Student List Policy

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1 Executive Summary

Colleges and universities identify prospective students by purchasing "student lists" from College Board, ACT, and other vendors. Student lists contain the contact information of prospective students that meet the criteria (e.g., test score range, high school GPA, zip codes) specified when buying the list. Sometimes referred to as "names," student lists are a fundamental input for undergraduate recruiting campaigns, which target individual prospects by mail, email, and on social media.

Recent research suggests that student lists have surprisingly large effects on college access for millions of students each year. Howell, Hurwitz, Mabel, & Smith (2021) compared SAT test-takers who opted into the College Board Student Search Service – allowing accredited institutions to "licence" their contact information – to test-takers who opted out. For students with the same SAT score, parental education, race/ethnicity, sex, and high school, 41.1% of students who participated in Search attended a 4-year college compared to 32.8% of students who opted out, an 8.3 (`=41.1-32.8`) percentage point difference and a 25.3 (`=(41.1-32.8)/32.8`) percent change. Furthermore, this percent change was higher for students from populations that have historically been excluded from higher education.

Due the structure of the U.S. market for higher education, student lists are a critical match-making intermediary connecting students and institutions. Students want to attend college but do not know all their options, where they would be admitted, and how much it will cost. Universities have a financial incentive to provide access because student aid and household savings follow students to whichever Title IV institution they enroll in. However, universities do not know who the prospects are, where they are, or how to contact them. Student lists overcome the problem faced by universities, providing the contact information of prospects who satisfy their criteria.

Policymakers have ignored student lists for half a century, ever since College Board launched the Student Search Service in 1972. Now, the student list business is undergoing a radical transformation that threatens to cause a college access crisis. This report as part of a broader project on the student list business. Jaquette, Salazar, & Martin (2022) describe the market for student list data and how it is changing. Salazar, Jaquette, & Han (2022) analyze student lists purchased by public universities. This report discusses policy concerns and policy solutions.

Policy Concerns. After describing The Student List Business, we raise Policy Concerns about the business model to date, which has been dominated by College Board and ACT, and we raise concerns about the future business model, which will be dominated by for-profit vendors.

We argue that the design of College Board and ACT student list products make it likely that students from communities of color, low-income communities, and rural communities are systematically excluded from student list purchases. We discuss two broad sources of exclusion: search filters; and who is included in the underlying database.

Search filters enable universities to control which prospects are included and excluded from a student list purchase. A university might purchase all prospects from the 2023 high school graduating class, who scored between 1200 and 1400 on the PSAT, have a GPA greater than 3.5, and live in a zip code specified by the university. Several commonly used search filters appear problematic. For example, filtering based on zip codes is problematic because zip codes are highly correlated with race and income. It also conflicts with the ideal that educational opportunity should not depend on where you live. Research universities often search for STEM majors by filtering on AP exam scores, but who attends high schools with widespread access to AP classes? More recently, in the name of "efficient" buys of "right-fit" prospects, College Board and ACT developed search filters based on statistical models of the past behavior of nearby or "similar" peers. For example, College Board "geodemographic" filters enable universities to target prospects based on the historical college-going behavior of students from their high school or neighborhood.

The second source of exclusion is that College Board and ACT student list products generally exclude non-test-takers from the underlying database. For decades, test-taking rates have differed by race, class, and geography, leading to systematic inequality in which prospects are contacted by universities. Looking foward, Jaquette et al. (2022) argue that the test-optional movement will cause fewer prospective college students to take the SAT/ACT, potentially leading to a crisis in college access because universities will be unable to contact prospective students.

Recent market dynamics raise additional concerns. Advances in technology yielded new sources of student list data – including college search engine websites and college planning software purchased by high schools – and new vendors. Over the past five years, a surge in acquisitions has transformed the market for student list data. PowerSchool, a K-12 software firm, and EAB, an enrollment management consulting firm, are poised to acquire market share ceded by College Board and ACT due to test-optional admissions. Whereas College Board and ACT previously sold names to any accredited university at a per-prospect price, these firms have learned to maximize profit by controlling a unique database of prospects and then restricting access to institutions that pay for subscription and/or consulting services. Because student lists are an important mechanism for college access, policymakers should investigate how the emerging for-profit business model affects students and universities.

Regulating the Student List Business. We argue that the major policy concerns are about products and suppliers. Therefore, rather than regulating the behavior of customers (universities) that buy student lists, regulations should primarily focus on student list products

and suppliers.

The Higher Education Act – enforced by The Department of Education (herein the Department) – is incapable of regulating the student list business. The HEA primarily regulates Title IV postsecondary institutions, which are the student list customers. The HEA is largely uninterested in "third-party servicers" (with the exception of lenders and loan servicers) because it remains fixated on outdated conceptualization of the higher education industry. Third-party providers now dwarf the size of for-profit direct providers. As long as the Department and the HEA abdicate responsibility for regulating the broader Ed Tech sector, they will remain incapable of regulating the student list business.

Regulating the Student List Business discusses federal regulations of the student list business in three parts: Regulating Products, Regulating Suppliers, and Regulating Customers.

Regulating Products focuses on the Federal Trade Commission (FTC), which has authority to regulate student list products. The FTC has become concerned about systematic exclusion caused by products sold by "marketing data brokers." Student list products clearly fall within FTC policy concerns. For example, consider the Federal Trade Commission (2016a) concern about technologies that "create new justifications for exclusion" (p. 10) against the new College Board "Interest in My Peers" tool, which enables institutions to "connect with students who are likely to enroll because they've demonstrated interest in similar institutions" (College Board, 2022d). Section 5 of the FTC Act prohibits "unfair" practices and applies to all companies engaging in interstate commerce. We argue that particular aspects of student list products (e.g., College Board geodemographic search filters) satisfy all three criteria of unfair practices. We recommend that the FTC investigate student list products.

Regulating Suppliers discusses regulations that target organizations rather than products. We raise two questions that merit additional scrutiny from legal experts. First, do student list vendors meet the criteria to be regulated as "consumer reporting agencies" under the Fair Credit Reporting Act? Consumer reporting agencies sell information about consumers that relates to the extension of credit (e.g., loans). Our logical argument is that the "enrollment funnel" begins by purchasing the contact information of prospects. The enrollment funnel ends ends by offering financial aid packages, sometimes including loans, with the goal of converting admits to enrolled students.

Second, we ask whether moves by EAB to become a supplier of names is negatively affecting competition in the market for enrollment management consulting. As context, universities hire enrollment management consulting firms for advice and implementation of recruiting strategy. Consultancies purchase student lists on behalf of universities, but they do not have proprietary control over unique sets of names. However, in 2020 EAB acquired Cappex, a college search website reportedly used by 1.5 million students annually. In 2021, PowerSchool agreed to make EAB the "exclusive reseller" of the Intersect recruiting platform. Intersect enables universities to send targeted ads to the reported 10 million students who use Naviance for college planning. In turn, EAB re-bundled Cappex and Intersect – alongside other acquisitions – into new software-as-service products like Enroll360. Universities that wish to recruit prospects contained within these software-as-service products face an incentive to contract with EAB, which may hurt the ability of other enrollment consulting firms to

compete.

Regulating Customers discusses HEA regulations that target Title IV institutions, the primary customers of student lists. Aside from reporting requirements, the HEA and the Department are presently incapable of regulating student list purchases by Title IV institutions.

Public Option. Regulations cannot overcome the fundamental problem that student list products are oriented to university enrollment goals because universities are the paying customers for student lists. We propose a public option student list product oriented around the goal of equality of opportunity for students.

Our idea is based on the example of national voter databases created by U.S. political parties. The basic input for national voter databases is voter files collected by state and local governments, which are essentially free public records. By contrast, the basic inputs for student lists (e.g., contact information, academic achievement) are proprietary, with College Board charging $0.50 per name in 2021. Paradoxically, universities value search filters that facilitate micro-targeting of prospects only because names are so expensive.

High school administrative data from statewide longitudinal data systems can be the basis for a student list product. We propose a student-list product developed by a consortium of states. Students/parents could opt in or out. For students who opt in, their "names" would be provided to eligible postsecondary institutions for free, eliminating the incentive for filters that enable institutions to purchase some prospects but not others.

2 Introduction

Colleges and universities identify prospective students by purchasing "student lists" from College Board, ACT, and other vendors. Student lists contain the contact information of prospective students who meet the criteria (e.g., test score range, high school GPA, zip codes) specified by a college in a student list purchase. Sometimes referred to as "names," student lists are a fundamental input for undergraduate recruiting "campaigns," which target individual prospects by mail, email, and on social media.

