

**The Impact of the Promise of Scholarships and Altering School
Structure on College Plans, Preparation, and Enrollment**

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Abstract

The Washington State Achiever (WSA) program is an educational intervention to encourage students from moderate and low income families to attend college through a program of scholarships, mentoring, and school redesign. Based on five cohorts of high school seniors (one pre-program and four post-program), we measure the impact of the WSA program on college plans, preparation, and enrollment. After controlling for between-school composition of students, which accounts for the non-random placement of the WSA program in schools, we find significant effects of the WSA program on educational outcomes in two of the three schools after a lag of two years.

INTRODUCTION

Educational opportunities and access to higher education, in particular, lie at the heart of the American dream of social and economic mobility. The economic gains from higher education are substantial, and the income gap between those with and without higher education has widened in recent years. In the late 1990s, high school dropouts earned an average of \$18,900 per year, high school graduates \$25,900, and college graduates \$45,400 (Cheeseman and Newburger 2002: 2).

Circumstances of origin, however, still have strong influences on access to education and, in particular who is able to enter and graduate from college (Mare 1995, Kao and Thompson 2003). Students from poorer families and with less educated parents are less likely to finish high school and enter college (Kauffman, Alt and Chapman 2004, Rumberger 1987, Sewell 1971). The gap in high school completion between black and white students has narrowed in recent years, but black students are still less likely to attend and graduate from college (Snyder et al. 2004). Latino and American Indian students are disadvantaged at all levels of schooling (Freeman and Cox 2005, Wojtkiewicz and Donato, 1995, US Department of Education 1998). The only substantial change in access to education in the recent decades is the apparent reversal in gender differences in college enrollment and graduation (Baker and Velez 1996: 83, Buchmann and DiPrete 2006, NCES 2005). At present, women are more likely to be enrolled in college than men in every race and ethnic community (Snyder et al. 2004).

Breaking the association between ascribed characteristics and education has been a major national priority since the early days of the Great Society and the War on Poverty. Pre-school programs, such as Head Start, are designed to equip children from poor families with the readiness skills to begin schooling. The Teacher Corps, Title I programs, and a host of other federal, state, and local efforts have been made to strengthen the quality of K-12 public education for children from disadvantaged origins. Needs based scholarships, affirmative action programs, and other similar initiatives have been enacted to reduce this association by leveling the playing field for admission to colleges and universities.

While these forms of initiatives (e.g. Head Start or scholarships) directly alter individual attributes (i.e. enhancing preparatory skills or ability to pay), a broad array of educational programs are designed to reform the large urban school setting/context to raise educational achievements among disadvantaged groups. Among the many programs of school reform are the creation of smaller schools (organizationally, if not physically), and schools with more local autonomy for administrators and teachers, as well as new approaches to instruction, and initiatives to build greater cohesion, trust, and teamwork among teachers and students (Lee and Smith 2001, Mehan 1996, National Research Council 2004). These reform efforts alter the institutional context of schooling in a manner that removes purported barriers to, or enhances opportunities for, less advantaged groups with the intent of opening access to higher education.

These diverse efforts have been and currently are present in both public and private spheres. In this study, we offer a preliminary evaluation of the impact of the initial stage of the “Washington State Achievers (WSA) Program.” The WSA program is a bold initiative that attempts to reduce disparities in the transition from high school to college by manipulating incentives, motivation, and school structure (O’Brien 2007). The program purposely argues that such initiatives must be systemic directed at both individual and structural attributes.

THE TRANSITION FROM HIGH SCHOOL TO COLLEGE

Over the course of the twentieth century, universal high school graduation has almost become a reality in the United States. Only about one-third of Americans born in the early years of the twentieth century graduated from high school, but upwards of 80 percent of those born in the second half of century have done so (Mare 1995: Figure 4.2). While there remains variability in the timing and form of high school completion (diploma vs. GED), recent estimates from the National Center for Educational Statistics (NCES) show that over 86 percent of 18-24 year olds in 2000 had completed high school, including 92 percent of white and 84 percent of black youths (Kaufman, Alt, and Chapman 2001).

The attainment of almost universal high school completion, however, has not led to equality in college attendance and graduation. There continues to be significant disparities in college attendance by socioeconomic origins, family structure and by race and ethnicity (Bowen, Kurzweil and Tobin 2005, Kao and Thompson 2003, McLanahan and Sandefur 1994). African American and Hispanic youth are much less likely to enter and to graduate from college than white youth (Mare 1995, Kao and Thompson 2003, NCES 2002). Not all race and ethnic minorities are educationally disadvantaged, however. Asian American students are more likely to attend college than any other group, and many new immigrants (and the children of immigrants) have above average levels of educational enrollment and achievement (Hirschman 2001, Kao and Tienda 1995). Important variation in college experience also exists among these groups in who goes to four year colleges compared to two year institutions, who attends elite status colleges, and who mixes work and college (Horn et al. 2005). Furthermore, variation in these post-secondary experiences have been more directly and strongly tied to socioeconomic background than the simple outcome of post-secondary attendance (Baker and Velez 1996). Differences in who attends, where one attends, and in what pattern (i.e. continuous enrollment) has been associated with differences in economic and educational outcomes and, thus, a continued source of ethnic and socio-economic background effects on key outcomes (Adelman 1999, Elman and O'Rand 2004). Programs designed to improve the transition from high school to college and alter patterns of college attendance/success, therefore, are of high interest.

THE SOURCES OF EDUCATIONAL INEQUALITY

Our primary focus is the evaluation of programmatic interventions to reduce educational inequality, but it is important to begin with a consideration of the conditions that give rise to differential educational attainment in society with a relatively open and meritocratic educational structure. The most compelling conceptual framework to explain unequal educational outcomes in terms of disparities in family (and group) background and resources, is organized in terms of four broad factors: financial capital, human capital, social capital, and cultural capital (Massey et al. 2002).

Financial capital (or the socioeconomic hypothesis) explains differentials in the transition from high school to college in terms of access to money that can pay for college costs, including tuition, fees, room and board, and related expenses. Students from middle and upper class families can generally assume that their parents will have sufficient income or savings that can be used to support higher education. Students can also supplement family resources by working during the school year and summers, and borrowing. But with the costs of college well over

\$10,000 per year at public institutions and more than doubling that figure at private colleges, it is increasingly difficult for college students to be completely self-supporting (Berkner, Berker, Rooney, and Peter 2002). Needs based scholarships, government subsidies for low interest loans, work-study programs, and other forms of financial aid are means to offset the inequality of financial capital across families of aspiring college students.

Money alone does not determine who goes to college. The ability, interest, and aptitude of students are important factors, as well as other non-financial characteristics of families. One of the most important determinants of college going is the educational attainment (or human capital) of parents. College educated parents are most likely to know the value (economic and non-economic) of a college degree and can provide advice to their high school age children on realistic college choices and how to prepare and apply to college. If parental educational attainment sets the minimum expectations for their children's education, then college educated parents would be highly motivated to urge their children to do at least as well as they did. College educated parents are probably more likely to express encouragement for college, to understand the necessary prerequisites, and to make the extra effort to find the necessary resources to pay for college costs.

Social capital refers to collective resources of a group or community that are embodied in network and social relationships. Communities with a high degree of social capital have a greater sense of solidarity, trust, and collective identity. Coleman (1988) posited that all adults, not just parents, in Asian immigrant families monitor the behavior of adolescents to keep them out of trouble. Zhou and Bankston (1998) report that the Vietnamese community in New Orleans organized Vietnamese language classes and other after school programs to prevent their children from spending too much time "on the street" and to reinforce academic goals and skills. A high degree of social solidarity and social interaction among members of a community may be indicators of social capital that fosters educational ambitions and attainment.

Cultural capital is the values and attitudes that reinforce high ambitions, hard work, perseverance, and deferred gratification. Behaviors reflecting these values are generally encouraged and rewarded by teachers and schools. The cultural hypothesis posits that ambitious families who impart high motivations and persistence have a distinct advantage in fostering their children's educational attainment. Values are thought to be transmitted between generations through socialization.

These four factors are not entirely independent. Among middle class parents these capital factors may be strongly correlated. Such parents are better able to afford the costs of college, generally have college backgrounds themselves, and tend to live in suburban areas that create positive peer and community networks and school settings. Moreover, college educated parents are more likely to socialize and encourage their children to plan to attend college. However, there are a variety of ways in which these factors may be less aligned, especially for race and ethnic groups and for new immigrant groups. For example, high ambitions by immigrant parents (see Kao and Tienda 1995) may not correspond with high human capital in which parents can offer their children knowledge of appropriate course taking, extra curricular activities, or application process that leads to successful access to college (or to particularly appropriate colleges for the student).

While other sources of educational inequality are also significant, including neighborhood and school context (Portes and MacLeod 1996; Portes and Hao 2004), the framework of financial-, human-, social-, and cultural-capital includes most of the major hypotheses in the educational stratification literature (Massey et al. 2002). One important aspect of this framework, is the assumption that deficits in capital can be remedied with additional resources. Scholarships, mentors, encouragement, school reform and other policy interventions, especially within a school setting, can change or supplement the current stocks of capital and resources of students from disadvantaged families.

PROGRAMS TO INCREASE EDUCATIONAL OPPORTUNITIES

Current programs to increase educational opportunities are generally organized to remedy deficits in the financial, human, social, and cultural capital of disadvantaged and minority students. Some directly deal with the financial cost through various forms of assistance and scholarships, including needs-based and affirmative action scholarships, low cost loans, and work-study programs.

Other programs address the lower know-how, ambitions, and confidence of students who do not have the human, social, and cultural resources generated by advantaged homes, peer networks, schools, and neighborhoods. These programs are designed to increase information and interest in attending college. Improvements in curriculum and mentoring are expected to supplement limited information available through family, friends, and informal networks. Investment in new programs and structural changes in the form of schooling (e.g. charter schools, small schools) are hypothesized to provide greater access to resources, mentoring, and higher quality instruction. The expectation is that structural changes lead to improvements in social and cultural capital, which lead to improved study habits, motivation, and ambitions. While not every structural change will to the desired outcomes (Goldhaber 1999), but there is some evidence the orientation and educational attainment of students are responsive to interventions (Lee and Smith 1995).

Among programs to increase access to higher education, the most widespread have been policies to reduce the financial capital barriers for youth from less affluent families. Need-based scholarships, work-study programs, and subsidized loans are primary examples. In more recent years, some states have initiated scholarship programs, such as the “21st Century Scholars Program” in Indiana and “Hope Scholarships” in Georgia to widen the scope of educational opportunity by guaranteeing tuition to in-state colleges for successful completion of high school among targeted under-achieving groups.

There has also been a variety of “outreach” programs in middle and high schools to stimulate an awareness and encouragement for college with a focus on students who do not have a family tradition of attending college. For example, MESA (Mathematics, Engineering, Science Achievement) and “Gear-Up” target groups with under-represented enrollments in college or in special programs such as engineering. These programs often bring middle school and high school students to college campuses for short educational programs with the objective to increase the motivation of students to take more challenging pre-college high school courses, to prepare to attend college, and to educate students (and often families) in the process of getting to college.

