Supplemental Online Appendix

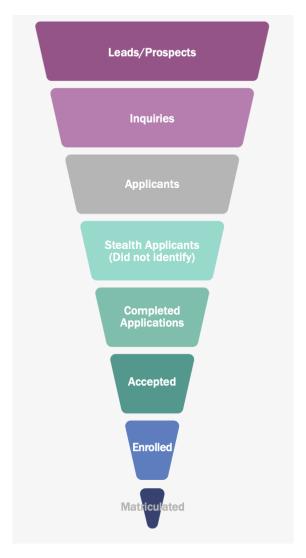


Figure S1: The Enrollment Funnel

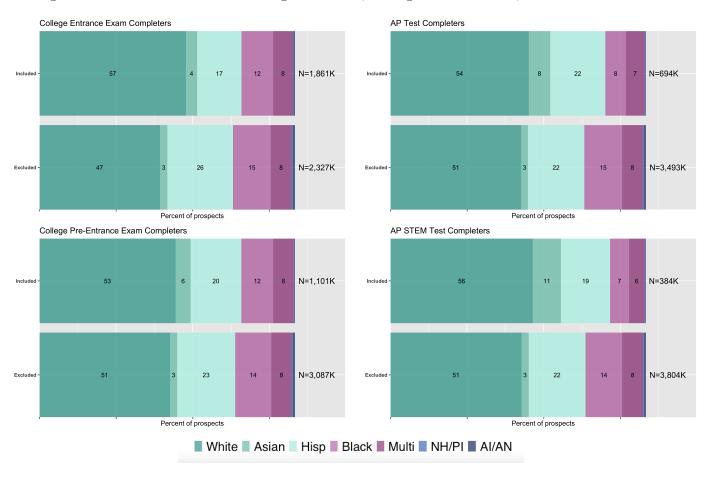


Figure S2: Test Takers Across College Extrance, College Pre-Entrance, and AP Assessments



Figure S3: AP Filter Across Thresholds

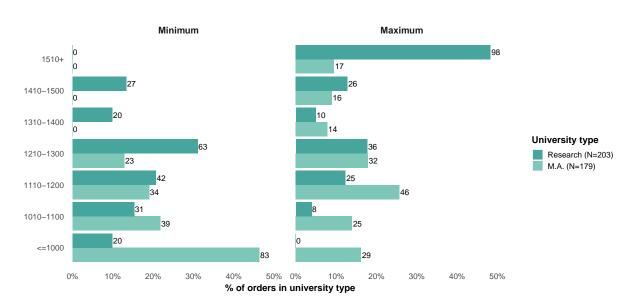


Figure S4: PSAT Filter Used by Research vs. Master's Universities

Figure S5: Academic Combination: GPA (3.0+) and AP (across score thresholds)

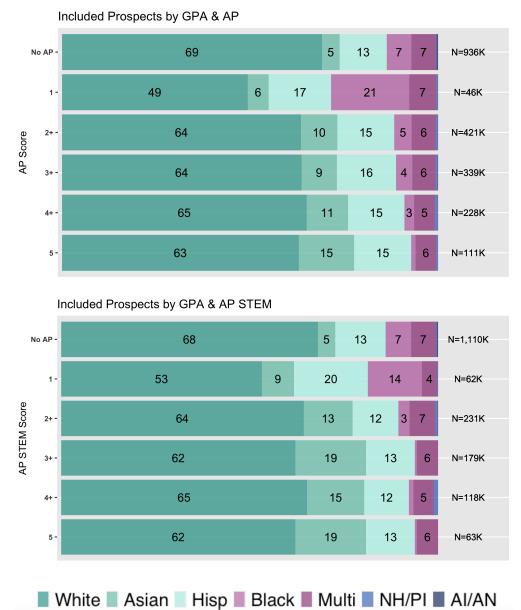


Table S1: HSLS09 Descriptive Statistics

	Unweighted	N	SE	Pct
Race/Ethnicity				
White	$9,\!390$	2,163,043	45,293	51.7
Asian	1,370	150,222	$15,\!373$	3.6
Hisp	$2,\!520$	$920,\!384$	$41,\!451$	22.0
Black	1,660	574,370	36,346	13.7
Multi	1,410	332,043	12,921	7.9
NH/PI	70	18,784	$5,\!241$	0.4
AI/AN	110	28,519	6,288	0.7
Academic Filters				
College Entrance Exam Completer	7,910	1,860,677	$54,\!277$	55.6
College Pre-Entrance Exam Completer	4,780	3,086,739	51,247	73.7
AP test-taker (any)	2,990	694,359	33,918	16.6
AP test-taker (STEM)	1,800	383,669	23,721	9.2
Academic GPA	16,480	$4,\!177,\!402$	$6,\!863$	99.8
Missing Academic GPA	40	9,964	$6,\!562$	0.2