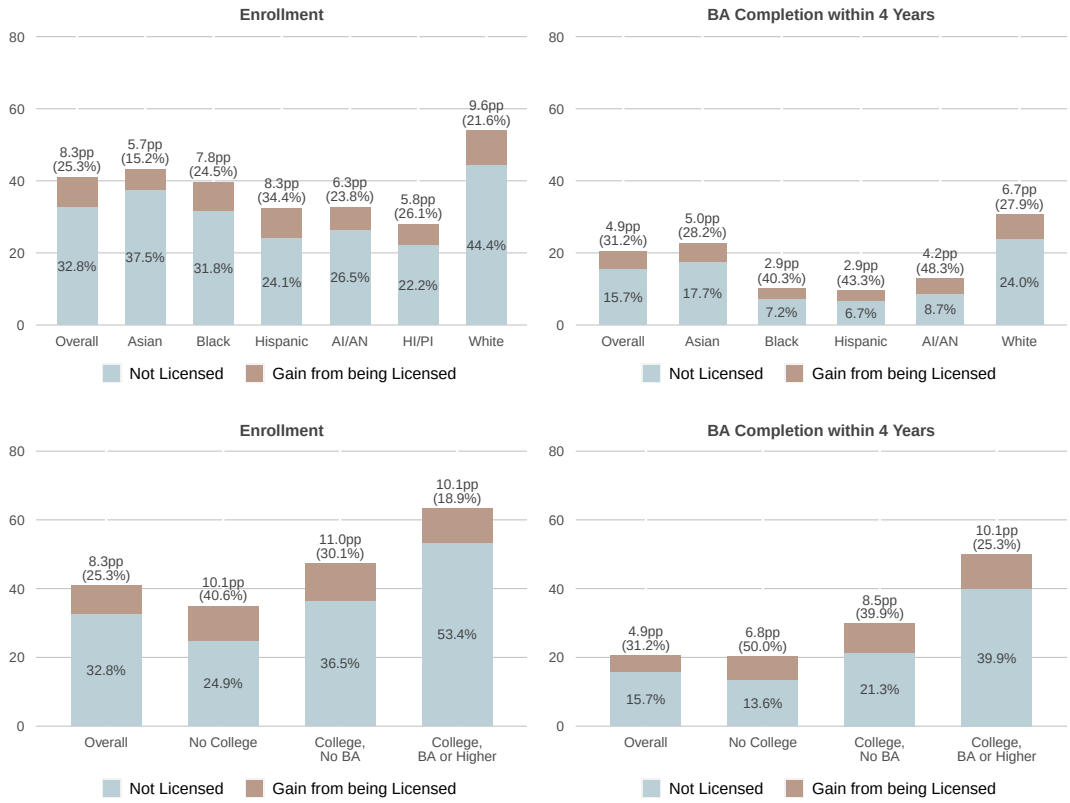
Student outcomes. Recent research suggests that student lists have surprisingly large effects on college access – and in turn degree completion – for millions of students each year. Howell et al. (2021) compared SAT test-takers who opted into the College Board Student Search Service – allowing accredited institutions to "licence" their contact information – and test-takers who opted out, after controlling for covariates. Figure 1 reproduces the main results. For students with the same values of SAT score, parental education, race/ethnicity, sex, high school graduation year, and who attended the same high school, 41.1% of students who participated in Search attended a 4-year college compared to 32.8% of students who opted out, representing an 8.3 (`=41.1-32.8`) percentage point difference and a 25.3 (`=(41.1-32.8)/32.8`) percent change in the relative probability of attending a 4-year college (for a similar analysis of ACT's Educational Opportunity Service (EOS) see Moore (2017)).

Figure 1 shows that participating in Search was associated with a larger percent change in the probability of attending a 4-year institution for students who identified as Black

(24.5%=(39.6-31.8)/31.8), Latinx (34.4%), American Indian or Alaska Native (23.8%), and Native Hawaiian or Pacific Islander (26.1%) than it was for students who identified as White (21.6%) or Asian (15.2%). Similarly, the percent change in the probability of attending a four-year college was higher for students whose parents did not attend college (40.6%) than it was for students whose parents had a BA (18.9%).

Given that the probability of graduating is affected by which institution a student attends (e.g., Long & Kurlaender, 2009; Melguizo, 2008), student lists may also affect degree completion through their effect on initial postsecondary institution. Howell et al. (2021) analyzed the four-year BA degree completion rates of SAT test-takers from the 2015 and 2016 high school graduation cohorts. Figure 1 shows that 20.6% of students who participated in Search obtained a BA in four years compared to 15.7% of students who opted out, representing a 31.2% (=(20.6-15.7)/15.7) increase in the relative probability of graduation. Furthermore, the relative increase in the probability of obtaining a BA was higher for Black (40.3%), Hispanic (43.3%), and Native American/Alaska Native students (48.3%) than it was for White (27.9%) and Asian (28.2%) students. The relative increase was also higher for students whose parents did not attend college (50.0%) than it was for students whose parents had a BA (25.3%).

Figure 1: Student Search Service and four-year college enrollment/completion



Notes: AI/AN = American Indian or Alaska Native. HI/PI = Hawaiian or Pacific Islander. Sample for enrollment outcomes is all SAT takers in the 2015–2018 high school graduation cohorts. Sample for completion outcomes is students in the 2015–2016 cohorts. Results are estimated from regressions that include student-level controls for: sex, race/ethnicity, SAT score, parental

education level, last Student Search Service opt-in status, graduation cohort, and high school fixed effects. All differences between licensed versus non-licensed students are statistically significant at the 1% level.

The U.S. market for higher education. Although the results above cannot be considered causal, the magnitude of these findings are huge even after including a strong set of control variables. How could student lists be so important for college access in the U.S.? The answer lies in the structure of the higher education market and the role played by federal financial aid.

U.S higher education is a market-based system consisting of a mix of providers – public, private non-profit, for-profit – in which the federal government takes a "steer don't row" approach, using subsidies and regulations to encourage providers to achieve government goals around college access and degree completion. Aside from research funding, the federal government subsidizes higher education primarily by providing Title IV grants and loans to students. These funds follow students to whichever Title IV postsecondary institutions they attend. From the perspective of Title IV institutions, the competition to enroll students is akin to a voucher system; revenue from tuition and room and board – composed of household savings and grants and loans from federal, state, and private sources – follows students to whichever institution they enroll in. Thus, postsecondary institutions have a financial incentive to provide access for students.

In this market-based system, student lists serve as a match-making intermediary connecting institutions to prospective students. Beyond the basic goal of filling classrooms with students, universities pursue a mix of broad enrollment goals (e.g., academic profile, racial diversity), while also meeting the needs of various campus constituencies (e.g., College of Engineering needs majors, marching band needs players) (Stevens, 2007). Universities cannot realize these goals solely from prospects who contact the university on their own. They must find prospects who can be convince them to apply. However, universities don't know who they are, where they are, or how to contact them. Student lists overcome the problem faced by universities, providing the contact information of prospects who satisfy their criteria. Student lists can also help overcome problems faced by students – what are their college options, where would they be admitted, how much would it cost – by enabling interested universities to contact them. But in practice, student list products are oriented to university enrollment goals rather than student opportunity goals because universities pay for the lists.

The market for student list data. For the past 50 years, the college access process has substantially depended on students taking the SAT/ACT college entrance exams. Once leading public and private universities adopted the SAT/ACT as an admissions requirement, others followed suit because the test had become a de facto requirement for "legitimate" universities. In turn, high school students who wanted to attend a 4-yr college were compelled to take the SAT or the ACT, creating unparalleled databases of prospective students. College Board created the Student Search Service in 1972 (Belkin, 2019) – ACT later created the Educational Opportunity Service – and the testing organizations have dominated the student list business ever since.

The 21st Century market for student list data has been surprisingly dynamic, marked by advances in technology, new sources of student list data, and entry by for-profit interests.

In the 2000s, firms building college search engines (e.g., Scholarships.com) and niche social network platforms (e.g., Zinch) promised greater competition. Starting in the 2010s, however, the market became increasingly concentrated because of a surge in acquisitions. Looking forward, the test-optional movement threatens to de-institutionalize the SAT/ACT college entrance exam, eroding the coverage of College Board and ACT student list products. Large enrollment management consulting firms – particularly EAB – and firms providing software to high schools – particularly PowerSchool – are poised to acquire market share ceded by College Board and ACT. These firms have learned to maximize profit by controlling unique databases of prospects and building software-as-service products around these databases, and only universities that pay for subscription/consulting services have access to these prospects.

Policy concerns. The student list business poses concerns for college access today and in the future. The College Board and ACT student list products, which dominate the market today, systematically exclude underrepresented student populations in two ways. First, only test-takers are included in the underlying student list databases, but test-taking rates differ by race/ethnicity and socioeconomic status. Second, student list products utilize "search filters" (e.g., test score range, GPA, zip-code, intended major) to control which prospects are included/excluded in a student list purchase. Over the past decade, College Board and ACT have added new search filters that enable universities to make "efficient" name buys that target "right fit" prospects. For example, College Board "geodemographic" filters target prospects based on the past behavior of students from their high school and their neighborhood. We argue that search filters that facilitate micro-targeting contribute to systematic exclusion of students from communities color, low-income communities, and rural communities.

Looking forward, the test-optional movement will erode the College Board and ACT student list businesses, creating the unintended consequence of a college access crisis. Although the test-optional movement increases equity in the process of college *admissions*, these exams have been central the broader process of college *access*. A by-product of these exams, student lists are an essential mechanism that connects Title IV institutions to prospective students. In the coming years, the number of college-going students who take the SAT or ACT will fall precipitously, eroding the coverage of College Board and ACT student lists. Without the emergence of viable alternatives, we anticipate a crisis in college access because Title IV institutions will be less able to connect with prospective students. Unfortunately, the for-profit interests positioned to wrest control of the market for student list data are even more problematic than College Board and ACT because these firms funnel prospective students only to universities that have paid for consulting services.

