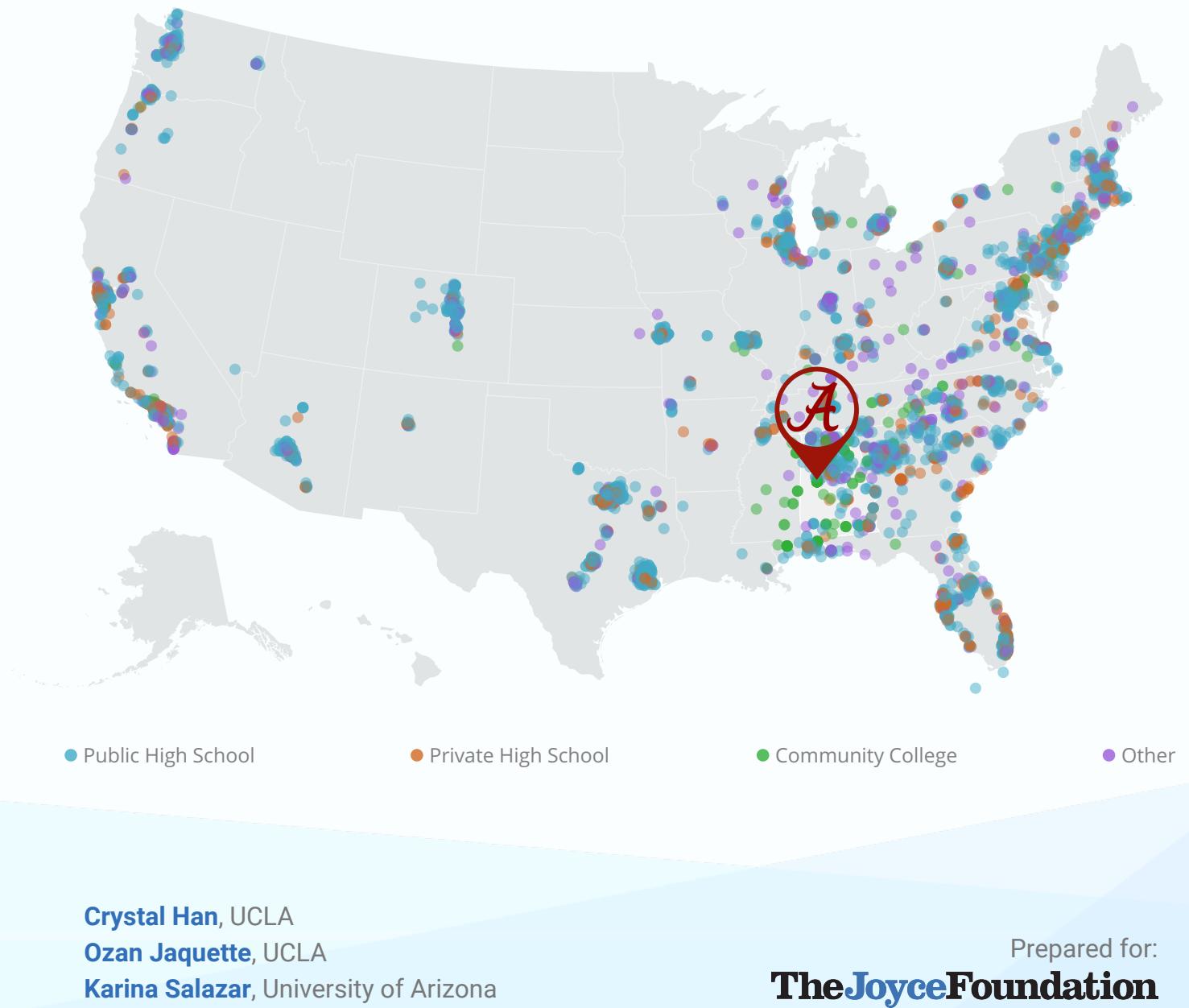


# RECRUITING THE OUT-OF-STATE UNIVERSITY

*Off-campus recruiting by public research universities*





## ACKNOWLEDGMENTS

We would like to gratefully acknowledge the **Joyce Foundation** for its support in this research investigating the off-campus recruiting patterns of public research universities. Knowing which student populations and communities are targeted by recruiting efforts can reveal insightful information about university enrollment priorities. The Joyce Foundation is a private, non-partisan foundation based in Chicago that supports policy research to advance racial equity and economic mobility for the next generation.

## 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 universities 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 stronger 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” ex-

pertise 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.

