

The Power of Certainty: Experimental Evidence on the  
Effective Design of Free Tuition Programs  
ONLINE APPENDIX

Elizabeth Burland, Susan Dynarski, Katherine Michelmore,  
Stephanie Owen, and Shwetha Raghuraman

## Appendix A. Intervention Materials

### Exhibit 1 HAIL Student Letter

September 11, 2019

<<First\_Name>> <<Last\_Name>>  
<<Person\_Address1>>  
<<Person\_Address2>>  
<<Person\_City>>, <<Person\_State>> <<Person\_Postal>>

Dear <<First\_Name>>,

As you are thinking about life after your senior year, we hope you are considering and will apply to the University of Michigan. You can put your incredible talents to work here in Ann Arbor – relatively close to home – where you will be surrounded by professors and resources to help you during your journey.

We believe you to be an academically excellent student who has worked hard for your achievements. If you apply to U-M and are admitted for the fall 2020 term, we will reward your hard work with the **HAIL Scholarship**, which covers the full cost of your in-state tuition for four years of study at our Ann Arbor campus. That's an approximate \$66,000 value to you and your family.

Additionally, after a review of your financial aid applications, you will likely be eligible for additional aid to cover costs of housing, meals, textbooks, and other expenses.

The University of Michigan is an outstanding advantage for families in our state. Among all Michigan colleges, U-M students are the most likely to earn their degree, with 92% graduating in six years. When they do, they join a global base of more than 580,000 alumni who are eager to help them make connections and advance in their careers. Importantly, students who hold a U-M bachelor's degree earn 22% more annually than the national median, or \$61,099, within five years after graduation. And 10 years after graduation that number rises to more than \$85,000.

<<First\_Name>>, please take a look at the enclosed materials and discuss this outstanding offer with your family. We look forward to receiving your application, with the fee waived, preferably by our Early Action deadline of November 1.

Similarly, please begin submitting your financial aid documents as of Oct. 1, when the FAFSA and CSS Profile become available. You do not need to wait until your application is complete to submit these documents. More information about applications to the university and for financial aid can be found at [admissions.umich.edu](https://admissions.umich.edu).

Additionally, you may reach out with admissions questions to Dustin Castro in the Office of Undergraduate Admissions at 734-615-4008 or [dcastro@umich.edu](mailto:dcastro@umich.edu); or with financial aid questions to Raquel Arevalo in our Office of Financial Aid at 734-763-6600 or [arevalor@umich.edu](mailto:arevalor@umich.edu).

Go Blue!

Dr. Mark Schlissel  
President

**Exhibit 2**  
Go Blue Encouragement Student Letter

September 11, 2019

<<First\_Name>> <<Last\_Name>>  
<<Person\_Address1>>  
<<Person\_Address2>>  
<<Person\_City>>, <<Person\_State>> <<Person\_Postal>>

Dear <<First\_Name>>,

As you are thinking about life after your senior year, we hope you are considering and will apply to the University of Michigan. You can put your incredible talents to work here in Ann Arbor – relatively close to home – where you will be surrounded by professors and resources to help you during your journey.

We believe you to be an academically excellent student who has worked hard for your achievements. That's why we hope you are planning to apply to the University of Michigan. Furthermore, our **Go Blue Guarantee** can help you with your college costs, as it covers the full cost of in-state tuition for in-state students who are admitted to the Ann Arbor campus and whose families earn incomes of \$65,000 or less, with \$50,000 or less in assets. If your family earns more, you can still Go Blue; we provide tuition support for families with incomes up to \$180,000.

The University of Michigan is an outstanding advantage for families in our state. Among all Michigan colleges, U-M students are the most likely to earn their degree, with 92% graduating in six years. When they do, they join a global base of more than 580,000 alumni who are eager to help them make connections and advance in their careers. Importantly, students who hold a U-M bachelor's degree earn 22% more annually than the national median, or \$61,099, within five years after graduation. And 10 years after graduation that number rises to more than \$85,000.

<<First\_Name>>, please take a look at the enclosed materials and discuss this outstanding offer with your family. We look forward to receiving your application, with the fee waived, preferably by our Early Action deadline of November 1.