Policy solutions. Policymakers must act quickly to fix systemic inequities in the current system and to avoid a college access crisis born of good intentions. This policy report develops the foundation for a multi-faceted reform agenda. First, policymakers must understand how the student list business works and how it is changing, which are the goals of The Student List Business section. Second, Regulating the Student List Business explores regulations for student list products, student list suppliers, and student list customers (i.e., universities). Regulation is necessary but not sufficient. The underlying problem is that the student list business is oriented to university enrollment goals rather than equality of opportunity for

students. Therefore, the Public Option section proposes a student list product based on state administrative data that would avoid the exclusionary practices of private sector products by providing prospect names (those who opt in) to universities for free.

3 The Student List Business

This section provides background information to inform a discussion about policy solutions. We situate student lists vis-a-vis the process of recruiting students and vis-a-vis broad approaches that industries use to identify customers. We describe student list products sold by College Board and ACT (e.g., how universities buy lists, what information they contain) and we discuss recent dynamics in the market for student list data, including new data sources and market entry by for-profit firms.

3.1 The Enrollment Funnel

The "enrollment funnel" – depicted in Figure 2 – is a conceptual visualization used in the enrollment management industry that describes stages in the process of recruiting students (e.g., prospects, leads, inquiries, applicants, admits, and enrolled students). "Prospects" are all desirable potential students. "Leads" are prospects whose contact information has been obtained. "Inquiries" are prospects that contact your institution and consist of two types: first, inquiries who respond to an initial solicitation (e.g., email) from the university; and second, "student as first contact" inquiries who reach out to the university on their own, for example, by sending ACT scores to the institution or by taking a "virtual tour" that records IP address. Applicants consist of inquiries who apply plus "stealth applicants" who do not contact the university before applying.

The enrollment funnel is based on the "marketing funnel," in which "marketers cast a broad net to capture as many leads as possible, and then slowly nurture prospective customers through the purchasing decision, narrowing down these candidates in each stage of the funnel" (Skyword, 2021). The shape of the enrollment funnel suggests an institution that begins with a large pool of desirable prospects and at each successive stage the funnel narrows to convey the assumption of "melt" (e.g., a subset of inquiries will apply). The practical purpose of the enrollment funnel is to inform interventions that increase the probability of "conversion" from one stage to another (Campbell, 2017). For example, financial aid packages convert admits to enrolled students.

3.1.1 Lists of Leads

At the top of the enrollment funnel, universities identify "leads" by purchasing "student lists." The sum of purchased leads and student-as-first-contact inquiries (e.g., filled out an online admissions inquiry form) constitutes the set of all prospects the university has contact information for. Thus, student lists are the fundamental input for recruiting campaigns, which target individual prospects by mail, email, and on social media.

Ruffalo Noel Levitz (2018) asked its clients to rate different "first contact" interventions (e.g., off-campus recruiting visit) as sources of inquiries and enrolled students. For the median

Figure 2: The enrollment funnel

public university, student list purchases were the highest source of inquiries, accounting for 26% of inquiries, and accounted for 14% of enrolled students, which ranked fourth after "application as first contact" (19%), campus visit (17%), and off-campus visit (16%).

Although the federal government does not collect data about list buying behavior, we feel safe stating that the majority of BA granting public and private non-profit institutions purchase student lists annually. Ruffalo Noel Levitz (2020) reported that 28% of public universities purchased less than 50,000 names, 44% purchased 50,000-100,000 names, 13% purchased 100,000-150,000 names, and 15% purchased more than 150,000 names. In our data collection, research universities purchased an average of 189,106 names per year, whereas ma/doctoral universities purchased an average of 51,284 names.

3.2 College Board and ACT Student Lists

The largest student list vendors are College Board and ACT, which create student list products based on their database of test takers. College Board encourages test takers to opt into the "Student Search Service," which enables "accredited colleges, universities, nonprofit scholarship programs, and nonprofit educational organizations" (College Board, 2022a) to "license" their contact information. Similarly, ACT encourages students registering for the PreACT and ACT test to opt into the "Educational Opportunity Service" (ACT, Inc., 2022), which "provides accredited colleges and scholarship agencies with the names and contact information of students who opt in" (Moore, 2017, p. 1).

In 2019, both College Board and ACT charged $0.47 per name (Belkin, 2019). In fall 2021, College Board charged charged $0.50 per name (College Board, 2021), while ACT had moved to a subscription pricing model following the acquisition of the National Research Center for

College and University (NRCCUA) and the launch of the Encoura product (Encoura, n.d.). College Board announced that it will move to a subscription pricing model in September 2022 (College Board, 2022b).

3.2.1 List Contents and Usage

What information do lists contain? Each purchased student list is essentially a spreadsheet that contains one row for each prospect that meets all criteria specified in the purchase. The columns of the student list include detailed contact information (e.g., name, address, email) and detailed student characteristics derived from the pre-test questionnaire (e.g., ethnicity, race, gender, high school GPA, graduation year, high school code, intended major, first-generation status). The data template for an ACT student list can be found here and the template for a College Board student list can be found here. These fields represent a small subset of the information the testing agencies know about prospective students and contain little data about performance on assessments (e.g., SAT score).

How are purchased lists utilized? Student lists are the basic building block for recruiting "campaigns" that use algorithms to inform recruiting interventions. Both the algorithms and the interventions must be fed data about prospects (e.g., cannot send an email without an email address). Once purchased, student lists are layered with additional data sources, such as consumer data about prospects from credit companies, records of interactions with prospects (e.g., visiting virtual tour), historical application/enrollment data about students who attended the same high school, etc. These layered data are the input to predictive models that inform decisions about which recruiting interventions to send to which prospects (e.g., who gets a $0.50 postcard and who gets a $7 brochure).

3.2.2 Search Filters

How do universities purchase student lists from College Board Student Search Service and ACT's Encoura platform? Each purchased list is a subset of prospects from the population of test-takers. Universities control which prospects are included in a particular list by specifying multiple search filters. Schmidt (2019) states that commonly specified search filters for ACT Encoura include high school graduation year, high school GPA, test score range (ACT or PreACT), gender, ethnicity, intended major, and geography (e.g., state, county, zip code) (Schmidt, 2019). As a hypothetical example, a university could purchase a student list from ACT that consisted of all prospects who scored between 30 and 34 on the ACT, have a GPA higher than 3.5, who live in a particular county, and are in the high school senior class of 2023.

A consequence of the high price charged per name by the College Board and ACT oligopoly is the incentive for "efficient" name buys, whereby universities only purchase the names of desirable prospects that are likely to apply and enroll. Over the past decade, the testing agencies have catered to this desire for efficiency by adding new search filters – often based on statistical models – that enable universities to target prospects with greater precision. ACT has moved more modestly in this direction, adding the "Enrollment Predictor" filter, which allows universities to filter prospects based on their predicted probability of enrolling. College

Board has moved more aggressively, adding "geodemographic" filters that target prospects based on the historical behavior behavior of students from their high school or neighborhood.

3.2.3 Geodemographic Search Filters

Geodemographic search filters are efficient tools of micro-targeting, which we believe can – knowingly or unknowingly – result in racial redlining. College Board began offering geodemographic search filters with the creation of the Segment Analysis Service (herein Segment). Segment is an add-on to the Student Search Service that enables universities to filter prospects based on the college-going characteristics of the high schools prospects attend or the neighborhoods prospects live in. College Board (2011) markets Segment as "an Educationally Relevant Geodemographic Tagging Service." Geodemography – now often referred to as "spatial big data" – is a branch of market research that estimates the behavior of consumers based on where they live. According to College Board (2011):

> The basic tenet of geodemography is that people with similar cultural backgrounds, means, and perspectives naturally gravitate toward one another or form relatively homogeneous communities; in other words, birds of a feather flock together. When they are living in a community, people ... share similar patterns of consumer behavior toward products, services, media, and promotions. The primary appeal of geodemography from the marketer's perspective is that, with just an address, s/he can begin to craft an image about a particular set of individuals based on the values, tastes, expectations, and behaviors associated with their geographic community (p. 1).

This quote illustrates that geodemography is based on problematic assumptions. People with similar cultural backgrounds do not "naturally gravitate toward one another" (College Board, 2011, p. 1). Rather, U.S. neighborhoods and schools are racially segregated because of historic and ongoing systematic discrimination embedded in policy and law (Harris, 1993; Rothstein, 2017). Product marketing decisions that are based on geodemography are likely to reinforce the race-based inequities in opportunity have been fundamental to creating and maintaining racial segregation.

To build Segment, College Board integrates information about test-takers and their neighborhood and school – including historical college going behavior. These data are grouped by high school and grouped by neighborhood (census-tract). Next, cluster analysis is used to "to group the 33,000+ high schools and 44,000 neighborhoods into 29 unique high-school types and 33 unique neighborhood types" (College Board, 2011, p. 4), resulting in high school (HS) clusters HS:51-HS:79 and educational neighborhood (EN) clusters EN:51-EN:83.

