P., & Lovenheim, M. (2016). Affirmative action and the quality-fit trade-off. *Journal of Economic Literature*, *54*(1), 3-51. Retrieved from <GotoISI>://WOS:000371997500001 doi: 10.1257/jel.54.1.3

Armstrong, E. A., & Hamilton, L. T. (2013). *Paying for the party: how college maintains inequality*. Cambridge, Massachusetts: Harvard University Press.

Boatman, A., & Soliz, A. (2018). Statewide transfer policies and community college student success [Journal Article]. *Education Finance and Policy*, *13*(4), 449-483. Retrieved from <GotoISI>://WOS:000448903100002 doi: 10.1162/edfp_a_00233

Bosshardt, D. I., Lichtenstein, L., Palumbo, G., & Zaporowski, M. P. (2010). Optimization techniques for college financial aid managers [Journal Article]. *Journal of Student Financial Aid*, *40*(3).

Bowman, N. A. (2013). How much diversity is enough? the curvilinear relationship between college diversity interactions and first-year student outcomes. *Research in Higher Education*, *54*(8), 874-894. Retrieved from http://dx.doi.org/10.1007/s11162-013-9300-0 doi: 10.1007/s11162-013-9300-0

Bulakowski, C., & Townsend, B. K. (1995). Evaluation of a community college honors program: Problems and possibilities. *Community College Journal of Research and Practice*, *19*(6), 485-499. Retrieved from https://doi.org/10.1080/1066892950190602 doi: 10.1080/1066892950190602

Burd, S. (2015). *The out-of-state student arms race: How public universities use merit aid to recruit nonresident students* (Tech. Rep.). New America Foundation.

Burd, S. (2018). *Undermining pell, volume iv: How the privatization of public higher education is hurting low-income students* (Tech. Rep.). New America. Retrieved from https://www.newamerica.org/education-policy/reports/undermining-pell-iv/

Byrne, J. P. (1998). Honors programs in community colleges: A review of recent issues and literature. *Community College Review*, *26*(2), 67-81. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/009155219802600205 doi: 10.1177/009155219802600205

Campaign for Free College Tuition. (2018). *Making public colleges tuition free* (Tech. Rep.). Campaign for Free College Tuition. Retrieved from https://www.freecollegenow.org/briefing_book

Campbell, A. (2017). *Higher education marketing: How to master your admissions funnel.* Retrieved from https://hop-online.com/blog/higher-education-marketing-admissions-process/

Castleman, B., & Goodman, J. (2018). Intensive college counseling and the enrollment and persistence of low-income students. *Education Finance and Policy*, *13*(1), 19-41. Retrieved from <GotoISI>://WOS:000418839700002 doi: 10.1162/edfp_a_00204

Cheslock, J. J., & Kroc, R. (2012). Managing college enrollments. In R. Howard, B. Knight, & G. McLaughlin (Eds.), *The handbook for institutional researchers* (p. 221-236). San Francisco, CA: Jossey-Bass.

Clinedinst, M., & Koranteng, A.-M. (2017). *2017 state of college admission* (Tech. Rep.). National Association of College Admissions Officers.

Cohen, A. M., Brawer, F. B., & Kisker, C. B. (2014). *The american community college* (Sixth edition. ed.). San Francisco: Jossey-Bass. doi: 40022881686

Cortes, K. E., & Lincove, J. A. (2019). Match or mismatch?

automatic admissions and college preferences of low- and high-income students. *Educational Evaluation and Policy Analysis*, *41*(1), 98-123. Retrieved from <GotoISI>://WOS:000458186300006 doi: 10.3102/0162373718813360

Cunha, J. M., Miller, T., & Weisburst, E. (2018). Information and college decisions: Evidence from the texas go center project [Journal Article]. *Educational Evaluation and Policy Analysis*, *40*(1), 151-170. Retrieved from <GotoISI>://WOS:000424050000007 doi: 10.3102/0162373717739349

Davis, G. F. (2005). Firms and environments. In N. J. Smelser & R. Swedberg (Eds.), *The handbook of economic sociology* (p. 478-502). New York: Russell Sage Foundation.

Delaney, J. A., & Doyle, W. R. (2011). State spending on higher education: testing the balance wheel over time. *Journal of Education Finance*, *36*(4), 343-368.

DesJardins, S. L. (2001). Assessing the effects of changing institutional aid policy. *Research in Higher Education*, *42*(6), 653-678. Retrieved from <GotoISI>://000179719500002

Dillon, E. W., & Smith, J. A. (2017). Determinants of the match between student ability and college quality. *Journal of Labor Economics*, *35*(1), 45-66. Retrieved from <GotoISI>://WOS:000390415700002 doi: 10.1086/687523

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*(2), 147-160.