Similarly, please begin submitting your financial aid documents as of Oct. 1, when the FAFSA and CSS Profile become available. You do not need to wait until your application is complete to submit these documents, and may receive additional aid to cover costs of housing, meals, textbooks, and other expenses. More information about applications to the university and for financial aid can be found at [admissions.umich.edu](https://admissions.umich.edu).

Additionally, you may reach out with admissions questions to Dustin Castro in the Office of Undergraduate Admissions at 734-615-4008 or [dcastro@umich.edu](mailto:dcastro@umich.edu); or with financial aid questions to Jim Eddy in our Office of Financial Aid at 734-763-8424 or [ofa-go.blue.guarantee@umich.edu](mailto:ofa-go.blue.guarantee@umich.edu).

Go Blue!

Dr. Mark Schlissel  
President

Exhibit 3  
HAIL Foldout (first page)



UNIVERSITY OF  
MICHIGAN

# BECOMING A WOLVERINE

STEP 1

## PREPARE & RESEARCH

Need a  
timeline and  
planning resource?  
**bigfuture.**  
[collegeboard.org](http://collegeboard.org)

Are you the  
first in your family  
to go to college?  
Check out  
**imfirst.org**

Looking for  
guidance and  
advice on the college  
admissions process?  
**coalitionfor**  
[collegeaccess.org](http://collegeaccess.org)

STEP 2

At Michigan, you apply to one  
specific school or college, or  
apply for dual enrollment in  
two schools or colleges.

### ACADEMIC UNITS THAT ADMIT/ENROLL FRESHMEN:

College of Literature,  
Science, and the Arts  
College of Engineering  
School of Music,  
Theatre & Dance  
Stamps School of  
Art & Design

Taubman College of  
Architecture  
and Urban Planning  
School of Nursing  
School of Kinesiology  
Ross School of Business

## APPLY

You can apply to Michigan online now by submitting  
the Common App ([commonapp.org](http://commonapp.org)) or  
the Coalition App ([coalitionforcollegeaccess.org](http://coalitionforcollegeaccess.org))\*

\*Students should only complete one application. We will evaluate the applications equally, and neither application gives a prospective student an advantage. Regardless of application chosen, consider utilizing MyCoalition, a support platform that can assist you in your college search and application process. We will waive the application fee. Just check the fee waiver request box on the application.

**YOUR TRANSCRIPT:** The official document issued by your high school that shows your grades, GPA, class ranking, etc.  
**STANDARDIZED TEST SCORES:** Scores you received on your SAT and/or ACT. When you take the test, you arrange to have the scores sent directly to U-M by writing our code number in the blank: ACT code: 2082 SAT code: 1839

**ESSAYS:** These are part of your admissions application; essays are a personal statement where you respond to questions posed by the university and tell a little bit about yourself—it gives the university some insight into your character and personality.

**LETTERS OF RECOMMENDATION:** Letters from adults you know in a professional capacity, like teachers or counselors, which are written in support of your character and qualifications as a college student.



Questions about applying to U-M? Please contact Dustin Castro in the Office of Undergraduate Admissions at 734-615-4008.

### HOW WE REVIEW:

Yes, we want excellent grades and academic rigor, but we also look for students who seek new experiences and are willing to take on new challenges. So we look at your life outside the classroom—clubs, sports, and after-school jobs.

STEP 3

## ATTEND WITH FREE TUITION

If admitted you will be attending U-M with **4 years of free tuition.\***

To determine your eligibility for financial aid beyond free tuition,  
please submit the following after October 1 of your high school senior year:

Complete the CSS Profile through the College Board.  
If the College Board does not automatically waive  
the required fee, then U-M will.

[cssprofile.collegeboard.org](http://cssprofile.collegeboard.org)

Complete the Free Application for  
Federal Student Aid (the FAFSA).  
There is no charge for this.

[fafsa.gov](http://fafsa.gov)

### FEE WAIVER: COLLEGE APPLICATION

The Common App is available online at:  
[commonapp.org](http://commonapp.org)

The Coalition App is available online at:  
[coalitionforcollegeaccess.org](http://coalitionforcollegeaccess.org)

There is a fee for filling out either  
application. However, by checking  
the "fee waiver" box, the fee  
will be waived.

### NO FEE: FAFSA (FREE APPLICATION FOR FEDERAL STUDENT AID)

The form can be accessed online at:  
[fafsa.gov](http://fafsa.gov)

On the FAFSA, there will be a space  
for U-M's Federal Code which is 002325.

