Evaluation of On-Site Admissions Program at the University of Oregon

By

Jeffrey Coe and Sean Spang

Presented to the Department of Economics, University of Oregon,
in partial fulfillment of requirements for honors in Economics

Under the supervision of

Prof. Joe Stone

June 4, 2010

June 2010

Evaluation of On-Site Admissions Program at the University of Oregon

Executive Summary:

The goal of this analysis is to determine the effectiveness of the onsite admission program in achieving its goal of increasing the number of applications from traditionally underrepresented students to the U of O. Prior research predicts that a program helping students only with application forms, and not financial aid paperwork, will have little to no effect on college attendance. In order to investigate the effectiveness of the program we specify three different models. The first model predicts the effect of the program on a participating student versus a non-participating student from the same school. The results estimate that students participating in the program are much more likely to apply, be admitted, and/or enroll than students who do not. The second model measures the effect of a visit from the program to a particular school compared to a school with similar characteristics which did not receive a visit. These results suggest that a visit to a particular school will have a small (0.013 increase in probability) but significant effect on applicants. Finally the third model examines the effect of a visit on applications and on various demographic variables. In each case however, the effect is insignificant. In allowing this model to range across all public high schools in the state we find a similarly small effect on applications.

Contents

Introduction

Acquiring a college education is important for individuals to attain economic and social success. A number of studies have found lifetime earnings of college graduates to be on average about one million dollars more than those without a college degree. Other studies have shown that investments in financial aid to enable low income students to attend college have a positive rate of return due to increased future tax revenue. (Singell, 2002) Despite the benefits of education for individuals and society, many students from low-income families do not take advantage of the opportunities. The gap between the number of students from higher income families who attend college and those from lower income families persists. This is attributable to both distorted beliefs of low income families about the cost of college and the complexity of the financial aid application process. In a report to congress, the Advisory Committee on Student Financial Assistance (ACSFA) found that:

> "Millions of students and adult learners who aspire to college are overwhelmed by the complexity of student aid. Uncertainty and confusion rob them of its significant benefits. Rather than promote access, student aid often creates a series of barriers – a gauntlet that the poorest students must run to get to college" (Advisory Committee On Student Financial Assistance, 2005)

Recent efforts have been undertaken by the University Of Oregon Department Of Admissions to encourage traditionally underrepresented students to apply for admission. The Onsite Admissions Program, which started in 2006, involved admissions staff travelling to low

income Oregon high schools. The pilot program expanded from two schools to fourteen schools in 2008 and 32 schools in 2009. Each territory manager, after becoming familiar with his or her region, determined a set of target schools which had a high number of traditionally underrepresented students. The percent of students eligible for free or reduced lunch was used as an indicator of the number of underrepresented students. The territory managers then developed plans in coordination with high school counselors to arrange for dates to visit students and help with applications. As part of the process, students were advised of when applications would be picked up by University staff and when decisions would be made regarding acceptance. Although the On-site program was available to any seniors with an interest, on average about seven actually participated in the program. Of these participants, over 95% submitted applications and 88% were admitted. Of those admitted, 56% chose to enroll at the University of Oregon.

Two ancillary goals of the program were to increase the number of applications from students of the non-majority racial group as well as students who would be the first in their family to attend college. Of the participants in 2008, 61% reported that their parents' education was "some college" or below. Thirty-one percent reported parents' education as high school/GED or below. Participants in the program also reported racial affiliation, of which 42% reported a race other than white. Over 19% of the respondents were Hispanic. Hispanics make up 9.3% of the population in Oregon. Respondents that reported their race as Black made up 9.6% of the participants while the state is only 1.5% Black.

In this paper we will evaluate the effectiveness of the On-Site program in achieving its goals of increasing applications from traditionally underrepresented groups.

Literature Review

Pre-college outreach programs have been in existence since their introduction by churches and private foundations in the 1950s and 1960s. Today, federal and state governments, in addition to non-profit organizations, finance hundreds of outreach programs. These programs vary in approach, but most include academic support, college planning and financial aid information, and the majority target students from low income families. (Cunningham, Redmond, & Merisotis, 2003) Other common eligibility criteria include first generation college attendance, minority status, and high dropout risk. (Cunningham, Redmond, & Merisotis, 2003)

In 1999, the College Board conducted a National Survey of Outreach Programs to provide detailed information about the types of programs being administered throughout the country. (Swail & Perna, 2002) The survey received usable responses from over 1,100 programs with the most common service being college awareness. (Swail & Perna, 2002) The most common characteristics targeted were low income students (80% of respondents) and minority and potential first-generation college students (69 % and 71% respectively). (Swail & Perna, 2002)