In addition to government, private philanthropy and foundations have also been major actors in creating programs to broaden access to higher education. Many efforts are directed at outright grants or guarantees to the underprivileged that link successful high school completion to financial access to college. For example Eugene Lang's efforts through the "I Have a Dream Foundation," have spawned many similar programs around the country which mainly offer financial incentives to attend college or, in terms of capital, manipulate the financial factors related to attending college (Gaines-Carter, 1990; Honan, 1997; Kelly, 1990).

Yet, the long-standing and deeply rooted problem of unequal access to higher education requires strategies that move beyond manipulations of single forms of capital and address how all forms of capital (financial, human, cultural, social) are integrally related to a successful college transition and college maintenance.

Among the most promising educational interventions in recent years is the Washington State Achiever Program (WSA). Similar to Lang's holistic vision, the WSA program combines the promise of scholarships, efforts to expand college awareness, and mentoring, as well as school restructuring. In this preliminary study, we examine the early years of the WSA program.

THE WASHINGTON STATE ACHIEVERS PROGRAM

In 2001, the College Success Foundation (formerly the Washington Education Foundation), with financial support from the Bill and Melinda Gates Foundation launched the Washington State Achievers Program (WSA) in sixteen program selected high schools in Washington State with a disproportionate number of students from low to modest income households (Craves 2006, O'Brien 2007). The program offered: 1) direct 4 year college scholarships to WSA scholars who are selected in their junior year of high school, 2) direct manipulation of knowledge and motivation by reorienting early middle school counseling toward college preparation, 3) support through direct 1:1 mentoring of scholarship recipients, and 4) restructuring of high school curriculum and school structure (specifically smaller schools). These programs are based on a model of school reform, which posits that small schools with higher standards and expectations will lead to greater academic attachment and aspirations of all students than is prevalent in traditional schools. These key features of the WSA address the deficits in financial, social, human, and cultural capital of disadvantaged students.

The stated goals of the Washington State Achievers Program are:

- to encourage school redesign that facilitates high academic achievement and increased college enrollment among all students at the selected high schools;
- to identify and reduce financial barriers to college for talented, low-income students who have overcome difficult circumstances and who are motivated to attend college;
- to provide mentoring to ensure academic support is available to students once they are enrolled in college; and
- to develop a diverse cadre of college-educated citizens and leaders in Washington state. (O'Brien 2007: 5, also see (<http://www.waedfoundation.org/achievers/index.htm>)).

Students in targeted schools are eligible to apply for a WSA scholarship if their family's income is in the lowest one-third of Washington State income distribution. This income cap is adjusted for family size and family circumstances. In recent years, students were eligible to apply if their family income was \$49,900 for a family of four and even up to \$67,000 for a family of seven

(O'Brien 2007: 6). The WSA scholarships vary by type of college attended. In 2006-07, the maximum scholarship was \$4,350 for students attending community college, \$7,000 for those attending four year in-state college or university, and \$9,700 for students attending a private college or a public university in another state

The College Success Foundation estimates that about 50 to 60 percent of eligible students apply for a WSA scholarship (O'Brien 2007: 7), though it was probably lower in the first year of the program (Emeka and Hirschman 2005). The selection of WSA scholars is a two-stage process. In the first stage, the written materials from the applicants, which include student essays and teacher recommendations, are evaluated to measure non-cognitive skills, such as positive self concept, realistic self appraisal, community service, and leadership potential, among other criteria (Sedlacek 2004, O'Brien 2007: 6)

About 750 of the 1,100 to 1,200 applicants are invited to attend the second stage of the selection process, which is an interactive workshop, which focuses on group interviews and problem solving. At the workshop, students are again evaluated to select students based on non-cognitive skills using a evaluation system of observer ratings developed (O'Brien 2007: 6). This final evaluation narrows the pool to approximately 500 applicants who are designated WSA scholars in the spring of their junior year.

PROGRAM IMPLEMENTATION AND ALTERING CAPITAL

Features of the WSA program manipulate the four capital quantities outlined. Clearly only the scholarship directly alters financial capital but arguably the presence of the scholarship changes features of the student's social capital by broadening their adult network and their cultural capital by changing the student body's view toward college preparation and possibility. Because of the large numbers of students receiving scholarships in each WSA high school—15 to 20 percent of high school seniors were selected in the targeted high schools--- the program has the potential of changing the culture of entire school as WSA scholars provide examples of changed study habits and higher educational ambitions. The other, non-financial features of WSA, including the early mentoring, altering access and emphasis on college preparation courses, and restructuring toward small schools favors change in human, social, and cultural capital. For example students, not just scholarship recipients, are more likely to take advanced classes, have more contact with adults emphasizing advanced education and with knowledge of what it takes to achieve/enter college and a general cultural upgrade among fellow students that college is a distinct, feasible choice.

Implementation of the WSA program, however, occurred in stages and while all features of the program were present in schools not all features were prescribed a standardized content or format. For example, the timing of and how early mentoring occurred in each school differed and the small school structural change mandate were developed separately by each participating school. This generates a highly standardized process of applying for and allocating scholarships (financial capital) but a purposely "grass roots" and varied way of implementing other features of the program. This process of implementation naturally led in the early years of the WSA program to a stronger presence of scholarships and scholar mentoring as the most visible aspects of the program. In the more recent years, new features of the program have been added, such as a middle school early college awareness curriculum and a summer program for WSA scholars.

The small school reform initiatives were implemented with varying speed and primarily in the third year of the program.

THE UNIVERSITY OF WASHINGTON BEYOND HIGH SCHOOL PROJECT

The analysis reported here is based on survey data from a study of the transition from high school to college—the University of Washington Beyond High School Project (UW-BHS). The UW-BHS includes five cohorts of high school seniors in several West Coast metropolitan school districts in 2000, 2002, 2003, 2004, and 2005. The analysis presented here is based on a merged data set of over 5,000 students from these five cohorts of high school seniors from one of the school districts.

In this school district, there are three WSA high schools and two non WSA schools. In this one school district we have a survey of all seniors in the five high schools that was conducted before the WSA program began (in 2000) as well as four surveys of seniors conducted post program (in 2002, 2003, 2004, and 2005). In addition to the baseline surveys of high school seniors, there was a one-year follow-up survey to measure who actually went to college in the year after anticipated high school graduation.

For each cohort of high school seniors, we administered an in-school “paper and pencil” questionnaire in the spring (April or May). In some schools, seniors completed the survey in regular classrooms, while in other schools the students were assembled in an auditorium to take the survey. Overall, student cooperation was very good and less than 2 percent of enrolled seniors (or their parents) refused to participate. In addition to in-school data collection, a series of mailings were sent to “enrolled seniors” who were not present in the school on the day of the survey following the Dillman (2000) procedures to increase survey response. These additional mailings increased the number of completed senior surveys from 10 to 15 percent.

Evaluation of the completeness of coverage of the senior survey is clouded by the definition of who is a high school senior, and the logistics of locating students who are nominally registered as high school students, but are not attending school on a regular basis. In theory, high school seniors are students who have completed the 11th grade, are currently enrolled in the 12th grade, and are likely to graduate from high school at the end of the year. In practice, however, there are considerable variations from this standard definition. Some students consider themselves to be seniors (and are taking senior classes and are listed as seniors in the school yearbook), but are classified in school records as juniors because they have not earned sufficient credits. In addition to “fourth-year juniors,” there are a number of “fifth-year seniors,” who didn’t graduate on time and have returned to take one or two courses.

In addition to the problems of identifying the potential universe of seniors, errors of coverage arise because about 10 percent of students are not enrolled in the five comprehensive high schools in the district. In addition to a small number of home-schooled students, there are a wide range of alternative programs for students with academic, behavioral, or disciplinary problems. Because many of these seniors have only a nominal affiliation with the public schools—the largest group was enrolled in high school equivalency courses at community colleges—they are less likely to respond to our request to complete a survey of high school seniors. Even among students enrolled in the five comprehensive high schools, there were “non-mainstream” students who completed the survey at lower rates than others, including the 6 percent of seniors who were

taking community college classes for college credit and another 7 percent of students who were in special education classes for part or all of the school day.

The problems of defining senior status and locating them (to take the survey) reduced the coverage of our senior survey. For regular students – graduating seniors enrolled at and attending one of the five major high schools—the response rate is about 80 percent. If we consider a broader universe of students, including students with marginal affiliation to high school and other hard to contact students, our effective rate of coverage of all potential seniors is probably about 70 percent. Although our rate of survey coverage of all high school seniors is less than desirable, the problems we encountered are endemic in survey research of high school students. Most national surveys of students are limited to students who are present on the day the survey is conducted and probably have even lower levels of coverage than the UW-BHS senior survey. During data processing, we excluded a small number of exchange students, developmentally disabled students, self-reported Juniors, and a few students who appeared to have answered the questionnaire with random responses or who could not be matched with school records¹. This leaves an effective sample of 5,618 seniors and 5,073 students who completed both the senior survey and the one year follow-up survey (90% of the interviewed high school seniors were interviewed one year later).

GENERAL ANALYTIC STRATEGY

To address the effect of the Washington State Achievers (WSA) program's restructuring of schools and direct scholarship program on educational outcomes, our analytical approach is framed as a quasi-experimental design. We have one cohort of seniors from Year 2000, which represents the period prior to the initiation of the WSA program and four cohorts (in Years 2002, 2003, 2004, and 2005) which represent the period after implementation of the WSA program. In addition, we have three high schools that implemented the program and two that did not; these schools were not randomly assigned but selected on criteria of highest need (i.e. higher levels of disadvantaged students). We measure four educational outcomes expected to increase due to WSA program presence: plans to attend 4-year college, taking the SAT/ACT, and actual college attendance one-year post-graduation in 2 or 4 year institutions and in 4 year colleges.

The major difference between a classical experimental design and our data is that the WSA program (scholarships and school reform) was not assigned randomly to students and schools. Indeed the program was designed for low income schools and for students below an income threshold in each school. For this reason, we estimate the program effect after adjusting for socioeconomic status, family structure, race and ethnicity, and other measures of family background that may have affected inclusion in a WSA school and selection as a WSA scholar. We consider these factors (discussed below) to be exogenous to the WSA program. We have not included current behavioral and social psychological orientations measured in the spring of the senior year) as control variables, because these might well be endogenous to selection of students as WSA scholars.

Our strategy is to use Year 2000 (pre-program) as indicative of the differences in the rate of educational outcomes across the schools. We expect, given the school selection criteria, that

¹ 111 students were excluded for the reasons mentioned above. Exchange students and self reported Juniors were the two largest groups--51 exchange students and 43 self reported Juniors were left out the analysis

WSA schools will have lower initial educational values on our four outcomes compared to the nonWSA program schools in Year 2000; this difference will be reduced when accounting for student body compositional effects, but will not necessarily disappear. Our approach is to then pool the data across time and schools to account for the general temporal trend in these four outcomes, as well as estimate specific WSA program school by year interactions. To the degree we see significant interactions of program and year we can talk about a collapsing of the observed initial differences between program and non-program schools and consider this collapse (or even surpassing their counterparts) as the effect of the WSA program. This would imply that the program has created comparable educational outcomes across schools regardless of the individual school's social and economic differences.