Dowd, A. C., Cheslock, J. J., & Melguizo, T. (2008). Transfer access from community colleges and the distribution of elite higher education. *Journal of Higher Education*, *79*(4), 442-+. Retrieved from <GotoISI>://000257175900004

Doyle, W. R. (2009). The effect of community college enrollment on bachelor's degree completion. *Economics of Education Review*, *28*(2), 199-206. Retrieved from http://www.sciencedirect.com/science/article/pii/S0272775708000770 doi: https://doi.org/10.1016/j.econedurev.2008.01.006

Dupaul, S., & Harris, M. S. (2012). Secret shoppers: The stealth applicant search for higher education [Journal Article]. *Journal of College Admission*(Spring 2012), 8-16.

Dynarski, S., Libassi, C. J., Michelmore, K., & Owen, S. (2018). Closing the gap: The effect of a targeted, tuition-free promise on college choices of high-achieving, low-income students. *National Bureau of Economic Research Working Paper Series*, *No. 25349*. Retrieved from http://www.nber.org/papers/w25349 doi: 10.3386/w25349

Fletcher, J. M., & Mayer, A. (2014). Tracing the effects of guaranteed admission through the college process: Evidence from a policy discontinuity in the texas 10% plan. *Contemporary Economic Policy*, *32*(1), 169-186. Retrieved from <GotoISI>://WOS:000333968200013 doi: 10.1111/coep.12011

Fries-Britt, S. L., & Turner, B. (2001). Facing stereotypes: A case study of black students on a white campus. *Journal of College Student Development*, *42*(5), 420-429. Retrieved from <GotoISI>://WOS:000170733800002

Gecker, J. (2018, July 12). *Uc schools admit record number of transfer students.* Retrieved from https://www.apnews.com/9ee3584875514b8fabbd777d4aa88258

General Assembly of North Carolina. (2009). *Unc/calculation of in-state students* (No. House Bill 256 (Second Edition)). Retrieved from https://www.ncleg.net/Sessions/2009/FiscalNotes/House/PDF/HFN0256v2.pdf

Gerald, D., & Haycock, K. (2006). *Engines of inequality: Diminishing equity in the nation's premier public universities* (Tech. Rep.). Education Trust.

Gurin, P. (1999). The compelling need for diversity in higher education, expert testimony in gratz, et al. v. bollinger, et al. *Michigan Journal of Race & Law*, *5*, 363-425.

Hanson, A. (2017). Do college admissions counselors discriminate? evidence from a correspondence-based field experiment. *Economics of Education Review*, *60*, 86-

96. Retrieved from http://www.sciencedirect.com/science/article/pii/S0272775716304526 doi: https://doi.org/10.1016/j.econedurev.2017.08.004

Haycock, K., Mary, L., & Engle, J. (2010). *Opportunity adrift: Our flagship universities are straying from their public mission* (Tech. Rep.). Education Trust.

Hemelt, S. W., & Marcotte, D. E. (2011). The impact of tuition increases on enrollment at public colleges and universities. *Educational Evaluation and Policy Analysis*, *33*(4), 435-457. Retrieved from <GotoISI>://WOS:000296924500002 doi: 10.3102/0162373711415261

Holland, M. M. (2019). *Divergent paths to college: Race, class, and inequality in high schools*. New Brunswick, NJ: Rutgers University Press.

Hossler, D., & Bean, J. P. (1990). *The strategic management of college enrollments*. San Francisco, CA: Jossey-Bass.

Hoxby, C. M. (2009). The changing selectivity of american colleges. *Journal of Economic Perspectives*, *23*(4), 95-118. Retrieved from <GotoISI>://000272677100005

Hoxby, C. M., & Avery, C. (2013). *The missing one-offs: The hidden supply of high merit students for highly selective colleges* (Tech. Rep.). The Brookings Institution.

Huelsman, M. (2018). *Social exclusion: The state of state u for black students* (Report). Demos. Retrieved from https://www.demos.org/publication/social-exclusion-state-state-u-black-students

Hurtado, S., Alvarez, C. L., Guillermo-Wann, C., Cuellar, M., & Arellano, L. (2012). A model for diverse learning environments: the scholarship on creating and assessing conditions for student success [Book Section]. In J. Smart & M. B. Paulsen (Eds.), *Higher education: handbook of theory and research* (Vol. 41). Kluewer Academic Publishers.

Hurtado, S., & Ruiz, A. (2012). *The climate for underrepresented groups and diversity on campus* (Tech. Rep.). Higher Education Research Institute at UCLA. Retrieved from https://www.heri.ucla.edu/briefs/URMBriefReport.pdf

Jaquette, O. (2017). *State university no more: Out-of-state enrollment and the growing exclusion of high-achieving, low-income students at flagship public universities* (Tech. Rep.). Jack Kent Cooke Foundation.

Jaquette, O., & Curs, B. R. (2015). Creating the out-of-state university: Do public universities increase nonresident freshman enrollment in response to declining state appropriations? *Research in Higher Education*, *56*(6), 535-565.

Jaquette, O., Curs, B. R., & Posselt, J. R. (2016). Tuition rich, mission poor: Nonresident enrollment growth and the socioeconomic and racial composition of public research universities. *Journal of Higher Education*, *87*(5), 635-673.

