Abstract Title Page
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Title: The College Ambition Program: Indicators of College Plans- Ambitions and Test Scores

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Abstract Body

Limit 5 pages single spaced.

Background / Context:

Description of prior research and its intellectual context.

Due to changing demographics and an increasingly competitive global economy, efforts to increase college readiness and matriculation are attracting more attention as a school reform measure. Adolescent students navigate their final years of secondary school making important decisions for their continuing education and future careers. The literature on these transitional years suggests that adolescents' pursuit of college and professional careers in Science, Technology, Engineering, and Math (STEM) is not deterred by a lack of talent or interest, but rather by students' inability to transform their interests into realistic strategies (e.g., course selection, targeted extracurricular activities, and college planning) to achieve their career goal.[†] Findings from these studies have informed the programmatic activities that comprise four of the core intervention components of the College Ambition Program (CAP) model: mentoring, course counseling and advising, college-related activities and workshops, and teacher professional development and instructional support.

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

This study is part of a larger project that will test the effectiveness of the CAP intervention model beginning with two schools experimental schools and two control schools. The study will evaluate the effectiveness of the overall intervention, as well as each of the four specific programmatic components. Data will be collected from school records, student surveys, and merged with state data. All components of the intervention have specific measures for assessing their relative value for increasing college attendance among students who are college ready but do not enroll in postsecondary school fall after high school graduation. .

This smaller study will look at two specific indicants of college readiness in students: their ambitions in high school and their test score performance. Ambition is defined as expectations of educational attainment and its relationship to occupational aspirations. Performance is measured by grades, course taking behaviors, and ACT scores. According to the *ACT Condition of College and Career Readiness Report* for Michigan, students score below the national benchmark for college readiness in both math and science. This smaller study will specifically focus on the alignment of student's high school ambitions and performance with their postsecondary plans. College plans are derived from an online survey that has been piloted and will be administered in the four schools during the month of October. Measures on the survey are taken from existing national surveys and some have been modified. A series of new items fielded in focus groups for issues of face validity are also included. School transcript information is used to obtain course taking behaviors and ACT scores. State information will be used for constructing additional matched comparison groups for further analyses.

[†] Schneider & Stevenson, 1999; Czikszentmihalyi & Schneider, 2000; Schneider, 2007, 2008, 2009.

Setting:
Description of the research location.

CAP is a whole-school intervention that will be implemented in phases. Currently, for the 2010-2011 school year, it is being implemented in two public secondary schools—one urban and one rural—in Central Michigan. A flagship land-grant university is within 5 miles (10 minutes) of the urban high school and 25 miles (30 minutes) of the rural high school. A community college is within 1 mile (walking distance) of the urban high school and 20 miles (25 minutes) of the rural high school. In addition to the intervention schools, there are two matched—one urban and one rural—Central Michigan comparison group schools. For the 2011-2012 year, there will be four experimental schools—two urban and two rural with four new controls. All of the schools will be followed for three years. All of the schools have lower than average college enrollment rates when compared with the state average and with other schools with similar student populations on measures of race and ethnicity, socio economic status, and in similar geographic regions.

Population / Participants / Subjects:
Description of the participants in the study: who, how many, key features or characteristics.

The urban high school participating in the CAP intervention serves a racially diverse student population (39 percent white, 34 percent black, 20 percent Hispanic, 5 percent Asian, and 2 percent Native American) of approximately 1300 students. The rural school serves slightly less than 500 students, nearly all of whom are white. The urban school serves a large percentage of economically disadvantaged students, with 60 percent of their students eligible for free and reduced lunch. At the rural school, around 30 percent of the students are eligible for free and reduced lunch. Both of the schools participating in the CAP model have a substantial number of students who would be the first in their family to go to college. The comparison group schools have largely similar characteristics as their intervention counterparts.

Intervention / Program / Practice:
Description of the intervention, program or practice, including details of administration and duration.

CAP is designed to enhance and supplement existing school resources in order to enhance the college-going culture of the school. CAP leverages resources from existing school, community, university, and nonprofit partners to create a system of supports for high school students. CAP is implemented in phases with the first six-month phase consisting of a needs assessment and the introduction of a CAP center near the end of the spring term to build interest going into the next academic year. The second phase consists of implementing the full intervention based on the results of the needs assessment. The CAP chief operating officer works collaboratively with current school leadership and teachers to assess the school's needs in four component areas, ensuring that CAP services supplement, not supplant, existing school activities. In this way, CAP is more likely to become integrated into the school's operational structure, helping to ensure future sustainability when CAP is run at school level. In addition to the benefits of working toward sustainability, being fully integrated into the school increases the chances for positive cultural changes. For instance, building strong relationships within the schools allows CAP to be integrated as a part of the school-wide plan for student achievement.