To accomplish this analysis, we estimate a baseline model of school and temporal effects. Because there is natural variation in the program structure across the 3 WSA high schools, we consider each school as a different treatment; the scholarships and scholarship process is consistent as noted above while mentoring and school reform are similar in intent but not necessarily in form. This is a simple additive model that estimates the observed differences between each of the three WSA schools relative to the non-WSA schools, and for each year.

$$(1) Y = B_0 + B_1 (WSA1) + B_2 (WSA2) + B_3 (WSA3) + B_4 (Yr2002) + B_5 (Yr2003) + B_6 (Yr2004) + B_7 (Yr2005)$$

In equation (1), the intercept B_0 represents the pooled mean outcome for non-program schools in Year 2000; B_1 , B_2 , and B_3 are the pooled constant differences between non-program and the specific WSA high schools; and B_4 , B_5 , B_6 , and B_7 represent the simple temporal differences over time regardless of school. This equation merely captures the pooled difference between the WSA and non-WSA schools and the secular trend in the outcome. Differences between schools do not reflect simply the effects of the WSA program because the WSA schools were not selected randomly. Restricting the analysis to only Year 2000 (dropping the corresponding dummy variables for each year) assesses the observed initial differences among the specific WSA schools and the nonWSA schools.

To measure school differences in educational outcomes more accurately, net of school composition, we estimate a second model simply adds a number of individual background variables to the baseline equation.

$$(2) Y = B_0 + B_1 (WSA1) + B_2 (WSA2) + B_3 (WSA3) + B_4 (Yr2002) + B_5 (Yr2003) + B_6 (Yr2004) + B_7 (Yr2005) + B_n (X_n)$$

In Model 2, X_n represents a broad range of background variables that are highly correlated with educational outcomes and also differ between schools. These include measures of race and ethnicity, socioeconomic origins, and family structure. Thus, the model provides estimates of school (and temporal) effects net of the socioeconomic composition of students (actually seniors). Measuring the observed effects of schools (model 1) and the effects of schools net of composition (model 2) is a necessary prelude to the estimation of program effects. Prior to the WSA intervention, schools with more disadvantaged students would be less likely to send students to college. But these same schools were targeted for the WSA program, which is designed to raise college awareness and college attendance among students. To provide a clear

estimate of the program effect, we set the stage by measuring “normal” school differences (without the program) and by estimating how much of these differences are due to student composition. Again limiting the analysis to Year 2000 and dropping the temporal dummy variable provides a specific estimate of nonWSA and WSA program schools differences net of student body characteristics.

The next equation specifically captures the school specific WSA program effect by adding interactions between the WSA designated schools and the presence of WSA in the years 2002, 2003, and 2004.

$$(3) \quad Y = B_0 + B_1 (WSA1) + B_2 (WSA2) + B_3 (WSA3) + B_4 (Yr2002) + B_5 (Yr2003) + B_6 (Yr2004) + B_7 (Yr2005) + B_n (X_n) + B_k (Yr_t * WSA_k)$$

In this equation B_k represents each WSA school by the expected program effects for each of the WSA and non-WSA program schools for years 2002, 2003, 2004, and 2005, respectively, relative to the baseline year of 2000. We expect B_k , coefficients (12 coefficients) to have positive signs suggesting positive outcomes for the presence of the program, perhaps increasing over time as the program matures and becomes more effective. Although there were scholarships and mentoring in all the years, the WSA program of school reform began only in the 2003-04 year, when the members of the Class of 2004 were seniors. Seeing these positive coefficients for the interaction terms is indicative of a reduction in the differences initially observed between the WSA schools and nonWSA schools and can be seen as effects due to the WSA initiative in these schools.

Note that we do not include a measure of whether a student received a WSA scholarship as a measure of program effect (St. John and Hu 2005). Receiving a WSA scholarship is an outcome of the WSA program and is certain to be correlated with a number of other endogenous factors, including the motivation to apply for the scholarship and the non-cognitive skills that were used to select recipients among the applicants. Since these unmeasured factors are likely to be predictive of motivations for college, many of the WSA scholars may have found some other means to attend college even if the program had not existed. The counterfactual of the WSA program is not students who did not receive a scholarship, but the absence of the program (measured by the Year 2000 data).

MEASUREMENT AND DESCRIPTION

We begin with an overview of the dependent variables, which tap subjective and behavioral aspects of the transition from high school to college. These measures are shown in Table 1 for the entire sample of high school seniors at the five comprehensive high schools in the pre-program year of 2000 and the post-program years of 2002, 2003, 2004 and 2005. This descriptive table also presents the distributions of the demographic, socioeconomic, and other background variables of students in the UW-BHS sample of high school seniors. Although these background variables are not the primary focus of attention in this analysis of the impact of a policy intervention, the socioeconomic and demographic composition of students shapes the context of this study, and are also used as “controls” to estimate the net effect of the WSA intervention.

TABLE 1 ABOUT HERE

The dependent variables include one subjective measure of educational ambitions and three behavioral measures of college preparation and enrollment. The subjective variable taps student plans for college. About three-quarters of seniors in our sample aspire to graduate from college and about two thirds of them “realistically” expect to do so. These values are very similar to those from national surveys, which indicate much higher levels of educational ambitions than will be realized (Hanson, 1994). The actual indicator of plan to attend college is based upon the students’ responses to “Do you plan to go on to college or other additional schooling right after high school? That is, do you plan to continue your education THIS FALL?” For students who report college plans, a follow-up question asked: “What is the name and location of the college, professional, or technical school that you will most likely attend in the fall? The students list, in preferential order, three schools which they plan to attend. The ‘college plans’ indicator used in our analysis is captured by examining whether the students’ first choice college is a four year college or not².

Roughly four-fifths of students surveyed reported plans to attend a post-secondary institution in the year following high school graduation. However, only about two-fifths of surveyed students reported that the institution which they would most like to attend post-high school is a four year college or university.

Student preparation for college is indexed by measuring whether a student’s had taken (or plans to take) a college-board examinations; either the SAT (Scholastic Assessment Test) or the ACT (American College Test). This variable is coded as a dichotomy with yes meaning that the student had taken (or planned to take by the spring of their senior year) the SAT or ACT. Although the SAT/ACT is required for application to most four-year colleges, there is not a requirement for admission to community colleges, which enroll more post-secondary students than four year colleges and universities.

A little more than half of students have taken the SAT or ACT—almost 55 percent in 2000. This figure rose by a point or so in 2002 and 2003, but then jumped to 62 percent in 2004. Small variations from year to year may be due to random variation or because of slight variations in the completeness of coverage (and perhaps some differences in selectivity of response) of the annual surveys, but the similarity of the trends suggests that there has been a modest increase in college ambitions and in college preparation in 2004 and 2005 relative to prior years.

College enrollment was measured in a survey conducted one-year following high school graduation. Over 90 percent of the original sample was re-interviewed, using multiple methods of contact, including telephone interviews, email and web forms of the survey, and a mail out/mail back format. The majority of students were interviewed by phone with a short five-minute questionnaire that asked if the student was enrolled in college. If the answer was yes, the student was asked the name and location of the college or university. If the original respondent could not be reached after many tries, we accepted proxy responses (less than 10 percent) from parents or other household members who knew the whereabouts of the respondent. The 2005 Carnegie classification of institutions of higher education were used to code the institutions by

² To delineate between two and four year colleges we use the 2005 Carnegie classification of institutions.

the respondents³. The schools were coded as 4-year degree granting institution, 2 year degree programs, or other post-secondary educational programs⁴.

For our analysis here, we consider two measures of college enrollment: attendance at either a two-year or four-year college, and attendance only at a four-year college. The figures reported here are for the sub-sample of respondents interviewed in the follow-up survey (see Ns at the bottom of each column). The results show that the proportion of seniors going on to college (of any type) rose from about 65 to 70 percent over the period and from 32 to 36 percent in four year colleges and universities.

In contrast to the trend of rising (albeit modest) educational outcomes reported in Table 1, the variables measuring the demographic and socioeconomic composition of students show a very stable portrait of students in a West Coast metropolitan school district. There are fluctuations from year to year, but with one or two exceptions, there is little evidence of major changes in student composition (or in the composition of respondents to the BHS questionnaire) over the years. This stability suggests that that the observed “improvements” in educational outcomes are not likely to be a result of differential composition of students (or in response rates) over time.

A little more than half of the sample of seniors is female (males are somewhat more likely to be high school dropouts). In the first two years of the UW BHS surveys, about half of seniors were white (a bit more in latter years) and the balance was composed of a rainbow coalition of every race and ethnic category—about 15-17 percent black, 7-10 percent Hispanic, with small fractions of East Asians (Chinese, Japanese, Koreans), Vietnamese, Cambodians, Filipinos, American Indians, and Pacific Islanders.

Family background is measured by parental education, home ownership, and family structure. Parental education is summarized with the highest education of either parent (absent parents were included only to the extent that the student could report on their educational attainment). Homeownership (rent versus own) is a measure of socioeconomic status or net wealth. Family structure is represented with three categories: 1) Co-residence with birth/adoptive parents, 2) Disrupted family (by divorce or death), but the student reports having both a father and mother figure in their lives⁵, and 3) Student reports not living with both parents and not having a father figure or mother figure. Generational status measures nativity—foreign born students, the second generation (children of immigrants), and everyone else (third and higher generations).

The modal “highest educated parent” is a mother or father (or mother-figure or father-figure) with some college—about 37 to 41 percent of students were in this category. A little more than one quarter of students have parents whose highest educational experience was high school

³ Information on the Carnegie classification of higher education institutions can be found at: <http://www.carnegiefoundation.org/classifications/>

⁴ The institutional classification was based upon the highest degree offered by the institution (Associates or Baccalaureate) For the few schools which offered both Associates and Baccalaureate degrees, we coded these schools based upon which type of degree was more prevalent amongst all degree recipients. Lastly, we coded the small number schools without any form of accreditation and all special focus institutions as other post-secondary educational programs.

⁵ Father or mother figures could be a step parent, an absentee parent, or another person, such as a grandparent, who plays the role of a mother or father

graduation or less, while almost one-third of students report that at least one parent was a college graduate. The other measure of socioeconomic status—homeownership—shows about one-third of students live in rental housing. In general, families that live in rental housing are poorer (both in wealth and income) than families that own their homes.

Somewhat more than half of the seniors in our sample, about 55 percent, are living with both of their birth (or adoptive) parents. At the other end of the spectrum, about 10 percent of the students report that they do not have either a mother or father figure in their lives. In between, constituting about one-third of the sample of students, are students who have experienced some fissure of their natal family, but have parenting relationships with step-parents, non-resident parents, or other relatives. A little more than one in ten (12 to 14 percent) students were born outside the United States and another 14 to 17 percent are the children of immigrants. The balance are 3rd and higher generation American residents (or students for whom nativity status is unknown).

Table 1 also lists the five high schools analyzed in this study (identified simply as schools 1, 2, 3, 4, and 5.) Schools 1 through 3 are the WSA high schools and schools 4 and 5 are the nonWSA schools. The two nonWSA high schools are somewhat larger and have about ½ of the total students in the BHS sample, while the three smaller WSA schools enrolled the other half of students in the district. There are fluctuations in the relative size of schools from year to year without a systematic trend—perhaps reflecting differential survey response. Although differential response between schools could bias the results, the modest magnitude of the variations and lack of any systematic trends provide reassurance. Moreover, the relative stability in the overall demographic and socioeconomic composition of students across years indicates that temporal shifts are unlikely to be explained by differential coverage of students in the annual senior surveys.