Jenkins, D., & Fink, J. (2016). *Tracking transfer: new measures of institutional and state effectiveness in helping community college students attain bachelor's degrees* (Tech. Rep.). Community College Research Center. Retrieved from https://ccrc.tc.columbia.edu/publications/tracking-transfer-institutional-state-effectiveness.html

Kane, T. J., & Orszag, P. R. (2003). *Funding restrictions at public universities: Effects and policy implications* (Tech. Rep.). Brookings Institution.

Kane, T. J., Orszag, P. R., & Gunter, D. L. (2003). *State fiscal constraints and higher education spending: the role of medicaid and the business cycle* (Tech. Rep.). Brookings Institute.

Khan, S. R. (2011). *Privilege: The making of an adolescent elite at st. paul's school*. Princeton, N.J.: Princeton University Press.

Kisker, C. B., & Outcalt, C. L. (2005). Community college honors and developmental faculty: Characteristics, practices, and implications for access and educational equity. *Community College Review*, *33*(2), 1-21. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/009155210503300201 doi: 10.1177/009155210503300201

Koshal, R., & Koshal, M. (2000). State appropriations and higher education tuition: What is the relationship. *Education Economics*, *8*(1), 81-89.

Laanan, F. (1998). *Beyond transfer shock: A study of students' college experiences and adjustment processes at ucla* (Unpublished doctoral dissertation).

Leeds, D. M., & DesJardins, S. L. (2015). The effect of merit aid on enrollment: A regression discontinuity analysis of iowas national scholars award. *Research in Higher Education*, *56*(7), 471-495. Retrieved from http://dx.doi.org/10.1007/s11162-014-9359-2 doi: 10.1007/s11162-014-9359-2

Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis*, *31*(1), 30-53. Retrieved from <GotoISI>://000263763100002 doi: 10.3102/0162373708327756

Long, M. C., Saenz, V., & Tienda, M. (2010). Policy transparency and college enrollment: Did the texas top ten percent law broaden access to the public flagships? *Annals of the American Academy of Political and Social Science*, *627*, 82-105. Retrieved from <GotoISI>://WOS:000273150200005 doi: 10.1177/0002716209348741

McPherson, M. S., & Schapiro, M. O. (1998). *The student aid game*. Princeton, NJ: Princeton University Press.

Means, D. R. (2016, August 31). *Rural location, race influence students access to college.* Retrieved from http://getschooled.blog.myajc.com/2016/08/30/black-rural-and-impoverished-are-colleges-ignoring-these-students/

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: formal structure as myth and ceremony. *The American Journal of Sociology*, *83*(2), 340-363.

Mountjoy, J. (2018). *Community colleges and upward mobility.* Retrieved from https://f17b4d08-a-62cb3a1a-s-sites.googlegroups.com/site/jackmountjoyeconomics/Mountjoy_2018_Community_Colleges_and_Upward_Mobility.pdf?attachauth=ANoY7coUCUd25KX9jm6QeZEhbJH4a8MoE4UN2lBKA9Hvlisje8OKTIkIDU27Wp1HzgOLq06CoEV9NQVBxUo6ffVThYkXAjOqi-moTbPAP3VTWTQvU5ctda-g3Igvf5Xu3gjrjZFPeZsd86k25roXMwPFWShpeV5Ealit_Rs6W_drWM8PNxnT-3gJjjYG5bH_sBiIbIWUc76h62Vuu_qYcqp7x7SWL8i1B3BFzSswbFd0Jmte3WEjakEt8lqSJPWwZlglmxjO6czfNqTUt3upXPifv1_ssSdPIA%3D%3D&attredirects=0

Nichols, A., & Schak, O. J. (2019). *Borken mirrors: Black student representation at public state colleges and universities* (Tech. Rep.). The Education Trust. Retrieved from https://edtrust.org/resource/broken-mirrors-black-representation/

Niu, S. X., & Tienda, M. (2010). The impact of the texas top 10 percent law on college enrollment: A regression discontinuity approach. *Journal of Policy Analysis and Management*, *29*(1), 84-110. Retrieved from <GotoISI>://WOS:000272634800005 doi: 10.1002/pam.20480

Noel-Levitz. (2016). *2016 e-recruiting practices report and infographic of 5 gaps in digital recruiting* (Tech. Rep.). Author.

Oldfield, K. (2007). Humble and hopeful: Welcoming first-generation poor and working-class students to college. *About Campus*, *11*(6), 2-12.

Page, L. C., & Scott-Clayton, J. (2016). Improving college access in the united states: Barriers and policy responses. *Economics of Education Review*, *51*, 4-22. Retrieved from <GotoISI>://WOS:000377830600002 doi: 10.1016/j.econedurev.2016.02.009

Park, J. J., Denson, N., & Bowman, N. A. (2013). Does socioeconomic diversity make a difference? examining the effects of racial and socioeconomic diversity on the campus climate for diversity [Journal Article]. *American Educational Research Journal*, *50*(3), 466-496. Retrieved from http://aer.sagepub.com/content/50/3/466.abstract doi: 10.3102/0002831212468290

Paterson, J. (2019). *Michigan joins free college push with latest proposal.* Retrieved from https://www.educationdive.com/news/michigan-joins-free-college-push-wit

h-latest-proposal/550051/

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.