The authors of the survey found that pre-collegiate programs were significant in improving achievement outcomes for disadvantaged students but the design and evaluation of

these programs made it difficult to determine which components were responsible for any improvements in college attendance. Gullatt and Jan (2003) found that "the survey results point out that a lack of internal, rigorous evaluation in these programs limits their ability to serve more students effectively, to make authentic and lasting links with the schools their participants attend, and to impact more significantly federal, state and local policy regarding educational opportunity." (Gullatt & Jan, 2003, p. 2) Few of these programs used control groups to compare outcomes with program participants, and selection criteria were not explicit. (Gandara, 2001) Boys are seriously underrepresented in these programs, generally comprising only one third of the participant group. (Gandara, 2001) While these programs report on the success of students who continue to participate, little information is available on students who leave the program. Gandara (2001) estimates that "between one-third and one-half of all students who begin programs leave before completion or before high school graduation." (Gandara, 2001, p. 9)

Despite shortcomings in internal evaluations of outreach programs, studies have shown that information about college admissions and financial aid is important for low-income families. When parents do not have accurate information about financial aid, students are less likely to attend college. (Swail & Perna, 2002) Parents with low incomes are also less likely to have attended college and are therefore less able to prepare their students for the admissions and financial aid process.

In a 2008 experiment conducted in collaboration with the tax preparer H&R Block, Bettinger, Long, Oreopoulos and Sanbonmatsu (2009) found that helping low income families with eligible students complete the Free Application for Federal Student Aid (FAFSA) increased

the likelihood of that student filing the FAFSA by 40 percent and the likelihood of enrolling in college by 29 percent. The control group was offered information about the importance of going to college and general information on costs and financial aid. A treatment group of low income students that was made aware of their eligibility for aid as well as the true costs of college but were not assisted in completing the application showed no significant difference from the control group. (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2009) This research suggests that actually helping students and families to complete the complex, eight-page FAFSA is the best way to increase college enrollment and aid receipt for economically disadvantaged students. This effect was positive for all groups but was highest on families in the group with incomes below $22,000. For students from families in this range, the FAFSA treatment was associated with an increase in enrollment of 37.9 percent. (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2009)

Methodology

In this paper, we will attempt to measure the effectiveness of the On-site Admissions Program by investigating its effects on applications, admittances and enrollments. First we will look at the effect of participation in the program relative to other students from the same school who did not participate. The second model will compare the effect of the program on students at a visited school relative to other students from similar schools which were not visited. Finally, we will explore the effect of an admissions office visit on the percentage of students who choose to apply, are admitted and enroll at the U of O compared to all other

unvisited public high schools in Oregon. The University Admissions department supplied data on students who participated in the program as well as data on all applicants for the 2008 and 2009 freshmen classes. Data on students that did not apply was imputed by deducting the number of students that did apply from the total number of seniors enrolled in each school according to Oregon Department of Education.

Participant Logit Model: Individual Students from the Same Schools

The first model will seek to gauge the effect of participation in the program on the probability of a student applying, being admitted, or enrolling to the University of Oregon compared to the same probabilities for non-participants from the same school. Since the dependent variables, applied, admitted, and enrolled, will be binary (either equal to 0 or 1) a logit specification will provide the necessary framework. The logit for this model is of the form:

$$ln\left(\frac{P_i}{1-P_i}\right) = \beta_o + \beta_1 PARTICIPANT_i + \varepsilon_i$$

$P_1 = Probability\ of\ Applying$
$P_2 = Probability\ of\ Being\ Admitted$
$P_3 = Probability\ of\ Enrolling$
$PARTICIPANT_i = \begin{Bmatrix} 1\ if\ student\ participated\ in\ pilot\ program \\ 0\ if\ student\ did\ not\ participate \end{Bmatrix}$

Before discussing the variables of this model, it may be helpful to explain the interpretation of coefficients in the logit model. Contrary to OLS regressions, point estimates in the logit model cannot be interpreted as the effect of a one unit change in the independent

variable on the dependent variable. Rather, the slope estimates are interpreted as a change in the "log of the odds function." To clarify

$$Odds\ Function = \frac{P_i}{1 - P_i}$$

The odds function is always positive and can vary from zero to infinity. P_i is the probability of an event occurring. In our case this will be either applying, being admitted, or enrolling. This probability will always range from 0, no chance of occurring, to 1, 100% chance of occurring. Its complement, $1 - P_i$, is the probability of this event not occurring, and it too will be bounded from 0 to 1. Thus the odds function will be the ratio of the probability of the event occurring to the probability of the event *not* occurring. When the odds function is equal to 1, the event is equally likely to either occur or not occur. A ratio greater than 1 implies the event is more likely to occur than to not occur and a ratio smaller than 1 predicts the event not occurring is more likely.