We now turn to a description of changes in educational outcomes. Table 2 shows the temporal shift in educational outcomes for four dependent variables for the five cohorts of seniors in WSA and non-WSA schools from 2000 to 2005. In the first panel of Table 2, the values of the three WSA schools are shown individually (labeled as schools 1, 2, and 3) and the two nonWSA schools (Schools 4 and 5) are grouped together. The middle panel shows the absolute differences (in percentage points) for each school from the nonWSA schools in 2000—the benchmark to judge both temporal and school effects in the subsequent multivariate analysis. The last panel shows the summary change (in percentage points) from 2000 to 2005 for each school.⁶

TABLE 2 ABOUT HERE

In 2000, prior to the initiation the WSA program, students in the nonWSA schools had higher educational plans/preparation to attend college and actual college attendance than those in the WSA schools; the exception being the trivial higher level of attending any college (difference of

⁶ For descriptive and analytical purposes it makes sense to pool these two high schools as nonWSA schools. This allows a simple discussion of differences between schools with program changes to non-program schools. Analyses of various attributes of HS#4 and HS#5 also suggest pooling is reasonable. There are some significant differences across key demographics but these are generally small; notably School #5 is more ethnically diverse (61% white versus 71% in School #4 but do not differ in the proportion in specific non-white subgroups). These two schools show no differences across the outcome variables for the baseline year 2000.

.7%) between High School #1 and the nonWSA schools. This is not too surprising since low income schools were selected for inclusion in the WSA program. For the more “middle class” nonWSA high schools, about 40% of seniors in 2000 reported that they were planning to attend a 4 year college and many more (62%) were preparing for college by taking the SAT or ACT. The plans reported by high school seniors were predictive of actual behavior one year later. More than one third (36%) of students from nonWSA schools were enrolled in a four college one year later and twice this number (70%) were enrolled some type of college (2 year or 4 year). In 2000, students at one of the WSA high schools (#1) had educational plans and enrollment levels that were only slightly below those of the nonWSA schools. Seniors at the other two nonWSA schools, especially #3, were much less likely to plan or prepare for college and were also much less likely to attend college. As indicated in Table 2 (Column 1) these differences compared to the nonWSA schools---based on a logistic regression of outcomes on the 3 dummy variables representing the separate WSA schools---were typically significant for WSA High Schools #2 and #3 while for High School #1 only the college preparation outcome (taking the SAT or ACT) was significant.

In the subsequent years, there is a moderate amount of “noise” as the annual percentages bounce around within a small margin of error with no clear direction, as well as some systematic patterns. For the nonWSA high schools, most of the variations do not have a consistent trend. For example, the percent of nonWSA students attending any college varies from 69 to 73% across years and there are similar fluctuations, from 33 to 36%, in attending a four year college. There is slight increase of 4 percentage points in the number of nonWSA students planning to attend college from 2000 to 2005 and a one point rise in college preparation, but there does not appear to be a consistent trend.

In contrast, two of the three WSA schools registered systematic and significant gains in college planning, preparation, and attendance, while one WSA high school had a mixed record. The most successful WSA high school (#1), which was only slightly, but significantly, below the nonWSA schools in 2000, caught up with and then surpassed the nonWSA schools. Students from high school #1 have much higher rates of college planning (over 50% plan to attend a 4-year college), preparation (70% take the SAT/ACT), and attendance (80% attend college and almost 50% attend a 4 year college) than their peers in the nonWSA schools. These differences in 2005 are all significant. The poorest performing WSA high school (#3) in 2000 increased its levels of college planning, preparation and attendance from 2002 to 2004, but then slipped a bit in 2005. Although school #3 had not caught up with the nonWSA high schools, it has reached parity with (or surpassed) school #2. Since numbers can bounce around from year to year for a variety of reasons, we do not interpret single year changes (such as the decline in college outcomes of seniors in school #3 from 2004 to 2005), but look for underlying trends and patterns. In contrast to the progress of schools #1 and #3, WSA high school, #2 made relatively few gains from 2002 to 2005. There were gains in college preparation for school #2, but no sustained change in college attendance.

These descriptive results offer prima facie evidence that the WSA program has had the intended effect of improving college ambitions, preparation, and performance of students in the program schools—at least for schools #1 and #3. These figures are, however, preliminary because these

patterns are confounded with the characteristics of students. In the subsequent multivariate analysis, we examine school effects net of composition of students.

MULTIVARIATE ANALYSIS

Based on the analytic strategy described above, Tables 3 and 4 present the results of our analysis of the impact of the WSA program on the transition to college. Table 3 includes the two dependent variables that were measured in high school—College Plans, the proportion of seniors planning to attend a four year college immediately after high school, and College Preparation, the proportion of seniors who have taken the SAT or ACT by the spring of their senior year. Table 4 presents the results of similar models for actual college attendance (for any college and for a 4-year college, respectively). Table 3 is based on the complete sample of high school seniors interviewed in each year while Table 4 is based on the sub-sample of high school seniors who were respondents in the one-year follow up survey. Although the follow up survey successfully re-interviewed about 90 percent of senior respondents, an independent check suggests that college attendees were somewhat more likely to be re-interviewed than their peers who did not go to college.⁷ However, there is no evidence of systematic bias in the correlates of college enrollment in the follow up sample (relative to the senior survey).

TABLE 3 ABOUT HERE

There are three models for each dependent variable in Tables 3 and 4 that correspond to the three equations outlined in the General Analytic Strategy. The first equation includes year (2002, 2003, 2004 and 2005 relative to 2000), which represents the temporal trend and the three WSA schools (#1, #2, and #3 compared to the two non-WSA schools) as independent variables. This baseline model presents a multivariate analogue to the descriptive results of the observed school differences in Table 2. Model 2 includes all the Model 1 independent variables plus the individual level covariates to control for compositional differences between schools. Because our focus is on the WSA program effect, we do not present the effects of the covariates in the tables. The last equation, Model 3, includes all the Model 2 independent variables plus interaction terms of year and school as proxies for program effects in 2002, 2003, 2004 and 2005. These interaction terms represent the school specific WSA program effects.

With binary dependent variables, we use logistic regression to estimate the models. Missing data are generally not at high levels across these measures, typically less than five percent of responses. To maximize the sample size and maintain a stable N over the analyses, we employ a regression single imputation method and estimate cluster correlated standard errors to account for sampling at the school level. Because observations of individuals within schools may not be independent of each other (students within a school are exposed to common organizational and cultural features) cluster correlated standard errors are estimated to account for the intraclass correlation and possible heteroskedastic disturbances. We have compared the results here to those from other methods of imputation and error estimation and there are virtually no differences.

⁷ The difference in re-interview rates is based on independent estimates of college attendance in the year after high school with data from the National Student Clearing House.

As discussed we use Year 2000 as a benchmark for pre-existing differences (prior to WSA program implementation). Our analysis of Table 2 shows there were consistent lower outcomes across the three WSA schools relative to the nonWSA schools albeit WSA High School #1 was not always significantly different. A multivariate analysis restricted to Year 2000 only and executing Model 2 (accounting for student demographics) shows that these school differences can be largely accounted for by student characteristics except for WSA School #3 which continued to show significantly lower levels relative to the nonWSA schools across all outcomes (results not shown). It is notable that in Year 2000 all three schools, net of student composition, had negative coefficients and a consistent pattern of lower performance for all outcomes; for college preparation High Schools #1 and #3 were significantly lower than the nonWSA schools. These results broadly suggest that differences in academic outcomes prior to WSA for schools #1 and #2 were compositional, while for WSA #3 there remained a consistent difference above and beyond the composition of the its student body.

For the pooled data analysis, Model 1 shows that, net of a general temporal trend, students at one WSA high school (#1) are on average more likely to plan to attend college relative to the nonWSA high schools and to have comparable rates of college preparation (SAT/ACT test taking). The other two WSA high schools, however, have much lower levels of college plans and preparation, especially high school #3. As noted earlier, the three WSA high schools enroll a disproportionate share of disadvantaged students in the school district. In Model 2, these measures of school composition (gender, race/ethnicity, immigrant generation, parental education, home ownership, and family structure) are included as covariates. The adjusted school effects in this model show that the educational deficit of students at high school #2 can be entirely explained by demographic and socioeconomic composition. Net of composition, students at high school #1 are doing better than students at the nonWSA high schools. School #3 still on average lags behind even after holding student composition constant, but the observed gap is reduced by one-third or more.

Model 3 tests the hypothesis of program effectiveness. The interactions of WSA and year (in 2002, 2003, 2004, and 2005) taps the impact of the WSA program, net of demographic and socioeconomic composition, relative to the nonWSA schools in 2000. These results show that the WSA program was effective in WSA schools #1 and #3, but not in #2. The WSA effect was statistically significant in 2004 and 2005 for both dependent variables. In 2002 and 2003 the program had an effect only for one dependent variable (SAT/ACT test taking) and only for high school #1.

The highly negative value for the dummy variable representing school #3, net of temporal effects, indicates that there were many fewer students taking the SAT/ACT in 2000 in this school relative to the nonWSA program schools in 2000. This is consistent with the descriptive patterns in Table 2. The negative effect of high school #3 is reduced a bit when socioeconomic composition is held constant in Model 2. But, then it sinks to a much lower level when school and year are allowed to interact in Model 3, revealing the effect of the WSA program. The impact of the WSA program on high school #3 was lagged, but it did have a positive impact in 2004 and 2005 and basically acts to remove the difference between school #3 and the nonWSA schools initially observed in 2000 (prior to the program).

There are two important conclusions from Table 3. First, the WSA program appears to have had a more immediate and stronger impact on SAT/ACT test taking than on college plans as reported by high school seniors. The differences in these effects may be due, in part, to an inflated sense of expectations to attend college as a socially desirable outcome, therefore increasing expectations even more may be difficult for the program to accomplish. Secondly, organizing students to take college entrance exams may be influenced, and even managed, by school administrators and teachers. With the expectations of change created by the WSA program, there may have been encouragement or pressure on students take the SAT or ACT. The second conclusion is that the impact of the WSA program is evident for only two of the three high schools with the program. We discuss this unexpected pattern after considering the evidence of the WSA program on college attendance or behavior one year later.

Table 4 shows the impact of school, year, and school by year interactions (program) on attending any college (left hand panel) and on attending a 4-year college in the year after high school graduation. These outcomes were measured in a one-year follow up survey for each cohort. As noted earlier, the follow up survey obtained data on college enrollment about 90 percent of the sample of interviewed seniors. For each dependent variable, 3 models or equations are presented in Table 4 (similar to Table 3). The first model shows the average effects of year and school, the second model introduces demographic and socioeconomic composition as covariates, and model 3 shows program effects as the interactions of school and year.

TABLE 4 ABOUT HERE

At first glance the results of Table 4 appear very similar to those for college planning—a lagged effect after a couple years for WSA schools #1 and #3, but not for school #2. But a closer look shows that the results are more complex. Model 3 shows that that high school #1 was comparable to the nonWSA in terms of sending students to college before the WSA program was implemented. BHS high school #1 began to send even more students to 4 year colleges in 2002 than in 2000, but the positive WSA impact only became statistically significant in 2003, 2004, and 2005. The stronger and more consistent impact of WSA on “attending 4 year college” than on “any college” undoubtedly reflects the WSA policy to direct scholarship recipients to 4 year colleges.