Reynolds, C. L. (2012). Where to attend? estimating the effects of beginning college at a two-year institution. *Economics of Education Review*, *31*(4), 345-362. Retrieved from http://www.sciencedirect.com/science/article/pii/S0272775711001774 doi: https://doi.org/10.1016/j.econedurev.2011.12.001

Rothschild, M., & White, L. J. (1995). The analytics of the pricing of higher education and other services in which the customers are inputs. *Journal of Political Economy*, *103*(3), 573-586. Retrieved from <GotoISI>://A1995RE66100005

Rouse, C. E. (1995). Democratization or diversion? the effect of community colleges on educational attainment. *Journal of Business & Economic Statistics*, *13*(2), 217-224. Retrieved from http://www.jstor.org/stable/1392376 doi: 10.2307/1392376

Rudolph, F. (1962). *The american college and university: A history* (1st ed.). New York: Alfred A. Knopf.

Ruffalo Noel-Levitz. (2016). *2016 report: cost of recruiting an undergraduate student for four-year and two-year institutions* (Tech. Rep.). Ruffalo Noel-Levitz. Retrieved from https://www.ruffalonl.com/papers-research-higher-education-fundraising/campus-organizational-strategy/benchmark-reports-higher-education

Ruffalo Noel-Levitz. (2017). *2017 marketing and student recruitment report of effective practices* (Tech. Rep.). Ruffalo Noel-Levitz. Retrieved from https://www.ruffalonl.com/papers-research-higher-education-fundraising/campus-organizational-strategy/benchmark-reports-higher-education

Ruffalo Noel-Levitz. (2018). *2018 marketing and student recruitment report of effective practices* (Tech. Rep.). Ruffalo Noel-Levitz. Retrieved from http://learn.ruffalonl.com/rs/395-EOG-977/images/RNL_2018_Student_Recruitment_Marketing_Report_EM-19.pdf

Schudde, L., & Grodsky, E. (2018). The community college experience and educational equality: Theory, research, and policy. In B. Schneider (Ed.), *Handbook of the sociology of education in the 21st century* (p. 405-430). Cham: Springer International Publishing. Retrieved from https://doi.org/10.1007/978-3-319-76694-2_18 doi: 10.1007/978-3-319-76694-2_18

Smith, J., Pender, M., & Howell, J. (2013). The full extent of student-college academic undermatch. *Economics of Education Review*, *32*, 247-261. Retrieved from <GotoISI>://WOS:000316524900017 doi: 10.1016/j.econedurev.2012.11.001

Smith, W. A., Allen, W. R., & Danley, L. L. (2007). "assume the position ... you fit the description": Psychosocial experiences and racial battle fatigue among african american male college students. *American Behavioral Scientist*, *51*(4), 551-578. Retrieved from <GotoISI>://WOS:000251065200005 doi: 10.1177/0002764207307742

Stevens, M. L. (2007). *Creating a class: College admissions and the education of elites*. Cambridge, MA: Harvard University Press.

The White House. (2014a). *Commitments to action on college opportunity* (Tech. Rep.). The Executive Office of the President.

The White House. (2014b). *Increasing college opportunity for low-income students* (Tech. Rep.). The Executive Office of the President.

Thompson, J. (1967). *Organizations in action*. New York: McGraw Hill.

Thornhill, T. (in press). We want black students, just not you: How white admissions counselors screen black prospective students [Journal Article]. *Sociology of Race and Ethnicity*, *0*(0), 2332649218792579. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/2332649218792579 doi: 10.1177/2332649218792579

UCLA. (2019). *The ucla transfer alliance program* (Vol. 2019) (No. March 9). Retrieved from http://www.admission

.ucla.edu/Prospect/Adm_tr/ADM_CCO/tap.htm

University of Alabama. (2019). *Open records.* Retrieved 2019-01-13, from http://open.ua.edu/

University of California. (2017). *Uc board of regents approves policy on nonresident student enrollment.* Retrieved from https://www.universityofcalifornia.edu/press-room/uc-board-regents-approves-policy-nonresident-student-enrollment

Weber, K., Davis, G. F., & Lounsbury, M. (2009). Policy as myth and ceremony? the global spread of stock exchanges, 1980-2005. *Academy of Management Journal*, *52*(6).

Winston, G. C. (1999). Subsidies, hierarchy and peers: The awkward economics of higher education. *Journal of Economic Perspectives*, *13*(1), 13-36.