The problem is that Segment neighborhood and high school clusters are highly correlated with both racial and income demographics. For example, educational neighborhood cluster EN:61 is 30% nonwhite and has median income of $123,858 while cluster EN:71 is 97% nonwhite and has median income of $42,661 (College Board, 2011, p. 5). Similarly, high school cluster HS:70 is 33% nonwhite and has median income of $105,721 while cluster HS:71 is 98% nonwhite and has median income of $43,391 (College Board, 2011, p. 6).

When buying names, a Segment customer may purchase prospects who scored within a particular range on the SAT, and live in a particular set of metropolitan areas, and who are associated with particular combinations of neighborhood and high school cluster (e.g., live in educational neighborhood cluster EN:61 and attend any high school; live in neighborhood cluster EN:73 and high school categories HS:65 or HS:70).

In Fall 2021, College Board's basic Student Search Service added three "Environmental Attributes" geodemographic search filters: Travel Rates (out-of-state), Travel Rates (distance from home), and AP engagement rates. Using out-of-state travel reads as example, each high school is categorized as "low," "medium," or "high" in terms of the percentage of college students who attend an out-of-state university. In turn, a Student Search Service customer could purchase prospects who live in a particular metro area, with PSAT scores within some interval, and attend a high school with a "high" out-of-state travel rate.

Geodemographic search filters raise two concerns for equality of opportunity. First, geodemographic filters can – intentionally and unintentionally – lead to redlining because racial segregation occurs at fine-grained geographic levels and geodemographic filters facilitate targeting at fine-grained geographic levels. Although filtering particular zip codes raies similar concerns, geodemographic filters are more fine-grained, filtering at the census-tract or school level. Furthermore, geodemographic filters enable customers to purchase prospects who attend a particular "kind" of school or live in a particular "kind" of neighborhood without explicitly naming the school or neighborhood. The second concern is that geodemographic filters deny opportunities to individuals based on the actions of others. Geodemographic filters target prospects based on the characteristics – including historic college-going behaviors – of their school or neighborhood. Thus, a prospects who meets the academic achievement criteria may be excluded from the student list purchase because they attend a high school with "low" distance-from-home travel rates.

3.2.4 Analysis of College Board Student List Purchases

We analyze students list purchases from the College Board in Salazar et al. (2022). Our analyses first focus on investigating which filter criteria were selected in student lists purchased by universities in our sample. Commonly used filter categories included academic (e.g., GPA, PSAT, SAT, academic rank, AP score), geographic (e.g., state, zip code, segment, core based statistical area, geomarket, and international), and demographic (e.g., race/ethnicity, gender, low socioeconomic status). A fourth category of filters, student preferences (e.g., campus location, campus size, major interests), were also used although less frequently than the other three categories. Both research and ma/doctoral universities tended to use high school graduating class, GPA, SAT, and PSAT extensively across orders. However, the only other filters frequently used by ma/doctoral universities in combination with high school class, GPA, and SAT were zip code and state. On the other hand, combinations of filters for orders by research universities varied across nearly all geographic and demographic filters.

The second part of our analyses focuses on exploring the relationship between selected filter criteria and the characteristics of prospects purchased in resulting student lists. We find that that filtering for affluent zip codes along with PSAT and SAT filters across all score

ranges (low, moderate, high) leads to substantial declines in the racial diversity of prospects. Analyses of filter combinations that use the segment product revealed troubling patterns of racial and socioeconomic exclusion across metropolitan areas. Combinations that included demographic filters (gender, race/ethnicity) were also concerning. Orders that filtered for underrepresented students of color with relatively high test scores tended to target affluent students, who often attended predominantly white high schools. Orders that targeted women in STEM based on AP and SAT scores resulted in student lists with predominantly and in some cases exclusively highly affluent, White and Asian prospects.

Our analyses are limited in ways that pose important questions for future research. First, we cannot untangle the extent to which racial and socioeconomic disparities are driven by which specific filters. As in the case of filter combinations using segment, we cannot assess whether the use of segment versus other filters utilized drive exclusionary patterns. Future research should investigate which specific filter combinations (e.g., SAT and segment) and specific ranges (e.g., low SAT score and certain school/neighborhood segments) produce exclusionary patterns. Our data also limits our ability to assess the extent to which universities purchase the same prospects across orders using different filter criteria. It is possible that the same prospects are repeatedly captured across orders by different universities (even across different filter combinations), which would corroborate research that suggests colleges and universities recruit the same students at the same "tapped out" high schools in the largest metropolitan areas of the country (Hoxby & Avery, 2013). Future research should investigate the extent to which universities purchase the same prospects.

3.2.5 How Industries Find Customers: List-based and Behavioral-based leads

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List-based leads. "Lead generation" is the process of connecting "leads" – consumers interested in products – to merchants who sell those products (Federal Trade Commission, 2016b). Two broad approaches industries use to find customers are "list-based" lead generation and "behavioral-based" lead generation. Student lists are an example of "list-based" lead generation, which is based on the direct mail business model (Singer, 1988). Federal Trade Commission (2016b) describes the flow of the online lead generation process, which is similar to the direct mail business ecosystem. "Publishers" are consumer-facing entities (e.g., a free college search engine website) that "encourage consumers to submit additional information about themselves" (Federal Trade Commission, 2016b, p. 3). Next, publishers sell the data entered by consumers to "aggregators." Aggregators are intermediaries that buy "leads collected by multiple website publishers and prepare them for sale to their clients" (Federal Trade Commission, 2016b, p. 3) who may be merchants or other aggregators.

The market described by Federal Trade Commission (2016b) is similar to the "Chegg Cloud," whereby Chegg "partnered with 18 of the top college search websites and mobile apps to aggregate student data and requests for information" (Chegg Inc., 2015, p. 5). In this model, college search engines (publishers) like Scholarships.com collect data voluntarily entered by prospective students. Chegg (aggregator) buys names from multiple publishers and sells the

resulting lists to universities (merchants) looking for customers. By contrast, the business model of College Board and ACT uses fewer intermediaries. The testing agencies are lead publishers – producing student list data as a byproduct of their assessment products – and sell these leads directly to universities looking for customers.

Behavioral-based leads. Advances in digital technology yielded behavioral-based targeting, which includes most advertising we see on websites and social media. Whereas list-based marketing proceeds in two steps – first obtain customer contact information and then serve marketing material via contact information – behavioral-based targeting identifies targets based on their user profile and simultaneously serves advertisements to users while they are on the platform. For example, a Google Search elicits paid Google Ads, alongside "organic" search results. Users of a platform may also be served advertisements when they visit a website that partners with the platform. For example, Google users are served display ads when they visit websites that are part of the Google Display Network.

To what extent are list-based vs. behavioral-based leads used in higher education? EAB (2018) suggests that when good lists are available, list-based leads are more efficient than behavioral-based leads. Thus, EAB (2018) recommends buying lists from College Board and ACT to identify college-bound high school students. By contrast, behavioral-based leads are the primary source of leads to identify student markets where good lists are unavailable. Examples include programs that target working adults, vocational programs offered by community college and for-profits, and recruiting efforts by third-party online program managers (OPMs). Beyond identifying customers, behavioral-based advertising is used for brand management.

3.3 The Changing Market for Student List Data

Student lists are central to a surprisingly dynamic ecosystem of enrollment management. This section sketches the contours of the enrollment management ecosystem – what are the technologies, who are the players and what do they want – and describes recent shifts in the market for student list data. Over the past 20 years, advances in technology that gave rise to the EdTech sector also yielded new sources of student list data, which created opportunities for entry by new firms and were also incorporated by existing players. In the 2000s, several upstart firms promised to compete with College Board and ACT student list products by creating college search engines, but many of these efforts failed. In the 2010s, mirroring broader trends in the EdTech sector, a surge of acquisitions has reshaped the student list business, increasing concentration in the market for student list data.

3.3.1 Sources of Student List Data

Student list data are created by several data generating processes. Prior to the 21st century, student list data on college-going high school students were derived from two primary sources. First, data were generated by students completing standardized assessments developed by testing companies College Board, ACT, and ETS. Second, organizations like the National Research Center for College and University (NRCCUA) asked high school students to complete a survey during school hours.

In the 21st Century, advances in technology yielded new sources of student list data. One source consists of survey data – and their user data – that students submit to search engines and social network platforms that focus on college search. One subset of platforms (e.g., Cirkled In, Zinch) has the explicit goal of sharing profiles created by students with the universities the student expresses interest in attending. Another subset of platforms has the explicit goal of helping students find "match" universities and scholarships (e.g., myOptions, Cappex).[1]

Another source student list data comes from software platforms used by high schools and high school students (e.g., Naviance, Scoir]. For example, Naviance enables high school students – and guidance counselors – to plan/search for colleges.