 $NOTE:\ Unweighted\ sample\ sizes\ rounded\ to\ nearest\ 10\ per\ NCES\ restricted\ data\ license\ regulations.$

Table S2: Characteristics of universities in public records request sample

						τ	Indergraduat	e Freshmen			
	Type	Tuition & Fees, In-State	Total Enrollment	% Non-Resident	% Pell	% Asian	% Black	% Hispanic	% Native American	% Multiracial	% White
Arizona State University-Tempe	Research	\$10,792	54,161	40	29	9	4	23	1	5	50
Northern Arizona University	Research	\$10,289	29,609	38	35	2	3	26	2	7	57
University of California-Davis	Research	\$14,419	31,437	19	33	25	2	23	0	5	21
University of California-Irvine	Research	\$13,738	28,947	26	38	38	2	26	0	4	11
University of California-San Diego	Research	\$14,018	29,613	26	31	34	1	23	0	5	18
University of Illinois at Chicago	Research	\$15,027	19,476	8	59	22	8	40	0	3	22
University of Illinois at Urbana-Champaign	Research	\$17,293	35,476	26	24	20	7	13	0	3	41
Illinois State University	Research	\$12,353	20,115	4	30	2	10	12	0	3	71
Northeastern Illinois University	Master's	\$9,638	9,260	2	64	6	30	44	0	2	11
University of Illinois at Springfield	Master's	\$11,523	3,500	10	38	2	18	18	1	5	55
Texas A&M University-Texarkana	Master's	\$6,963	1,953	16	42	1	16	23	0	4	46
Stephen F Austin State University	Master's	\$7,716	12,149	1	41	1	16	24	0	5	5
Tarleton State University	Master's	\$7,367	12,853	2	40	1	6	21	0	3	6
Texas A & M University-College Station	Research	\$10,294	53,515	6	21	9	3	26	0	3	5

SOURCE: U.S. Department of Education, Integrated Postsecondary Education Data System, 2017-18.

Table S3: Assessment Completer Differences in Proportion

	Included	Excluded	Difference	Lower CI	Upper CI
College Ent	rance Exam				
White	0.573	0.472	0.101***	0.100	0.102
Asian	0.045	0.029	0.016***	0.015	0.016
Hisp	0.173	0.257	-0.084***	-0.085	-0.083
Black	0.124	0.147	-0.023***	-0.024	-0.022
Multi	0.077	0.081	-0.004***	-0.005	-0.004
NH/PI	0.003	0.006	-0.003***	-0.003	-0.002
AI/AN	0.005	0.008	-0.003***	-0.003	-0.003
College Pre	-Entrance Exa	m			
White	0.533	0.511	0.022***	0.021	0.023
Asian	0.058	0.028	0.030***	0.030	0.031
$_{ m Hisp}$	0.199	0.227	-0.028***	-0.029	-0.027
Black	0.125	0.142	-0.017***	-0.018	-0.016
Multi	0.08	0.079	0.001***	0.001	0.002
NH/PI	0.003	0.005	-0.002***	-0.002	-0.002
AI/AN	0.002	0.009	-0.007***	-0.007	-0.007
AP					
White	0.542	0.512	0.030***	0.029	0.031
Asian	0.083	0.026	0.057***	0.056	0.058
Hisp	0.216	0.221	-0.005***	-0.006	-0.004
Black	0.081	0.148	-0.067***	-0.068	-0.067
Multi	0.072	0.081	-0.009***	-0.009	-0.008
NH/PI	0.005	0.004	0.001***	0.000	0.001
AI/AN	0.001	0.008	-0.007***	-0.007	-0.006
AP STEM					
White	0.557	0.513	0.044***	0.043	0.046
Asian	0.11	0.028	0.082***	0.081	0.083
Hisp	0.193	0.223	-0.030***	-0.031	-0.029
Black	0.074	0.144	-0.070***	-0.071	-0.069
Multi	0.06	0.081	-0.021***	-0.022	-0.020
NH/PI	0.004	0.005	-0.001	-0.000	0.000
AI/AN	0.002	0.007	-0.005***	-0.006	-0.005

Table S4: Score Threshold Proportion Differences in Included vs. Excluded across Race/Ethnicity