Winston, G. C. (2003). Differentiation among us colleges and universities. *Review of Industrial Organization*, *24*, 331-354. Retrieved from <GotoISI>://000223206000002

APPENDIX

A1 SUMMARY OF DATA COLLECTION AND QUALITY CHECKS. 58

A2 STATE REVENUE AND TUITION REVENUE PER FTE STUDENT, 2003-04 THROUGH 2016-17. 59

A3 PERCENT OUT-OF-STATE FRESHMEN AND FEDERAL GRANT RECIPIENT, 2003-04 THROUGH 2016-17. 60

A4 PERCENT BLACK 18-YO IN-STATE AND FRESHMEN ENROLLMENT, 2010-11 THROUGH 2016-17. 61

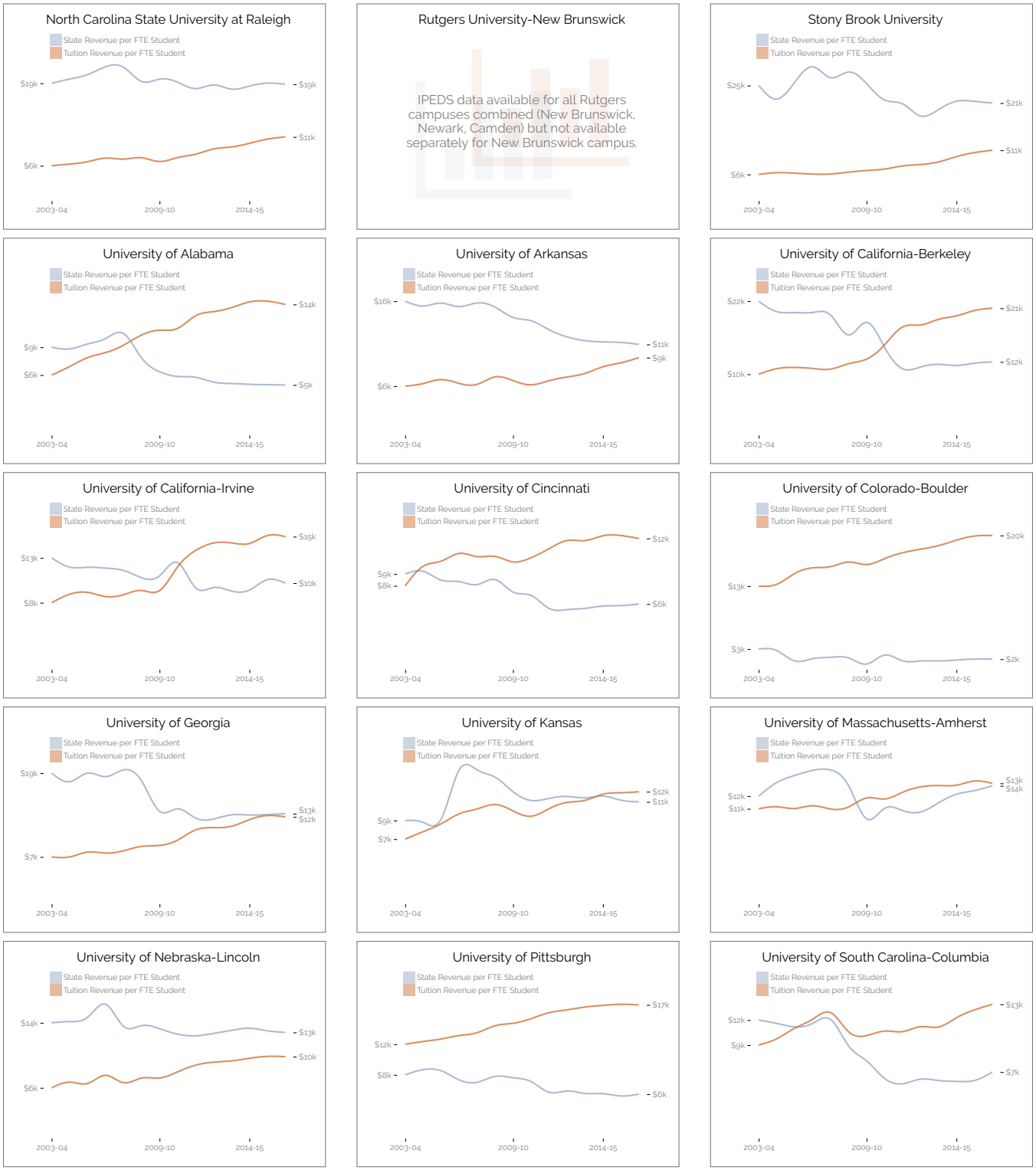
A5 PERCENT LATINX 18-YO IN-STATE AND FRESHMAN ENROLLMENT, 2010-11 THROUGH 2016-17. 62

A6 NUMBER OF HIGH SCHOOL GRADUATES IN STATE, 2000-01 THROUGH 2019-20. 63

TABLE A1: SUMMARY OF DATA COLLECTION AND QUALITY CHECKS.