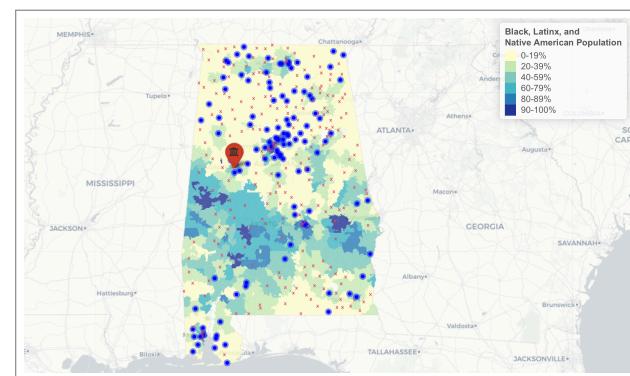
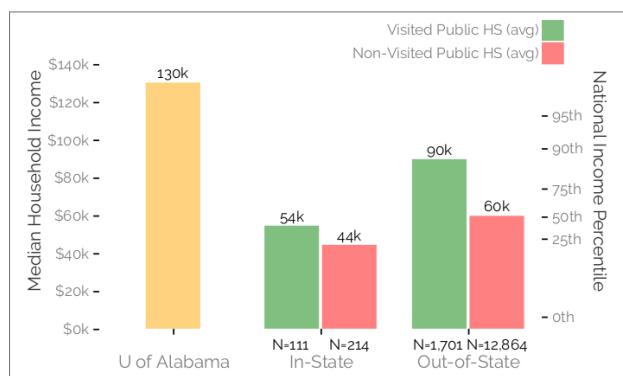
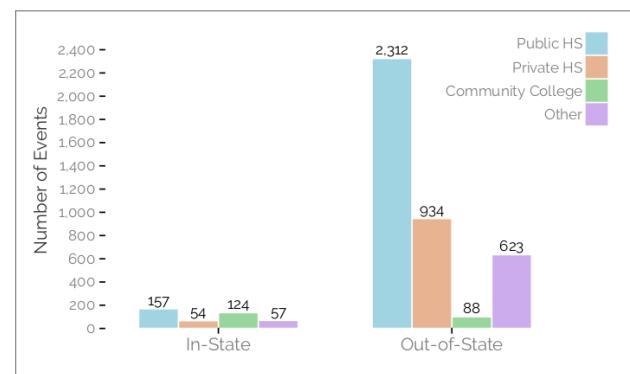
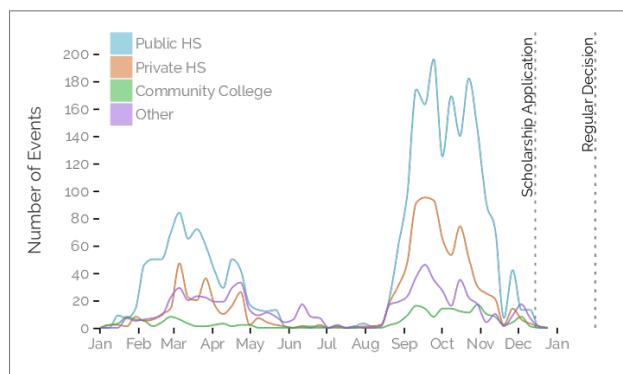
Figure 1 provides descriptive statistics about off-campus recruiting visits (e.g., visits to local high schools, community colleges, hotel receptions) by the University of Alabama in the 2017 calendar year. Admissions representatives made 4,349 off-campus recruiting visits. However, only 392 of these 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](#); [Des-](#)

[Jardins, 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 ([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 universities 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.<sup>1</sup> 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

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<sup>1</sup>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 in-

cluded 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

	<b>Sample (N=15)</b>	<b>Population (N=80)</b>
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

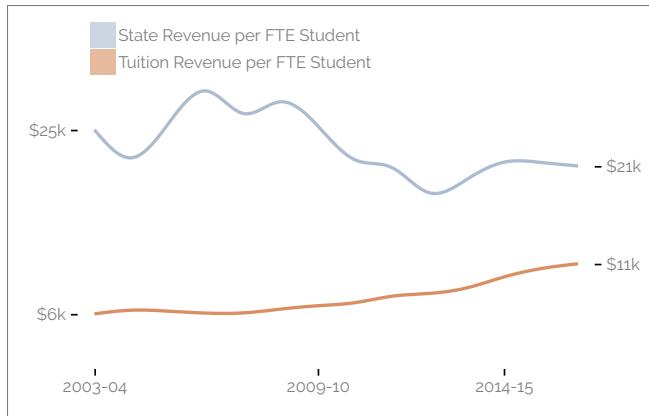
Our data collection has several limitations. First, off-campus visits encompasses only one university recruiting effort. Universities may also be recruiting students via other interventions (e.g., direct mailings, emails, specific outreach programs). Second, despite our best efforts to collect and triangulate 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

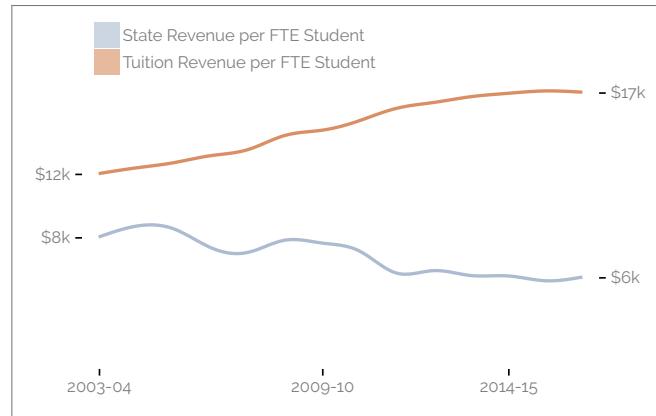


**FIGURE 3:** STONY BROOK REVENUES PER FTE STUDENT, 2003-04 THROUGH 2016-17.

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.

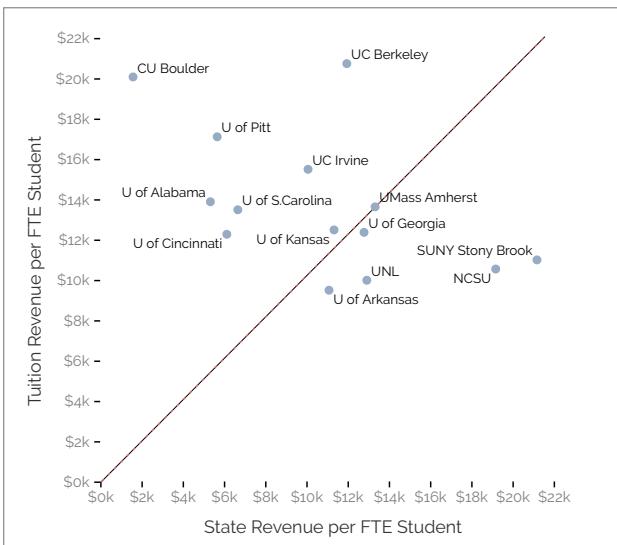
Appendix Figure A3 shows the percent of freshmen who are nonresident and the percent of freshmen who are federal grant recipients for all 15 universities from 2003-04 to 2016-17.<sup>2</sup> Many universities experienced significant nonresident enrollment growth, consistent with research showing that 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-

<sup>2</sup>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.