In 2000, high school #3 was in a deep hole—only 17 percent of seniors went to a 4 year college—only about ½ the rate of the nonWSA high schools (see Table 2). The multivariate results in Table 4 show that there was little progress in sending students to college in WSA school #3 in 2002 and 2003, but then there was a sizable jump in the WSA program’s impact in 2004 and 2005. This lagged effect of the program is very similar to the results for SAT/ACT test taking as reported in Table 3

The limited effect of the WSA program on attending any college may reflect the WSA policy to encourage attendance at a four college. Moreover, the barriers to attending a two year college are relatively modest; the barriers are not primarily financial or driven by specific course prerequisites and application processes typical of 4-year programs. Given the affordability and ease of access to community colleges, it is not too surprising the WSA program was more consequential for attending a 4 year college than any college.

The emergence of a significant WSA program effects in 2004 might be explained in several ways. One possibility is simply the maturation of the WSA program and the delayed general impact on specific forms of capital (e.g. cultural capital). All intervention programs take some time to “settle down” and begin to change behavior. Habits and customs, which are governed by inertia as much as objective forces, are slow to change. Another reason might be that that some aspects of the WSA program were phased in over time and have a differential effect on cohorts of students (i.e. seniors and juniors have less exposure to changes than sophomores and freshman).

Figures 1 and 2 “translate” the logistic regression coefficients into predicted probabilities for an illustrative case of a typical student that the WSA program was designed to assist. These figures show the probabilities that a native born African American male student (living in an owner occupied home, from a non-intact family, and without a parent who had attended college) had taken the SAT/ACT (shown in Figure 1) and had attended a 4 year college (shown in Figure 2) for each year from 2000 to 2005 by high school attended. In 2000, black students (with all the attributes noted above) in the nonWSA high schools had a modest advantage over black students in the WSA high school, especially high school #3. Over the years following the implementation of the WSA program, black students in high school #1 were more likely to take the SAT/ACT and to attend a 4 year college than comparable students in the nonWSA schools. There was essentially no change in the probability in either outcome for comparable black students in high school #2. Black students in WSA high school #3, who were furthest behind in 2000, narrowed the gaps with their peers in nonWSA schools in 2004 and 2005, but were still behind. These predicted probabilities are broadly consistent with the overall between-school patterns show in Tables 3 and 4. The WSA did make a difference in two of the three WSA schools, although the effect was not immediate but rather developed over the period.

FIGURE 1 AND FIGURE 2 ABOUT HERE

Why should the effect of the WSA program vary across high schools and why was there no measurable impact of the WSA scholarships in high school #2? These are questions that are not empirically addressed here, but informed speculation is possible. As indicated in our prior discussion, features of the program implementation while standardized in character (i.e. all WSA schools required an early mentoring structure), they were organic in implementation and specific content (i.e. how mentoring was accomplished and how smaller schools within schools were organized was school specific, determined by staff and administration).

The “normal” rate of college attendance for each high school, without the impact of the WSA program, reflects the demographic and socioeconomic composition of students, the available educational opportunities, and specific school effects that may reflect the practices (such as curriculum, counseling, etc.) and culture of each institution. The rate of college going will vary with changes in any of these antecedent conditions as well with economic circumstances and other period influences (availability of community colleges, subsidized loan programs). Our measure of variations in “normal” rates of college attendance—the 2000 level—shows the below average rate (relative to the nonWSA high schools) of high school #2 is entirely due to demographic and socioeconomic composition (compare models 1 and 2 in the multivariate

analysis). The even lower rate of college going of high school #3 is only partially explained by demographic and socioeconomic composition of the student body.

There is, however, a “bump” in the educational outcomes of students in high school #3 after a 2 year lag following the implementation of the WSA program. There is no bump for high school #2 for the years observed here. This difference is not due to fewer WSA scholarships in high school #2 relative to high school # 3; relatively equal numbers are given out across schools. One possible clue is revealed by a decline in the number of non-eligible scholars (those not selected as scholarship recipients) going to college over time in high school #2. This pattern would be consistent with an interpretation that WSA scholarships were awarded to students in high school #2 who would have gone to college anyway (by access to other scholarships, borrowing funds, working extra jobs, etc.) and did not represent an expansion to or a successful outreach to a previously non-college oriented group. Since the selection of scholars was centralized and consistent across the 3 WSA schools, we suspect that somewhat differential application patterns across high schools might explain variations in program effects. Differential application or differential recruitment of previously less encouraged students might result from school specific features of WSA implementation (mentoring, curriculum change, counseling, culture of college preparation etc)

Additional Analyses. Sometimes intervention projects are more successful with a subset of the population, perhaps because the nature of the program directly addresses the needs or handicaps of some people. For example, the WSA program provides college scholarships to motivated students from low income households. We might expect that the program would be particularly effective for students from poor families. To examine this possibility and other differential effects of the WSA program, we estimated additional logistic regression equations predicting educational outcomes with “interactions” of the program (WSA x Year) by each of the individual level covariates. Overall, there were few interaction terms that were statistically significant. For example, the WSA program does not “interact” with parental education or home ownership. The one significant interaction of the WSA program was for students from disrupted families. Seniors from intact (birth or adopted) families have a marked advantage for all educational outcomes relative to other students. This difference was substantially reduced in WSA schools, where the program appeared to have been very effective in assisting students from disrupted families, (especially the 10 percent of students who report not having a mother or father figure in their lives) to make it to a four year college. It is unclear if this effect is due to financial reasons (the scholarship) or that the program was particularly effective in targeting students with less stable families.

CONCLUSIONS

Human societies, and the individuals and organizations that populate them, are much more complex and unpredictable than is generally assumed by policy makers and others who wish to change social patterns and behavior. The widespread assumption that if one has the right tool or plan, then some direct action or intervention can change individual and organizational behaviors and attitudes is much more tenuous than this view of policy suggests. The limitations of knowledge of social causation and its complexity, as well as the possibility that social policies and programs often have unanticipated consequences make change inherently difficult.

The WSA program represents a systemic attempt to manipulate four key capital features (financial, human, social, and cultural) that have been linked to academic achievement. How to change these features within high school settings, however, is a complex task. While the manipulation of the financial capital feature represented a systematic process, the changes in other capital features were fundamentally less controlled by the program and also represent more difficult dimensions of capital to manipulate; altering a culture of a school is not a simple task. The differential effects observed across the program sites are indicative of these difficulties as are the lagged impact consistent across the two successful sites. Such differences arise, in part, because starting places differed within the WSA program schools relative to each other and the nonWSA comparison. Altering social or cultural capital, if dependent on original levels, may lead to differential effects. In addition, such changes, given that some features of the intervention were formed from the bottom-up (i.e. the local school structured their own response to specified program goals), may have a more difficult. School specific changes to address program goals may have taken longer to take hold in schools less oriented towards these programs or not fully implemented in settings that believe they have other successful structures already in place.

What is clear is the immediate availability of scholarships did not have the direct spill over effect anticipated across the dependent variables analyzed, except arguably for WSA School #1 where positive, albeit not significant, effects for the first and second year, were present across all outcomes. This is interesting in that this same high school is the only one of the three that had higher levels of college oriented outcomes compared to the nonWSA schools once key individual student characteristics were controlled. This could be interpreted as this school was not experiencing any deficit, in fact was more successful, in college activity for students who (given their background) were likely to go to college. In this case this school might have been most prepared to expand its pool of college oriented students given the resources provided by the WSA program.

School #3 then represents a more likely scenario for such systemic organizational changes that rely on both systematic and organic processes to adopt and implement the intervention components. Work by Kanter (1983), Everitt (1995a, 1995b), and Oldenburg and colleagues (1997) lends insight to this process and suggests why there might be delays and variation in adoption of proposed structural and cultural changes in schools that eventually lead to successful outcomes. For such programmatic interventions as WSA expectations of immediate effects are probably not realistic and lags in effects should be expected in the evaluation of success. Conversely, relying partly on internal agents for change holds the possibility of failure. In this sense School #2 requires more detailed exploration to understand the factors that inhibited the success, even lagged success, observed in the other two schools. (Of course, an explanation of not seeing change in this school is that the lag period is longer for this school and more observation periods are required).

In either, case such program implementation aimed at a systemic alteration, seemingly pointed to by the policy and education literature, requires a rather complex approach. Clearly altering forms of capital for individuals is probably a key feature of reducing educational disparities. The WSA program, in this instance, poses a strong sense of promise in that we observe partial success. Perhaps most salient is that it reinforces the need for systemic change in addressing

educational disparities. Simply manipulating financial capital, clearly present in all intervention schools, is not enough. At the same, the evaluation also continues to pose key questions about our overall ability to invoke systematic and consistent change in complex settings.

REFERENCES

- Ainsworth-Darnell, James W. and Douglas B. Downey. 1998. "Assessing The Oppositional Culture Explanation for Race/Ethnic Differences in School Performance." *American Sociological Review* 63: 536-553.
- Alba, Richard and Victor Nee. 2003. *Remaking the American Mainstream: Assimilation and Contemporary America*. Cambridge: Harvard University Press.
- Alexander, Karl, Doris Entwisle, and Nader S. Kabbani. 2001. "The Dropout Process in Life Course Perspective." *Teachers College Record* 103: 760-882.
- Alexander, Karl, Doris Entwisle, and Carrie S. Horsey. 1997. "From First Grade Forward: Early Foundations of High School Dropout." *Sociology of Education* 70: 87-107.
- Allison, Paul D. 2002. *Missing Data*. Sage University Papers Series on Quantitative Applications in the Social Sciences, 07-136. Thousand Oaks, CA: Sage.
- Aunola, Jari and Nurmi. 2000. "Parenting Styles and Adolescents' Achievement Strategies." *Journal of Adolescence* 23:205-222.
- Bankston, Carl L. and Min Zhou. 2002. "Being Well vs. Doing Well: Self Esteem and School Performance Among Immigrant and Nonimmigrant Race and Ethnic Groups." *International Migration Review* 36: 389-415.
- Baker, Therese L. and William Velez. 1996. "Access to and Opportunity in Postsecondary Education." *Sociology of Education* 69 (Extra Issue): 82- 101.
- Baldwin, Carly. 2003. "One Man's Idea Gives Hundreds of Kids a Boost." *Christian Science Monitor*. Thursday, July 13, 2003: 12& 14.
- Berkner, Lutz, Ali Berker, Kathryn Rooney, and Katharin Peter. 2002. Student Financing of Undergraduate Education: 1999–2000. *Education Statistics Quarterly* 4:
- Bowen, William G., Martin A. Kurzweil, and Eugene Tobin. 2005. *Equity and Excellence in American Higher Education*. Charlottesville; University of Virginia Press.
- Claudia Buchmann and Thomas A. DiPrete. 2006. "The Growing Female Advantage in College Completion: The Role of Parental Resources and Academic Achievement." *American Sociological Review* 71:515-541.
- Cheeseman-Day, Jennifer and Eric Newburger. 2002. "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings." *Current Population Reports*, P23; No. 210. Washington, D.C. Census Bureau.
- Cheng, Simon and Brian Starks. 2002. "Racial Differences in the Effects of Significant Others on Students' Educational Expectations." *Sociology of Education* 75: 306-327.
- Coleman, James S. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology*. 94: S95-S120.
- Craves, Bob. 2006. *Funding the Future: Practical Strategies for Scholarship Development*. Seattle: National Educational Foundation.
- Dillman, Don A. 2000. *Mail and Internet Surveys: The Tailored Design Method*. New York: John Wiley and Sons.
- Duncan, Beverly. 1968. "Trends in the Output and Distribution of Schooling." Pp. 601-672 in Eleanor Bernert Sheldon and Wilbert E. Moore, eds. *Indicators of Social Change: Concepts and Measurements*. New York: Russell Sage Foundation.
- Emeka, Amon and Charles Hirschman. 2005. "Who Applies For and Who Is Selected for Washington State Achievers Scholarships? A Preliminary Assessment." In Edward St. John, ed. *Readings on Equal Education*. Volume 21: *Public Policy and Equal Educational Opportunity*; pp. 177-206. New York: AMS Press.