	Is Scraped?	Scraped Data Checked?	Is Requested?	Requested Data Received?	Requested Data Checked?
NC State	Yes	Yes	Yes	Yes	Yes
Rutgers	Yes	Yes	Yes	Yes	Yes
Stony Brook	Yes	Yes	Yes	Yes	Yes
Alabama	Yes	Yes	Yes	No	-
Arkansas	Yes	Yes	Yes	No	-
UC Berkeley	Yes	Yes	Yes	No	-
UC Irvine	Yes	Yes	Yes	Yes	Yes
Cincinnati	Yes	Yes	Yes	Yes	Yes
CU Boulder	Yes	Yes	Yes	Yes	Yes
Georgia	Yes	Yes	Yes	Yes	Yes
Kansas	Yes	Yes	Yes	Yes	Yes
UMass	Yes	Yes	Yes	Yes	Yes
Nebraska	Yes	Yes	Yes	No	-
Pittsburgh	Yes	Yes	Yes	No	-
S.Carolina	Yes	Yes	Yes	No	-

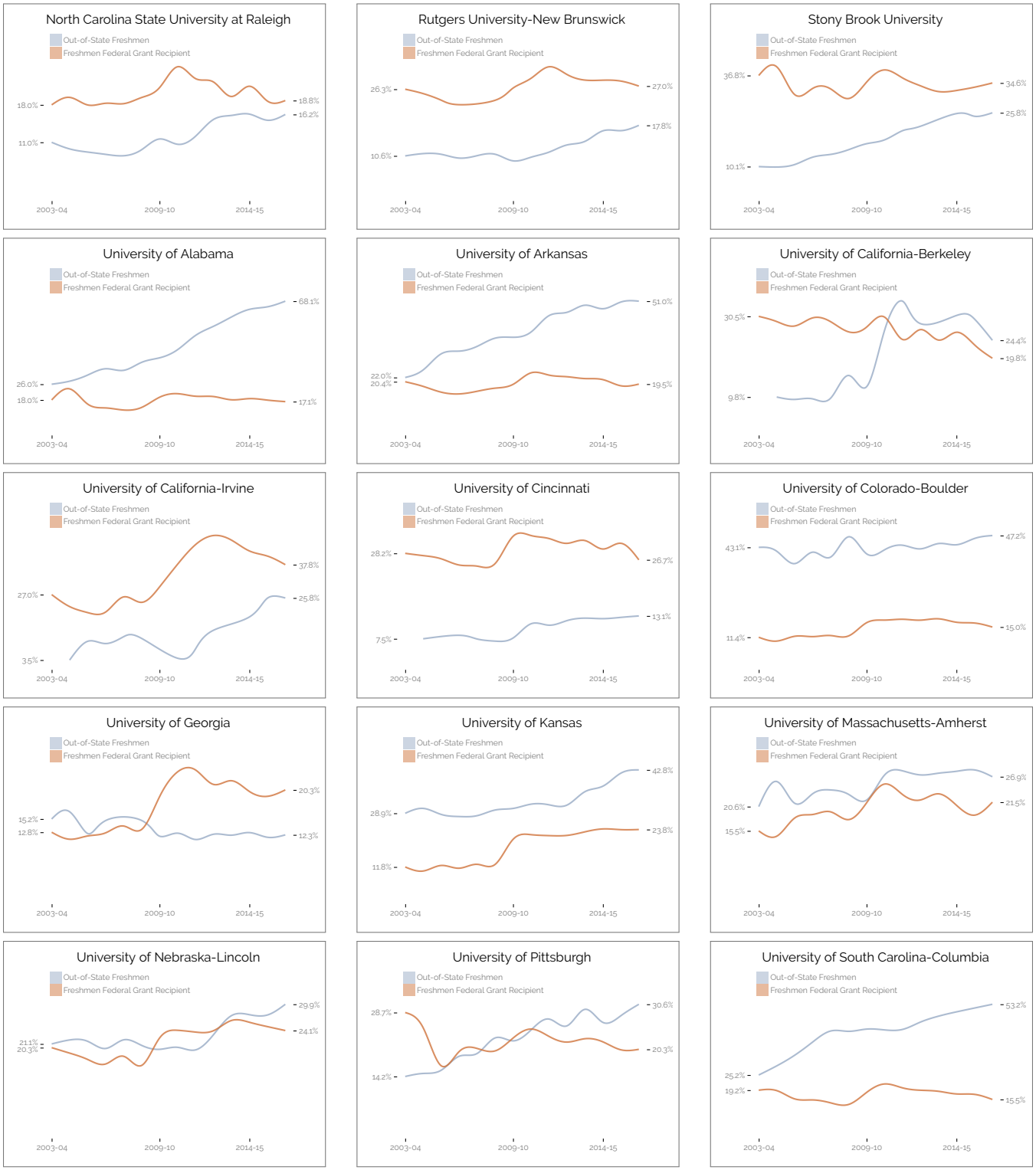
FIGURE A2: STATE REVENUE AND TUITION REVENUE PER FTE STUDENT, 2003-04 THROUGH 2016-17.