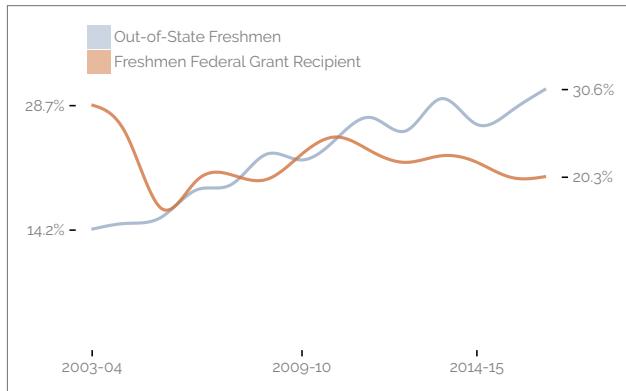


**FIGURE 4:** UNIVERSITY OF PITTSBURGH REVENUES PER FTE STUDENT, 2003-04 THROUGH 2016-17.

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.



**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.

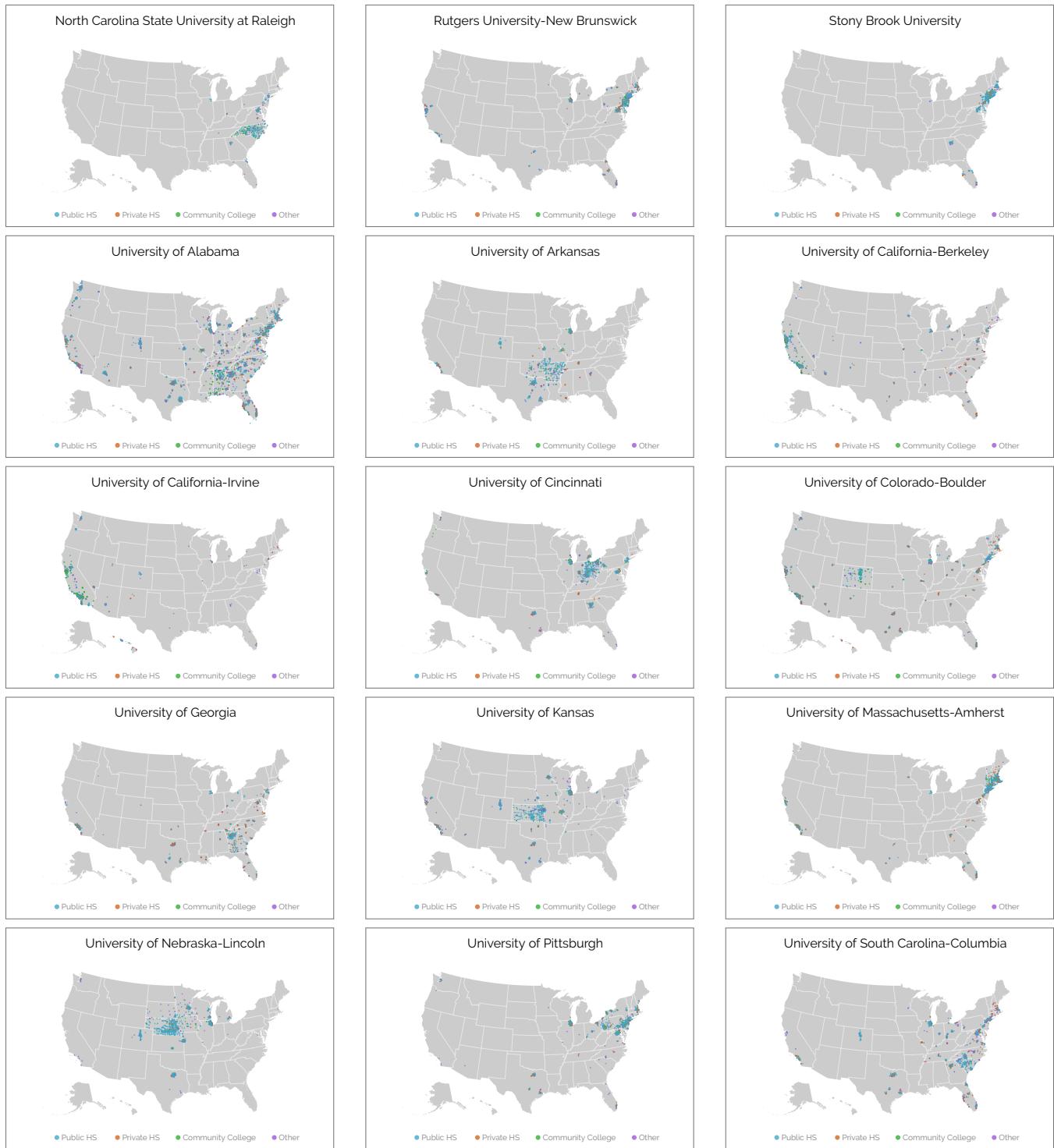
stand university enrollment priorities with respect to the iron triangle of enrollment management, our analyses focus on the income, race, and achievement characteristics of schools and communities that receive visits.

## 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 univer-

sities 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.<sup>3</sup>

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).