3.3.2 Universities and Enrollment Management Consulting Firms

Although the customers of student list vendors are universities looking for students, we cannot understand the student list business without considering the role of enrollment management consulting firms. Over the past twenty years, as recruiting became more sophisticated and competitive, a growing number of universities hired consultancies to develop and/or implement recruiting campaigns. Contributing to this trend, university leaders often fire senior enrollment and admissions professionals when enrollment does not meet targets. In turn, employee turnover reduces in-house capacity, making universities more dependent on external consultants.

Although enrollment management consulting firms depend on universities as their primary source of revenue, they also depend on student list vendors for two reasons. First, a core service offered by most firms is making recommendations about student list purchases and executing these purchases (e.g., Ruffalo Noel Levitz, Fire Engine Red). Second, student lists are an essential input to the predictive models and to the recruiting interventions (e.g., email, mail, social media) that the consultancies provide.

The market for enrollment management consulting consists of large firms providng the full range of enrollment services and smaller firms providing particular services. Anecdotally, the number of small and medium sized firms increased from 2000 to 2010, catalyzed by advances in digital technology and data science. Since 2010, horizontal acquisitions have caused the market for enrollment management consulting to become more concentrated (Rogers, 2014). For example, RuffaloCODY acquired Noel-Levitz in 2014 (Ruffalo Noel Levitz, 2014) and EAB acquired the enrollment management business of Hobsons in 2021 (Wan, 2021). By 2022, the enrollment management consulting market consisted of two large firms – Ruffalo Noel Levitz, which claims to serve "1,900 campuses and nonprofits" each year (Ruffalo Noel Levitz, n.d.), and EAB, which claimed to serve "more than 1,100 higher education institutions" in 2021 (EAB, n.d.-a) – and a shrinking number of small and mid-sized operations (e.g., Fire Engine Red, Capture Higher Ed).[2]

[1] Aside from the privacy policy page, these sites tend to avoid clear language about whether/how student data are shared.

[2] Additionally, College Board and ACT have leveraged their position in the student list market to enter the enrollment management consulting market (College Board, 2022c; Encoura, 2022), offering clients information

3.3.3 EAB Enters the Student List Business

EAB is an enrollment management consulting firm. EAB does not sell student lists. Nevertheless, by the end of 2021, EAB arguably joined College Board and ACT as one of the three most important suppliers of names to universities. Whereas any accredited institution can purchase names from College Board and ACT, only EAB clients have access to prospect databases controlled by EAB. How did this come to be? To a great extent, the EAB story is a story about acquisitions.

The origins of EAB trace to 1983 when Bill Royall founded Royall & Company to provide direct marketing and fundraising for political campaigns (Jump, 2020). However, by 1995, universities became the primary client. In 2015, the Advisory Board Company – a technology and consulting company operating in the health sector – purchased Royall & Company for $850 million as the centerpiece of its entrance into the higher education consulting market (StreetInsider.com, 2014). In 2017, the Royall & Company business line was sold to Vista Equity Partners, the largest private equity firm in the world, for $1.5 billion and renamed EAB (Hansen, 2017).

Under Vista, EAB pursued vertical acquisitions that increased the value of existing activities and also leveraged relationships with other Vista subsidiaries.

YouVisit and Cappex. In 2019, EAB acquired YouVisit, "the leading provider of virtual tour and interactive web content" (EAB, 2019), enhancing "EAB's ability to help colleges and universities find, engage, and enroll new students" (para.1). In 2020 EAB acquired Cappex, a college/scholarship search website reportedly used by 1.5 million students annually (EAB, 2020). The President of EAB Enrollment Services said the Cappex acquisition

> 'will enable EAB partners to identify and engage prospective students who do not interact with schools through the traditional channels, such as campus visits or standardized tests. By expanding schools' inquiry pools, we can help institutions grow and diversify their student populations' (EAB, 2020, para. 5).

As fewer high school students take the SAT/ACT, Cappex represents a proprietary pool of prospects that cannot be purchased from College Board or ACT. Universities that wish to recruit these prospects must pay EAB for consulting and subscription services. The YouVisit acquisition, re-branded as EAB virtual tours, can be thought of as an "inquiry engine"; the virtual tours record IP address, submitted contact information, and user behavior to help university clients know "who your visitors are and where their interests lie so that you can effectively recruit them" (EAB, n.d.-b).

Hobsons and Naviance/Intersect. In 2021, EAB and PowerSchool – a K-12 software provider owned by Vista – acquired and split the assets of the EdTech firm Hobsons.

Hobson's, one of the largest enrollment management consultancies, operated three software-as-service products: Starfish, a student success platform for colleges and universities; Naviance, college search/planning software sold to high schools; and Intersect, a recruitment platform that connects universities to Naviance users.

about prospective students that is not included in purchased lists.

Investigative reporting by Feathers (2022) explains how Naviance and Intersect work in concert. Naviance is reportedly used by more than 10 million students and by 40% of US high schools (PowerSchool, 2021b). Intersect enables "colleges and universities to target students [Naviance users] with paid advertisements encouraging them to enroll" (Feathers, 2022). Although Intersect customers (universities) do not receive the contact information of Naviance users, they control which Naviance users will receive recruiting messages by selecting on search filters similar to those of College Board student list products (Feathers, 2022). Promotional material claims that Intersect is effective at funneling Naviance users to universities (EAB, 2021b).

In the acquisitiong of Hobsons, PowerSchool acquired Naviance and Intersect for $320 million. EAB acquired Starfish for $90 million (Wan, 2021) and also took over Hobsons' university consulting contracts.

Following the acquisition, PowerSchool agreed to make EAB "the exclusive provider of the Intersect student recruitment platform" (EAB, 2021a, para. 2). The agreement has a ten-year term and EAB paid PowerSchool $32.4 million for the first year (PowerSchool, 2021a). At the same time, PowerSchool also paid EAB $8.0 million in 2021 to sell Intersect subscriptions to universities on its behalf (PowerSchool Holdings, Inc., 2021, p. 121).

How does this exclusive reseller agreement position EAB as a supplier of student lists? Our interpretation is that EAB does not gain strategic value from selling a la carte subscriptions of Intersect, which is why PowerSchool pays EAB for this service. Rather, EAB gains strategic value from having the right to re-bundle Intersect, alongside other EAB assets, into software-as-service products like *Enroll 360*. These products connect university clients to unique, proprietary databases of prospects that cannot be obtained from other enrollment management consulting firms or other student list vendors. Because EAB is the exclusive reseller of Intersect, universities cannot recruit Naviance users unless they purchase an Intersect subscription or pay for an EAB product that re-bundles Intersect alongside other EAB clients. Considering the likely decline in SAT/ACT test-takers and the number of students who use Naviance to search for college, the reseller agreement will likely result in more clients for EAB.

The cost of outsourcing. To the extent that universities pay EAB with revenue derived from taxpayers (e.g., state appropriations, state and federal financial aid), EAB derives profit from public subsidies. We believe that the surge of investment in Ed Tech over the past two years (e.g., Vista Equity Partners, 2021; Bradley, 2021) is based on the belief that Ed Tech firms can generate strong revenues by convincing schools and universities to expend public subsidies on outsourcing core processes. Although vendors provide valuable services, policymakers should monitor the size of the tab. Based on our calculations from the procurement website www.procure.stateuniv.state.il.us/search.cfm, eight Illinois public universities awarded contracts to EAB totaling approximately $17.2 million (2021 CPI) since 2018.

4 Policy Concerns

We consider policy concerns and solutions in relation to the ideal of equality of opportunity in college access, the idea that all students should have the opportunity to attend a high-quality college or university, regardless of race, gender, creed, parental education, household income, or where they live.

Research suggests that student lists have large effects on college access outcomes (Howell et al., 2021; Moore, 2017), particularly for first-generation students and students from historically underserved racial and ethnic groups. The surprising importance of student lists for college access is a consequence of the structure of the U.S. market for higher education. Federal higher education policy provides funding to students but depends on Title IV institutions to provide access; since federal funds follow students, institutions have an incentive to find and enroll students. However, institutions don't know who the prospective students are or how to contact them. This is the problem that student lists solve. Therefore, at the top of the enrollment funnel, universities identify "leads" by buying student lists from College Board, ACT, and other vendors.

There are several ways that the student list business undermines equality of opportunity for students. First, student list products are oriented to the enrollment goals of universities rather than the opportunity goals of students because universities are the paying customers. This explanation suggests that the underlying policy problem is university enrollment preferences, not student lists. To a certain extent – and for certain institutions – this is true; if a university only wants to enroll wealthy students, regulating student lists will not compel the university to enroll poor students. That said, the choices universities make about which names to purchase are structured by the architecture of student list products – which prospects are included in the product, the targeting behaviors allowed by the product, the targeting behaviors encouraged by the product.

Second, the search filters on College Board and ACT student list products facilitate the exclusion of prospective students. For example, universities often search for STEM majors by filtering on AP exam scores, but which students attend high schools with widespread access to AP classes? Geographic filters (e.g., buy prospects in particular zip codes) often conflict with the ideal that educational opportunity should not depend on where you live. Filtering at the zip code level is dangerous because zip codes are highly correlated with race. Filtering for particular metropolitan areas is dangerous because what about students who live outside the metropolitan area? College Board geodemographic filters are particularly problematic because they filter at fine-grained geographic levels – the Census tract, the high school – and Census tract level and they simultaneously filter students based on the historic behavior of students from that school/neighborhood rather than the achievement of the prospect. Although some universities may use geodemographic filters to increase socioeconomic or racial diversity, the broader policy concern is the potential for abuse – intentional and unintentional – posed by these filters.

