

UO Economics Summer Camp

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

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June 2006

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Abstract: This paper is a study of how to design a summer economics camp aimed at students from low socioeconomic status families. The goals of this camp are to increase the likelihood that these students will attend college, as well as to stimulate an interest in economics. Based on prior research, we argue that the best age for this intervention is eighth graders. We use NELS data and a survey to show that college attendance and expectations about college are highly negatively correlated with family income. With our background research and data analysis, we recruit camp participants, plan curriculum, and design a way to evaluate the success of our program.

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Introduction

Children who are minorities, whose parents did not attend college, or who are from low socioeconomic status (SES) families are less likely to prepare for, attend, and complete college. Since education is the primary means by which people in the United States increase their incomes, and because higher incomes are associated with many private and public benefits, this is a problem for these students, their families, and for the country as a whole.

There are many programs, both publicly and privately funded, that aim to correct educational disparities and increase the likelihood that disadvantaged youth will be academically successful. The University of Oregon Economics Department is implementing its own program to target disadvantaged area youth and attempt to steer them toward obtaining a college education. The program will be a weeklong summer day camp for 20 Springfield Middle School students who demonstrate high math ability but, due to their family backgrounds, are unlikely to go on to college. The camp will teach basic economics concepts and also provide information on college preparation, both academic and financial. The project is motivated by a desire to help correct disparities in access to education and get youth interested in economics, and by the belief that there are large social returns to investing in disadvantaged youth.

Our review of the literature will begin with a description of the current demographics of higher education, highlighting the problems of under-represented groups. We recognize that college is not for everyone – so, we will then consider how the disadvantages that the adolescents in these groups face justify intervening in their own decisions of whether to prepare for and attend college or not.

Our project will inform the planning of this program by reviewing the literature on existing interventions of this sort that attempt to increase the educational attainment of their

participants. We will look at various elements of college outreach programs and ascertain the best practices along each dimension. First, we will look at the characteristics of the ‘optimal participant’ in an attempt to answer the question: Who will benefit most from the camp? This involves considering the appropriate age group to target for intervening in college choice and for teaching economics concepts. We will also address other characteristics of participants that may affect the benefit they receive from the camp. Our review of the literature will then go on to describe programs with similar goals and curricula as ours, highlighting the most effective practices. Finally, since we are interested in the effectiveness of our own program as well, this paper will consider different methods of program evaluation.

In the second part of our project we will discuss how to apply what we find in our literature review to the planning of the UO Economics Summer Camp. This section will describe how we recruited our target participant, designed curriculum for the camp, and began the process of data collection for program evaluation. Finally, we will discuss remains to be done in order to complete the camp planning and implementation.

Literature Review

There is a wealth of information on pre-college intervention programs targeted at historically under-represented groups. There are also a few economics-specific programs. However, there do not seem to be many programs where the two are combined. Still, we feel that by examining the literature in the fields of education and economics, among others, we are able to identify some of the most effective practices for teaching economics and intervening in pre-college decisions. The review that follows addresses four necessary elements of a pre-college intervention program: target participant, type of program, curriculum, and program

evaluation. We then discuss our analysis of the National Education Longitudinal Study (NELS) data set and its implications for the planning of our program. To demonstrate our motivation for implementing this program, we will begin with an overview of the disparities in education that currently exist, and discuss why there is a need for these sorts of programs.

Disparities in Education

According to the University of Oregon website of diversity statistics, the total number of ethnic minorities enrolled at the university has increased from 13.3% of the total student population in 1997 to 14.3% of the total student population in 2004. However, race/ethnic minority high school students in Oregon account for approximately 17% of the total number of regular high school diploma recipients in 2004 (2003-2004 High School Completers). All of these statistics do not take into account those who did not respond or whose race/ethnic category is unknown. But it is likely that minority students are represented at a lower rate at the university level than at the high school level. The University's Office of Multicultural Affairs sponsors a campus visitation program for middle-school students of color to learn about the opportunities the university has to offer ("Programs- Recruitment"). The "Reach for Success" program is similar to ours in that students get to explore the campus, meet with faculty, and generally learn about various aspects of college life, in an effort to increase the awareness and hopefully attendance of minority students in higher education.

A recent US News & World Report editorial also investigated education statistics, this time comparing differences between the achievements of low-income and high-income students. Given that many states are decreasing financial aid to students, while at the same time tuition costs are rising at triple the rate of the consumer price index, the discrepancy between low-income and high-income students will continue to grow, which only helps to fuel segregation by

income. Since 1988, 46% of 24 year olds in the highest-income quartile receive a bachelor's degree, compared with 8% of those from the lowest-income quartile. This is no doubt correlated with the statistic that in the top-income quartile it takes 11% of family income to pay for college, while in the bottom-income quartile it requires 45% (Zuckermann). These figures, along with the fact that government aid is coming increasingly in the form of loans and not grants, indicate that the gap between the rich and the poor is expanding.

Along with academic and financial barriers to college, the aspect of motivation and how it affects lower-income students must be explored. The motivation to go to college can be attributed in some degree to peer and parental involvement and encouragement, whether directly stated or indirectly implied. Our intervention can be seen of as primarily an attempt to boost motivation, so these issues are particularly important to us. Several older studies that still have relevance today demonstrated that parental support is practically a required condition for a student to pursue higher education in all income levels. One study found that 70% of those who finished four years of college felt that their parents definitely wanted them to attend compared with less than 10% of those did not continue their education after high school (Ferrin). It is also worth noting that family expectations also affect motivation to attend college. For the children of college-educated parents, it is usually anticipated that they will attend college, because to do otherwise would likely be a step down on the socioeconomic ladder. Therefore, motivation is not a problem in this group.

On the other hand, students from low-income families sometimes see university attendance as advantageous, but unrealistic, and are sure that they will most likely continue the lifestyle of their parents. Along with other data, this leads to the conclusion that the decision to go to college is determined early in high school by whether a student takes college-preparatory

classes or not. This decision, which is perhaps the one our project will have the most influence on, is affected by many things, including home environment and a lack of appropriate guidance or understanding of the educational system.

Why Intervene in Post-secondary Education Decisions?