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<sup>3</sup>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.<sup>4</sup> 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-

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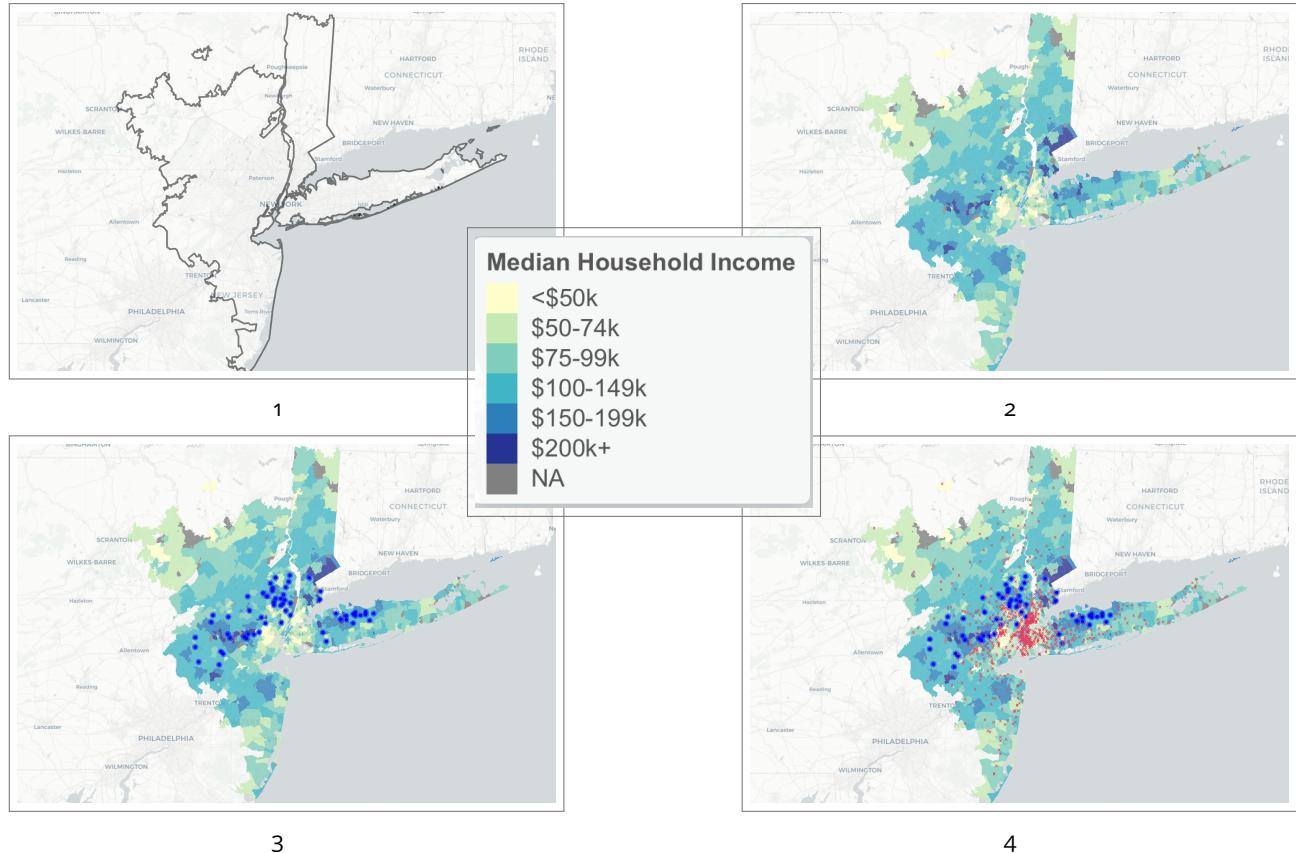
<sup>4</sup>Average median household income of age group 25-64 years olds in each zip code was used.

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

	<b>NC State</b>	<b>Rutgers</b>	<b>Stony Brook</b>	<b>Alabama</b>	<b>Arkansas</b>	<b>UC Berkeley</b>	<b>UC Irvine</b>
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit
Number of High Schools	70	5,185	445	6,635	407	3,613	1,711
Miles from University	339	437	717	1,003	196	506	831
Grade 12 Enrollment	403	201	428	214	332	215	384
Median Household Income (\$000)	\$121	\$67	\$113	\$66	\$110	\$66	\$60
Percent Free or Reduced Lunch	21.5	49.2	22.9	52.0	22.8	48.8	30.4
<b>Percent Enrollment by Race</b>							
Black, Latinx, Native American	28.7	37.1	26.2	45.6	24.0	37.0	30.3
White	58.7	57.2	57.1	48.2	64.7	58.0	59.9
Black	15.9	22.1	10.1	15.4	11.8	22.1	13.8
Latinx	12.6	14.7	15.9	29.6	12.0	14.6	16.1
Native American	0.2	0.3	0.2	0.6	0.2	0.3	0.4
Asian	9.7	3.4	13.7	3.9	9.0	2.8	6.7
Other Race	2.9	2.3	3.0	2.3	2.3	3.2	2.4
<b>School Type</b>							
0/1 is a Charter School	0.01	0.07	0.02	0.11	0.02	0.07	0.11
0/1 is a Magnet School	0.07	0.06	0.08	0.08	0.07	0.09	0.05
0/1 is a Regular School	0.91	0.87	0.90	0.81	0.90	0.84	0.91
<b>Locale</b>							
In a City	0.17	0.26	0.29	0.31	0.14	0.22	0.25
In a Suburb	0.64	0.35	0.64	0.31	0.73	0.39	0.58
In a Town	0.03	0.11	0.01	0.11	0.01	0.12	0.04
In a Rural Area	0.16	0.27	0.07	0.28	0.11	0.27	0.13