The "log of the odds function" then is simply the natural logarithm of the odds function

$$\ln\left(\frac{P_i}{1 - P_i}\right)$$

Still, this interpretation of the coefficients as changes in the log of the odds function is not very intuitive. Performing algebraic manipulation will transform the logit model from

$$ln\left(\frac{P_i}{1 - P_i}\right) = \beta_o + \beta_1 PARTICIPANT_i + \varepsilon_i$$

To

$$P_i = \frac{\exp\left(\beta_o + \beta_1 PARTICIPANT_i + \varepsilon_i\right)}{1 + \exp\left(\beta_o + \beta_1 PARTICIPANT_i + \varepsilon_i\right)}$$

At this point, it is possible to compute the derivative of the probability of applying, being admitted, or enrolling with respect to the variable marking if a student participated in the admissions department's program.

$$\frac{\partial P_i}{\partial PARTICIPANT_i} = \frac{\beta_1 \exp\left(\beta_o + \beta_1 PARTICIPANT_i + \varepsilon_i\right)}{\left[1 + \exp\left(\beta_o + \beta_1 PARTICIPANT_i + \varepsilon_i\right)\right]^2}$$

This derivative can be computed and then interpreted as the change in the probability of applying, being admitted, or enrolling as a result of participation in the program. We will report this estimate, labeled as the marginal effects (mfx) in the results, as well as the estimate for the change in the log of the odds function.

Now that the rationale for the logit model is explained, we can return to analysis of the variables presented. The only exogenous variable chosen is the variable *PARTICIPANT*. This variable marks whether a student participated in the U of O admissions program or not. Since we are looking at students from the same school, our assumption is that this provides some control for omitted variables. Students at the same school will be subject to the same school environment, same quality of teachers, and other similar factors. This assumption may be too broad because there are factors outside of school that likely influence students decisions for college, (for example parental education) but we did not have access to data for every student

at the school, only those who chose to apply to the U of O. If the control does not work as hypothesized, then the model will suffer from omitted variable bias.

Intent to Treat (ITT) Logit Model: Individual Students from Visited Schools vs. Individual Students from Similar Unvisited Schools

The second model is also a logit model that estimates the effect of a visit from the On-Site program on the probability of a student applying relative to other students from similar schools that were not visited. Visited schools were each paired with a control school from the same county which had a similar proportion of students eligible for free and reduced lunch. (See Appendix Table 2)

The model for this specification is

$$ln\left(\frac{P_i}{1-P_i}\right) = \beta_o + \beta_1 VISITED_i + \varepsilon_i$$

The model will be interpreted in the same manner as explained for the first model. An important distinction to make between this model and the first is that here *VISITED* represents whether a school was *visited* by the program, not whether a student actually participated. This *VISITED* variable will capture "the intent to treat." However, due to the limited number of participants in the program per school, it is likely this variable will produce only a slight increase, if any, in applicants to the U of O.

OLS Lagged Variable Model: Percentages of Graduating Seniors from Visited Schools versus All Unvisited Public High Schools in Oregon

The third model will predict the percentage of students from all Oregon public schools who choose to apply, are admitted, or enroll using Ordinary Least Squares techniques. The main difference between the OLS model and the prior logit models is that the OLS model will be predicting percent changes in University of Oregon applicants, admits, and enrollees per school while the logit models estimate the probability of one student applying, being admitted, or enrolling. Essentially, it is a jump from student level analysis to school level analysis.

In making this transition, our model will face a problem of heterogeneity that cannot be controlled for. For example, public schools in Eastern Oregon are different from schools in downtown Portland in terms of location, median income, and percentage of nonwhite students just to name a few. Ideally a fixed or random effects model would be used to control for this heterogeneity. However, these types of models tend to be highly sensitive to attenuation (bias toward no effect). Instead, a lagged variable model will be used, derived from differencing equations set at different times.

$$Y_t = \beta_0 + \beta_1 VISITED_i + \beta_2 Y_{t-1} + \varepsilon_t$$

Here the β_1 coefficient will signify the percent change on applicants, students admitted, or enrollees at the U of O from a U of O admissions staff visit.

The reason for using a lagged variable can be demonstrated with a quick example. Let

$$Y_t = \beta_0 + \beta_1 X + \varepsilon_t$$

$$Y_{t-1} = \beta_0 + \beta_1 X + \varepsilon_{t-1}$$

Assume the X matrix represents all factors that do not depend on time. In our model this would be factors such as income, race, location, etc. Subtracting the models yields:

$$Y_t = \gamma Y_{t-1} + (\varepsilon_t - \varepsilon_{t-1})$$

Essentially, the lagged dependent variable model will remove the need for any time invariant variables that differ across schools. For this model, we assume the only time dependent exogenous variable will be whether a school received a visit from U of O Admissions. Our model may be limited by the fact that we only have relevant data for two years, 2008 and 2009. However, this is sufficient to create a lagged variable model.