It is clear that there are glaring disparities in the rate at which certain groups prepare for and attend post-secondary education. However, this may not convince everyone that it is necessary to intervene in disadvantaged students' decisions regarding higher education. After all, college involves many costs, and there is always the risk of failure. There are, however, several potential reasons why society might want to encourage some people to go to college who would not go if left to their own decision. In addition to satisfying altruistic desires, promoting college attendance among disadvantaged youth could lead to economic benefits for society as a whole. Furthermore, the existence of external benefits of education paired with the high costs of college preparation could mean that not enough disadvantaged youth are going to college.

First, there is the simply the altruistic value of equality of opportunity. We have already discussed the under-representation of disadvantaged groups on college campuses. There is also evidence that this stems from an inequality in the opportunity to attend institutions of higher education. For example, the fact that poorer students are likely to attend poorly funded primary and secondary schools makes them less academically prepared for college, even if their intrinsic ability is high. Therefore, if society values equality of opportunity, or just wants to take advantage of the skills of its citizens, then this could justify programs that intervene in the PSE decisions of disadvantaged students.

There are also economic justifications for intervening in an adolescent's college choice. Aside from the benefits that college graduates reap in the form of higher wages, each college-

educated adult creates external benefits for society as a whole to enjoy. There is evidence that college-educated adults are less likely to rely on income transfers. Other evidence suggests that those who are college educated are also less likely to commit crimes and put strain on the nation's criminal justice system. Furthermore, they may also be more likely to make charitable donations, save money at higher rates, and vote. (Wolfe and Haveman)

Because of the external benefits that are associated with education, it is possible that an inefficiently low number of disadvantaged youth are attending college. Human capital theory predicts that students simply weigh the costs and benefits of preparing for and attending college, choosing to invest in higher education if the present discounted value of net benefits is positive. However, individuals may not internalize the societal benefits of education. Furthermore, disadvantaged students may be even less likely to obtain the optimal amount of education because presumably they face higher short-run costs of preparing for college than the average adolescent. The opportunity cost for a low SES student of taking rigorous high school courses may not be giving up participating in extra-curricular activities, but rather giving up the wages they would make by working in their spare time. In Myers and Schirm's 1999 evaluation of the Upward Bound pre-college outreach program, they found that the reason that students most frequently cite for leaving the program before graduation is taking a job (27). If disadvantaged students are not achieving optimal levels of education then society is not fully reaping all the external benefits associated with having college-educated citizens.

Target Participant

The first question that one must answer when planning a pre-college intervention is who will benefit most from the program. As economists, we are always interested in maximizing the net benefits of a policy, so we would like to target the students for whom the program will have

the most positive impact. For example, since our goal is to increase college graduation it would not make sense to target children who will go to college regardless or children who are not likely to graduate college even with the intervention.

Part of answering this question involves pinpointing the optimal age at which to stage an intervention in college choice. There is a plethora of literature on just this topic, and there are a few main questions that researchers focus on. One common emphasis in the literature is on intervening early enough in order to facilitate academic planning for college. In her review of pre-college outreach programs, Laura Perna concludes that intervention should begin “by at least 8th grade” in order to encourage students to take the kinds of academically rigorous high school courses that are associated with later college enrollment. If intervention comes too late, she argues, even if students want to attend college they may not be academically qualified to be admitted, let alone to earn a degree.

It is clear that promoting academic preparation is important, but it is not the only consideration one must make when timing an intervention. It is at least theoretically possible that intervention could be timed too early, especially if children are unable developmentally to undertake the long term planning that college choice implies. Still, research has shown that as early as sixth grade, the college plans of students are good predictors of their actual college outcomes. A study using data from the Michigan Study of Adolescent Life Transitions found that a student’s expectation of attending college predicted well their actual attendance two years after high school, while controlling for other important variables such as academic performance and parent’s highest level of education (Eccles, et al.). This implies that somewhat meaningful college planning is taking place as early as sixth grade.

Because the program we are planning has an economics focus, it is necessary to ensure that students will be able to successfully learn economics concepts. Economics is not typically taught at the elementary school level, and in some cases not even in middle or high school, so it is not obvious that all ages may be able to understand the subject. However, some research has been done in this area. Sosin, Dick, and Reiser did a study of 3rd to 6th grade classes to determine what factors are influential in children's ability to learn economics. They incorporated economics lessons into the students' classes for 1 year, administering pre- and post-tests of economics knowledge. Several similar classes were used as control groups. They find that all grade levels were able to significantly improve their economics knowledge compared with the control group, with economics learning not dependent on race, income, or gender (except in one class which they dismiss as an anomaly). Not surprisingly, however, mathematics ability was found to be positively correlated with improvements between the pre- and post-tests. (Dick, et al.)

Existing programs

There are a variety of summer programs available to students of all ages, income levels, and abilities. However, there are few that specifically teach economics to low-income students. Some programs with similar content to our intended program include George Mason University's Vernon L. Smith High School Summer Workshops in Experimental Economics, started by Nobel Laureate Vernon Smith, and the Economics Camp for Exceptional High School Students through Clemson University. These programs encourage participation in classroom discussion, interaction with university faculty, and application of concepts to real-world policy through a multitude of economic topics, such as supply and demand, game theory, globalization, and environmental problems. However, these camps are not geared toward low-income students

and actually have very selective admissions processes. Since the students are already highly motivated, the camp administrators do not make an effort to measure the success of the attendants.

Employers also sponsor summer camps to encourage teenagers to pursue studies in mathematics, technology, and hard sciences. This is in part public relations, and in part a result of the perceived lack of youth training for careers in these areas. Large US companies, such as Boeing, Texas Instruments, and IBM want to grab the interest of future workers and are targeting middle-school aged children in order to expose them early on to the opportunities these fields have to offer. The results of these camps are inspiring for projects such as our own. They demonstrate a rise in student interest- only 26% of participants at the University of Colorado's pharmacy camp were interested in becoming pharmacists before attending the camp, compared with 89% after the camp- and students actually pursue the field afterwards – more than a quarter of students at the Texas Instruments camps have proceeded to take the AP physics test two years later. The American Business Collaboration is increasing its middle-school technology and science camps to serve 500 students at 10 different camps (Shellenbarger). These summer camps are similar in that they are providing kids who have the ability to succeed insights into promising careers and encouraging them to “ ‘take the hard courses, the engineering and the math and the physics, so you can go on to the next level.’ ” (Watt, qtd in Shellenbarger)

Other programs focus more specifically on low-income and minority students, but do not have a specific economic curriculum. A summer bridge program for students entering their freshman year of college at New York's Bronx Community College used survey responses and academic records to conclude that such programs for high-risk and low-income students can ease their apprehensions about college and improve their college retention rates (Santa Rita and

Bacote). Closer to home is a supplemental education opportunity for historically under-represented communities at Willamette University in Salem. The Willamette Academy is similar in size and objective to our proposed program, admitting 20 seventh-grade students per year. Though this is a long-term, year-round program covering many academic disciplines, its aim is to shed light on the college experience and encourage students to make positive choices about careers and education, as well as develop analytical skills.