Research Design:
Description of research design (e.g., qualitative case study, quasi-experimental design, secondary analysis, analytic essay, randomized field trial).

The study is best described as a pretest, posttest, quasi-experimental, comparison-group, interrupted time-series design. The study consists of a comparison of students who participate in the CAP (intervention) at the two intervention schools versus students in two comparable schools who do not participate (comparison).

This comparison interrupted time-series design is an increasingly common and rigorous approach to school reform research when a randomized control design is not feasible (BiFulco 2002, Bloom 2003). This study incorporates the "short" enhancement to the interrupted time-series design, as popularized by MDRC (Bloom 2003). The strategy measures the effect of CAP as the resulting difference from the prior pattern of college-going behavior for a specific grade. The analysis compares the college-going probabilities of different student cohorts for each high school grade using a consistent outcome measure during three baseline years before CAP was implemented and at least 3 follow-up years. By comparing follow-up student college-going behavior to the baseline years (counterfactual), we obtain valid estimates of the intervention's effects. For this smaller study the focus will specifically be on ambition and college plans with achievement as a control and college attendance as the outcome.

It is assumed that college-going behavior varies randomly across annual student cohorts with no clear sign of a systematic increase or decrease over time. This model can be expressed in the following equation: $Y_i = A + \Sigma D_k FY_{ki} + \Sigma C_j X_{ji} + v_t + e_i$, (3) where

Y_i = the college-going probability for student i,
A = a constant estimated from baseline college-going probabilities that is used to project the counterfactual for each follow-up year
D_k = for the student cohort in follow-up year k represents the average deviation of college-going probabilities for that cohort from its projected counterfactual, A. Hence, D_k represents the reform's impact for follow-up year k,
FY_{ki} = equals one if student i was a member of the cohort for follow-up year k and zero otherwise
$C_j X_{ji}$ = controls explicitly for systematic changes over time in the background characteristics (e.g., gender, age for grade, race or ethnicity, special education status, English language proficiency, and eligibility for subsidized school meals) of student cohorts
v_t = accounts for cohort effects by adding a random error term (via using random effects models as a variance component structure to the impact estimation model), v_t, for each cohort to the random error term, e_i, for each student, and
e_i = a random error term for student i.

The equation represents the impact of the intervention as its deviation, D_k, from A, where A is the same for cohorts in all follow-up years.

Bloom (2003) described three important advantages to this approach. First, the approach projects what student performance for a specific grade in a school would have been without CAP during the follow-up years after CAP was implemented. Second, the approach controls for observed changes over time in selected student background characteristics by integrating a multiple regression model ($\Sigma C_j X_{ji}$) with the baseline projection model ($Y_i = A + \Sigma D_k FY_{ki} + e_i$). Third, the

approach accounts for year-to-year fluctuations in student outcomes due to "cohort effects" by integrating a variance component model (v_t) with the regression model ($\Sigma C_j X_{ji}$) and the baseline projection model. By including estimates from comparison schools' deviation from their baseline college-going pattern, we protect internal validity by controlling for local history that might have affected student college-going behavior while CAP was being implemented at program schools.

Data Collection and Analysis:
Description of the methods for collecting and analyzing data.

The three primary outcome measures are whether or not students apply to, get accepted to, and enroll in college. For students still in high school, the outcome measure of interest will be student reported college intentions and predicted probabilities of going to college based on academic achievement data (e.g., Michigan Educational Assessment Program, Michigan Merit Exam/ACT scores). The study incorporates school administrative data in the form of student background characteristics and academic achievement for grade 9, grade 10, grade 11, and grade 12 students in the intervention and comparison groups schools for each of the three years prior to CAP (pretest) and annually during and after CAP implementation (posttest).

In addition, after CAP is launched in the schools, a student survey is administered annually in the early fall to both intervention and comparison group students. In addition to the fall survey, seniors are surveyed again in late spring to obtain their post-collegiate plans and summary perspectives of their high school and CAP. The student survey is a 40-minute web-based questionnaire that collects information from students on their high school experiences as well as their postsecondary awareness, aspirations, and planning. Many of the questionnaire items were previously used in the Educational Longitudinal Study of 2002 (ELS:2002), which will allow for comparison with a nationally representative sample of students. Student identifiers are used with the baseline surveys and administrative data to track change over time.

We measure impacts on three facets of student college-going behavior: (a) average (mean) college-going probabilities (or actual rates for students no longer in school), which summarize impacts in general—the total improvement per student; (b) the distribution across specific ranges, which helps to identify where in the distribution of student college-going probabilities impacts were experienced—how different types of students (e.g., likely college-goers versus unlikely college-goers) are affected by the intervention; and (c) the variation (standard deviation) of proportions, which indicates how the disparity in student college-going probabilities was affected—the equity of the intervention.