	\mathbf{White}	Asian	\mathbf{Hisp}	Black	\mathbf{Multi}	NH/PI	AI/AN
College Entrance	Exam						
Less than 1000	-0.062***	-0.010***	0.004***	0.065***	0.005***	-0.003***	0.002***
1000+	0.217***	0.033***	-0.129***	-0.103***	-0.012***	-0.001***	-0.006***
1200+	0.209***	0.057***	-0.137***	-0.103***	-0.025***	0.001***	-0.003***
1300+	0.205***	0.090***	-0.137***	-0.122***	-0.027***	-0.002***	NA
1400+	0.170***	0.160***	-0.175***	-0.130***	-0.012***	NA	NA
College Pre-Entra	ance Exam						
Less than 120	-0.194***	0.007***	0.076***	0.105***	0.014***	-0.004***	-0.005***
120+	0.098***	0.034***	-0.062***	-0.060***	-0.003***	-0.001***	-0.006***
170+	0.185***	0.051***	-0.093***	-0.123***	-0.015***	0.001*	NA
200+	0.116***	0.151***	-0.102***	NA	-0.015***	NA	NA
220+	-0.078***	0.417***	-0.191***	NA	0.002	NA	NA
AP							
1	-0.143***	0.022***	0.056***	0.077***	-0.001	-0.003***	-0.006***
2+	0.066***	0.061***	-0.017***	-0.094***	-0.010***	0.001***	-0.007***
3+	0.070***	0.058***	-0.017***	-0.091***	-0.015***	0.001*	-0.005***
4+	0.086***	0.071***	-0.022***	-0.106***	-0.026***	0.003***	-0.005***
5+	0.084***	0.104***	-0.046***	-0.109***	-0.025***	0.001	NA
AP STEM							
1	-0.100***	0.046***	0.090***	0.015***	-0.040***	-0.004***	-0.007***
2+	0.101***	0.092***	-0.077***	-0.101***	-0.012***	0.002***	-0.005***
3+	0.130***	0.105***	-0.097***	-0.111***	-0.025***	0.003***	-0.005***
4+	0.113***	0.119***	-0.106***	-0.103***	-0.023***	0.007***	-0.006***
5+	0.078***	0.151***	-0.101***	-0.096***	-0.020***	NA	NA
GPA							
Less than 2.0	-0.198***	-0.036***	0.104***	0.109***	0.016***	-0.002***	0.006***
2.0+	0.193***	0.037***	-0.103***	-0.107***	-0.016***	0.002***	-0.006***
2.5+	0.212***	0.037***	-0.112***	-0.112***	-0.018***	-0.001***	-0.006***
3.0+	0.109***	0.032***	-0.068***	-0.060***	-0.008***	-0.004***	-0.002***
3.5+	0.233***	0.034***	-0.124***	-0.112***	-0.026***	0.000	-0.006***

 $SOURCE: U.S.\ Department\ of\ Education,\ National\ Center\ for\ Education\ Statistics,\ High\ School\ Longitudinal\ Study\ of\ 2009\ (HSLS09).$

Table S5: Zip Code Affluence Proportion Differences in Included vs. Excluded across Race/Ethnicity

	White	Asian	Hisp	Black	Multi	NH/PI	AI/AN
Affluence Percentile							
Less than 20%	-0.248***	-0.009***	0.112***	0.156***	-0.008***	0.001***	-0.003***
20-39%	-0.030***	-0.011***	0.034***	-0.005***	0.008***	-0.004***	0.008***
40-59%	0.035***	-0.014***	0.015***	-0.028***	-0.005***	-0.002***	0.000
60-79%	0.051***	-0.004***	-0.035***	-0.024***	0.011***	0.004***	-0.003***
80-89%	0.079***	0.000*	-0.028***	-0.054***	0.001*	0.002***	0.000***
Greater than 90%	0.151***	0.047***	-0.108***	-0.071***	-0.013***	0.001***	-0.004***

NOTE: *p<0.05, **p<0.01, ***p<0.001

Table S6: GPA and College Entrance or Pre-Entrance Exam Score Threshold Proportion Differences in Included vs. Excluded across Race/Ethnicity