Another opportunity exclusively for low-income students is a summer high school program from the Lincoln Foundation that provides four weeks of instruction in math and science. The goal of this program was to improve students' ability to succeed in similar courses in high school. This program utilized parent and teacher surveys, which both indicated high levels of satisfaction with the program, as well as pre- and post-tests to determine the effectiveness. As a result, students gained content knowledge in all eight math and science subjects they were instructed in. The percent gain between the pre- and post-tests ranged from 12.34% in chemistry to 51.67% in calculus, but improvements in all subject areas were found to be statistically significant (Munoz and Clavijo). We hope to replicate the success of these camps by combining different aspects of the various programs, since our goal includes preparing disadvantaged students for attending college as well as exposing them to economic theory.

Curriculum

There are many resources for planning curriculum in economics for all ages. The National Council on Economic Education presents annual awards for lesson plans in economics. The NCEE also provides Voluntary National Content Standards in Economics, a set of curriculum standards based on the fundamental principles of economics. *Social Education*, the Official Journal of National Council for the Social Studies, recommends using an activity-based

approach to teach economics at the primary and secondary levels. This involves concentrating on economic content through using an active learning methodology. Pedagogical theory and research promotes using active-learning methodology (Lopus, et al). Intangible concepts are better remembered and applied when learned through active lessons, like role-playing, experiments, group decision making, and classroom presentations. Using a hands-on approach also increases the likelihood for long-term retention of the concept, since students are experiencing it directly, instead of just listening or reading passively. Active learning methodology gets to the point of the lesson more efficiently than using other pedagogical techniques and students learn to apply the concepts to a wide range of real-world situations.

There is evidence that by age 10, children have a basic understanding of four fundamental economic concepts: profit seeking, economizing, acquisition of desired goods, and competition between sellers. Further experiments suggest that by age 11-12, most children can comprehend the idea of profit, and this understanding continues to improve in the 11-16 year old age group. All of this evidence demonstrates that at the age of 11-12, children are moving towards an adult understanding of economic concepts (Barrett and Buchanan-Barrow). Although many of the complexities of economics are still out of their reach, their comprehension of basic economic structure is more or less adult.

In Texas, Trinity University's Department of Economics has instituted a program called "Economists in the Schools," where economics students teach in the local elementary, middle, and high schools. This program came as a result of an NCEE survey, where 96 percent of adults felt that economics should be taught in high school, but only 60 percent of high school students have actually taken an economics course (Breidenstein, et al). Students teach at all grade levels since even younger children can understand basic concepts. The middle school model includes

hands-on activities to demonstrate economic concepts and applies the lessons to parts of the social studies curriculum that the students are already learning. By tying the lessons in economics to historical events, students can see real-world application of abstract economic thought as well as improve their understanding of history. No scientific evaluation was done for the Trinity program, but teachers at the local schools feel it has provided a lasting positive impact on students who took part.

A survey conducted by the NCEE demonstrated the overall lack of economics knowledge among students, but also a disparity in knowledge between genders and races. 25 percent of boys scored a C or better on the tests of basic economics, compared with 17 percent of girls. 26 percent of white students passed the test, compared with 14 percent of Hispanic students and 11 percent of African American students. The inequality in economic and financial knowledge among groups may be part of the reason behind inequality in personal income and wealth among these same groups. In the US, there is a considerable gap between the median net worth of nonwhite or Hispanic families, whose median net worth was only 17.3 percent of that of white non-Hispanic families, which was valued at \$94,900 in 1998 by the Federal Reserve. Although many historical and social causes come into play to account for these differences, economic education has potential to narrow the disproportion. By teaching students the long-term value of a college degree and educating them in personal finance, such as saving and investing, they can see the opportunities available to them to accumulate wealth (Schug, et al).

In an effort to bridge the gap, the Milwaukee Economic Education Partnership established the Youth Enterprise Academy, which is a ten day summer program for high school students. Like our program, it takes place on the university campus and aims to increase economic knowledge and participate of local youth. The Youth Enterprise Academy emphasizes

basic economic concepts, personal financial planning and investing, and academic success.

Students from this program completed pre- and post-tests, which showed statistically significant differences in the pre- and post-test mean scores in both the basic economics test items and the personal finance test items. This summer program shows that students are capable of improving their economic knowledge in just a short period of time.

Program Evaluation

The use of experimental design with random assignment to control and treatment groups is widely recognized as the “gold standard” of program evaluation for interventions like the one we are proposing (Orr). Many government programs are evaluated using an experimental design because it is considered to be the most rigorous evaluation method. Although it is not the most appropriate means for evaluating all programs, for a small program with well-defined goals such as ours, it is the best method.

Despite the fact that experimental design is accepted as a highly effective tool for evaluation, many educational outreach programs do not use it. There are several reasons for this. One is that many programs lack the funding for rigorous program evaluation. Laura Perna found that about 20% of pre-college outreach programs have no paid full-time staff, which she suggests may make evaluation a low priority (Perna, 76). Furthermore, some may find random assignment of program participants to be unethical. However, as Orr points out, random assignment is not inherently less fair than other methods of admitting participants, especially if the program already restricts participation due to its inability to serve all applicants (Orr). Moreover, although evaluations using experimental design are regarded as the most rigorous, they simply may not be appropriate for all programs. There are many potential difficulties of using experimental design to evaluate large-scale programs with broad aims (Weiss and Rein),

and unfortunately these are traits that characterize many intervention programs for at-risk youth. We also found that some programs do not find it necessary to evaluate their program's effect on post-secondary outcomes at all, since they are not targeted toward disadvantaged students. As the program administrators see it, the participants are all ready highly motivated and academically successful, and therefore this type of evaluation is unnecessary.

There have been successful evaluations using experimental design in the field of education, and specifically, of college outreach. Beginning in 1992, Myers and Schirm conducted a highly praised evaluation of the Upward Bound program using random assignment of students to the program. This allowed the evaluators to observe and compare the outcomes of those who received the treatment (program participants) and the control group (those who were not accepted into the program). Because the groups did not differ systematically (all had applied to and were eligible for the program), differences in their educational outcomes (after controlling for a variety of relevant variables) should indicate only the effects of program participation.