There is never a fee to fill  
out the FAFSA.

### FEE WAIVER: CSS PROFILE

You can find the CSS Profile at:  
[cssprofile.collegeboard.org](http://cssprofile.collegeboard.org)

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You may be offered a fee waiver  
while completing this application.  
If you are not, please contact  
the Office of Financial Aid at  
734-763-6600.






The HAIL Scholarship is brought to you by:



OFFICE OF  
UNDERGRADUATE ADMISSIONS  
UNIVERSITY OF MICHIGAN



OFFICE OF  
FINANCIAL AID  
UNIVERSITY OF MICHIGAN

## THE VALUE OF A MICHIGAN DEGREE

The University of Michigan is consistently ranked as one of the top 25 universities worldwide, and as the No. 1 public research university in the U.S.

We appreciate our rankings, but we value student success even more. At Michigan, you'll stay, graduate, and become a member of the world's largest living alumni group.

**M** Our freshman retention rate is 97%, compared to the national rate of 79%.  
(Our students like it here!)

 Our graduation rate is 92%, compared to the national average of 59%. (Our students learn—and go on to great things!)


 After graduation, you'll become part of an incredibly large, supportive network of alumni from all over the world. Anywhere you go, you're likely to meet a proud Wolverine. GO BLUE!

U-M offers all this and better lifetime earnings, too.

By 2020, 65% of job openings will require workers with at least some college education.


Georgetown University Center on Education and the Workforce, Recovery 2020 Report

\$61,099



Average earnings of U-M Bachelor's Degree grads after 5 years

\$85,000



Average earnings of U-M Bachelor's Degree grads after 10 years

Department of Education (2018)

Learn more and register for a **free** U-M e-book:

<<purl>>



HAIL: High-Achieving Involved Leader

A scholarship at the University of Michigan for students like you who are intent on reaching their full potential at a school with the resources and support to help them succeed.

CSS PROFILE

The CSS Profile is a financial aid application that allows us to determine eligibility for U-M gift aid and scholarships.

This money can be used to pay for expenses other than tuition and does not have to be paid back.



FAFSA  
(FREE APPLICATION FOR  
FEDERAL STUDENT AID)

This is the application used to determine eligibility for federal, state, and college-sponsored financial aid, including grants, educational loans, and Work-Study programs.

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COLLEGE  
APPLICATION

The Common Application and Coalition Application are online college applications used by U-M. Students enter basic information and statistics into either application, and meet the school's particular requirements—like the additional essays.





**Exhibit 4**  
Go Blue Encouragement Foldout (first page)



**UNIVERSITY OF MICHIGAN**

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At Michigan, you apply to one specific school or college, or apply for dual enrollment in two schools or colleges.

**ACADEMIC UNITS THAT ADMIT/ENROLL FRESHMEN:**

College of Literature, Science, and the Arts	Taubman College of Architecture and Urban Planning
College of Engineering	School of Nursing
School of Music, Theatre & Dance	School of Kinesiology
Stamps School of Art & Design	Ross School of Business

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\*Students should only complete one application. We will evaluate the applications equally, and neither application gives a prospective student an advantage. Regardless of application chosen, consider utilizing MyCoalition & support platform that can assist you in your college search and application process.

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**You do not have to apply specifically for the Go Blue Guarantee. The Go Blue Guarantee is automatically awarded to qualified Michigan residents who:**

1. Apply to U-M
2. Get admitted
3. Apply for financial aid by March 31

**It's that simple.**

**FREE TUITION**

FOR FAMILIES WITH INCOMES \$45,000 & UNDER

ASSETS BELOW \$40,000

**TUITION SUPPORT**

FOR FAMILIES WITH INCOMES UP TO \$150,000

FOUR YEARS FOR QUALIFYING IN-STATE STUDENTS  
ANN ARBOR CAMPUS

[goblueguarantee.umich.edu](http://goblueguarantee.umich.edu)

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On the CSS Profile, there will be a space for U-M's Code which is 1639.