- Fordham, Signithia and John U. Ogbu. 1986. "Black Students' School Success: Coping with the 'Burden of Acting White.'" *Urban Review* 18:176-206.
- Freeman, C., and M. Fox. (2005). *Status and Trends in the Education of American Indians and Alaska Natives* (NCES 2005-108). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Gaines-Carter, Patrice. 1990. Making the Dream a Reality; Millionaire's Pledge to Help Youth Attend College Sparks Similar Efforts Nationwide. *The Washington Post*, 24 June.
- Gibson, Margaret A. 1988. *Accommodation Without Assimilation: Sikh Immigrants in an American High School*. Ithaca, NY: Cornell University Press.
- Gibson, Margaret A. and John U. Ogbu. 1991. *Minority Status and Schooling: A Comparative Study of Immigrant and Involuntary Minorities*. New York: Garland Publishing, Inc.
- Goldhaber, Dan D. 1999. "School Choice: An Examination of the Empirical Evidence on Achievement, Parental Decision Making, and Equity." *Educational Researcher* 28:16-25.
- Gordon, Milton. 1964. *Assimilation in American Life*. New York: Oxford University Press.
- Goyette, Kim and Yu Xie. 1999. "Educational Expectations of Asian American Youths: Determinants and Ethnic Differences." *Sociology of Education* 72:22-36.
- Greene Jay P. 2002. *Public School Graduation Rates in the United States*. Civic Report No. 31. New York: The Manhattan Institute.
- Greene, Jay P. and Marcus A. Winters. 2002. "Public School Graduation Rates in the United States." Civic Report No 31. New York: The Manhattan Institute. Available from: http://www.manhattan-institute.org/pdf/cr_31.pdf
- Hanson, Sandra L. 1994. "Lost Talent: Unrealized Educational Aspirations and Expectations among US Youths." *Sociology of Education* 67: 159-183.
- Hao, Lingxin and Melissa Bonstead-Bruns. 1998. "Parent-Child Differences in Educational Expecations and the Academic Achievement of Immigrant and Native Students." *Sociology of Education* 71: 175-198.
- Hauser, Robert M. and Douglas K. Anderson. 1991. "Post High School Plans and Aspirations of Black and White High School Seniors: 1976-86." *Sociology of Education* 64: 263-277.
- Hirschman, Charles. 2001. "The Educational Enrollment of Immigrant Youth: A Test of the Segmented-Assimilation Hypothesis" *Demography* 38: 317-336.
- Honan, William. 1997. Graduate Gives \$30 Million To Swarthmore. *The New York Times*, 25 April.
- Horn, L., Cataldi, E.F., and Sikora, A. (2005). *Waiting to Attend College: Undergraduates Who Delay Their Postsecondary Enrollment* (NCES 2005-152). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Hout, Michael. 1988. "More Universalism, Less Structural Mobility: The American Occupational Structure in the 1980s" *The American Journal of Sociology*, 93: 1358-1400
- Kanter, R. M. 1983. *The Change Masters*. New York: Simon & Schuster.
- Kao, Grace. 1999. "Psychological Well-Being and Educational Achievement Among Immigrant Youth." In Donald Hernandez (ed.), *Children of Immigrants: Health, Adjustment, and Public Assistance*, pp. 410-477. Washington, D.C.: National Academy Press.
- Kao, Grace and Marta Tienda. 1995. "Optimism and Achievement: The Educational Performance of Immigrant Youth." *Social Science Quarterly* 76: 1-19.
- Kao, Grace and Jennifer S. Thompson. 2003. "Race and Ethnic Stratification in Educational Achievement and Attainment." *Annual Review of Sociology* 29:417-442.

- Kaufman, P., M.N. Alt, and C. Chapman. 2001. *Dropout Rates in the United States: 2000*. Washington, DC: Office of Educational Research and Improvement: U.S. Office of Education.
- Kaufman, P., M.N. Alt, and C. Chapman. 2004. *Dropout Rates in the United States: 2001* (NCES 2005- 046). U.S. Department of Education. National Center for Education Statistics. Washington, DC: U.S Government Printing Office.
- Kelly, Dennis. 1990. Dreams do come true; Promise sees pupils through college; Benefactor still nurtures young adults. *USA Today*, 4 September.
- Lee, Valerie E. and Julia B. Smith. 1995. "The Effects of High School Restructuring and Size on Early Gains in Achievement and Engagement." *Sociology of Education* 68:241-270.
- Lee, Valerie and Julia Smith. 2001. *Restructuring High Schools for Equity and Excellence: What Works*. New York: Teachers College Press.
- Mare, Robert D. 1995. "Changes in Educational Attainment and School Enrollment." In Reynolds Farley (ed.), *State of the Union: America in the 1990s. Volume 1: Economic Trends*, pp. 155-213. New York: Russell Sage Foundation.
- Massey, Douglas S., Camille Z. Charles, Garvey Lundy, Mary J. Fischer. 2002. *The Source of the River: The Social Origins of Freshmen at America's Selective Colleges and Universities*. Princeton: Princeton University Press.
- McLanahan, Sara and Gary Sandefur. 1994. *Growing Up with a Single Parent: What Hurts, What Helps*. Cambridge; Cambridge University Press.
- Mehan, Hugh, Irene Villanueva, Lea Hubbard, and Angela Lintz. 1996. *Constructing School Success : The Consequences of Untracking Low Achieving Students*. New York: Cambridge University Press.
- National Research Council. 2004. *Engaging Schools: Fostering High School Students' Motivation to Learn*. Washington, DC: National Academies Press.
- NCES (National Center for Educational Statistics). 2002. *Coming of Age in the 1990s: The Eight Grade Class of 1988 12 Years Later*. NCES 2002-321: Initial Results of the Fourth Follow Up to the National Educational Longitudinal Survey of 1988. Washington, DC: Office of Educational Research and Improvement: U.S. Office of Education.
- NCES (National Center for Educational Statistics). 2005. *Gender Differences in Participation and Completion of Undergraduate Education and How They Have Changed Over Time*. NCES 2005-169. Postsecondary Education Descriptive Analysis Reports. Washington, DC: Office of Educational Research and Improvement: U.S. Office of Education.
- O'Brien Colleen. 2007. *Expanding Access and Opportunity: The Washington State Achievers Scholarship*. Washington, D.C.: The Pell Institute for the Study of Opportunity in Higher Education
- Ogbu, John U. 1978. *Minority Education and Caste* New York: Academic Press.
- Oldenburg, B., Hardcastle, D. M., & Kok, G. 1997. Diffusion of Innovations. In Glaz, K., Lewis, F. M., & Rimer, B. K. (Eds.), *Health Behavior and Health Education: Theory, Research and Practice* (pp. 270-286). San Francisco: Jossey-Bass.
- OSPI (Office of the Superintendent of Public Instruction), State of Washington. 2005. "Running Start: Overview." Accessed at: <http://www.k12.wa.us/RunningStart/default.aspx>
- Perlmann, Joel and Mary Waters eds. 2002. *The New Race Question: How the Census Counts Multiracial Individuals* New York: Russell Sage.
- Portes, Alejandro and Ruben G. Rumbaut. 1996. *Immigrant America: A Portrait*. Second edition. Berkeley: University of California Press.

- Portes, Alejandro and Ruben Rumbaut. 2001. *Legacies: The Story of the Immigrant Second Generation*. Berkeley: University of California Press.
- Portes, Alejandro and Min Zhou. 1993. "The New Second Generation: Segmented Assimilation and Its Variants," *Annals of the American Political and Social Sciences*. 530 (November):74-96.
- Portes, Alejandro and Dag MacLeod. 1996. "Educational Progress of Children of Immigrants: The Role of Class, Ethnicity, and School Context." *Sociology of Education* 69: 255-275.
- Portes, Alejandro and Lingxin Hao. 2004. "The Schooling of Children of Immigrants: Contextual Effects of the Educational Attainment of the Second Generation." Proceedings of the National Academy of Sciences 101 (August 17, 2004, No 33): 11910-11927.
- Rogers, E M. 1995a. *Diffusion of Innovations* (4th ed.). New York: Free Press.
- Rogers, E M. 1995b. Diffusion of drug abuse prevention programs: Spontaneous diffusion, agenda setting, and reinvention. *National Institute on Drug Abuse: Research Monograph Series, 155*, 90-105.
- Rumberger, Russell W. 1987. "High School Dropouts: A Review of Issues and Evidence." *Review of Educational Research* 57 (2): 101-121.
- Sedlacek, William E. 2006. *Beyond the Big Test: Non Cognitive Assessment in Higher Education*. San Francisco: Jossey-Bass.
- Sewell, William H. 1971. "Inequality of Opportunity for Higher Education." *American Sociological Review*: 36: 793-809.
- Snyder, T.D., Tan, A.G., and Hoffman, C.M. 2004. *Digest of Education Statistics 2003*, (NCES 2005 025). U.S. Department of Education, National Center for Education Statistics. Washington, DC: Government Printing Office.
- St. John, Edward P. and Shouping Hu. 2005. "School Reform, Scholarship Guarantees, and College Enrollment: A Study of the Washington State Achievers Program" In Edward St. John, ed. *Readings on Equal Education*. Volume 22: **Confronting Educational Inequality: Reframing, Building Understanding, and Making Change**. New York: AMS Press.
- Stoops, Nicole. 2004. "Educational Attainment in the United States: 2003." *Current Population Reports*, P20-550. Washington, D.C. : Bureau of the Census.
- U.S. Department of Education, National Center for Education Statistics. 2003. *Digest of Education Statistics, 2002*, NCES 2003-060, by Thomas D. Snyder. Production Manager, Charlene M. Hoffman. Washington, DC.
- U.S. Department of Education, National Center for Education Statistics. 1998. *American Indians and Alaska Natives in Postsecondary Education*. NCES 98-291, by D. Michael Pavel, Rebecca Skinner, Elizabeth Farris, Margaret Cahalan, John Tippeconnic, and Wayne Stein. Project Officers, Bernard Greene and Martha Hollins. Washington, DC: 1998.
- Wojtkiewicz, Roger A. and Katharine M. Donato. 1995. "Hispanic Educational Attainment: The Effects of Family Background and Nativity." *Social Forces*: 74: 559-574.
- Wood, Daniel B. 1985. Tuition isn't the purpose here, the dream is. *The Christian Science Monitor*, 10 December.
- Zhou, Min. 1997. "Growing Up American: The Challenge Confronting Immigrant Children and Children of Immigrants." *Annual Review of Sociology* 23:63-95.
- Zhou, Min and Carl L. Bankston III. 1998. *Growing Up American: How Vietnamese Children Adapt to Life in the United States*. New York: Russell Sage.