Given this, it is somewhat discouraging that the results of the Upward Bound evaluation show it to have "limited impact" on high school and post-secondary education outcomes (39-40). However, it is important that the program had significantly larger effects on certain subgroups of students. These groups include boys, low-income students, students with low education expectations, and students with poor academic performance. Furthermore, the authors of the study are quick to point out that, because the study is on-going, many of the participants who were included in the evaluation had not yet graduated high school. This means that the measured effects on post-secondary outcomes do not include all program participants, especially those who entered the program early in high school. Even if the impacts of Upward Bound are not as

substantial as we might hope, it is encouraging that many subgroups see fairly considerable results from participating in the program.

An example of an evaluation of a program more similar in scale and design to ours is that of Gordon Hall's clinical psychology summer program at the University of Oregon. His program is intended to increase the likelihood that ethnic minority psychology undergraduates will attend graduate school in clinical psychology. He also tests for improvements in multicultural awareness by alternating annually between multicultural and monocultural emphases. By randomly assigning applicants to the program to treatment and control groups and comparing subsequent outcomes, Hall is able to isolate the effects that the program has on participants.

Hall finds that his program is effective at increasing the likelihood that participants will apply to clinical psychology PhD programs. Although their intentions as reported on the pre-test, post-test and follow-up were not significantly different from the control group, the participants in the program applied to and were accepted at clinical psychology programs at a higher rate. The participants in programs with the monocultural and multicultural emphases did not appear to differ significantly in either self-perceived multicultural competence or graduate school application behavior. Still, participants in both programs had higher self-perceived multicultural competence than members of the control group. While this intervention targets older and more select students, because it is similar to our program in size and objective (both attempt to impact education decisions), its evaluation design is a good model for our program.

Analysis of the NELS Data

Since the program we are planning is intended to increase the likelihood that the participants will plan for and ultimately attend college, we were interested to know if this would

even be possible. This led us to the question: What variables determine whether an 8th grader will attend college? In order to examine how traits of 8th graders are related to their post-secondary outcomes, we looked at data from the U.S. Department of Education's National Education Longitudinal Study of 1988 (NELS:88/2000).

NELS 88, as it is commonly referred to, began in 1988 with a sample of 24,999 8th grade participants. It was scaled down in further waves of data collection, finally ending in the last wave in 2000 with a sub-sample of 12,144 cases (Quick Guide, 2). The data is incredibly extensive and includes thousands of variables derived from the questionnaires completed during five waves of data collection, with students, parents, teachers, and schools acting as respondents (Quick Guide, 3). In our analysis we focused only on student and parent data from the base year and student data from the fourth follow-up. With the data we ran some simple regressions to determine how certain characteristics of 8th graders are correlated with post-secondary educational outcomes.

We used several variables as measures of educational attainment, running a set of regressions for each dependent variable. Rather than using a continuous variable for educational attainment, which would be difficult to do with these data, we used four different dichotomous response variables. The motivation for using four different levels of PSE as dependent variables was the possibility that different explanatory variables might be more significant predictors of attainment of certain levels of education. For instance, perhaps having low math ability would not be as large an obstacle to attending PSE as to completing a bachelor's degree. These potential differences are intriguing, and could be relevant to our goals, so we wanted to look for them.

The first and broadest measure of educational attainment that we used is the binary variable *pse*, which is equal to one if the student has ever attended any post-secondary education. To be classified as having some post-secondary education, according to the wording of the NELS questionnaire, one must have “attended college, university, or vocational, technical or trade school for academic credit” (NELS 88 Questionnaire, 26). Slightly more than 79% of those sampled in the fourth follow-up had some post-secondary education experience.

The other dependent variables measure higher levels of educational attainment, and the percentage of students who attain them successively narrows. First, we looked at whether the students attended a four-year college (*fyrroll*). Almost 54% of the sample has done so by the fourth follow-up. When compared with the 79% who attend any PSE, this number suggests that almost one third of those who attend PSE do not attend a four-year college. Next, we looked at whether respondents earned a bachelor’s degree, with more than 34% doing so by 2000 (*bachelors*). Lastly, we created a variable for graduate school attendance, finding that only 4.8% of the sample attends post-graduate programs (*gradscl*).

When choosing explanatory variables, we first selected those that have been deemed significant predictors of post-secondary outcomes by other studies. It is generally assumed that race, gender, socio-economic status, and cognitive ability are correlated with educational attainment, so we included these variables in our analysis. The race data from the base year is divided into five categories: white, non-Hispanic; black, non-Hispanic; Hispanic; Asian or Pacific Islander; and American Indian. We generated five indicator variables for these categories: *white*, *black*, *hispanic*, *api*, and *amerind*, respectively. We also created an indicator variable for gender, *female*, where respondent is female when the variable is equal to one. Socio-economic status is broken into quartiles, and we created indicator variables for each

quartile (*lowses*, *lomidses*, *midses*, and *highses*). As a proxy for cognitive ability we used the mathematics test score of the students, also broken into quartiles which served as indicator variables (*lowmath*, *lomimath*, *midmath*, and *highmath*).

It has also been shown that attitude and self-esteem can be very important predictors of both educational attainment and career outcomes. In his 2006 paper in *Economic Inquiry*, Waddell finds that measures of attitude and self-esteem of high school seniors were significant predictors of later labor market outcomes, after controlling for other variables considered important. Because Waddell puts forth strong evidence that there is a relationship between these variables and education and career outcomes, we include a measure of self-esteem in our analysis to control for its effect on educational attainment.

To construct a variable for self-esteem we selected four questions from the NELS questionnaire that are also included in the Rosenberg Self-Esteem Scale, which is an established measure of self-esteem (Waddell, 72). The questions are phrased as self-affirmations (for example, “On the whole, I am satisfied with myself”) with which the students can strongly agree, agree, disagree, or strongly disagree (NELS). These responses have values 1, 2, 3, and 4, respectively. Our self-esteem variable is a sum of these responses ranging from 4 to 16, where higher values indicate lower self-esteem. For example, a value of 4 would indicate that the respondent strongly agreed with each of the four positive statements and hence had high self-esteem. The average value of this variable in the sample is 6.9, indicating moderately high self-esteem.