***You may be offered a fee waiver while completing this application. If you are not, please contact the Office of Financial Aid at 734-763-6600.***






## GO BLUE GUARANTEE

**FREE TUITION**  
FOR FAMILIES WITH  
INCOMES \$45,000 & UNDER  
ASSETS BELOW \$50,000


**TUITION SUPPORT**  
FOR FAMILIES WITH  
INCOMES UP TO \$180,000

FOUR YEARS FOR QUALIFYING IN-STATE STUDENTS | ANN ARBOR CAMPUS

The Go Blue Guarantee is brought to you by:



OFFICE OF  
UNDERGRADUATE ADMISSIONS  
UNIVERSITY OF MICHIGAN



OFFICE OF  
FINANCIAL AID  
UNIVERSITY OF MICHIGAN


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Average earnings of U-M Bachelor's Degree grads after 5 years




Average earnings of U-M Bachelor's Degree grads after 10 years



Department of Education (2018)

<<purl>>

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The Go Blue Guarantee is our commitment to keeping a world-class education affordable and accessible for all Michigan residents pursuing undergraduate study on our Ann Arbor campus.

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CSS PROFILE

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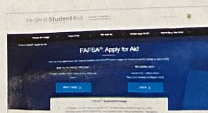
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## Appendix B. Appendix Tables and Figures

**Appendix Table 1**  
School-Level Balance

Characteristic	(1) Control	(2) HAIL	(3) GB Encour.	(1) vs. (2) P-value	(1) vs. (3) P-value	(2) vs. (3) P-value	Joint F-test P-value
Pred. prob. of highly selective college attendance	0.13 (0.13)	0.13 (0.12)	0.13 (0.12)	0.81	0.58	0.43	0.71
School in UP	0.15 (0.36)	0.18 (0.38)	0.15 (0.36)	0.52	1.00	0.52	0.76
Town/rural school	0.53 (0.50)	0.53 (0.50)	0.52 (0.50)	1.00	0.78	0.77	0.95
Suburban school	0.35 (0.48)	0.35 (0.48)	0.36 (0.48)	1.00	0.78	0.77	0.95
Distance of school from UM (miles)	98.9 (86.74)	104.1 (86.65)	97.5 (75.65)	0.55	0.85	0.39	0.68
UM application rate of school, class of 2015	0.07 (0.08)	0.07 (0.10)	0.06 (0.09)	0.89	0.60	0.56	0.81
Average ACT score of school, class of 2015	19.96 (1.85)	19.92 (2.06)	19.89 (2.07)	0.85	0.74	0.92	0.94
Proportion of sample students with A or A+ GPA	0.86 (0.24)	0.87 (0.22)	0.84 (0.26)	0.74	0.47	0.30	0.56
Proportion of sample students with A-, B+, or B GPA	0.14 (0.24)	0.13 (0.22)	0.16 (0.26)	0.68	0.52	0.29	0.57
Average SAT of sample students	1260 (71.14)	1264 (72.77)	1262 (61.83)	0.55	0.86	0.65	0.83
Proportion female	0.56 (0.35)	0.55 (0.36)	0.57 (0.34)	0.71	0.87	0.59	0.86
Proportion under-represented minority	0.17 (0.28)	0.15 (0.27)	0.18 (0.29)	0.59	0.63	0.31	0.59
Proportion eligible for free lunch	0.80 (0.28)	0.81 (0.25)	0.79 (0.28)	0.70	0.71	0.43	0.74
Average number of sample students	3.8 (3.50)	3.7 (3.19)	3.7 (3.51)	0.79	0.76	0.96	0.95
Overall F-test p-value				1.00	1.00	0.93	
Number of schools	159	159	159	318	318	318	477
Number of students	610	595	591	1,205	1,201	1,186	1,796

Notes: All analyses conducted at the school level. P-values for each pair of treatment arms are from a t-test of the coefficient on treatment status from a regression of the characteristic on treatment and strata dummies. The joint F-test p-value for each characteristic is from a joint significance test of the coefficients on treatment dummies from a regression of the characteristic on treatment and strata dummies, run on all treatment arms. For each pair of treatment arms, the overall F-test p-value is from a joint significance test predicting treatment based on the characteristics listed here, excluding the summary index, as well as strata dummies. Standard deviations in parentheses. All regressions use robust standard errors. We rerandomized to achieve balance within region on all listed school characteristics, except the summary index and the proportion eligible for free lunch. Summary index calculated from parameters of an OLS regression estimating the relationship between observable characteristics and a binary indicator for attending a college as competitive as the University of Michigan. “Under-represented minority” includes all students who are Black, Hispanic, American Indian, or Native Hawaiian or Pacific Islander.

