

2007 AIR RESEARCH GRANT PROPOSAL**Exploring School Effects on the College Preparation of High School Students****Data Set of Interest: Education Longitudinal Study (ELS: 2002)****Grant Amount Requested: \$30,000**

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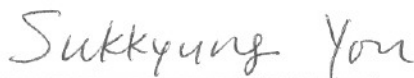
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2. Project Summary

There has been a growing demand for college preparation and increased interest in college entrance over the past thirty years in the U.S. Although nine out of every ten U.S. high school sophomores intend to pursue postsecondary education, a much smaller percentage actually enter college. Our society expects schools to help our young students meet high academic standards, graduate from high school, and prepare for college. To monitor the quality of the schooling in the U.S., we need information about whether or not students are meeting these goals and if our schools have the capacity to assist students in meeting their goals.

Numerous studies have found that taking courses in advanced mathematics is the single most powerful predictor of college success. Research from the U.S. Department of Education shows that high school students who completed math courses at levels higher than Algebra 2 (e.g., trigonometry or pre-calculus) earn a college degree at twice the rate of those whose high school math curriculum was less rigorous (Adelman, 1999, 2006). Since the critical boundary for mathematics lies beyond Algebra 2, this study intends to examine differences among high schools on access to these three “gate keeper” courses (Trigonometry, Pre-Calculus, and Calculus) and the school characteristics that explain these differences. The study will utilize data from a newly released longitudinal study of a cohort of high school tenth graders known as the Education Longitudinal Study of 2002 (ELS: 2002). Multilevel multinomial logistic regression will be utilized to assess the association of school effects with the number of advanced mathematics courses taken, controlling for individual-level factors. The examination of “between-school” differences in the U.S. will help parents, educators, and policymakers to have a better understanding of significant school factors that promote or impede students’ college preparation.

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4. Project Description

Introduction/Objectives

There has been a growing demand for college preparation over the past thirty years in the U.S. Currently, nine out of every ten U.S. high school sophomores intend to pursue postsecondary education (NCES, 2004), yet a much smaller percentage actually do so. Our society expects schools to help our young students meet high academic standards, graduate from high school, and prepare for college. To monitor the quality of the schooling in the U.S., we need information about whether or not students are meeting these goals and if our schools have the capacity to help students meet them. Schools with limited resources generally have the poorest record of student academic success. For example, a recent report suggests that schools with a lack of counselors, teachers with adequate training, and college preparatory curriculum may have a serious problem with providing students with an adequate and fair level of education (Rogers, Terriquez, Valladares, & Oakes, 2006). Students attending such schools face significant roadblocks to their pathway to college and are not given a fair and equal opportunity to learn. These roadblocks to pursuing a college education are especially prevalent for low income and underrepresented minority students (Rogers et al., 2006).

During the last twenty years, the enrollment of minorities in higher education has increased substantially (Harvey, 2003). However, African American and Latino students continue to show lower college enrollment and graduation rates than their Asian American and White counterparts. For example, achievement test scores from the National Assessment of Educational Progress (NAEP, 2002) showed that African American and Latino students' scores fall considerably behind White and Asian American students in reading, mathematics, and science.

This achievement gap is even bigger for Latino students as compared to African American students. Latinos have the least amount of years of education completed and struggle significantly with underachievement in U.S. schools (Rumberger & Rodriguez, 2002; Steinberg, Dornbusch, & Brown, 1992; Valencia, 1991). In regards to high school completion rates, while the gap between African American and White students narrowed dramatically over the past decades, the gap between Latino students and their White counterparts still persists (U.S. Department of Education, 2006). Furthermore, according to the National Assessment of Educational Progress, the percentage of 25 to 29 year olds with at least bachelor's degree in 2000 was considerably lower for Latinos (10%) as compared to African Americans (18%) or Whites (34%) (U.S. Department of Education, 2002). It should be an urgent concern because over the last several decades Latinos have been the fastest growing minority group in the school-age population (U.S. Department of Education, 2000).

In the near future, Latinos will become the second largest group in the labor force; therefore their lack of educational attainment is likely to impact the economic productivity of the nation (U.S. Bureau of Labor Statistics, 2003). For this reason, the elimination of the large achievement gap among Latino and non-Latino students has become a major focal point in educational research. The *No Child Left Behind* (NCLB) Act of 2001 reflected this urgency by including, as one of its goals, closing the achievement gap between minority and white students (U.S. Department of Education, 2003).

Explanations for the achievement gap have ranged from individual differences, such as familial and biological background, to social and school level factors. Beginning with Coleman's notable report in a 1966 study, many subsequent studies in the past thirty years claim that the effects of schooling and contextual factors, in conjunction with individual factors, significantly

influence students' learning (Coleman, 1966; Lee, 2000; Rothstein, 2004). Although studies on school effectiveness on students' learning and development have been widely conducted, little attention has been paid to school effectiveness on college preparation. Previous research has focused primarily on identifying school factors on achievement test scores as an academic outcome.