Data Description

Applicants

For the participant logit model, applicants is a binary variable equal to 1 if a senior from one of the visited schools during the 2007-2008 school year applied to the U of O or 0 otherwise. Similarly, a value of 1 was entered if the student was admitted as well as enrolled,

and a 0 was entered for these categories if the student did not apply. Because students who did not apply to the University of Oregon may have applied elsewhere, these values are only used to determine the effect of the program on students who applied to the University of Oregon. (See Appendix Table 1 for participant breakdown)

In the ITT logit, each student from a visited school was assigned a value of 1 for the variable *visited*, while the OLS model assigned a 1 to each visited school. For these models, we analyze the effect of intent to treat. While not every student in a visited school actually participated in the program, they did receive the treatment of having the program available. In the participant logit, we use the variable *talked* to differentiate between the students who participated in the program and those who did not in schools that were visited. This data was only available for the class entering in the fall of 2008. The percent of students from a high school that applied, were admitted and enrolled was derived from the number of students in grade twelve in each school as reported by the Oregon Department of Education.

Lagged Variables

The variables *applylag, admitlag, enrolllag* are the percentages of each school that applied, were admitted and enrolled in 2008. (See Appendix table 7 for summary statistics)

Visited Schools

2008	
Aloha	Marshfield
Henley	Mazama
Hillsboro	McKay
Jefferson	North Eugene
Klamath Union	Phoenix
Liberty	South Medford
Lost River	

2009		
Aloha	Gresham	Phoenix
Beaverton	Henley	Reynolds
Benson	Hillsboro	South Medford
Century	Jefferson	South Umpqua
Chiloquin	Klamath Union	Springfield
Cottage Grove	Liberty	Sutherlin
Eagle Point	Mazama	Taft
Forest Grove	McKay	Willamette
Grant	North Salem	Woodburn

Results

Participant Logit

The first model investigated the Admissions Program's effect on a student who participated directly versus fellow students from the same high school who chose not to participate. The results suggest that the program has a significant effect on encouraging students to apply, gain admittance, and enroll at the University compared to students not participating. According to data from the year 2008, at the visited schools 349 of the 3486 seniors decided to apply to the University. If we assume all students are the same, then a student has a 10% percent chance of applying. Students participating in the program are predicted to have an increase in probability of applying of 0.875 compared to nonparticipants. To clarify, students participating will have a 0.975 (0.1+0.875=0.975) total probability of applying or in other words 97.5% of all participants are predicted to apply. Thus, it would appear on the surface the program is quite effective in achieving its goal of increasing

applicants from underrepresented areas. Chances of being admitted and/or enrolling produce similar staggering results. Of the visited schools, 298 out of 3486 were admitted to the University of Oregon, or 8.5% of students, while 152 out of the 3486, 4.4% of students, ultimately enrolled. However program students had an increase in probability of being admitted of 0.82 and an increase of 0.497 for enrolling. So participants were predicted to be admitted with probability 0.905 (0.82+0.085) and enroll with probability 0.541 (0.044+0.497). While these results are both intriguing and statistically significant, one must investigate further the validity of these predicted values. (See Appendix Table 3 for overall and individual school results)

First and foremost, it is likely that students participating in the program are not from a random sample. In other words, it is probable that Admissions staff did not simply speak with a group of randomly selected seniors, but rather interested students selected into the program or were encouraged to attend by their high school counselors. If this was the case, then the model will produce biased estimates and we are left wondering whether these students would have ultimately applied on their own without the treatment. The admit and enroll likelihoods will be biased upward for the same reason and also because in order to be admitted or enroll students must first apply. If the program did succeed in increasing highly qualified applicants, then these admit and enroll probabilities will of course be higher.

Another concern is the small sample of actual seniors treated. On average less than 7 seniors per visited high school participated in the program, while the average number of

seniors per visited school was 267. Once again it appears likely that this treated group is not a representative sample of the population.

ITT Logit

This model again attempted to predict the probability of students applying, being admitted, and enrolling at the University of Oregon. This model differs from the participant logit in that data is on seniors enrolled at 52 public Oregon high schools for the 2008-2009 school year. This model seeks to examine the program's effect on a student choosing to apply, gain admittance, and/or enroll based on whether the student attended a school which was visited versus other students from schools that were not visited. It is important to note that this model does not distinguish whether a student actually participated in the program, but simply if U of O admissions visited the school. The model predicts that a student from a visited high school will see an increase in probability of applying of 0.0138, a probability increase of 0.011 for gaining admittance, and an increase in probability of 0.0007 for enrolling compared to students from unvisited schools. While these results are small, both the likelihoods to apply and to gain admittance are statistically significant. At first glance these results may seem smaller than expected, however, the nature of the program in its current format helps to explain why this may be. If the 2008-2009 program is anything like its predecessor for the 07-08 school year, it is reasonable to assume that only a small percentage of students are participating in the program. Therefore, any effect would be quite small when broadened to include the entire school. If, for example, the program succeeded in increasing applicants at a treated school by three people, the resultant increase in percentage of applicants to the U of O

relative to unvisited schools would only be approximately a percent or two. (For a full breakdown of overall and individual school effects see Appendix Table 4)