Previous studies have also found students’ expectations regarding their own post-secondary education to be significant predictors of their actual educational outcomes. One such study by Eccles, et al. used data from the Michigan Study of Adolescent Life Transitions to show

that a sixth grader's college plans significantly predict future college attendance. Consequently, we chose to include 8th graders' educational expectations as an explanatory variable of their educational attainment. We constructed variables that indicate the students' expectation of the highest education level they will achieve. For instance, if a student expected to attend some PSE or a higher level of education, then the variable *exppse* is equal to one. We constructed expectation variables for attending some PSE, attending a four-year college, earning a bachelor's degree, and attending graduate school.

It is widely recognized that parental characteristics are important predictors of their children's educational attainment. We include parents' expectations for their children's education—taken from the base-year parent questionnaire—as an explanatory variable in our analysis. The variables are divided into levels of attainment consistent with those of the student expectation variables.

In addition to their expectations for their children, parents' own educational attainment is known to predict children's outcomes. For instance, Waddell and Eccles et al. both include a parent education variable in their analyses. We use data on the highest level of education completed by either parent from the parent survey to assess its relationship to the students' education outcomes.

Results of NELS Data Analysis

Since we are using dichotomous dependent variables, we are essentially estimating linear probability models. This means that the coefficient that we estimate for each variable represents a change in the probability that the event described by the dependent variable will occur, given the explanatory variable, and holding all other variables constant.

For the regressions with some post-secondary education as the dependent variable we find almost all regressors to be significant. The variables with effects of the highest magnitude are student expectations, math ability, and SES, in that order. Students who expect to at least attend some PSE have a probability of attending college that is .25 more than those who have lesser expectations. Those in the lowest math quartile have a probability of attending PSE that is .2 lower than those in the highest quartile. Similarly, those with lowest SES are less likely to attend PSE than high SES students by .18.

Using attendance of a four-year college as the dependent variable yields different significant variables. Math ability is now the variable with the highest magnitude of effect, followed up by SES and student's expectation of attending a four-year college. Eighth graders in the lowest math quartile have a probability of attending a four-year college that is .35 less than students in the highest math quartile. The effect of low SES compared with high SES is -.23. Students who expect to at least attend a four-year college have a probability advantage of .20 over students with lower expectations.

When we run regressions on the attainment of a bachelor's degree, we find a different set of significant variables with the highest magnitude of effect. They are now mathematical ability, SES, and parent expectations, followed closely by student expectation of earning a bachelor's degree. The effect of being in the low math quartile is a probability that is .26 below that of the high math quartile. The low SES effect is -.24, while parent and student expectations of bachelor degree completion are .12 and .11, respectively.

While many researchers focus on the effect of race on PSE attainment, our regressions according to the NELS data find small race effects relative to other variables. American Indians are less likely than whites to achieve regardless of the dependent variable used, but the effects

are small relative to those of other variables, ranging between $-.01$ and $-.06$. When it comes to achieving at least some PSE (*pse* as dependent variable), blacks, Hispanics, and Asian/Pacific Islanders are all more likely than whites to do so, all with coefficients less than $.07$. In attending a four year college, Hispanics do not differ significantly from whites, while blacks and Asian/Pacific Islanders still have higher probabilities than whites ($.04$ and $.06$, respectively). When the dependent variable is the attainment of a bachelor's degree, blacks do not differ significantly from whites, Asian/Pacific Islanders are more likely ($.07$), and Hispanics are less likely ($-.05$). Only the *amerind* variable is significant at the graduate school level. We obviously cannot conclude that race does not play any role in the attainment of post-secondary education, as some of these race indicators are significant at certain levels of education. However, depending on the level of education we are looking at, the significance and effect of race varies. Furthermore, the magnitudes of the effects are small relative to those of certain other variables.

Gender, like race, shows significant but small effects. Females are consistently more likely than males to achieve at every level of PSE. However, the magnitude of the effect is small, ranging from $.02$ with the graduate school dependent variable to $.07$ when the dependent variable is bachelor's degree attainment.

Most important to us is the huge and consistent effect of socio-economic status on the likelihood of post-secondary education attainment. Regardless of the dependent variable used the magnitude of the effect of SES is much larger than that of any of the race indicators. There is a unique and consistently large effect of SES on the likelihood of post-secondary education attainment. The fact that SES is one of the most significant predictors of completion of various levels of higher education helps to justify using low SES as a criterion for selecting disadvantaged students for the camp.

It is also notable that student expectations of attaining a certain education level are consistently significant at predicting education outcomes. Since the goal of the camp is to increase the participants' chances of college attendance and success, we want to succeed in affecting college expectations in such a way that it will cause them to take the necessary steps and make preparations to attend college. As the Eccles paper suggests, youths' education expectations are significant predictors of college outcomes because they affect intervening processes like high school course choice. Presumably, raising participants' expectations for college while giving them the proper information about and tools for college preparation will allow them to more effectively realize their educational goals.

Summer Camp Design

In the section that follows we will discuss the implementation of the UO Economics Summer Camp. We will describe the steps we have already taken in planning the camp, as well as detail the steps that are yet to be completed. Applying what we have learned from our extensive review of the literature, we will provide a design for the ideal economics-focused pre-college intervention program. This section essentially follows the same organizational structure as the literature review, touching on target participant; program goals and curriculum; and finishing with program evaluation.

Recruiting our Target Participants

It is implicit in the nature of our program that we will select participants from under-represented groups. Because there is so much evidence that socio-economic status is an important predictor of educational attainment, we will select low SES students. Also because there is evidence that students' decisions regarding post-secondary education begin as early as 6th

grade, we will target middle school students. Lastly, because we want students to succeed within the context of the camp, we will select those who should excel in economics. Since math has been shown to be important for economics understanding, our target participant will have high math ability.

In order to recruit students for the program we contacted Springfield School District Superintendent Rob Bressi, who helped us get in contact with administrators at Springfield Middle School. This middle school has the highest proportion of low SES students in the Springfield school district; slightly more than 74% of the school's student population is eligible for free or reduced-price lunches, compared with eligibility rates as low as 22% in other middle schools in the district (CCD Public School Data). By selecting Springfield Middle School students we should fulfill our criterion that recruits be low SES. Regarding the age of our recruits, Superintendent Bressi recommended that we target 8th graders, due to their high maturity level relative to 6th and 7th graders. After discussing our criteria for selecting recruits with the vice-principal and the math teacher, they agreed to nominate low SES students with high math ability that would be likely to succeed at the camp. The group would ultimately consist mainly of 8th graders, but also includes some advanced 7th graders.