Source: [Michigan Department of Education \(2022b\)](#), [University of Michigan Office of Enrollment Management \(2022\)](#).



**Appendix Table 2**  
Applicant Characteristics by Treatment Arm

Characteristic	Control	HAIL	GB Encour.	Control vs. HAIL P-value	Control vs. GBE P-value	HAIL vs. GBE P-value
Pred. prob. of highly selective college attendance	0.23	0.16	0.19	0.00	0.05	0.29
School in UP	0.07	0.14	0.07	0.07	0.77	0.10
Town/rural school	0.31	0.37	0.38	0.55	0.16	0.38
Suburban school	0.44	0.43	0.34	0.31	0.02	0.33
Distance of school from UM (miles)	78.0	89.8	73.3	0.24	0.67	0.08
UM application rate of school, class of 2015	0.11	0.08	0.11	0.34	0.76	0.53
Average ACT score of school, class of 2015	20.64	20.49	20.41	0.72	0.47	0.93
A or A+ GPA	0.90	0.87	0.89	0.22	0.70	0.52
A-, B+, or B GPA	0.10	0.13	0.10	0.25	0.78	0.48
SAT	1309	1285	1289	0.01	0.02	0.63
Female	0.54	0.55	0.55	0.94	0.79	0.93
Under-represented minority	0.18	0.15	0.18	0.53	0.97	0.66
Eligible for free lunch	0.83	0.76	0.81	0.05	0.64	0.24
Average number of sample students at school	7.6	6.6	7.5	0.51	0.86	0.65
Overall F-test p-value				0.00	0.02	0.00
Application rate	0.38	0.63	0.46			
Number of students	229	373	269			

Notes: All analyses conducted at the student level. Treatment arm comparison p-values and overall F-test p-value computed as in Appendix Table as in Appendix Table ???. All variables defined as in Appendix Table ??.

Source: [Michigan Department of Education \(2022b\)](#), [University of Michigan Office of Enrollment Management \(2022\)](#).

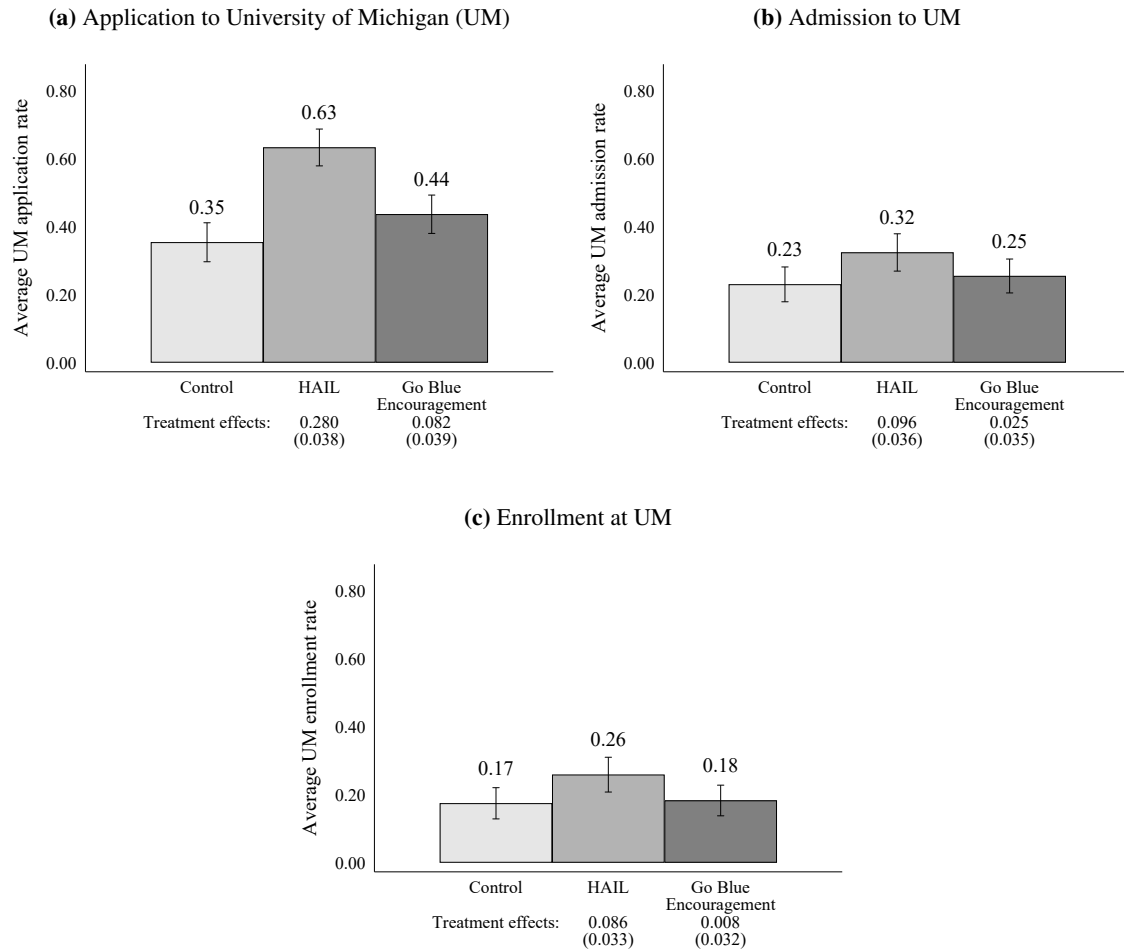
**Appendix Table 3**  
Student Financial Aid Amounts by Treatment Arm