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

	<b>Cincinnati</b>	<b>CU Boulder</b>	<b>Georgia</b>	<b>Kansas</b>	<b>UMass</b>	<b>Nebraska</b>	<b>Pittsburgh</b>	<b>South Carolina</b>
	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit	Visit	Nonvisit
Number of High Schools	401	8,717	575	12,820	249	9,333	438	8,090
Miles from University	406	720	1,139	1,116	920	808	519	685
Grade 12 Enrollment	430	199	431	186	490	201	458	172
Median Household Income (\$000)	\$101	\$64	\$115	\$63	\$102	\$62	\$96	\$62
Percent Free or Reduced Lunch	28.3	50.9	20.5	49.5	22.6	51.2	26.1	49.6
<b>Percent Enrollment by Race</b>								
Black, Latinx, Native American	28.9	40.5	25.4	37.6	29.6	40.9	25.4	38.2
White	57.1	53.6	59.2	56.5	56.1	53.4	63.6	56.1
Black	14.6	16.7	6.6	14.9	10.3	17.1	9.8	11.7
Latinx	14.0	23.2	18.5	21.3	19.0	22.3	15.0	24.3
Native American	0.2	0.6	0.3	1.3	0.3	1.5	0.5	2.2
Asian	10.8	3.7	12.0	3.3	11.2	3.2	7.6	3.2
Other Race	3.2	3.4	2.2	2.7	3.1	2.6	3.4	2.5
<b>School Type</b>								
0/1 is a Charter School	0.03	0.10	0.03	0.11	0.05	0.10	0.01	0.12
0/1 is a Magnet School	0.11	0.06	0.09	0.05	0.12	0.06	0.03	0.03
0/1 is a Regular School	0.86	0.85	0.88	0.84	0.83	0.84	0.95	0.85
<b>Locale</b>								
In a City	0.25	0.27	0.32	0.25	0.41	0.24	0.33	0.22
In a Suburb	0.63	0.28	0.62	0.27	0.52	0.29	0.56	0.22
In a Town	0.03	0.13	0.01	0.14	0.00	0.13	0.03	0.16
In a Rural Area	0.09	0.32	0.05	0.34	0.07	0.34	0.08	0.40



**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 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.**

	<b>NC State</b>	<b>Rutgers</b>	<b>Stony Brook</b>	<b>Alabama</b>	<b>Arkansas</b>	<b>UC Berkeley</b>	<b>UC Irvine</b>
<b>Income (ref=&lt;\$50k)</b>							
\$50k-\$74k	-0.001 (0.002)	-0.011** (0.004)	-0.020** (0.007)	0.004 (0.004)	0.002 (0.004)	-0.003 (0.002)	-0.001 (0.002)
\$75k-\$99k	0.005 (0.005)	0.019* (0.008)	0.016 (0.013)	0.081*** (0.009)	0.044*** (0.010)	0.006 (0.004)	0.006 (0.004)
\$100k-\$149k	0.047*** (0.009)	0.173*** (0.014)	0.185*** (0.021)	0.207*** (0.014)	0.184*** (0.023)	0.060*** (0.009)	0.042*** (0.008)
\$150k-\$199k	0.166*** (0.047)	0.363*** (0.050)	0.433*** (0.041)	0.415*** (0.047)	0.066 (0.041)	0.193*** (0.045)	0.033 (0.020)
\$200k+	0.104 (0.077)	0.398*** (0.089)	0.482*** (0.120)	0.481*** (0.075)	0.398** (0.141)	0.241** (0.089)	0.005 (0.005)
<b>Black, Latinx, Native American Enrollment (ref=&lt;20%)</b>							
20-39%	0.001 (0.006)	-0.010 (0.010)	0.030*** (0.008)	-0.026** (0.008)	-0.004 (0.004)	-0.004 (0.004)	-0.004 (0.004)
40-59%	-0.012* (0.005)	-0.038*** (0.010)	-0.028 (0.016)	-0.011 (0.008)	-0.000004 (0.008)	-0.015*** (0.004)	0.002 (0.005)
60-79%	0.007 (0.008)	-0.048*** (0.011)	-0.054** (0.017)	-0.047*** (0.017)	-0.007 (0.009)	-0.013** (0.009)	-0.004 (0.005)
80-89%	0.005 (0.009)	-0.070*** (0.011)	-0.078*** (0.020)	-0.042*** (0.011)	-0.022* (0.011)	-0.021*** (0.009)	-0.011* (0.005)
90%+	-0.0004 (0.005)	-0.075*** (0.010)	-0.087*** (0.015)	-0.073*** (0.008)	-0.026*** (0.008)	-0.027*** (0.008)	-0.011*** (0.004)
<b>Number of 12th Grade Enrollment (ref=&lt;50)</b>							
50-99	-0.003 (0.002)	-0.001 (0.004)	0.014 (0.009)	0.006 (0.004)	0.014*** (0.004)	0.001 (0.002)	0.006*** (0.002)
100-199	-0.001 (0.004)	-0.001 (0.006)	0.016 (0.011)	0.015** (0.005)	0.032*** (0.006)	-0.0004 (0.002)	0.009*** (0.003)
200-299	-0.012* (0.005)	0.030*** (0.010)	0.065*** (0.016)	0.075*** (0.010)	0.043*** (0.009)	0.001 (0.001)	0.018*** (0.005)
300-399	0.010 (0.008)	0.080*** (0.014)	0.085*** (0.019)	0.162*** (0.013)	0.078*** (0.014)	0.013* (0.007)	0.031*** (0.007)
400-499	0.008 (0.011)	0.086*** (0.016)	0.138*** (0.025)	0.198*** (0.016)	0.105*** (0.018)	0.040*** (0.009)	0.031*** (0.009)
500+	0.016 (0.013)	0.125*** (0.017)	0.125*** (0.026)	0.201*** (0.017)	0.124*** (0.018)	0.059*** (0.012)	0.075*** (0.013)
Constant	0.020* (0.008)	0.059*** (0.009)	0.136*** (0.016)	0.073*** (0.010)	0.080*** (0.012)	0.009 (0.007)	0.011 (0.007)
<b>Observations</b>	5,255	7,080	4,020	14,966	6,630	11,071	7,595
<b>Akaike Inf. Crit.</b>	-8,194,420	-1,519,028	-795,540	4,098,966	-2,687,272	-15,443,480	-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	SCarolina
<b>Income (ref=&lt;\$50k)</b>								
\$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*** (0.013)	0.178*** (0.013)	0.191*** (0.014)	0.153*** (0.012)	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* (0.049)	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)
<b>Black, Latinx, Native American Enrollment (ref=&lt;20%)</b>								
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)	-0.027*** (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)
<b>Number of 12th Grade Enrollment (ref=&lt;50)</b>								
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)	0.006 (0.005)	-0.001 (0.003)	0.036*** (0.003)	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)	0.012* (0.004)	0.076*** (0.010)	0.077* (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 (0.014)	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*** (0.012)	0.012 (0.012)	0.190*** (0.024)	0.096*** (0.018)	0.058*** (0.015)
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)
<b>Observations</b>	9,118	13,395	9,582	8,528	9,293	6,423	7,749	12,086
<b>Akaike Inf. Crit.</b>	-4,444.550	-8,207.670	-3,137.670	-3,973.770	-3,464.868	-1,616.831	-2,627.812	-5,393.591