Data Sources: IPEDS 12-Month Enrollment Survey; IPEDS Finance Survey

Variable Definitions: FTE student count is based on reported full-time equivalent undergraduate enrollment; State revenue is the sum of state appropriations, operating grants and contracts, and non-operating grants; Tuition revenue is defined as revenue from tuition and fees after deducting discounts and allowances

FIGURE A3: PERCENT OUT-OF-STATE FRESHMEN AND FEDERAL GRANT RECIPIENT, 2003-04 THROUGH 2016-17.

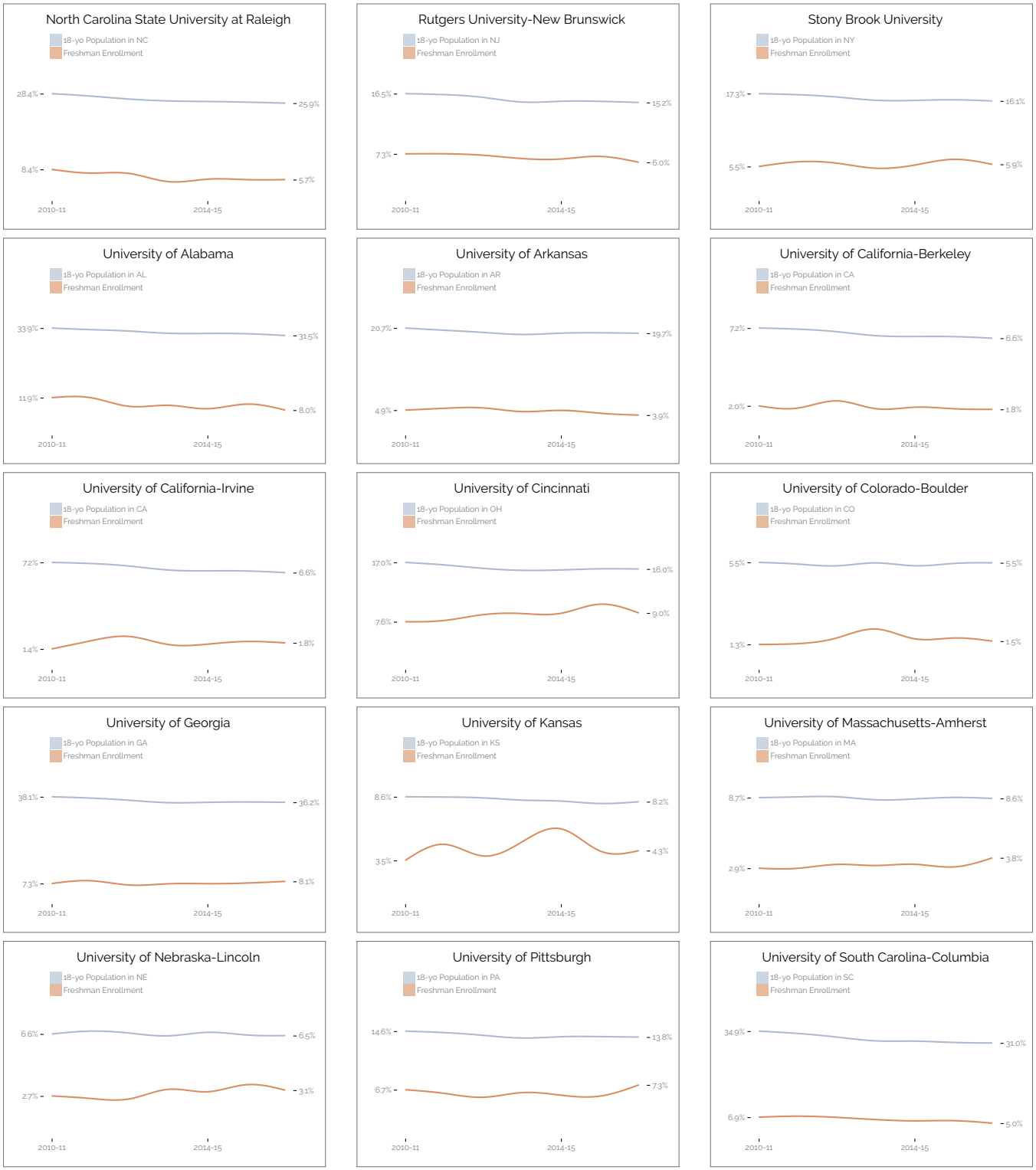


Data Sources: IPEDS Fall Enrollment Survey; IPEDS Student Financial Aid Survey

Variable Definitions: Percent out-of-state freshmen is calculated for first-time degree-seeking undergraduate students based on state of residence at time of admission; Percent federal grant recipient is defined as percent of full-time, first-time degree-seeking undergraduates in full-year cohort who are awarded federal grant aids

Note: 2007-08 federal grant recipient data for Rutgers University-New Brunswick is omitted due to concerns for data accuracy

FIGURE A4: PERCENT BLACK 18-YO IN-STATE AND FRESHMEN ENROLLMENT, 2010-11 THROUGH 2016-17.