	Focal Cohort					
	First Year					
	Mean			H-C	GBE-C	H-GBE
	Control	HAIL	GBE			
Grants	\$25,432 (918)	\$26,676 (423)	\$25,172 (690)	\$1,244 (1014)	-\$260 (1152)	\$1,504 (812)
Loans	\$1,217 (412)	\$956 (184)	\$1,419 (346)	-\$261 (453)	\$202 (540)	-\$463 (393)
Proportion with Grants $\geq$ Tuition	0.886 (0.034)	1.000 (0.000)	0.873 (0.035)	0.114 (0.034)	-0.013 (0.049)	0.127 (0.035)
Expected Family Contribution	\$2,336 (605)	\$2,481 (524)	\$2,464 (564)	\$145 (803)	\$129 (830)	\$17 (773)
Cost of Tuition		\$15,960 (132)				
Number of students	88	117	81			
Number of students in the study	610	595	591			

Notes: Analysis done at the student level. Includes only students enrolled at the University of Michigan full time for full first year and who have financial aid data reported. Standard errors are clustered at the school level. Includes zeros for students who receive no aid. “Total grant aid” includes all institutional and departmental scholarships and grants, federal grants, state grants and scholarships, and private scholarships, and other departmental aid. Expected family contribution is capped at the cost of attendance, as determined by the University of Michigan (includes tuition, fees, books and supplies, room and board, transportation, and personal expenses).

Source: [Michigan Department of Education \(2022b\)](#), [University of Michigan Office of Enrollment Management \(2022\)](#), [University of Michigan Office of Financial Aid \(2022\)](#).