Third, College Board and ACT student list products generally exclude students who do not take College Board or ACT assessments. Test-taking rates have differed by race and by class since 1972 (Bastedo & Jaquette, 2011), when College Board created the Student Search

Service. These differences yield racial and socioeconomic inequality in which prospects are contacted by universities. As test-optional becomes the new normal, the number of SAT/ACT test-takers will decline dramatically, and in ways that may be correlated with race, class, and geography. In turn, the eroding coverage of these lists may trigger a crisis in college access because universities will not know who the prospective students are or how to contact them.

In (micro-economics) theory, new suppliers will enter the market in response to the erosion of College Board and ACT student list products. We are concerned that, without significant government intervention, the death of the SAT/ACT exam will leave students unwittingly reliant on for-profit firms that maximize profit by providing prospect names only to universities that pay for expensive subscription or consulting services. Equitable college access it too important to leave to market today, and that will only be more true as the new for-profit players enter the space

5 Regulating the Student List Business

Having laid out the policy concerns, how should federal policymakers think about regulating the student list business? Industries are regulated by laws that prescribe rules and by regulatory agencies that interpret and enforce those laws. In its present form, the Higher Education Act (HEA) – enforced by the U.S. Department of Education – is exceedingly limited in how it could regulate the student list business. However, laws enforced by other agencies may be relevant to particular aspects of the student list business. Our goal is to start the conversation about federal regulation. We believe this conversation should be approached from three critical angles: regulating student list products; regulating student list suppliers; and regulating student list customers.

5.1 Regulating Products

Federal policymakers have become increasingly concerned about products that utilize "big data," "artificial intelligence," "algorithms," and "predictive analytics," citing research findings that "apparently 'neutral' technology can produce troubling outcomes – including discrimination by race or other legally protected classes" (Jillson, 2021, para. 1). The Federal Trade Commission (FTC) has authority over commercial products and is viewed as the federal regulatory agency most responsible for addressing these concerns. FTC concerns and guidelines on these issues emerged over the past decade following several reports and hearings (e.g., Federal Trade Commission, 2012, 2014, 2016a, 2019; Jillson, 2021; Smith, 2020). We highlight two reports in particular, *Data Brokers: A Call for Transparency and Accountability* (Federal Trade Commission, 2014) and *Big Data: A Tool for Inclusion or Exclusion?* (Federal Trade Commission, 2016a).

Marketing data brokers. Federal Trade Commission (2014) defines "data brokers" as "companies that collect consumers' personal information 'and resell or share that information with others" (Federal Trade Commission, 2014, p. i). Federal Trade Commission (2014) distinguished between three categories of data brokers: (1) "consumer reporting agencies" covered by the Fair Credit Reporting Act (FCRA); (2) marketing data brokers which sell

consumer data to businesses looking for customers (e.g., student lists); and (3) entities not covered by FCRA that use consumer data for non-marketing purposes, such as fraud detection. Student list vendors clearly fall within the Federal Trade Commission (2014) definition of marketing data brokers.

The products sold by marketing data brokers enable businesses to buy data about some customers but not others. A common approach is to categorize customers into different "segments." For example, one marketing data broker analyzed by Federal Trade Commission (2014) developed the category "Married Sophisticates" which consists of "upper-middle class [couples] ... with no children" and the category "Rural Everlasting" which consists of single people older than 66 with "low educational attainment and low net worth" (Federal Trade Commission, 2014, p. 20). The College Board Segment Analysis Service product adopts a similar approach when it categorizes every high school into one of 29 types and categorizes every neighborhood into one of 33 types (College Board, 2011). Another common practice by marketing data brokers is assigning scores to customers based on their likelihood of making a purchase or responding to a marketing intervention (Federal Trade Commission, 2014). An example of this approach is the "Enrollment Predictor" prospect search filter in ACT's Encoura student list product, which enables universities to filter prospects based on the predicted probability they will enroll (Schmidt, 2019).

Policy concerns Federal Trade Commission (2016a) described concerns about products sold by marketing data brokers that utilize big data, algorithms, artificial intelligence, and predictive analytics. Student list products clearly fall within Federal Trade Commission (2016a) policy concerns.[3]

Broadly, Federal Trade Commission (2016a) (p.9.) is concerned that these technologies "categorize consumers in ways that can result in exclusion of certain populations" (Federal Trade Commission, 2016a, p. 9). Federal Trade Commission (2016a) (p. 2) states that "if big data analytics incorrectly predicts that particular consumers are not likely to respond... [or] are not good candidates for prime credit offers, educational opportunities, or certain lucrative jobs, such educational opportunities, employment, and credit may never be offered to these consumers." One concern is that these technologies create new justifications for exclusion. For example, the Intersect recruiting platoform allows universities to "send targeted messages through Naviance to students who had used the platform to research competitor institutions" (Feathers, 2022), thereby excluding students who did not search for competitor institutions.

Another concern is that products increasingly use predictive analytics to deny opportunities to individuals based on the actions of others. Federal Trade Commission (2016a) distinguishes *descriptive analytics*, which seek to "uncover and summarize patterns or features that exist in data sets" (p. 4), from "predictive data analytics," which "refers to the use of statistical models to generate new data" (pp. 4-5). Products that utilize predictive analytics can develop algorithms based one one group of people and apply those algorithms to make decisions about a different group of people. For example, (Federal Trade Commission, 2016a, p. 9)

[3]For example, ACT states that the Encoura Platform – which includes student lists – "is an enrollment management technology platform that combines student intelligence data, advanced analytics" (Encoura, 2021, para. 2).

states that "some credit card companies have lowered a customer's credit limit ... based on analysis of other customers with a poor repayment history that had shopped at the same establishments where the customer had shopped." The geodemographic filters in the College Board Segment Analysis Service product are based on predictive data analytics in that cluster analysis is used to assign neighborhoods and schools to types (College Board, 2011). In turn, geodemographic search filters enable universities to target prospects based on the behaviors of previous cohorts from that neighborhood or high school.

Guidelines for data brokers. FTC developed guidelines for businesses about the use of big data, algorithms, and analytics (Federal Trade Commission, 2016a; Jillson, 2021; Smith, 2020). These guidelines apply to vendors selling student list products.

First, companies should consider how representative their data are. "If a data set is missing information from particular populations, using that data to build an AI model may yield results that are unfair or inequitable to legally protected groups" (Jillson, 2021).

Companies should consider whether the algorithm is biased against protected classes (Jillson, 2021). For example, Obermeyer, Powers, Vogeli, & Mullainathan (2019) found that the algorithm used by a hospital system to predict health care needs was biased against Black patients because the algorithm was based on health care costs rather than illness.

FTC investigations of products consider both discriminatory inputs and discriminatory outcomes (Smith, 2020). With respect to discriminatory inputs, FTC examines whether the algorithm explicitly considers a protected class (e.g., race, gender, religion). FTC also investigates whether the algorithm considers inputs that are highly correlated with a protected class. For example, if "a company made credit decisions based on consumers' Zip Codes, resulting in a 'disparate impact' on particular ethnic groups, the FTC could challenge that practice" (Smith, 2020). Regardless of algorithm inputs, FTC evaluates whether the product has an "illegal disparate impact on protected classes" (Smith, 2020).

FTC investigation and regulation. The FTC Act authorizes the FTC to "investigate from time to time the organization, business, conduct, practices, and management of any person, partnership, or corporation engaged in or whose business affects commerce" (Federal Trade Commission, 2021a). Contemporary student list products exhibit several features described as problematic by FTC guidelines (e.g., unrepresentative data, algorithms that consider inputs highly correlated with protected class, denying opportunities based on the behavior of others, etc.). We recommend that FTC investigate College Board student list products, ACT student list products, and PowerSchool's Intersect product.

To what extent are student list vendors beholden to FTC regulations? The FTC Act applies to all companies engaging in interstate commerce. Section 5 of the FTC Act prohibits "unfair" or "deceptive" practices. FTC penalties targeting the higher education industry have mostly focused on "deceptive" practices by for-profit colleges making false claims about jobs and earnings (e.g., Federal Trade Commission, 2021b). By contrast, student list products are more likely to be penalized for "unfair" practices. A practice is defined as unfair if it meets all three of the following criteria: causes substantial harm to consumers; harm cannot be reasonably avoided; and harm not outweighed by benefits to other consumers (FDIC, 2018).