On Wednesday, May 17th, we accompanied UO Economics professor Bill Harbaugh to Springfield Middle School to do an economics activity with several math classes. This was intended to give teachers an idea of what the camp curriculum would consist of and to motivate them to nominate capable students to participate in the program. In addition to serving as a recruiting activity, the visit allowed us to observe the abilities of the students. Furthermore, we were able to collect data on the students to be used in the program evaluation. A description of the data collection is included in the section on program evaluation.

The school visit also allowed us to practice leading an economics game and get an idea of the abilities of the age group that the camp will target. We led the students in an activity where they simulated a market by making transactions as buyers and sellers. The students were divided into two groups and were named either buyers or sellers according to their group. They were then each given an index card with a red (for sellers) or black (for buyers) number on it. For sellers, the numbers represented the cost of producing a good, and for buyers the number was their value of the good. We explained to the students that they would all be given the opportunity to try to make a trade with another student (one buyer, one seller), agreeing on a price to buy or sell the good, and that they would be paid in quarters according to the surplus that the transaction yielded them. Buyers would be paid their value minus the agreed-upon price—the consumer surplus—and sellers would receive the price minus their cost—the producer surplus. Students would not be allowed to make trades that yielded a negative surplus, which would essentially mean that they owed us money. The monetary compensation was intended to give the students an incentive to make thoughtful economic decisions.

The students did quite well in the game and seemed to understand its underlying principles. Although the game is intended to simulate the types of economic transactions that people make in markets all of the time, it can be difficult to comprehend because it requires a certain amount of abstraction. For example, the item that is being bought and sold is essentially imaginary. Because of this, even undergraduate economics students playing it for the first time may require clarification about how the game is played. However, the 7th and 8th graders were adept enough to grasp the need to bargain in order to maximize their payout. They also realized that there was luck involved in their initial drawing of the cards, and that the market did not necessarily distribute income in a way that was fair. Leading the activity with the group of

students from which our participants would be selected allowed us to assess their abilities and get a sense of what activities are age-appropriate.

The teachers and the vice-principal were pleased with our visit to the school and followed-up by sending us a list of their recommendations for camp participants. After receiving the list of nominated students we proceeded to select 20 for the camp. A description of the selection of students and of the data we collected is contained in the Program Evaluation section.

Curriculum

For our camp curriculum, we will be incorporating National Content Standards in Economics into the daily lessons presented by various economics professors. Each day will have an overlying theme, so as to integrate what the students learn regarding economics with something relating to university life or another real world application. The daily schedule is designed to have a presentation by a UO faculty member where the students are actively engaged in learning an economic concept. The purpose of an interactive experiment is to keep the student's attention and lead them to figure out the correct economic conclusion through the activity. Following the experiment or activity, the students will discuss with each other and the professor about what happened and why their actions led to a certain effect. After the morning session, class will break for lunch, which will be held on campus, at the EMU where many university students also eat. The day will end with activities relating the morning experiment to something relating to the university or the students' personal college or financial goals.

For example, if the morning activity has to do with the stock market and investing, the afternoon session would discuss returns to schooling and an informational session about financial aid available for continuing post-secondary education. Another potential day's theme is globalization. It would start with the students guessing where their own favorite items might be

produced. Then everyone would take a trip to the bookstore to look at products and see if there seems to be one country or region that produces a lot of the same item, like clothing produced in various Southeast Asian countries. The rest of the morning would be spent on a comparative advantage experiment and discussion. These activities would incorporate many National Content Standards, but mainly focus on #5, that voluntary exchange occurs only when all parties expect to gain, and # 6, that both production and consumption increase when individuals, regions, and nations specialize in what they can produce at the lowest cost and then trade with others.

In the afternoon, students would meet a panel of international students, who could compare and contrast life in the United States with their home countries and the different benefits and drawbacks of each. This activity would relate the economic concept of globalization with how it directly affects people's lives, as well as letting the camp participants interact with a diverse group of university students. By using lessons that directly demonstrate the fundamental principles of economics and incorporating it with a something relating to the UO, we hope to engage the students and show them real-world applications for the concepts that they are learning while at the same time showing them the opportunities available to them at college.

Program Evaluation

The first step of our experimental method will be to recruit enough students for treatment and control groups. The camp will accommodate 20 students, so we solicited 40 nominations from Springfield Middle School 8th grade math teachers. We received a list of 35 students, six of which came highly recommended by the teachers and vice-principal. We included these six in the camp group before randomizing. We then randomly selected 14 more for the camp from the

remaining 29 students, leaving 15 randomly assigned to the control group. This was not an ideal randomization procedure, but because we want to encourage future cooperation with the middle school, we were willing to compromise slightly in order to ensure that the strongly recommended students are invited to attend the camp. Also, when analyzing base and follow-up data, we can check for any systematic differences between the six students left out of randomization and those randomized.

During our visit to Springfield Middle School we had the students complete surveys before leading them in the economics activity. The surveys asked questions regarding their college plans and preparation; how much schooling they thought their parents expected them to complete; information about how much they had discussed college preparation with their parents; and their parents' highest level of education (see Appendix for complete survey). The survey was constructed using much of the same wording and format as the NELS base year student questionnaire, but was only a page in length (NELS:88 Questionnaires). The data collected will later serve as base data to evaluate the program. Conducting the surveys with each entire class allowed us to survey the camp and control groups anonymously. Only one of the students was not present when we surveyed the classes, so this student will be sent a survey with the camp information. After the completion of the camp and the collection of follow-up data, the pre- and post-camp data sets can be analyzed to evaluate the effects of the camp.

We will also seek data on the individuals in control and treatment groups from the Springfield School District to include in our evaluation. We will need information on the students' SES, age, gender, race, grades, standardized test scores, and any other factors that may influence their postsecondary outcomes. Since it is unlikely that we will be able to find out the household income of each student, we will rely on their eligibility for free or reduced-price

school meals as a measure of SES. This is an acceptable proxy for SES and its use has precedent in similar studies. The eligibility guidelines for the National School Lunch Program for free and reduced price meals are multiples of the Federal income poverty guidelines. Annual poverty-level income is multiplied by 1.3 and 1.85, and students from households with incomes below these levels qualify for free and reduced price meals, respectively (USDA).