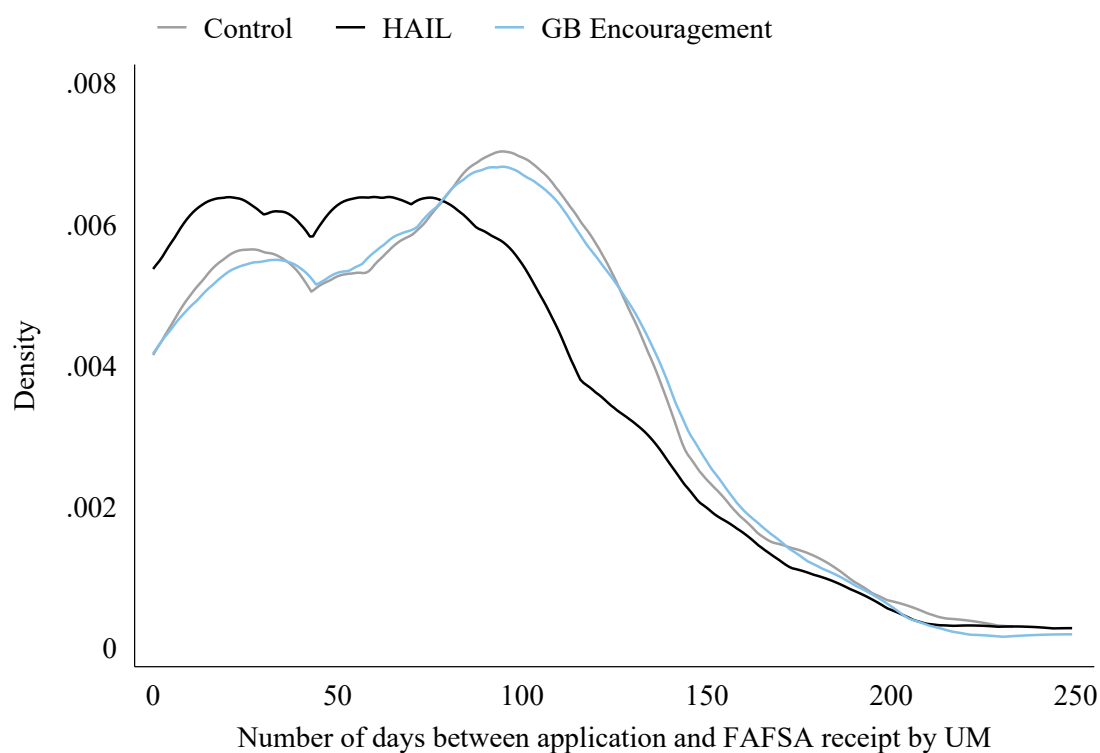
**Appendix Figure 1**  
**Estimated Effect of HAIL Scholarship and Go Blue Encouragement Treatments**  
**on University of Michigan Application, Admission, and Enrollment**



Notes: All analyses done at the school level. Treatment effect coefficients are from estimating Equation 1, a regression of the outcome on indicators for each treatment status (HAIL, Go Blue Encouragement), and strata indicators. The “HAIL” and “Go Blue Encouragement” treatment effects are estimates of  $\beta_1$  and  $\beta_2$ , respectively. Robust standard errors reported in parentheses. Ninety-five percent confidence intervals shown based on robust standard errors. Application, admission, and enrollment measured in the summer and fall following expected high school graduation. Admission and enrollment are unconditional on application.

Source: [Michigan Department of Education \(2022b\)](#), [University of Michigan Office of Enrollment Management \(2022\)](#).

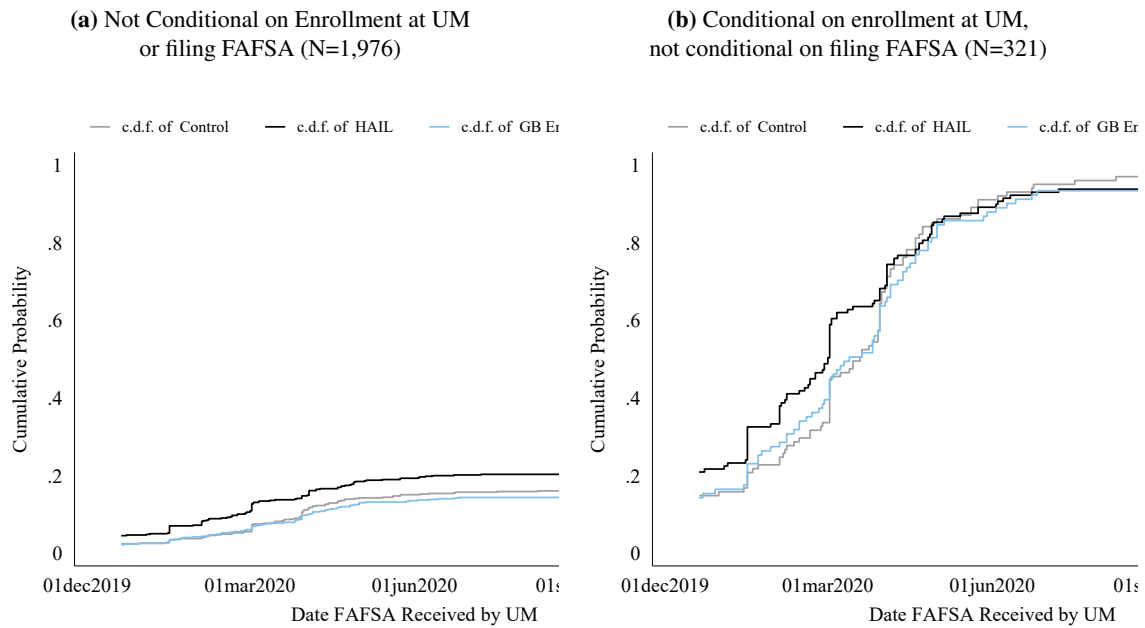
**Appendix Figure 2**  
Days between Application to UM and UM Receipt of FAFSA Application