We argue that certain attributes of student list products may meet all three criteria of unfair practices, while also having a disparate impact on protected classes. Consider the College Board Segment Analysis Service geodemographic high school "type" search filters. High school type categories are highly correlated with race (see College Board (2011), p. 6). These filters are likely to cause substantial harm to consumers (criterion #1) because students attending high school types not selected by a university are excluded from outreach. Consumers cannot reasonably avoid the injury (criterion #2) because they cannot easily change schools. The injury is not reasonably outweighed by benefits to consumers or competition (criterion #3). The beneficiaries of high school type filters are universities, who are able to target customers more efficiently, and students who attend high school types that universities tend to select. High school type filters do not realistically benefit competition in terms of the price and quality of higher education purchased by students. Applying this logic, other attributes of student list products may be considered unfair practices by the FTC Act.[4]

5.2 Regulating Suppliers

As a complement to regulating student list products, federal regulators may target the organizations that supply student list data. We introduce two distinct lines of inquiry, both of which merit additional scrutiny from legal experts. First, do College Board, ACT, and other student list vendors meet the criteria to be designated as "consumer reporting agencies"? Second, is EAB restraining competition in the market for enrollment management consulting by becoming a supplier of student list data?

5.2.1 Consumer Reporting Agencies

The Fair Credit Reporting Act (FRCA) defines a "consumer report" as information "that bears on a consumer's creditworthiness, credit standing, credit capacity, character, general reputation, personal characteristics, or mode of living" that is used to establish eligibility for "(1) credit or insurance . . . ; (2) employment purposes; or (3) any other purpose authorized under Section 604 (15 U.S.C §1681a). In turn, a"consumer reporting agency" is any entity that sells consumer reports for monetary fees.

Consumer reporting agencies are regulated by the Fair Credit Reporting Act – enforced by the FTC – and by the Consumer Finance Protection Act – enforced by the Consumer Finance Protection Bureau (Federal Trade Commission, 2016a). Amongst other requirements, consumer reporting agencies must take steps to ensure data accuracy about consumers and grants consumers the right to obtain data about them, the right to dispute data, and "the right to take the company to court if it sells inaccurate information to other businesses" (Pierce, 2020).

[4]For example, most student list products allow universities to filter by zip code, which is highly correlated with race (Federal Trade Commission, 2016a). Filtering prospects based on zip code causes harm to students from excluded zip codes (criterion #1) that cannot reasonably be avoided by students (criterion #2) and is not outweighed by benefits to consumers or competition (criterion #3). Similarly, the ability to filter prospects by AP exam score may be an unfair practice because students who attend high schools that do not offer substantial AP curricula are excluded.

Are student list vendors consumer reporting agencies? Setting aside the legal argument for legal experts, we develop a logical argument that student lists systematically lead to the extension of credit (i.e., loans).

The enrollment funnel identifies stages in the process of recruiting students in order to inform interventions that convert prospective students from one stage to the next. At the top of the enrollment funnel, universities identify "leads" by purchasing student lists. At the bottom of the enrollment funnel, universities attempt to convert admits into enrolled students by offering financial aid packages, including institutional grant aid and guidance about how much to borrow and how to apply for federal and/or private loans.[5] Based on information contained in student lists, some purchased prospects are not recruited while others are targeted with recruiting interventions designed to "convert" leads to inquiries and applicants. Thus, the systematic, intentional relationship between student lists and the extension of credit through financial aid packages suggests that student lists systematically lead to the extension of credit.

5.2.2 Anti-Competitive Behavior

Antitrust regulation is based on the idea that competitive markets result in lower prices, higher quality, and more choices for consumers. We suggest that regulators should be concerned about concentration in the market for enrollment management consulting and that they should investigate potentially anti-competitive behaviors by EAB.

Competition in enrollment management consulting. Why should policymakers be concerned about competition in the market for enrollment management consulting?

Enrollment management consultants offer services in the three domains of marketing and recruiting, pricing and financial aid, and student success. They have become important to the higher education sector because many postsecondary institutions lack internal capacity in these domains. Over the past decade, the enrollment management consulting industry has become increasingly concentrated. Two large large providers – EAB and Ruffalo Noel Levitz – dominate the market and the number of small/medium-sized firms has declined due to horizontal acquisitions. Further, most small/medium-sized firms cannot offer the range of services offered by EAB and Ruffalo Noel Levitz. Economic theory predicts that a decline in the number of firms offering enrollment management consulting enables the remaining firms to charge higher prices because customers that need the product have no choice but to pay. If university expenditure on enrollment management consulting increases, these costs will ultimately be passed on to students in the form of higher tuition prices.

Furthermore, increasing concentration in the enrollment management consulting market may lead to de facto collusion between universities. A recent lawsuit alleges 16 selective universities colluded to reduce financial aid (Skolink, 2022). Consider the consequences of thousands of postsecondary institutions relying on the same two enrollment management consulting firms for strategy about marketing/recruiting, tuition pricing, and financial aid. Here, a third-party consultancy makes recommendations about the tuition price and financial

[5]Some institutions originate their own loans (Berkeley Law, 2021; Hayes & Lowe, 2020).

aid offers of universities that are in direct competition with one another. How do consulting firms decide which university recruits which prospective students when two universities face similar student demand? Consulting firms may parcel out prospective students across their clients in ways that negatively affect the college choice options of students and/or negatively affect competition between students.

Regulating vertical agreements by EAB. Antitrust regulations seek to eliminate anti-competitive business practices, which are practices that restrain competition in a market, resulting in higher prices, lower product quality, and/or fewer choices for consumers. Antitrust law is concerned with two types of inter-firm agreements, horizontal agreements and vertical agreements (Donovan, 2019). *Horizontal agreements* refer to agreements between competitors in the same market. Although College Board and ACT operate an oligopoly in the student list market, oligopolies are legal unless there is evidence that the firms engaged in an agreement (e.g., price collusion) (Robinson & Koley, 2019), which is unlikely in the case of College Board and ACT. *Vertical agreements* refer to agreements between firms that operate at complementary points in the supply chain (e.g., a retailer promotes the products of a manufacturer in exchange for a price discount). *Vertical restraints* are agreements that affect competition and antitrust law is concerned with vertical constraints that "hurt competition more than they help competition" (Donovan, 2019, para. 9).

We suggest that vertical agreements by EAB may negatively affect competition in the market for enrollment management consulting. In particular, PowerSchool and EAB agreed to make EAB the "exclusive reseller of the Intersect student recruitment platform in the United States and Canada" (PowerSchool, 2021a, p. 193). Naviance is reportedly used by 10 million U.S. students and by 40% of U.S. high schools (PowerSchool, 2021b), representing a substantial share of the college-going high school population. As part of the agreement, EAB sells a la carte Intersect subscriptions to universities on behalf of PowerSchool (PowerSchool Holdings, Inc., 2021, p. 121), which raises no regulatory concerns.

Our interpretation is that EAB pays PowerSchool – $32.4 million in 2021 (PowerSchool, 2021a) – for the right to re-bundle Intersect – alongside other EAB assets – into software-as-service products. For example, EAB describes *Enroll 360* as the product of synergies between EAB vertical acquisitions and partnerships:

> We spent the last couple of years creating **a connected recruitment ecosystem** that allows enrollment leaders to keep pace with students as they pursue these increasingly digital journeys to college. **This work led us to join forces with several leading companies: Cappex, Intersect, Wisr, and YouVisit**. [bold in original] (Koppenheffer, 2021)

Enroll360 integrates proprietary databases of prospective students from Cappex and Intersect into a unique database of prospects that can only be accessed by universities that contract with EAB.

The exclusive reseller agreement – and vertical acquisition of Cappex – may harm competition in the enrollment management consulting industry. Other enrollment management consulting firms buy student lists on behalf of universities, but they do not have proprietary control over substantial databases of prospective students. Universities may reason that contracting

with EAB is the only way to recruit the set of prospects subsumed within EAB's proprietary software-as-service products. In turn, competitor consultancies will be less able to find prospects clients, making them less valuable to universities, and leading to market exit. By a similar logic, regulators may be concerned that College Board and ACT are negatively affecting competition by leveraging their position in the student list business to enter the market for enrollment management consulting.

Additionally, vertical agreements and acquisitions by EAB may harm universities that are not customers of EAB; these universities may be less able to recruit high school students contained within EAB proprietary databases because EAB funnels these prospects to client universities. The agreement may also harm high school students within EAB databases in that these students will be funneled to EAB client universities.

5.3 Regulating Customers

Postsecondary institutions are the customers of student list products. Because colleges are the direct providers of the opportunities presented by higher education, we consider regulations with respect to with respect to how institutions are meeting the imperative of equality of opportunity. One policy goal is that the names purchased by a university – across all lists purchased in a year – should not systematically exclude members of a protected class, rural students, or low-income students. This goal encompasses redlining by selective institutions and reverse redlining by for-profit colleges. An example of a potential regulation in service of this goal would be clear reporting requirements for colleges' student list purchases. Another idea is to limit outsourcing of student list purchases, based on the idea that universities are less knowledgeable and less accountable when they outsource student list purchases to a third-party consultancy.

The Higher Education Act (HEA) regulates federal higher education programs, including all federal grants and loans to students, and is enforced by the Department of Education (herein the Department). Postsecondary institutions authorized to enroll students that receive federal financial aid are called Title IV institutions. HEA section 487 states that institutions must sign a "program participation agreement" which defines the requirements for "initial and continuing eligibility" to participate in the Title IV financial aid program (20 U.S.C. §1094).