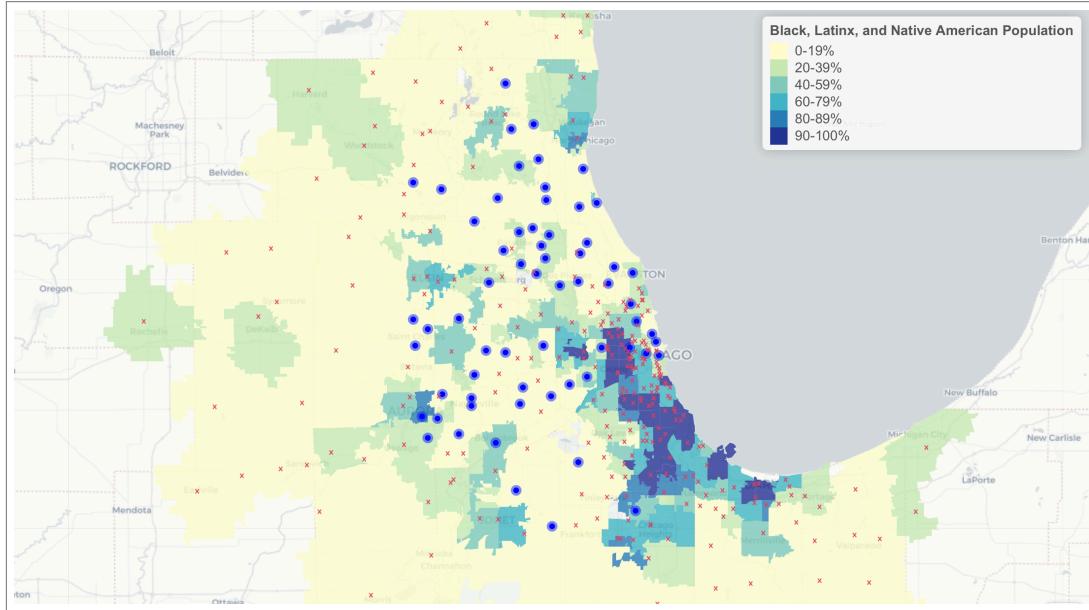


FIGURE 9: UNIVERSITY OF PITTSBURGH IN CHICAGO.

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, and 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).