Table 1. Percent Distribution of Social and Economic Characteristics and Educational Outcomes of High School Seniors in 2000 (Pre Program), 2002, 2003, 2004, and 2005 (Post Program).					
Social and Economic Characteristics	Pre-Program	Post Program			
	2000	2002	2003	2004	2005
GENDER					
Male	46.1	45.5	45.5	46.0	42.5
Female	53.9	54.5	54.5	54.0	57.5
RACE/ETHNICITY^a					
Hispanic	7.6	9.7	10.4	7.7	6.5
African American	17.8	17.3	16.7	15.1	19.0
East Asian	5.0	6.8	4.6	5.7	6.5
Cambodian	4.7	3.6	2.5	3.1	3.1
Vietnamese	4.7	4.4	3.9	3.7	3.3
Filipino	2.5	2.1	2.5	1.9	1.5
Other Asian	2.2	1.4	1.3	1.1	1.7
American Indian	3.1	2.7	2.1	3.9	4.3
Hawaiian/Pacific Islander	1.8	1.6	1.8	2.0	1.6
White and others NEC	50.6	50.4	54.3	55.9	52.6
PARENTAL EDUCATION					
Neither with college	29.8	27.9	27.7	27.8	28.8
One or both with some college	37.7	40.0	39.5	41.3	39.4
One or both college graduate	32.5	32.1	32.8	30.9	31.8
HOME OWNERSHIP					
Rents	33.9	33.3	30.4	31.9	30.5
Owns home	66.1	66.7	69.7	68.1	69.5
FAMILY STRUCTURE^b					
Lives with both birth/adoptive parents	55.3	56.2	56.0	54.6	53.8
Disrupted family, has father & mother figures	31.7	34.4	35.4	36.5	36.8
Missing a father figure or mother figure	13.1	9.5	8.7	8.9	9.5
GENERATIONAL STATUS					
First (foreign born)	15.4	16.6	14.3	12.7	10.8
Second (child of immigrants)	15.6	15.6	15.3	13.8	17.8
Third or higher (or unknown)	69.0	67.8	70.5	73.5	71.4
High School Attended					
High School #1 (WSA program present)	20.7	23.1	19.0	18.5	19.4
High School #2 (WSA program present)	15.7	16.5	14.4	16.1	16.9
High School #3 (WSA program present)	14.8	12.9	14.9	13.3	16.1
High School #4 (Non-program school)	24.8	23.2	25.5	21.6	23.8
High School #5 (Non-program school)	24.0	24.3	26.2	30.5	23.7

Table 1 (cont). Percent Distribution of Social and Economic Characteristics and Educational Outcomes of High School Seniors in 2000 (Pre Program), 2002, 2003, 2004, and 2005 (Post Program).

Educational Outcomes					
COLLEGE AMBITIONS					
College Aspirations	71.4	72.4	72.4	72.0	72.0
College Expectations	63.4	62.8	64.1	64.9	62.9
College Plans for Year Post-High School	75.2	81.1	79.7	78.4	77.4
Four Year College Plans for Year Post-HS	35.8	37.8	39.2	45.0	41.7
COLLEGE PREPARATION					
Taken SAT/ACT by spring of senior year	54.7	56.1	56.7	60.4	61.7
COLLEGE ATTENDANCE					
Attended a 4-Year Degree College	31.3	31.9	31.6	35.3	34.3
Attended a 4 or 2-Year Degree College	65.8	67.6	65.7	67.8	65.4
N of high school seniors on official roster	1,450	1,559	1,617	1,450	1,565
N of high school seniors surveyed	1,140	1,173	1,219	1,020	1,066
Senior Survey response rate	78.6%	75.2%	75.4%	70.3%	68.1%
N of follow up respondents	1,005	1,046	1,102	916	1,004
Follow up response rate	88.2%	89.2%	90.4%	89.8%	94.2%

Notes: a) Race/Ethnicity is constructed from two variables (Q158 and Q159). About 10 percent of students reported 2 or more races and about 5 percent did not report any race or ethnicity. No responses were coded according to the race/ethnicity listed in school records, and multiple race respondents were coded
b) Family structure is based on Q186, which asks if the respondent lives with both your mother and your father (biological or adoptive). The second category includes respondents who answered "no" to Q186 (not living with both mother and father), but did report a mother and father figure (Q123 and Q131). The third category includes respondents not living with both mother and father (Q186) and report not having a father figure or mother figure (Q123 and Q131).

Table 2. Distribution of College Plans Preparation, and Attendance in WSA & Non-WSA schools: 2000, 2002, 2003, 2004, and 2005.

Educational Outcomes	Percent distribution by year for WSA and Non-WSA schools					Percent point difference between WSA schools by year and non-WSA schools in 2000 ^d					2000 to 2005 change in % difference ^e
	2000 ^f	2002	2003	2004	2005	2000	2002	2003	2004	2005	
Four Year College Plans^a:											
High School #1 ^c	38.0	44.8	46.7	54.9	54.7	-2.4%	4.4%	6.3%	14.5%	14.3%	16.7%
High School #2	33.0 †	30.2	40.7	36.6	25.3	-7.5%	-10.3%	0.3%	-3.8%	-15.2%	-7.7%
High School #3	20.2 *	24.0	19.2	41.0	33.7	-20.2%	-16.4%	-21.2%	0.6%	-6.7%	13.5%
High School #4 and 5	40.4	40.7	41.6	44.9	44.9	--	(0.3%)	(1.2%)	(4.5%)	(4.5%)	(4.5%)
College Preparation^b:											
High School #1	53.5 *	61.2	64.0	70.2	72.2	-9.5%	-1.8%	1.0%	7.3%	9.3%	18.7%
High School #2	48.6 ***	48.0	54.3	49.3	54.1	-14.3%	-14.9%	-8.7%	-13.6%	-8.9%	5.5%
High School #3	35.5 ***	41.1	38.6	56.8	50.6	-27.4%	-21.8%	-24.3%	-6.1%	-12.3%	15.1%
High School #4 and 5	62.9	60.4	59.8	61.2	63.9	--	-(2.5%)	-(3.1%)	-(1.7%)	(0.9%)	(0.9%)
Attended Any College:											
High School #1	71.1	69.7	73.8	77.9	80.4	0.7%	-0.7%	3.4%	7.5%	10.0%	9.3%
High School #2	62.7 †	58.9	55.5	52.6	49.7	-7.7%	-11.5%	-14.9%	-17.8%	-20.7%	-13.0%
High School #3	45.9 ***	54.5	52.7	64.3	49.1	-24.5%	-15.9%	-17.7%	-6.1%	-21.3%	3.2%
High School #4 and 5	70.4	73.0	69.2	69.3	70.5	--	(2.6%)	-(1.2%)	-(1.1%)	(0.1%)	(0.1%)
Attended Four Year College:											
High School #1	32.3	38.2	41.9	49.4	46.4	-3.9%	2.0%	5.7%	13.2%	10.2%	14.1%
High School #2	27.2 *	25.0	29.0	26.3	20.1	-9.0%	-11.2%	-7.2%	-9.9%	-16.1%	-7.1%
High School #3	17.8 ***	17.9	14.6	32.6	27.6	-18.4%	-18.3%	-21.7%	-3.6%	-8.6%	9.8%
High School #4 and 5	36.2	35.0	33.4	33.4	36.6	--	-(1.2%)	-(2.8%)	-(2.8%)	(0.4%)	(0.4%)

Note: a) Four year college plans is measured by whether the student listed a four year college as the first school choice which they planned to attend the following year.
 b) College preparation is measured by whether the student has taken the SAT or ACT college placement exam by spring of their senior year.
 c) High schools #1, #2, and #3 are part of the WSA program. High schools #4 and #5 are not part of the WSA program
 d) In comparing the WSA and non-WSA schools there are two potential referent categories: non-WSA schools in 2000 or non-WSA schools in each year. The use of either referent category yields nearly identical results. Thus, we use non-WSA schools in 2000 as a referent as it allows for continuity with the rest of our analysis.
 e) The difference between WSA schools and non-WSA schools between 2000 and 2005.
 f) Indicated levels of significance are for the logistic regression models of each outcome regressed on the three WSA school dummy variables using non-WSA schools as the referent category.

† Significant at the .10 level with a two tailed test

* Significant at the .05 level with a two tailed test

** Significant at the .01 level with a two tailed test

*** Significant at the .001 level with a two tailed test

Table 3: Coefficients from Logistic Regression of WSA Program and Socioeconomic Background on Four Year College Plans and College Preparation of High School Seniors with robust standard errors

Variables	Four year College Plans						Took SAT/ACT					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	β	Std Error	β	Std Error	β	Std Error	β	Std Error	β	Std Error	β	Std Error
2002	.07	.09	.05	.09	-.02	.13	.04	.09	.02	.09	-.14	.13
2003	.14 †	.09	.13	.09	.04	.12	.08	.08	.06	.09	-.15	.13
2004	.39 ***	.09	.42 ***	.09	.21 †	.13	.23 **	.09	.26 **	.09	-.06	.13
2005	.27 **	.09	.24 *	.09	.15	.13	.31 ***	.09	.29 **	.09	.00	.13
High School #1	.21 **	.07	.26 ***	.08	-.08	.16	.09	.07	.17 *	.08	-.37 *	.16
HS #1 2002 (HS #1 x 2002)					.31	.23					.48 *	.23
HS #1 2003 (HS #1 x 2003)					.35	.23					.64 **	.23
HS #1 2004 (HS #1 x 2004)					.57 *	.24					.88 ***	.25
HS #1 2005 (HS #1 x 2005)					.52 *	.24					.83 ***	.25
High School #2	-.40 ***	.08	-.13	.09	-.03	.19	-.44 ***	.08	-.13	.09	-.27	.18
HS #2 2002 (HS #2 x 2002)					-.12	.27					.12	.26
HS #2 2003 (HS #2 x 2003)					.20	.27					.26	.26
HS #2 2004 (HS #2 x 2004)					.04	.27					.15	.27
HS #2 2005 (HS #2 x 2005)					-.62 *	.28					.17	.26
High School #3	-.69 ***	.09	-.47 ***	.09	-.75 ***	.22	-.72 ***	.08	-.47 ***	.09	-.87 ***	.20
HS #3 2002 (HS #3 x 2002)					.19	.30					.32	.28
HS #3 2003 (HS #3 x 2003)					-.13	.31					.28	.28
HS #3 2004 (HS #3 x 2004)					.68 *	.30					.82 **	.28
HS #3 2005 (HS #3 x 2005)					.58 *	.29					.66 *	.27
N of Model	5,523		5,523		5,523		5,374		5,374		5,374	
Pseudo R-squared	.02		.07		.07		.02		.07		.08	

Note: Covariates included in Models 2 and 3, but not shown, are gender, race/ethnicity generational status, parental education, familial home ownership, and family structure.