OLS Lagged Model

The final model examines the effect of the program across all public schools in Oregon for the 2008-2009 school year. In this model, we again view the school as having received the treatment if it was visited by the Admissions department. Our results predict the percentage of applicants from visited schools will be 1% higher than the percentage of applicants from schools not visited. The effect on being admitted and enrolling is essentially zero and statistically insignificant. The visit effect is not quite statistically significant for applying, however, when we examine the 95% confidence interval [$-.0085316<\beta_1<.0278867$], we find results that have meaning. The effect of a visit is 95% likely to be between -.85%, which is close to zero, and 2.79%. It seems probable that the effect on a smaller school may be closer to the 2.79% threshold and a bigger school closer to 1% based on the assumption that a relatively small number of students from each school are participating. (See Appendix Table 5)

Since one of the goals of the program was to increase applications from non-majority racial groups, we attempted to test the effect of a visit on different self identified racial groups. For measures of income, race and ethnicity, we used 2000 census data at the zip code level. It is likely that as of 2008 and 2009, the percent of the population that was Hispanic or of a minority race was different. We were unable to find any statistically significant effect when inter-acting the visited variable with several different racial groups. This result is somewhat

surprising because the 2007-2008 program participant group was less than 50% white, which is well below the state average. However, since the program was focused on low income and non-majority racial and ethnic groups, the positive effect was likely born by these groups.

Another goal of the program was to increase applications from students who would be the first member of their family to attend college. While we did not have any way of measuring the percent of seniors who were potential first generation college students, we did know the median income by zip code. Studies have shown that earnings are higher on average for those with higher levels of education. We hypothesized that median income levels could provide a proxy variable for first generations college students. Interacting visited with these income measures however provided results that had no statistical significance.

Conclusion

The goal of this analysis was to determine the effectiveness of the onsite admission program in achieving its goal of increasing the number of applications of students from traditionally underrepresented backgrounds to the U of O. Prior research predicted that a program helping students only with application forms, and not financial aid paperwork, would have little to no effect on college enrollment. In order to investigate the effectiveness of the program we specified three different models. The first model predicted the effect of the program on a participating student versus a student from the same school who did not participate. The results estimate that students participating in the program are much more likely to apply, be admitted, and/or enroll than students who do not. The second model

measured the effect of a visit from the program to a particular school compared to a school with similar characteristics which did not receive a visit. These results suggest that a visit to a particular school will have a small but significant effect on applicants. Finally the third model sought to examine the effects of a visit on various demographic groups across the state. In each case however, the effect was insignificant. In allowing this model to range across all public high schools in the state we found a similarly small effect on applications. (See Appendix Table 6 for scaled effects)

Future efforts to increase applications from traditionally underrepresented groups should consider including help with filling out financial aid paperwork, which has been shown to provide a greater effect than informational visits alone, especially on minority or low income groups. If the University continues with this program, it should make efforts to increase the participants in the program at each school because of the success demonstrated in increasing applications from participants.

Appendix

Table 1 Breakdown of School Participants 2008

High School	Participants	Applicants	Admits	Deposits
Aloha	14	14	12	7
Henley	4	3	3	2
Hillsboro	13	11	10	6
Jefferson	7	7	7	5
Klamath Union	6	5	3	0
Liberty	10	10	10	6
Lost River	2	2	2	1
Marshfield	2	2	2	0
Mazama	2	2	1	1
McKay	4	4	4	1
North Eugene	7	7	7	6
Phoenix	11	11	11	7
South Medford	5	5	4	4
Woodburn (381280, 381265, 381287)	6	6	6	0
Total	93	89	82	46

Table 2 Reference Groups

treated schools	% eligible	seniors	reference school	% eligible	seniors
Aloha	40	542	Glencoe	31.2	370
Beaverton	31.1	475	Tigard	26	484
Benson	57.7	236	Parkrose	58.9	273
Century	33.6	355	Glencoe	31.2	370
Chiloquin	86.6	40	Lost River	79.2	44
Cottage Grove	50.9	184	Oakridge	61.2	35
Eagle Point	48.8	274	Rogue River	47.7	91
Forest Grove	51.6	408	Community School	66.4	93
Grant	22.7	362	Cleveland	24.1	338
Gresham	32.3	449	Centennial	48.3	379
Henley	35.6	145	Link River	45.1	25
Hillsboro	40.6	367	Glencoe	31.2	370
Jefferson	67.4	116	Madison	65.3	147
Klamath Union	51.2	195	Bonanza	52.4	40
Liberty	40.3	275	Gaston	39.2	45
Mazama	50.5	219	Gilchrist	67.5	23
McKay	92.7	407	Early College	90.8	282
North Salem	76.3	439	Wellness, Business and Sports	75.8	55
Phoenix	47.8	207	Rogue River	47.7	91
Reynolds	51.1	594	David Douglas	65.9	755
South Medford	40.1	476	North Medford	31.6	443
South Umpqua	50.1	124	Yoncalla	62.9	33
Springfield	47.6	334	Creswell	43.5	102
Sutherlin	44.9	112	Douglas	49.3	118
Taft	59.2	140	Waldport	62.5	67
Willamette	41	335	Junction City	38.5	121
Woodburn Art Comm	75.8	46	Wellness, Business and Sports	75.8	55
Woodburn Art Science	75.8	60	Wellness, Business and Sports	75.8	55
Woodburn Int.	75.7	83	Wellness, Business and Sports	75.8	55