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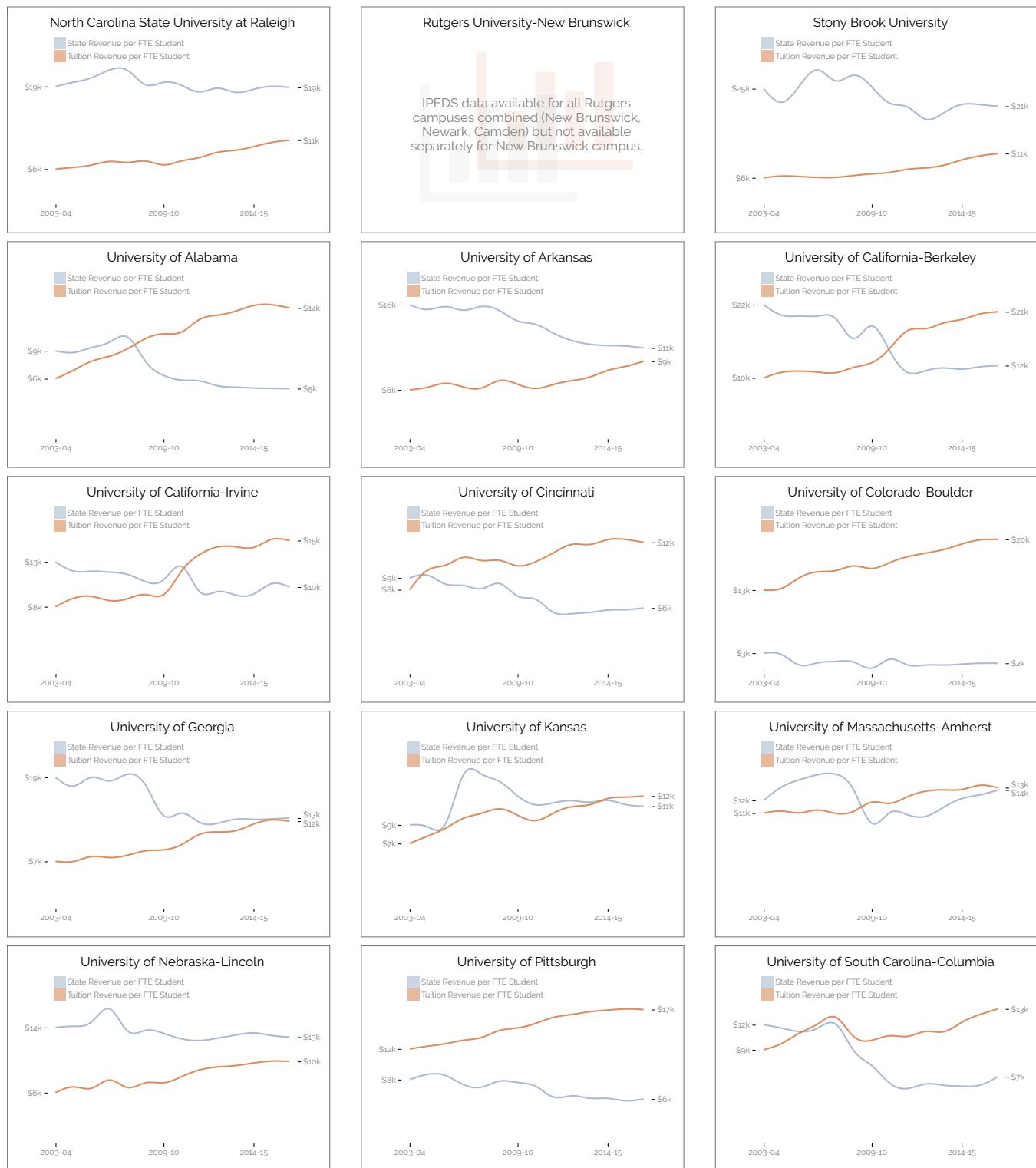
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## APPENDIX

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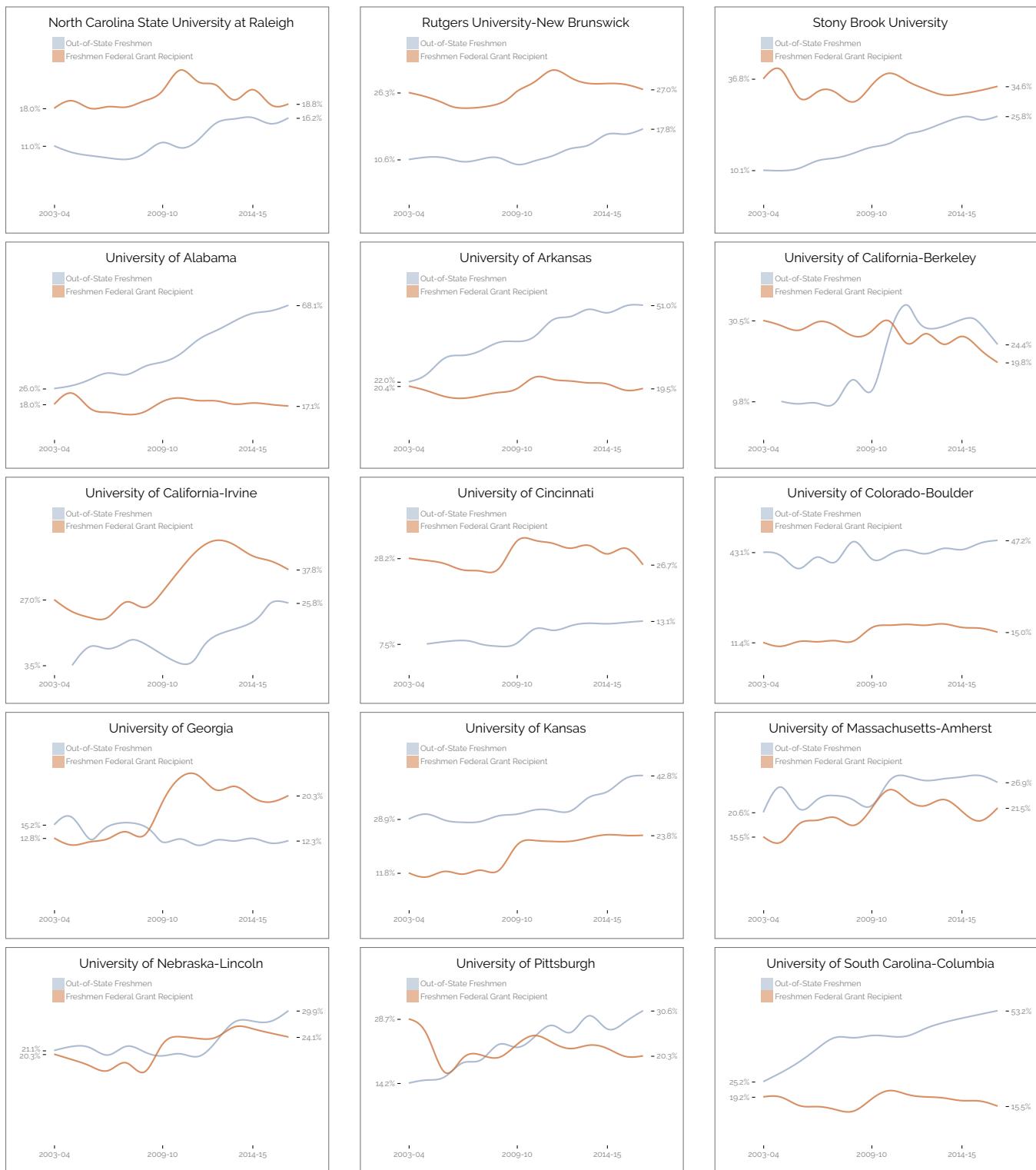
**TABLE A1:** SUMMARY OF DATA COLLECTION SOURCES AND QUALITY CHECKS.