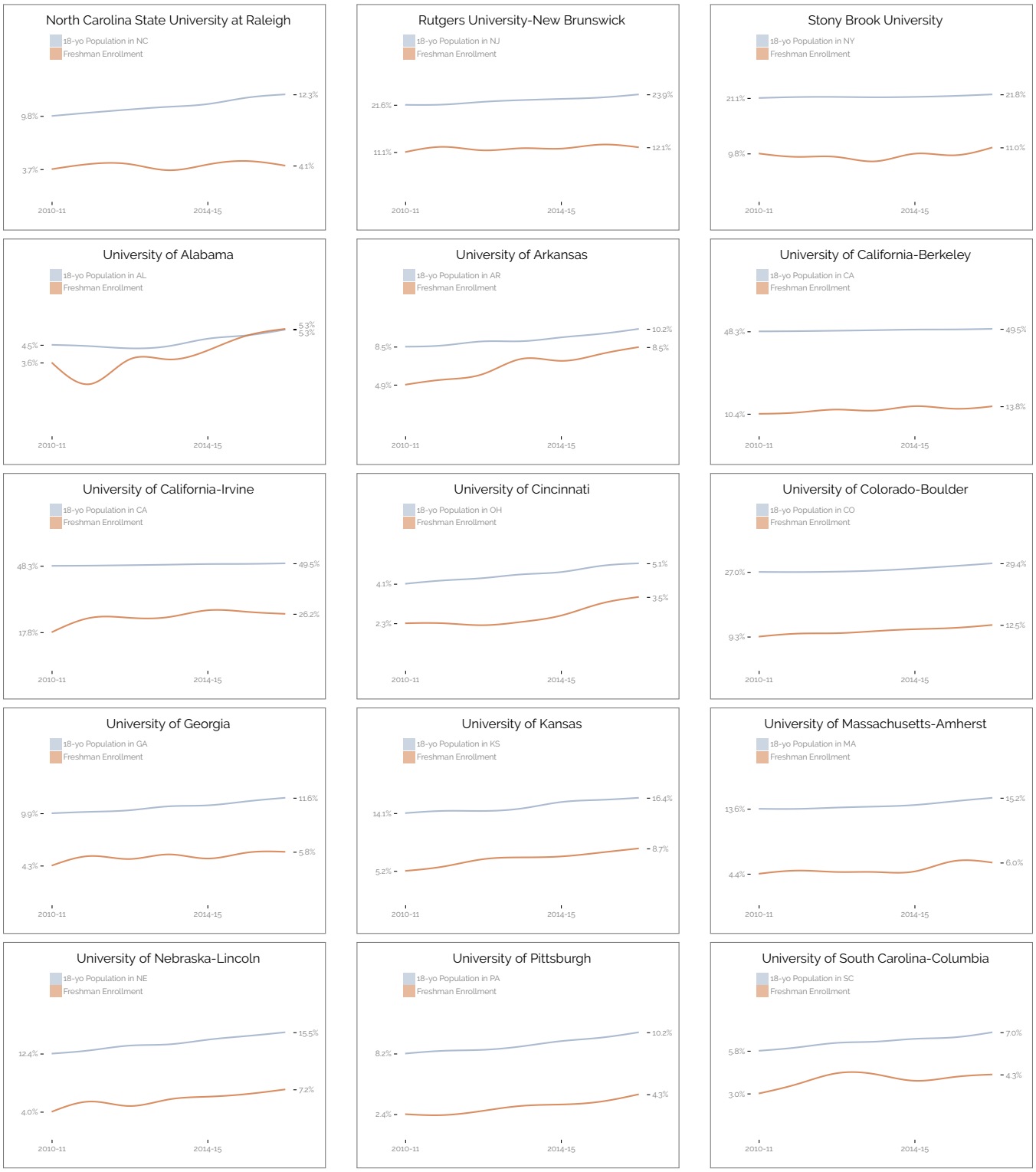


Data Sources: NIH National Cancer Institute; IPEDS Fall Enrollment Survey

Variable Definitions: Freshmen enrollment is defined as full-time and part-time first-time students

Note: NIH race categories are defined by origin (Hispanic, Non-Hispanic) and race (White, Black, American Indian/Alaska Native, Asian/Pacific Islander), while IPEDS categories include White, Black, Hispanic, Asian, Native Hawaiian/Pacific Islander, American Indian/Alaska, two or more races, unknown races, and nonresident alien; We count all race categories in the total when calculating the percentage for each data source

FIGURE A5: PERCENT LATINX 18-YO IN-STATE AND FRESHMAN ENROLLMENT, 2010-11 THROUGH 2016-17.



Note: We use the term "Latinx" to refer to the population of hispanic origin

FIGURE A6: NUMBER OF HIGH SCHOOL GRADUATES IN STATE, 2000-01 THROUGH 2019-20.

Data Sources: Western Interstate Commission for Higher Education
Variable Definitions: High school graduates may include graduates from any point of each acacdemic year, from fall through the summer
Note: Private high school data is only available on a biennial basis; Projected data for private high schools start from 2015-16 on and are produced based on data up to the 2010-11 academic year