We will assess the robustness of our estimates by reviewing alternative statistical models to account for: nesting effects at the second (classroom) and at the third (school) level; sample size effects (e.g., number of schools, classrooms, and students); and covariate effects (e.g., pretreatment measures) (Konstantopoulos 2008). Moreover, we will estimate and contextualize the impact of CAP as a national school reform intervention at scale using a simulation with a nationally representative sample of students (Konstantopoulos and Hedges 2006). Here our interest is in identifying similar types of public high schools in these national datasets such as the Educational Longitudinal Study and the National Household Education Survey.

Findings / Results:
Description of the main findings with specific details.

At this time, we have preliminary results obtained from a survey given to 12th graders in the spring of 2010 at the two treatment schools. Using these data, we can analyze the relationship between a student's college plans and their level of performance, as measured by the ACT. Prior to the CAP intervention, the treatment schools show below average ACT scores when compared to Michigan and national averages (see Table 1 in Appendix B). When considering the level of college readiness for our schools, we can compare ACT scores with a benchmark score that measures the preparation of a student to have at least a 50 percent chance of achieving a grade of B or higher in an entry-level credit bearing course (ACT, 2010). Both treatment schools show low rates of students who meet these benchmark scores (see Table 2 in Appendix B). At the urban school, less than 1 percent of students met all four benchmark scores.

Conclusions:
Description of conclusions, recommendations, and limitations based on findings.

Initial analyses of the pilot data suggest that the mechanisms in the high school whereby students learn information about college are different in rural and urban schools, and are differentially associated with student ambitions and plans controlling on ability. We are currently in year one of the College Ambition Program, which has the potential to not only aid in better understanding the impact of this particular intervention, but also serve as a model for analysis that can be used to assess other high school interventions aimed at increasing college-going behaviors. The long-term research project aims to show how CAP and similar initiatives can play an important role in increasing college- and career-readiness for adolescents by aligning students' ambitions with a realistic strategic plan for obtaining a bachelor's degree. By the time of the conference, we will have a more complete understanding of the student's plans (including the types of college they hope to attend, area of study, and career goals) for the seniors of 2011 and prior graduation and matriculation numbers for the 2009-2010 cohort. This poster will more fully describe these differences and what aspects of the intervention appear to be related to student plans and ambitions, not only for seniors, but 9th, 10th and 11th graders as well.

Appendices

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Appendix A. References

References are to be in APA version 6 format.

ACT (2010). *The Condition of College Readiness: 2010.* Iowa city, IA: Author.

Bifulco, R. (2002). Addressing self-selection bias in quasi-experimental evaluations of whole-school reform: A comparison of methods. *Evaluation Review,* 26(5), 545–572.

Bloom, H. S. (2003). Using "short" interrupted time-series analysis to measure the impacts of wholeschool reforms: With applications to a study of accelerated schools. *Evaluation Review*, 27 (1), 3-49.

Csikszentmihalyi, M. & Schneider, B. (2000). *Becoming adult: How teenagers prepare for the world of work.* New York: Basic Books.

Konstantopoulos, S. (2008). The power of the test for treatment effects in three-level Cluster randomized designs. *Journal of Research on Educational Effectiveness*, 1(1), 66 – 88.

Konstantopoulos, S. & Hedges. L. (2006). How large an effect can we expect from school reforms? *Teachers College Record*, 110, 1613-1640.

Schneider, B. (2007). *Forming a college-going community in U.S. public high schools.* Seattle, WA: Bill & Melinda Gates Foundation.

Schneider, B. (2008). Inspiring youth to careers in science and medicine: Lessons from the Sloan Study of Youth and Social Development. *Presented on August 7 at the Social Science Perspectives on Workforce Policy Conference, Center for Disease Control.* Atlanta, GA.

Schneider, B. & Stevenson. D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven, CT: Yale University Press.

Appendix B. Tables and Figures
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Table B1: Average ACT Scores

	Composite	English	Mathematics	Reading	Science
National	**21**	**20.5**	**21**	**21.3**	**20.9**
Michigan	19.7	18.9	19.7	19.7	19.9
Urban School (SE)	17 (2.5)	15.8 (4.7)	16.8 (5.4)	17.6 (4.5)	17.6 (4.3)
Rural School (SE)	19.1 (5.2)	17.9 (4.7)	19.1 (4.8)	18.8 (4.4)	20 (4.2)

Source: ACT (2010) Sample based on urban school, n=239, and rural school, n= 75.

Table B2: Percent of Students Taking the ACT who Met College Readiness Benchmark

	ACT Benchmark for College Readiness				
	English 18	Mathematics 22	Reading 21	Science 24	All Four Benchmarks
National	**66**	**52**	**42**	**29**	**24**
Michigan	56	33	40	25	19
Urban School	36	9	22	7	0.4
Rural School	52	24	33	20	11

Source: ACT (2010) Sample based on urban school, n=239, and rural school, n= 75.