Our main takeaway is that, at present, the HEA – and the Department of Education – is incapable of significantly regulating actors in the market for student list data. For example, Title IV of HEA regulates "third party servicers" but most of these regulations focus on lenders and guaranty agencies, not student list vendors or enrollment management consultancies.

The example of "incentive based compensation" regulations demonstrates the impotence of the HEA with respect to student lists. In 1992, Congress banned Title IV institutions from providing compensation for "success in securing enrollments or financial aid to any persons or entities engaged in any student recruiting or admission activities" [HEA section 487(a)(20)]. However, these rules explicitly exempt student list purchases: "these activities do not include making a payment to a third party for the provision of student contact information for prospective students provided that such payment is not based on any additional conduct or

action by the third party or the prospective students" (Program participation agreement, 34 C.F.R. §668.14, 2012).

Recent policy debate around incentive based compensation has focused on the 2011 "bundled services loophole," which enables online program management companies (OPMs) to engage in tuition sharing agreements (Dimino, 2020; Shireman, 2019). We are more interested in the Department of Education's rationale for the loophole:

> The independence of the third party (both as a corporate matter and as a decision maker) from the institution that provides the actual teaching and educational services is a significant safeguard against the abuses the Department has seen heretofore. When the institution determines the number of enrollments and hires an unaffiliated third party to provide bundled services that include recruitment, payment based on the amount of tuition generated does not incentivize the recruiting as it does when the recruiter is determining the enrollment numbers (US Department of Education, 2011, p. 11).

In other words, the Department (2011) implies that tuition sharing with third-party vendors is not problematic because the Department believed that enrollment goals are chosen by the institution rather than the vendor. This quote illustrates a fundamental problem with federal higher education policy; it is fixated on a 20th Century conception of the higher education industry. Thus, the Department focuses on regulating Title IV institutions based on the belief that only the behavior of direct providers have consequence for federal policy goals. But in the 21st century, third-party vendors dwarf the size of for-profit college industry. These vendors wield great market power, they influence the behavior of Title IV institutions, and they serve their own interests.

Reporting requirements. We believe that the Department can require Title IV institutions to provide information about student list purchases. The statutory language – within HEA section 487 on "program participation agreements" – states that Title IV institutions "will complete surveys conducted as a part of the Integrated Postsecondary Education Data System (IPEDS) or any other Federal postsecondary institution data collection effort, as designated by the Secretary" (HEA section 487(a)(17)).

Providing information about student list purchases need not be onerous, even when the university outsources purchases to a consulting firm. For example, we created a document that explains how to obtain prior student list purchases from the College Board and ACT online portals [PROVIDE LINK]. To minimize burden, universities could omit lists purchased from small vendors. Moving forward, policymakers could commission a tool that helps universities obtain the requested data, describes the characteristics of purchased prospects, and compares the characteristics of purchased prospects to other populations of interest (e.g., high school graduates in the county).

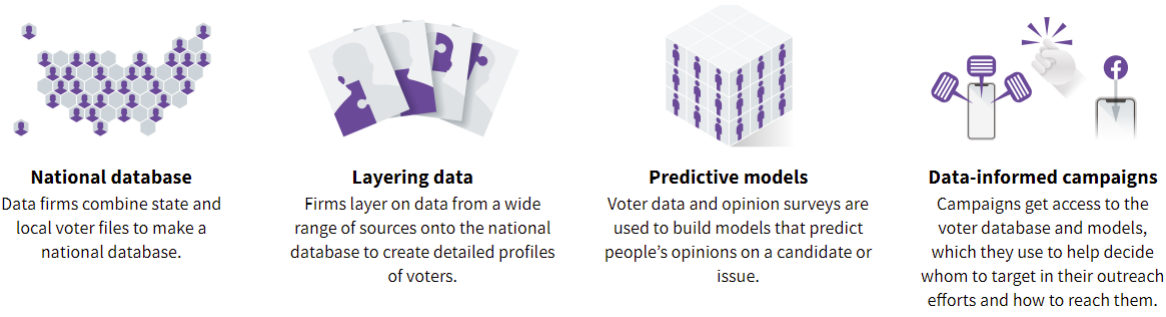
6 Public Option

Student lists play an essential role in the college access process because the U.S. higher education market is structured as a national voucher system that depends on providers

to go out and find the students. Unfortunately, the contemporary student list business is characterized by the systematic exclusion of underrepresented students, the certain death of the college entrance exam, and the looming takeover by corporate and private equity interests. Is this the best we can do? Regulation alone cannot solve these problems. We must create a "public option" student list product that that is oriented to equality of opportunity for students.

National voter databases. Our proposed publict student list option is inspired by the example of national voter databases. Culliford (2020) describes how U.S. political parties create and utilize national voter databases in four sequential steps, depicted in Figure 3. First, data firms create a national database by cobbling together the voter files of state and local governments, which are essentially free public records. Second, data firms layer on additional information (e.g., income levels, purchasing patterns) from a "range of sources onto . . . to create detailed profiles of voters" (Culliford, 2020, para. 6). Third, predictive models are developed to predict the opinions and behavior of prospective voters. Fourth, the database and predictive models are used to inform campaign decisions. Both the Republican National Committee (RNC) and Democratic National Committee (DNC) have developed processes by which these data can be shared with campaigns and outside political organizations.

Figure 3: National voter database



The way political campaign managers use voter data to inform political campaigns is strikingly similar to the way enrollment managers utilize student lists to inform "recruiting campaigns." However, voter files – the basic input to national voter databases – are free, public records. By contrast, the basic inputs for student lists (e.g., contact information, academic achievement, college preferences) are propietary, with College Board and charging $0.50 per name in 2021 [CITE].

The public option. Administrative data already collected by U.S. high school/districts (e.g., contact information, GPA, course-taking by subject) provides the basis for a viable student list product. Increasingly, states have incorporated high school administrative data into statewide longitudinal data systems. The Arizona Department of Education provides the contact information and high school rank of all AZ high school graduates for free to Arizona [PUBLIC?] postsecondary institutions [CITE].

We propose a public, national student-list product developed by a consortium of states, based on data from statewide longitudinal data systems. Students and parents would have the opportunity to opt in or opt out. The system might allow participants to control which

institutions can obtain their contact information (e.g., in-state vs. out-of-state, institutional control). The "names" of students who opt in would be provided to eligible postsecondary institutions for free. The public-option student lists would include information like, contact information, high school code, expected graduation year, high school academic achievement (e.g., high school GPA, math course-taking, science course-taking), demographic information, and limited set of survey responses about college preferences (e.g., intended major).

Several product features are essential for the public option to compete with private sector products. First, the public-option becomes a viable alternative to the extent that it includes more states and a high share of prospects from these states. Second, a core advantage of the College Board/ACT products is that the PSAT and PreACT tests enable colleges to reach out to prospects early in their college search process. Therefore, the public-provision product should enable universities to obtain names of sophomores and juniors who have opted in, a product feature that requires timely data. Third, concerns about missing data and data quality undermined the value of lists sold by Chegg. Therefore, the public-option must possess data quality on par with College Board/ACT student lists. Fourth, students opting in to the public-option should be required to complete a brief questionnaire to provide data that is valued by enrollment professionals but is not recorded by high school administrative data (e.g., intended major, how far away from home student wants to be, preferences for public vs. private, etc.).

Benefits of the public option. A robust, reliable public student list product would improve college access and equality of opportunity in several ways. First, students would not be excluded from name buys because they did not take a particular standardized assessment. Given racial and socioeconomic differences in test-taking rates, moving away from reliance on College Board and ACT databases for name buys will likely increase socioeconomic and racial equality in college access.

Second, the search filters on College Board and ACT student lists that facilitate micro-targeting (e.g., geodemographic filters, filtering by zip-code) can lead to the systematic exclusion of underrepresented students. Universities value these search filters because College Board and ACT charge a high price for names. By offering names for free, the public option eliminates the incentive for "efficient" name buys that target very particular prospects while excluding others. Although free names would not eliminate discrimination in which prospects receive recruiting material, several recruiting interventions have negligible marginal cost (e.g., email, text). Therefore, we believe that free names will result in more recruiting interventions directed at under-recruited student populations, which is important because prior research finds that under-recruited student populations tend to be the most responsive to attention from universities (Holland, 2019).[6]

Another benefit of the public-option is that money previously spent on buying names can be allocated to other purposes. Furthermore, postsecondary institutions unable to afford names in the past (e.g., many community colleges) could engage in list-based recruiting.

Political and technical challenges. Formidable political challenges face the public option. Who will pay for, develop, and maintain the system? State laws restrict sharing statewide

[6]Another likely consequence of free names is that students are deluged with emails and text messages.

longitudinal data and some state policymakers may be concerned about brain-drain from out-of-state universities. Several formidable technical challenges face the public option, relating to the goal goal of creating a timely database that incorporates contact information, transcript data, and demographic information, with data drawn from many states and many schools and districts within each state. In short, creating the public option will be difficult. Alternatively, we can do nothing, inviting a college access crisis as College Board and ACT fade and for-profit interests assume control of the student list business. This alternative is unacceptable.

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