Notes: Figure plots the kernel density of days between application and when the FAFSA was received by the University of Michigan. The first recorded date of receipt by UM is December 20th, the day after early action admissions decisions were released. To calculate the number of days, we set the earliest application date at December 20th then calculated the FAFSA submission date from there, or the actual recorded date for those who apply later. Students who do not enroll at UM or file a FAFSA are excluded from this figure. Source: [University of Michigan Office of Enrollment Management \(2022\)](#), [University of Michigan Office of Financial Aid \(2022\)](#).

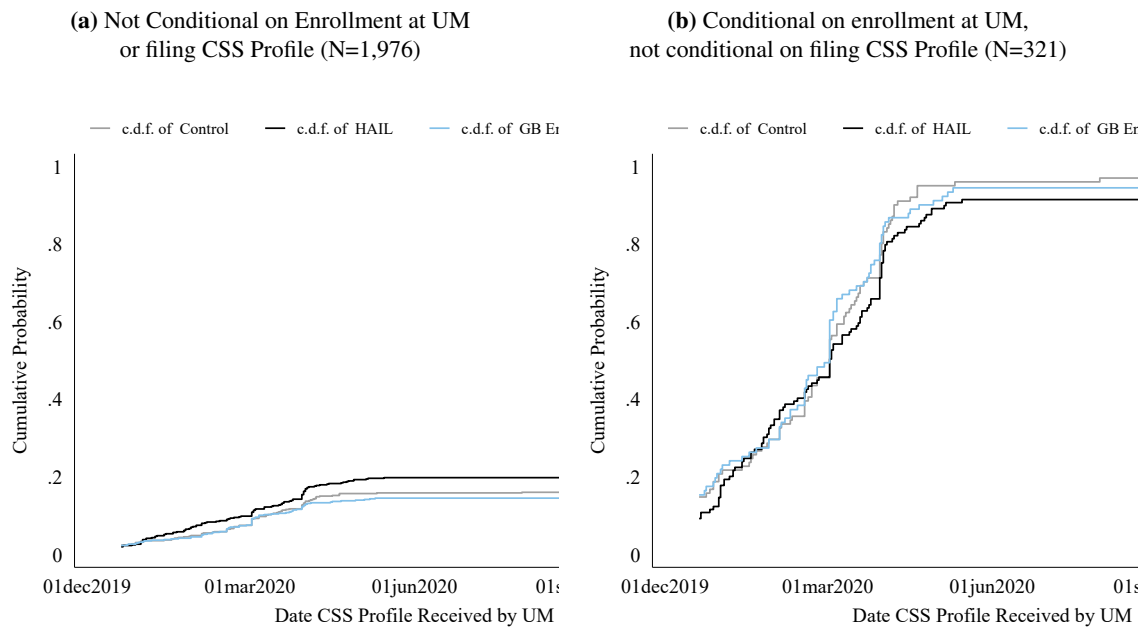


**Appendix Figure 3**  
Cumulative Distribution of the Dates FAFSA was received by UM



Notes: Figure plots the cumulative distribution of the date the FAFSA was received by the University of Michigan. The first recorded date of receipt by UM is December 20th, the day after early action admissions decisions were released. Panel ?? includes the full HAIL sample, and therefore students who never have a FAFSA received by UM. Panel ?? excludes students who do not enroll at UM.  
Source: [University of Michigan Office of Enrollment Management \(2022\)](#), [University of Michigan Office of Financial Aid \(2022\)](#).

**Appendix Figure 4**  
Cumulative Distribution of the Dates CSS Profile was received by UM



Notes: Figure plots the cumulative distribution of the date the CSS Profile was received by the University of Michigan. The first recorded date of receipt by UM is December 20th, the day after early action admissions decisions were released. Panel ?? includes the full HAIL sample, and therefore students who never have a CSS Profile received by UM. Panel ?? excludes students who do not enroll at UM.

Source: [University of Michigan Office of Enrollment Management \(2022\)](#), [University of Michigan Office of Financial Aid \(2022\)](#).