	White	Asian	\mathbf{Hisp}	Black	Multi	NH/PI	AI/AN
College E	ntrance Exan	ı					
1050+	0.233***	0.041***	-0.133***	-0.124***	-0.011***	0.001	-0.006***
1100+	0.229***	0.045***	-0.127***	-0.130***	-0.011***	-0.002***	-0.004***
1150+	0.229***	0.048***	-0.126***	-0.135***	-0.010***	-0.002***	-0.005***
1200+	0.243***	0.066***	-0.144***	-0.135***	-0.025***	-0.001***	-0.004***
College P	re-Entrance I	Exam					
<120	-0.135***	0.075***	0.081***	-0.012***	0.003*	NA	-0.006***
120+	0.164***	0.051***	-0.099***	-0.097***	-0.012***	-0.001***	-0.005***
170+	0.199***	0.059***	-0.098***	-0.130***	-0.021***	-0.002***	NA
200+	0.119***	0.154***	-0.089***	NA	-0.033***	NA	NA
220+	-0.053***	0.386***	-0.190***	NA	0.007	NA	NA

Table S7: GPA and AP Proportion Differences in Included vs. Excluded across Race/Ethnicity

	\mathbf{White}	Asian	\mathbf{Hisp}	Black	Multi	NH/PI	AI/AN
AP							
1	-0.023***	0.020***	-0.054***	0.072***	-0.007***	0.000	-0.006***
$^{2+}$	0.132***	0.068***	-0.077***	-0.100***	-0.017***	0.001***	-0.006***
3+	0.131***	0.063***	-0.068***	-0.102***	-0.019***	0.002***	-0.006***
4+	0.141***	0.078***	-0.074***	-0.118***	-0.026***	0.004***	-0.006***
5+	0.116***	0.114***	-0.070***	-0.130***	-0.025***	0.001***	NA
AP ST	EM						
1	0.016***	0.050***	-0.024***	0.006***	-0.039***	-0.003***	-0.006***
$^{2+}$	0.134***	0.100***	-0.104***	-0.113***	-0.012***	0.002***	-0.006***
3+	0.163***	0.108***	-0.114***	-0.129***	-0.025***	0.004***	NA
4+	0.139***	0.119***	-0.105***	-0.129***	-0.026***	0.008***	NA
5+	0.106***	0.153***	-0.091***	-0.134***	-0.024***	NA	NA

Table S8: GPA, College Entrance/Pre-Entrance Exam, by Zip Code Affluence Proportion Differences in Included vs. Excluded across Race/Ethnicity

	\mathbf{White}	Asian	\mathbf{Hisp}	Black	\mathbf{Multi}	NH/PI	AI/AN
College Entrance Ex	am (1050+)						
Less than 20%	0.210***	0.012***	-0.129***	-0.072***	-0.011***	-0.002***	-0.007***
20-39%	0.210***	0.001*	-0.065***	-0.122***	-0.015***	-0.005***	-0.006***
40-59%	0.201***	0.014***	-0.117***	-0.102***	0.009***	0.002***	-0.007***
60-79%	0.228***	0.021***	-0.106***	-0.123***	-0.009***	-0.005***	-0.007***
80-89%	0.200***	0.044***	-0.129***	-0.117***	-0.017***	0.012***	0.006**
Greater than 90%	0.200***	0.091***	-0.156***	-0.110***	-0.019***	0.000	NA
College Pre-Entranc	e Exam (150-	+)					
Less than 20%	0.215***	0.049***	-0.093***	-0.111***	-0.054***	0.002**	-0.007**
20-39%	0.181***	0.011***	-0.036***	-0.131***	-0.014***	-0.005***	-0.007***
40-59%	0.206***	0.017***	-0.122***	-0.113***	0.014***	0.005***	-0.007***
60-79%	0.184***	0.042***	-0.115***	-0.118***	0.017***	-0.005***	-0.007***
80-89%	0.180***	0.039***	-0.125***	-0.109***	0.008***	0.012***	-0.004**
Greater than 90%	0.193***	0.114***	-0.167***	-0.104***	-0.024***	NA	NA