Follow-up data can be collected as early as next year for the 8th grade camp participants. We can observe their high school course choices and grades to determine if they are on track for college. We will also administer a post-survey several months to one year after camp completion. Finally, upon their completion of high school we can collect data on participants' post-secondary education outcomes. All of these follow-ups should include the control group, since they will provide a baseline against which the treatment group will be compared. Any statistically significant differences observed between the two groups will suggest effects of the camp.

Conclusion

It has been demonstrated that social, economical, and historical inequalities exist which make the possibility for post secondary education a near impossibility for certain groups. Encouraging and aiding members of these groups to attend college is not only beneficial for the individuals, but for society as a whole. Receiving a background in economics helps students with analytical thinking and application of logic to real-life issues, as well as an understanding of how and why people act the way they do. Through our research and data analysis, we have determined the optimal way for the University of Oregon Economics department to implement the proposed summer camp. In order to have the greatest effect on intervening in the decision to

attend college, we have recruited mainly 8th grade students. At this age, they are mature enough to learn economic concepts and act responsibly at a day camp, but are still forming their decisions about obtaining a post secondary education. Our group of students comes from the lowest SES school in the area, since our data analysis informs us that low-income students are less likely to attend college. We have verified appropriate curriculum for this age group and the best pedagogical approach, which is an active, hands-on learning experience. To facilitate objective evaluation of the success of our program, we are implementing random assignment to determine camp participants and those assigned to the control group. By following the choices of these two groups after the camp, we can ascertain whether the UO economics summer program did indeed make a difference in the post-secondary outcomes of the participants. The camp can then be modified as needed in order to make it more effective. It is our hope that this program makes a difference in the participants' likelihood of pursuing a post secondary education, and in doing so, plays a small role in correcting inconsistencies in access to higher education.

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Appendix

NELS DATA ANALYSIS VARIABLE KEY

pse	student attended some post-secondary education after high school (this is the broadest category, including those with degrees)
bachelors	student obtained a bachelor's degree
gradscl	student obtained a graduate degree
fyrcoll	student attended a four-year college (may or may not have completed)
female	student is female
white	student is white, non-Hispanic
black	student is black, non-Hispanic
api	student is Asian or Pacific Islander
hispanic	student is Hispanic
amerind	student is a Native American
lowses	student is in lowest socio-economic quartile
lomides	student is in second to lowest SES quartile
mides	student is in second to highest SES quartile
highses	student is in highest SES quartile
lowmath	student is in first (lowest) math quartile
lomimath	student is in second math quartile
midmath	student is in third math quartile
highmath	student is in fourth (highest) math quartile
expkse	student expects to at least attend some post-secondary education
expkch	student expects to at least obtain a bachelor's degree
expkfyr	student expects to at least attend a four year college
expkgrdc	student expects to at least attend graduate school
pepkkse	parent expects their child to at least attend some post-secondary education
pepkch	parent expects their child to at least obtain a bachelor's degree
pepkfyr	parent expects their child to at least attend a four year college
pepkgrds	parent expects their child to at least attend graduate school
paredhs	highest education level attained by either parent is a high school diploma or GED
paredkse	highest education level attained by either parent is some post-secondary education less than a four-year degree
paredbac	highest education level attained by either parent is a bachelor's degree or higher
bys44a	response to "I feel good about myself," where 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree
bys44d	response to "I feel I am a person of worth, the equal of other people," where 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree
bys44e	response to "I am able to do things as well as most other people," where 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree
bys44h	response to "On the whole, I am satisfied with myself," where 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree
selfest	the sum of responses to bys44a, bys44d, bys44e, and bys44h, where higher values indicate lower self-esteem

NELS REGRESSION RESULTS

Dependent variable: pse

Regression with robust standard errors Number of obs = 10954
 F(17, 10936) = 185.02 Prob > F = 0.0000
 R-squared = 0.2380 Root MSE = .34553

Ind. Variable	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
female	.0511207	.0067302	7.60	0.000	.0379282	.0643132
black	.0431317	.013281	3.25	0.001	.0170985	.0691649
hispanic	.0618129	.0120719	5.12	0.000	.0381498	.085476
api	.0675927	.0095487	7.08	0.000	.0488755	.0863099
amerind	-.0374276	.0217882	-1.72	0.086	-.0801365	.0052812
lowses	-.1758924	.0158351	-11.11	0.000	-.206932	-.1448528
lomidses	-.1022456	.0121768	-8.40	0.000	-.1261143	-.0783769
midses	-.0274651	.0089716	-3.06	0.002	-.0450511	-.009879
lowmath	-.1955826	.0123476	-15.84	0.000	-.2197861	-.1713791
lomimath	-.0895281	.0094474	-9.48	0.000	-.1080467	-.0710095
midmath	-.0304174	.0073641	-4.13	0.000	-.0448524	-.0159824
paredhs	.0223842	.0179823	1.24	0.213	-.0128644	.0576328
paredpse	.0527683	.0186217	2.83	0.005	.0162664	.0892702
paredbac	.0745049	.0205302	3.63	0.000	.0342621	.1147478
exppse	.2574454	.016319	15.78	0.000	.2254572	.2894337
pexppse	.1218181	.0148602	8.20	0.000	.0926894	.1509468
selfest	-.0078452	.0018036	-4.35	0.000	-.0113806	-.0043098
_cons	.5686243	.0296292	19.19	0.000	.5105458	.6267028

Dependent variable: fryrcoll

Regression with robust standard errors Number of obs = 10954
 F(17, 10936) = 586.22 Prob > F = 0.0000
 R-squared = 0.3397 Root MSE = .40388

Ind. Variable	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
female	.0306747	.0078744	3.90	0.000	.0152395	.0461099
black	.0483552	.0151605	3.19	0.001	.018638	.0780725
hispanic	-.0089428	.0135977	-0.66	0.511	-.0355968	.0177112
api	.060209	.0147683	4.08	0.000	.0312605	.0891574
amerind	-.042213	.0213645	-1.98	0.048	-.0840913	-.0003348
lowses	-.2321714	.0196309	-11.83	0.000	-.2706515	-.1936914
lomidses	-.1815465	.0169778	-10.69	0.000	-.214826	-.1482669
midses	-.0868814	.014211	-6.11	0.000	-.1147375	-.0590253
lowmath	-.3465532	.0130309	-26.59	0.000	-.3720961	-.3210103
lomimath	-.2374753	.0120821	-19.66	0.000	-.2611585	-.2137921
midmath	-.1172449	.0104828	-11.18	0.000	-.1377931	-.0966967
paredhs	.0338638	.0162564	2.08	0.037	.0019984	.0657293
paredpse	.0384749	.0173817	2.21	0.027	.0044036	.0725462
paredbac	.1371292	.0218801	6.27	0.000	.0942403	.180018
pexpfyr	.1333933	.0116106	11.49	0.000	.1106344	.1561523
expfyr	.203066	.0115986	17.51	0.000	.1803307	.2258014
selfest	-.0151883	.0020743	-7.32	0.000	-.0192543	-.0111222
_cons	.5728208	.0289345	19.80	0.000	.5161039	.6295377