Table 3 2007-2008 Logit Effect on Participation (blanks indicate participated variable was perfectly collinear with dependent variable)

	Apply		Admit		Enroll	
		mfx		mfx		mfx
Overall						
Participated	5.493***	0.875***	4.701***	0.820***	3.546***	0.497***
	(0.516)	(0.0229)	(0.343)	(0.0345)	(0.236)	(0.0536)
Constant	-2.460***		-2.660***		-3.431***	
	(0.0639)		(0.0696)		(0.0987)	
Aloha						
Participated			4.401***	0.789***	3.367***	0.467***
			(0.783)	(0.0942)	(0.586)	(0.134)
Constant			-2.610***		-3.367***	
			(0.170)		(0.240)	
Henley						
Participated	3.694***	0.681***	3.694***	0.681***	3.135***	0.458*
	(1.200)	(0.218)	(1.200)	(0.218)	(1.083)	(0.251)
Constant	-2.595***		-2.595***		-3.135***	
	(0.328)		(0.328)		(0.417)	
Hillsboro						
Participated	4.324***	0.778***	4.161***	0.720***	4.228***	0.449***
	(0.800)	(0.101)	(0.706)	(0.117)	(0.750)	(0.138)
Constant	-2.619***		-2.958***		-4.382***	
	(0.221)		(0.256)		(0.503)	
Jefferson						
Participated					4.500***	0.687***
					(1.021)	(0.171)
Constant					-3.584***	
					(0.585)	
Klamath Union						
Participated	4.111***	0.758***	2.576***	0.429**		
	(1.128)	(0.153)	(0.862)	(0.205)		
Constant	-2.501***		-2.576***			
	(0.269)		(0.277)			
Liberty						
Participated					3.216***	0.543***
					(0.695)	(0.156)
Constant					-2.811***	
					(0.257)	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Apply		Admit		Enroll	
		mfx		mfx		mfx
Lost River						
Participated						
Constant						
Marshfield						
Participated						
Constant						
Mazama						
Participated			2.944**	0.450	3.892***	0.480
			(1.451)	(0.354)	(1.502)	(0.354)
Constant			-2.944***		-3.892***	
			(0.324)		(0.505)	
Mckay						
Participated					3.577***	0.241
					(1.259)	(0.217)
Constant					-4.675***	
					(0.502)	
North Eugene						
Participated					4.380***	0.787***
					(1.111)	(0.133)
Constant					-2.589***	
					(0.259)	
Phoenix						
Participated					4.279***	0.613***
					(0.806)	(0.146)
Constant					-3.720***	
					(0.506)	
South Medford						
Participated					4.411***	0.754***
					(1.139)	(0.179)
Constant					-3.025***	
					(0.218)	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4 2008-2009 Logit Effect on Individual Students at Treated Schools (blanks indicate participated variable was perfectly collinear with dependent variable) Control school in parentheses.

	Apply		Admit		Enroll	
		mfx		mfx		mfx
Overall						
Visited	0.156**	0.0138**	0.149**	0.0111**	0.0190	0.000728
	(0.0641)	(0.00554)	(0.0698)	(0.00509)	(0.0962)	(0.00368)
Constant	-2.302***		-2.506***		-3.187***	
	(0.0526)		(0.0573)		(0.0776)	
Academy of Intl Studies Woodburn (Wellness, Business, Sports)						
Visited	0.301	0.0177	0.725	0.0359		
	(0.730)	(0.0418)	(0.836)	(0.0380)		
Constant	-2.853***		-3.277***			
	(0.594)		(0.720)			
Aloha (Glencoe)						
Visited	0.292	0.0261	0.259	0.0203	0.674*	0.0246*
	(0.230)	(0.0199)	(0.245)	(0.0187)	(0.375)	(0.0127)
Constant	-2.357***		-2.503***		-3.584***	
	(0.185)		(0.197)		(0.321)	
Beaverton (Tigard)						
Visited	-0.0327	-0.00490	0.0382	0.00496	-0.390	-0.0258
	(0.167)	(0.0250)	(0.179)	(0.0233)	(0.254)	(0.0166)
Constant	-1.477***		-1.728***		-2.380***	
	(0.117)		(0.127)		(0.163)	
Benson (Parkrose)						
Visited	0.518	0.0400	0.538	0.0335	-0.377	-0.0112
	(0.323)	(0.0250)	(0.360)	(0.0225)	(0.524)	(0.0153)
Constant	-2.651***		-2.918***		-3.270***	
	(0.244)		(0.274)		(0.322)	
Century (Glencoe)						
Visited	0.549**	0.0544**	0.439*	0.0370*	0.914**	0.0378**
	(0.240)	(0.0235)	(0.258)	(0.0217)	(0.386)	(0.0155)
Constant	-2.357***		-2.503***		-3.584***	
	(0.185)		(0.197)		(0.321)	
Chiloquin (Lost River)						
Visited	-0.329	-0.0182	-0.329	-0.0182		
	(0.940)	(0.0513)	(0.940)	(0.0513)		
Constant	-2.615***		-2.615***			
	(0.598)		(0.598)			