Table S9: Filter by neighborhood segments

2011 D+ Cluster	SAT Math	SAT CR	Going Out of State	Percent NonWhite	Need Financial Aid	Med Income
51	546	533	32%	30%	57%	\$95,432
52	480	470	30%	58%	71%	\$63,578
53	561	544	32%	50%	55%	\$92,581
54	458	443	25%	83%	76%	\$38,977
55	566	565	52%	24%	63%	\$71,576
56	420	411	29%	93%	66%	\$35,308
57	541	519	52%	47%	43%	\$67,394
58	533	489	28%	87%	69%	\$68,213
59	561	562	52%	24%	74%	\$54,750
60	589	590	63%	37%	36%	\$104,174
61	585	567	51%	30%	40%	\$123,858
62	596	595	67%	24%	72%	\$59,824
63	548	541	39%	23%	65%	\$69,347
64	466	466	48%	34%	29%	\$49,829
65	440	433	23%	93%	78%	\$45,081
66	499	492	20%	12%	76%	\$50,453
67	519	501	27%	53%	59%	\$60,960
68	552	558	52%	35%	65%	\$57,902
69	534	521	37%	19%	65%	\$88,100
70	613	598	65%	29%	61%	\$86,381
71	405	408	39%	97%	68%	\$42,661
72	399	397	31%	87%	47%	\$32,708
73	528	514	29%	42%	62%	\$90,849
74	433	435	29%	84%	79%	\$44,065
75	459	457	28%	85%	72%	\$50,421
76	514	509	27%	38%	64%	\$61,332
77	502	492	26%	18%	75%	\$62,372
78	594	578	56%	26%	39%	\$134,400
79	550	551	57%	32%	74%	\$40,909
80	534	527	39%	39%	65%	\$49,877
81	491	483	27%	57%	72%	\$63,030
82	496	491	29%	21%	75%	\$53,465
83	500	490	19%	26%	71%	\$49,335
Total	512	502	32%	43%	65 %	\$70,231

NOTE: All Segment orders analyzed in Figure ?? filtered for the following school and neighborhood clusters combinations: 1) Neighborhood cluster 51, with any high school cluster; 2) Neighborhood cluster 53, with high school cluster 70; 3) Neighborhood cluster 58, with any high school cluster; 3) Neighborhood cluster 60, with high school clusters 65, 70, or 79; 4) Neighborhood cluster 61, with high school cluster 65; 5) Neighborhood cluster 63, with high school clusters 68 or 70; 6) Neighborhood cluster 69, with high school clusters 65 or 79; 7) Neighborhood cluster 70, with high school clusters 65, 68, 70, or 75; 8) Neighborhood cluster 73, with any high school cluster; 9) Neighborhood cluster 78, with high school cluster 66; 10) High school cluster 79, with any neighborhood.

Table S10: Filter by high school segments

2011 D+ Cluster	SAT Math	SAT CR	Going Out of State	Percent NonWhite	Need Financial Aid	Med Income
51	462	457	14%	33%	68%	\$40,918
52	489	496	81%	99%	77%	\$64,730
53	471	484	28%	38%	62%	\$60,833
54	376	371	33%	96%	38%	\$38,146
55	489	481	39%	46%	44%	\$71,845
56	536	508	73%	43%	49%	\$63,967
57	434	435	29%	82%	79%	\$48,301
58	592	577	51%	27%	32%	\$104,509
59	499	489	19%	18%	74%	\$47,685
60	523	549	23%	30%	33%	\$70,175
61	485	370	33%	89%	9%	\$61,385
62	474	473	34%	92%	67%	\$55,515
63	440	427	28%	86%	72%	\$49,238
64	606	542	37%	89%	57%	\$81,911
65	515	503	28%	43%	65%	\$72,692
66	498	515	37%	37%	73%	\$60,272
67	526	546	48%	41%	69%	\$71,279
68	541	540	41%	26%	62%	\$79,260
69	390	395	36%	92%	74%	\$43,391
70	595	581	56%	33%	48%	\$105,721
71	400	412	57%	98%	80%	\$43,137
72	528	544	35%	25%	64%	\$70,018
73	451	438	24%	89%	76%	\$48,406
74	654	579	76%	80%	46%	\$59,089
75	514	502	31%	20%	71%	\$72,850
76	600	584	72%	50%	28%	\$90,265
77	595	508	64%	75%	39%	\$39,490
78	473	468	48%	43%	22%	\$56,703
79	594	585	61%	26%	71%	\$65,180
Total	514	502	32%	44%	65%	\$70,223

NOTE: All Segment orders analyzed in Figure ?? filtered for the following school and neighborhood clusters combinations: 1) Neighborhood cluster 51, with any high school cluster; 2) Neighborhood cluster 53, with high school cluster 70; 3) Neighborhood cluster 58, with any high school cluster; 3) Neighborhood cluster 60, with high school clusters 65, 70, or 79; 4) Neighborhood cluster 61, with high school cluster 65; 5) Neighborhood cluster 63, with high school clusters 65 or 79; 7) Neighborhood cluster 70, with high school clusters 65, 68, 70, or 75; 8) Neighborhood cluster 73, with any high school cluster; 9) Neighborhood cluster 78, with high school cluster 66; 10) High school cluster 79, with any neighborhood.