Dependent variable: *bachelors*

Regression with robust standard errors

Number of obs = 10954

F(17, 10936) = 417.78 Prob > F = 0.0000

R-squared = 0.3186 Root MSE = .3964

Ind. Variable	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
female	.0674921	.0077121	8.75	0.000	.052375	.0826093
black	-.011586	.0134248	-0.86	0.388	-.0379011	.014729
hispanic	-.0538707	.0116101	-4.64	0.000	-.0766286	-.0311127
api	.0694693	.0167791	4.14	0.000	.0365793	.1023594
amerind	-.06494	.0177566	-3.66	0.000	-.0997462	-.0301338
lowses	-.2390552	.0187164	-12.77	0.000	-.2757427	-.2023677
lomidses	-.2106013	.0173483	-12.14	0.000	-.2446071	-.1765956
midses	-.1357911	.0159056	-8.54	0.000	-.166969	-.1046131
lowmath	-.2638841	.0118842	-22.20	0.000	-.2871794	-.2405888
lomimath	-.2264405	.0117806	-19.22	0.000	-.2495327	-.2033483
midmath	-.1423218	.011488	-12.39	0.000	-.1648404	-.1198033
paredhs	-.0037794	.0124719	-0.30	0.762	-.0282266	.0206677
paredpse	-.0150697	.013413	-1.12	0.261	-.0413616	.0112222
paredbac	.0839524	.0197144	4.26	0.000	.0453086	.1225963
expbach	.114848	.0089324	12.86	0.000	.0973388	.1323572
pexpbach	.1223782	.0093367	13.11	0.000	.1040765	.1406799
selfest	-.0097345	.0020213	-4.82	0.000	-.0136966	-.0057724
_cons	.5000908	.02625	19.05	0.000	.448636	.5515457

Dependent variable: *gradscl*

Regression with robust standard errors

Number of obs = 10954

F(17, 10936) = 17.60 Prob > F = 0.0000

R-squared = 0.0436 Root MSE = .21227

Ind. Variable	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
female	.020309	.004112	4.94	0.000	.0122487	.0283692
black	-.002468	.0065239	-0.38	0.705	-.0152559	.01032
hispanic	-.0072085	.0052977	-1.36	0.174	-.0175929	.0031758
api	.0116624	.0104546	1.12	0.265	-.0088305	.0321553
amerind	-.0153926	.0068523	-2.25	0.025	-.0288244	-.0019607
lowses	-.0419519	.0093278	-4.50	0.000	-.0602361	-.0236677
lomidses	-.0342239	.0089312	-3.83	0.000	-.0517308	-.0167171
midses	-.0353933	.0085253	-4.15	0.000	-.0521044	-.0186823
lowmath	-.045651	.0056823	-8.03	0.000	-.0567894	-.0345126
lomimath	-.0444436	.005721	-7.77	0.000	-.0556577	-.0332295
midmath	-.0408208	.0059822	-6.82	0.000	-.052547	-.0290947
paredhs	-.0016006	.0056116	-0.29	0.775	-.0126003	.0093991
paredpse	-.0050351	.0059564	-0.85	0.398	-.0167107	.0066405
paredbac	.014921	.009621	1.55	0.121	-.003938	.0337799
pexpgrds	.0081438	.0053646	1.52	0.129	-.0023719	.0186595
expgrdsc	.0261352	.0059174	4.42	0.000	.014536	.0377343
selfest	-.001528	.0011142	-1.37	0.170	-.003712	.0006561
_cons	.095241	.0134822	7.06	0.000	.0688134	.1216685

SAMPLE DAY

UO Economics Summer Camp

Globalization of our World

- 10:00** Students arrive at classroom. We provide a snack.
- 10:15-11:00** Students go to the bookstore to look at where products come from.
- 11:00-12:00** Professor Bill Harbaugh leads an interactive experiment about comparative advantage. Discuss experiment.
- 12:00-1:00** Lunch at the UO Student Union.
- 1:00-2:00** Professor Bruce Blonigen leads a panel of international students to talk about how globalization affects our daily lives and compare and contrast life in US with their home countries.
- 2:00- 3:00** UO Admissions provides general college orientation.

STUDENT SURVEY

YOUR NAME _____

YOUR TEACHER'S NAME _____

This is a survey about your high school and college plans. Please read each question carefully and answer as honestly and accurately as possible. If you are not sure about an answer, make your best guess.

As things stand now, how far in school do you think you will get? (mark one)

- Won't finish high school _____
- Will graduate from high school, but won't go any further _____
- Will attend college _____
- Will graduate from college _____
- Will attend a higher level of school after graduating from college _____

How far in school do you think your parents want you to get? (mark one)

- Less than high school _____
- Graduate from high school _____
- Attend college _____
- Graduate from college _____
- Attend higher level of school after graduating from college _____

How far in school did your parents get? (mark one for each parent/guardian)

- | | <i>Father</i>
(or male guardian) | <i>Mother</i>
(or female guardian) |
|---|-------------------------------------|---------------------------------------|
| Less than high school | _____ | _____ |
| Graduated from high school | _____ | _____ |
| Attended college | _____ | _____ |
| Graduated from college | _____ | _____ |
| Attended higher level of school after graduating from college | _____ | _____ |

How often have you talked to your parents about attending college? (mark one)

- Not at all _____ Once or twice _____ Three or more times _____

Have you talked to your parents about how to pay for college?

- No _____ Yes _____

Do you plan to take college prep classes or advanced classes in high school?

- No _____ Yes _____

When you finish school, what is your preferred job or career?

How much schooling does this job or career require? (mark one)

Graduate from high school

Attend college

Graduate from college

Attend higher level of school after graduating from college