- † Significant at the .10 level with a two tailed test
- * Significant at the .05 level with a two tailed test
- ** Significant at the .01 level with a two tailed test
- *** Significant at the .001 level with a two tailed test

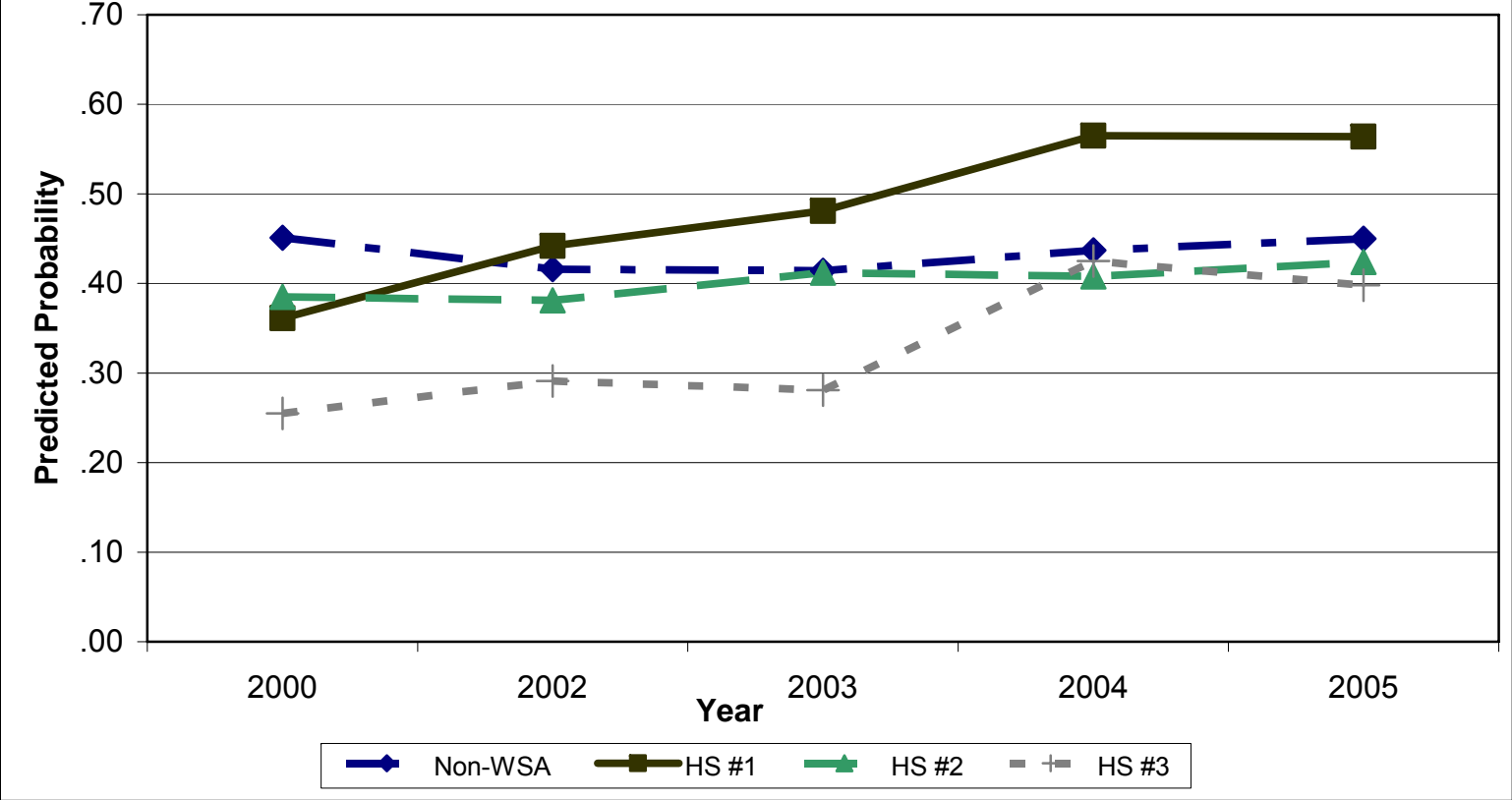
Table 4: Coefficients from a Logistic Regression of WSA Program and Socioeconomic Background on Any and Four year College Attendance of High School Seniors Expectations of Completing College with robust standard errors

Variables	Attended any college (2 or 4 year)						4 year College Attendance					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	β	Std Error	β	Std Error	β	Std Error	β	Std Error	β	Std Error	β	Std Error
2002	.07	.10	.06	.10	.13	.15	.01	.10	.00	.10	-.07	.14
2003	-.01	.09	.00	.10	-.06	.14	.01	.09	.00	.10	-.14	.13
2004	.08	.10	.12	.10	.00	.14	.18 [†]	.10	.21 *	.10	-.10	.14
2005	.01	.09	.01	.10	.02	.15	.15	.10	.13	.10	-.01	.14
High School #1	.19 *	.08	.23 *	.09	.04	.19	.27 ***	.08	.37 ***	.08	-.14	.18
HS #1 2002 (HS #1 x 2002)					-.19	.26					.37	.25
HS #1 2003 (HS #1 x 2003)					.25	.26					.62 **	.25
HS #1 2004 (HS #1 x 2004)					.46	.28					.93 ***	.26
HS #1 2005 (HS #1 x 2005)					.54 [†]	.29					.62 *	.25
High School #2	-.63 ***	.08	-.33 ***	.09	-.01	.21	-.45 ***	.09	-.09	.10	-.03	.22
HS #2 2002 (HS #2 x 2002)					-.31	.28					-.04	.30
HS #2 2003 (HS #2 x 2003)					-.29	.29					.12	.31
HS #2 2004 (HS #2 x 2004)					-.37	.29					.12	.32
HS #2 2005 (HS #2 x 2005)					-.66 *	.28					-.49	.32
High School #3	-.75 ***	.09	-.50 ***	.09	-.76 ***	.20	-.65 ***	.10	-.35 ***	.10	-.62 **	.25
HS #3 2002 (HS #3 x 2002)					.20	.29					.01	.35
HS #3 2003 (HS #3 x 2003)					.37	.28					-.14	.35
HS #3 2004 (HS #3 x 2004)					.66 *	.29					.76 *	.33
HS #3 2005 (HS #3 x 2005)					.13	.28					.58 [†]	.32
N of Model	5,073		5,073		5,073		5,073		5,073		5,073	
Pseudo R-squared	.02		.08		.08		.02		.08		.08	

Note: Covariates included in Models 2 and 3, but not shown, are gender, race/ethnicity, generational status, parental education, familial home ownership, and family structure.

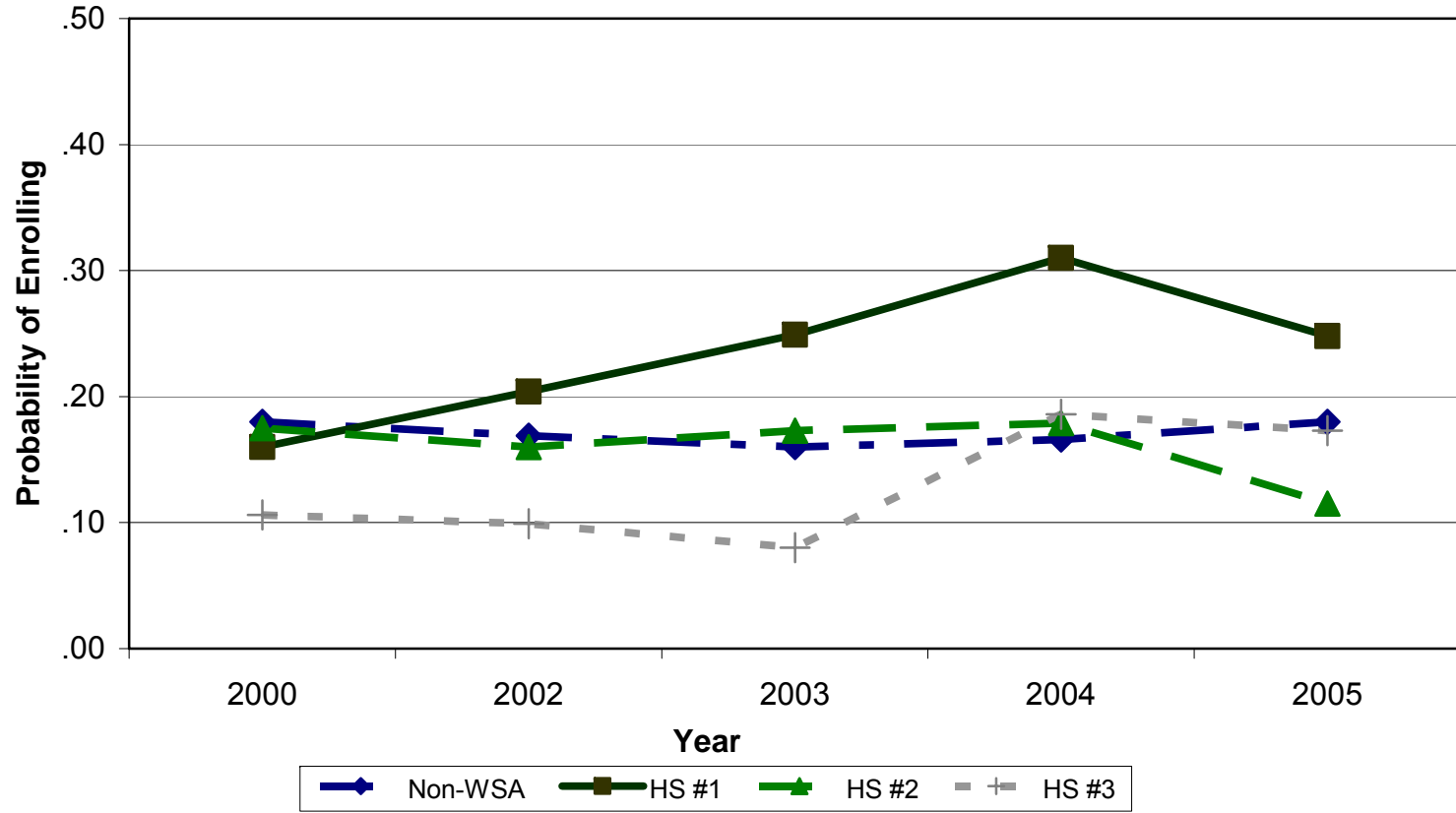
- [†] Significant at the .10 level with a two tailed test
- * Significant at the .05 level with a two tailed test
- ** Significant at the .01 level with a two tailed test
- *** Significant at the .001 level with a two tailed test

Figure 1. Probability of Taking a College Placement Exam (SAT or ACT) by High School Attended



Note: The predicted probabilities are for a third generation, African-American Male, from a non-intact family. The parent did not attend college but the family owns the home in which they live.

Figure 2. Probability of Attending a Four Year College by High School Attended



Note: The predicted probabilities are for a third generation, African-American Male, from a non-intact family. The parent did not attend college but the family owns the home in which they live.