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Apply		Admit		Enroll	
		mfx		mfx		mfx
Cottage Grove (Oakridge)						
Visited	-0.00153	-0.000155	0.0823	0.00668		
	(0.580)	(0.0587)	(0.655)	(0.0519)		
Constant	-2.048***		-2.367***			
	(0.531)		(0.604)			
Eagle Point (Rogue River)						
Visited	-0.00378	-0.000120	0.154	0.00357	-1.117	-0.0147
	(0.678)	(0.0216)	(0.811)	(0.0181)	(1.007)	(0.0162)
Constant	-3.379***		-3.795***		-3.795***	
	(0.587)		(0.715)		(0.715)	
Forest Grove (Community School)						
Visited						
Constant						
Grant (Cleveland)						
Visited	0.167	0.0329	0.183	0.0326	0.398	0.0312
	(0.171)	(0.0336)	(0.180)	(0.0319)	(0.274)	(0.0212)
Constant	-1.075***		-1.289***		-2.571***	
	(0.125)		(0.132)		(0.212)	
Gresham (Centennial)						
Visited	0.563**	0.0363**	0.770**	0.0370**	1.080**	0.0247**
	(0.283)	(0.0177)	(0.337)	(0.0153)	(0.514)	(0.0107)
Constant	-2.888***		-3.338***		-4.315***	
	(0.230)		(0.282)		(0.450)	
Henley (Link River)						
Visited						
Constant						
Hillsboro (Glencoe)						
Visited	-0.136	-0.0102	-0.351	-0.0212	0.106	0.00295
	(0.270)	(0.0201)	(0.303)	(0.0182)	(0.443)	(0.0123)
Constant	-2.357***		-2.503***		-3.584***	
	(0.185)		(0.197)		(0.321)	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Apply		Admit		Enroll	
		mfx		mfx		mfx
Jefferson (Madison)						
Visited	0.683*	0.0772*	0.351	0.0304	-0.715	-0.0335
	(0.373)	(0.0426)	(0.421)	(0.0370)	(0.605)	(0.0268)
Constant	-2.251***		-2.420***		-2.617***	
	(0.281)		(0.301)		(0.328)	
Klamath Union (Bonanza)						
Visited	1.652	0.0929***	1.315	0.0622*	-0.495	-0.00962
	(1.037)	(0.0338)	(1.044)	(0.0319)	(1.168)	(0.0262)
Constant	-3.664***		-3.664***		-3.664***	
	(1.013)		(1.013)		(1.013)	
Liberty (Gaston)						
Visited	1.859*	0.105***	1.567	0.0760***	0.606	0.0178
	(1.027)	(0.0298)	(1.031)	(0.0284)	(1.057)	(0.0249)
Constant	-3.784***		-3.784***		-3.784***	
	(1.011)		(1.011)		(1.011)	
Mazama (Gilchrist)						
Visited						
Constant						
McKay (Early College)						
Visited	2.442**	0.0358***	2.227**	0.0284***	1.251	0.00874
	(1.034)	(0.0103)	(1.041)	(0.00941)	(1.098)	(0.00651)
Constant	-5.638***		-5.638***		-5.638***	
	(1.002)		(1.002)		(1.002)	
North Salem (Wellness, Business, and Sports)						
Visited	-0.0426	-0.00215	0.0654	0.00236		
	(0.631)	(0.0324)	(0.762)	(0.0269)		
Constant	-2.853***		-3.277***			
	(0.594)		(0.720)			
Phoenix (Rogue River)						
Visited	1.438**	0.0926***	1.716**	0.0891***	0.582	0.0167
	(0.623)	(0.0297)	(0.748)	(0.0267)	(0.801)	(0.0204)
Constant	-3.379***		-3.795***		-3.795***	
	(0.587)		(0.715)		(0.715)	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Apply	mfx	Admit	mfx	Enroll	mfx
Reynolds (David Douglas)						
Visited	-0.0980	-0.00537	-0.134	-0.00620	-0.620	-0.0127
	(0.235)	(0.0128)	(0.257)	(0.0117)	(0.402)	(0.00781)
Constant	-2.735***		-2.910***		-3.554***	
	(0.152)		(0.164)		(0.221)	
South Medford (North Medford)						
Visited	0.466**	0.0463**	0.420*	0.0383*	-0.116	-0.00633
	(0.213)	(0.0208)	(0.222)	(0.0199)	(0.283)	(0.0154)
Constant	-2.310***		-2.395***		-2.735***	
	(0.166)		(0.172)		(0.199)	
South Umpqua (Yoncalla)						
Visited						
Constant						
Springfield (Creswell)						
Visited	-0.265	-0.0248	-0.0506	-0.00358	0.0396	0.00188
	(0.361)	(0.0356)	(0.423)	(0.0303)	(0.522)	(0.0245)
Constant	-2.015***		-2.464***		-2.965***	
	(0.307)		(0.368)		(0.459)	
Sutherlin (Douglas)						
Visited	-0.693	-0.0481	-0.378	-0.0227	0.0546	0.00227
	(0.519)	(0.0350)	(0.544)	(0.0324)	(0.647)	(0.0269)
Constant	-2.179***		-2.494***		-3.118***	
	(0.305)		(0.347)		(0.457)	
Taft (Waldport)						
Visited	1.992*	0.0851***	1.512	0.0494*	0.368	0.00650
	(1.046)	(0.0294)	(1.065)	(0.0255)	(1.164)	(0.0192)
Constant	-4.190***		-4.190***		-4.190***	
	(1.008)		(1.008)		(1.008)	
Willamette (Junction City)						
Visited	0.351	0.0308	0.273	0.0211	0.135	0.00782
	(0.372)	(0.0304)	(0.393)	(0.0288)	(0.448)	(0.0252)
Constant	-2.407***		-2.521***		-2.790***	
	(0.330)		(0.346)		(0.389)	