	NC State	Rutgers	Stony Brook	Alabama	Arkansas	UC Berkeley	UC Irvine	CU Cincinnati	Boulder	Georgia	Kansas	UMass	Nebraska	Pittsburgh	S.Carolina
<b>Web-scraped data collection</b>															
Scraped data on off-campus recruiting events?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Manually checked each scraped event?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<b>Public records request data collection</b>															
Requested data from Enrollment Management VP from university?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Received data from Enrollment Management VP?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
State law allows nonresidents to request from public universities?	Y	N	Y	Ambiguous	N	Y	Y	Y	N	Y	Y	Y	Y	N	Y
Made public records request to university?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Received public records data from university (by 3/8/2019)?	Y	Y	Y	Y	N	N	Y	Y	-	Y	Y	Y	N	N	N
Manually checked each visit from requested data?	N	Y	Y	-	-	-	Y	Y	Y	Y	Y	-	-	-	-
<b>Data used in report analyses</b>															
Web-scraped data is primary data source?	Y	N	N	Y	Y	Y	N	N	N	N	N	N	Y	Y	Y
Public records data used as primary data source?	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	N

**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

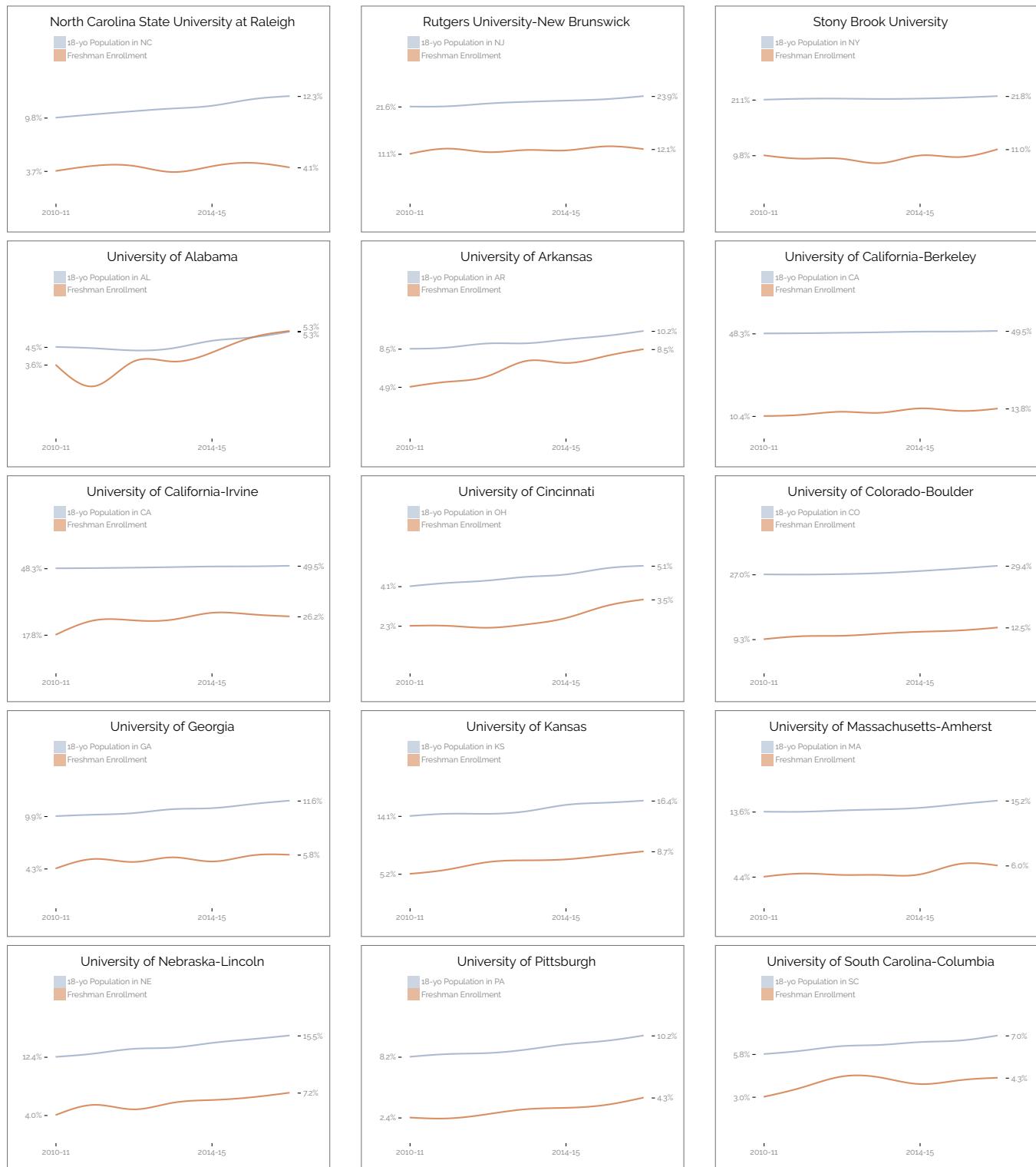
**Note:** 2007-08 federal grant recipient data for Rutgers University-New Brunswick is omitted due to concerns for data accuracy

**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 academic 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