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Apply		Admit		Enroll
		mfx		mfx	mfx
Woodburn Arts and Communications (Wellness, Business, and Sports)					
Visited	0.748	0.0542	0.926	0.0506	
	(0.760)	(0.0552)	(0.890)	(0.0486)	
Constant	-2.853***		-3.277***		
	(0.594)		(0.720)		
Woodburn Arts and Sciences (Wellness, Business, and Sports)					
Visited	1.118	0.0955*	1.405*	0.0970*	
	(0.695)	(0.0553)	(0.814)	(0.0506)	
Constant	-2.853***		-3.277***		
	(0.594)		(0.720)		

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5 Effect of Visit on Percent Change in Dependent Variable

VARIABLES	(1) Pct Apply	(2) Pct Admit	(3) Pct Enroll
applylag	0.957***		
	(23.04)		
Visited	0.00968	0.00725	-0.00424
	(1.05)	(0.77)	(-0.79)
Admitlag		0.884***	
		(19.11)	
Enrolllag			0.830***
			(16.81)
Constant	0.00659	0.0103*	0.00857***
	(1.16)	(1.84)	(2.67)
Observations	177	177	177
R-squared	0.753	0.677	0.621

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6 Predicted Additional Applicants

Model	Predicted Effect	Treated Students	Predicted Additional Applicants
Participant Logit	87.50%	93	81
ITT Logit	1.38%	7999	110
OLS Lagged Variable	1.00%	7999	80

Table 7 Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
app	3468	0.100634	0.300887	0	1
admit	3468	0.085929	0.280299	0	1
enroll	3468	0.043829	0.204745	0	1
talked	3468	0.025087	0.15641	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
app	12362	0.099903	0.299883	0	1
admit	12362	0.082592	0.275275	0	1
enroll	12362	0.040123	0.196256	0	1
visited	12362	0.647064	0.477903	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
visited	404	0.1089109	0.3119137	0	1
pctapplied	404	0.1024069	0.0966836	0.0025189	1
pctadmit	404	0.0875308	0.0909631	0	1
pctenroll	404	0.047867	0.0654054	0	1
applylag	177	0.1014006	0.0824455	0.0084746	0.4178744
admitlag	177	0.0868076	0.0760073	0	0.3834586
enrolllag	177	0.0465837	0.0405545	0	0.2105263

Works Cited

Advisory Committee On Student Financial Assistance. (2005). *The Student Aid Gauntlet: Making Access to College Simple and Certain.* Washington: US Department of Education.

Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2009). The Role of Simplification and Information in College Decisions: Results From the H&R Block FAFSA Experiment. *NBER Working Papers Series* .

Cunningham, A., Redmond, C., & Merisotis, J. (2003). *Investing Early: Intervention Programs in Selected U.S. States.* Montreal: Canada Millenium Scholarship Foundation.

Gandara, P. (2001). *Paving the Way to Post-Secondary Education: K-12 Intervention Programs for Underrepresented Youth.* Washington, D.C.: National Center for Educational Statistics.

Gullatt, Y., & Jan, W. (2003). *How Do Pre-Collegiate Academic Outreach Progr*

ms Impact College-Going among Underrepresented Students? . Washington, D.C.: Pathways to College Network Clearinghouse.

Swail, W. S., & Perna, L. W. (2002). Pre-College Outreach Programs; A National Perspective. In W. G. Tierney, & L. S. Hagedorn, *Increasing Access to College; Extending Possibilities for All Students* (pp. 15-34). Albany: State University of New York.