Although test scores provide a direct measure of students' learning and college preparation, advanced mathematics coursework provides a more focused indicator of college preparation. Numerous studies have found that taking advanced mathematics courses is the single most powerful predictor of college success (Adelman, 1999; Barth & Haycock, 2004; U.S. Department of Education, 1999). Research from the U.S. Department of Education shows that high school students who completed math courses at levels higher than Algebra 2 (e.g., trigonometry or pre-calculus) earn a college degree at twice the rate of those whose high school math curriculum was less rigorous (Adelman, 1999). Other researchers, using nationally representative data, reported that high school students who take more mathematics courses are at a clear advantage with regard to achieving high school graduation, academic success, and college opportunity (Ma, 1997; Rock, Ekstorm, Goertz, & Pollack, 1995; Wilkins & Ma, 2002). Differences in enrollment in math courses have also shown a significant effect on college completion rates for African American and Latino college freshmen.

Despite being a strong predictor of college success, enrollment in advanced level mathematics courses is not always an option for most students. One possible explanation is that huge disparities in material resources and conditions that exist among students, their families, and their schools along with students' individual differences in academic achievement may affect college preparation. A substantial body of research suggests that the pattern of advanced

mathematics coursework is, to some extent, a function of school characteristics (Ma, 1999; Oakes, 1985; Oakes, Ormseth, Bell, & Camp, 1990; Secada, 1995). Schools across the United States vary widely in how they structure opportunity and allocate resources to different groups of students. Schools with high concentrations of minority students, many of whom are poor, show the highest rates of unqualified teachers and shortages of college preparatory courses (Rogers et al., 2006). These students are not given a fair and equal opportunity to learn. For example, research has consistently found that parental socio-economic status is a powerful predictor with regard to the achievement gap because minority students are more likely to attend schools with fewer resources, including financial resources, qualified teachers, and curriculum (Betts, Rueben, & Danenberg, 2000; Lee, 2002). Other support comes from a recent report of the Reality Check survey, which indicated that there are repeated and significant disparities between the educational experiences of African American and Latino parents and students when compared to those of most white families (Public Agenda, 2006). Based on the challenges faced by many African American and Latino families, U.S. schools still have a long road ahead in providing equitable educational opportunities for *all* students.

Research Objectives

This study will investigate student and school factors that predict college preparation using data from a newly released longitudinal study of a cohort of high school tenth graders known as the Education Longitudinal Study of 2002 (ELS: 2002). ELS: 2002 is designed to monitor the transition of a nationally representative sample of students as they progress from tenth grade through high school and on to postsecondary education.

ELS: 2002 is ideal for this study because: (1) it provides rich information from four respondents (i.e. students, their parents, their teachers, and their schools) that can be used to

estimate the effects of both student-level and school-level characteristics on college preparation; (2) it gathers data repeatedly from the same students over time so the long-term effects of students' earlier experiences (i.e., previous academic achievement, aspirations, high school experiences) on college preparation can be evaluated; (3) it provides sufficient sample sizes of nationally representative high school students and schools.

Specifically, this study will address the following research questions:

1. What are the disparities in high school senior's college preparation (measured by the number of advanced mathematics courses taken at the end of grade 12) among students and schools?
2. To what extent are students or schools responsible for the variation in high school senior's college preparation?
3. What student and school factors can explain these differences?

Data and Method

Data: This study will utilize the base-year (2002) and first follow-up (2004) data from the Education Longitudinal Study (ELS: 2002). In the 2002 base year, ELS: 2002 tested high school sophomores' achievement in reading and math and gathered information about their attitudes and experiences. These same students were surveyed and tested again, two years later in 2004 when they were high school seniors. And in 2005 high school transcripts were collected. Information has been obtained not just from students and their school records, but also from their parents, teachers, and administrators of their high school, including the principal and library media center director. The approximate sample size will be around 15,000 high school students from 750 schools.

Human Subjects issues: The project relies on secondary data for the analyses and all identifiers are removed from the dataset.

Conceptual Framework and Variables: Using this longitudinal, multilevel information, a comprehensive set of student-level and school-level variables will be constructed to measure their effects on college preparation. A graphic representation of the conceptual framework of this study is presented in Appendix B. The conceptual framework suggests that students' advanced mathematics courses-taking is influenced by students' own educational background, experiences, and attitudes as well as the characteristics of their families and their schools. The framework also suggests reciprocal relationships among these factors. At the student level, students' performance is a function of the characteristics and experiences of individual students in their respective schools. At the school level, it presents the aggregated performance of the students in a school and is a function of the characteristics of the school and its impact on the individual experiences of the students in it. Most researchers recognize that students' characteristics, as well as environmental factors, play a huge role in their school performance. Indeed, students who attend the same school often do not take the same courses. Thus, this study will also explore the students factors related to students' advanced mathematics course-taking as well as the school factors.

One notable aspect of this framework is that it incorporates the intermediate stage between school context and the educational outcomes of students (students' college preparation). School context, which includes student background characteristics, school resources, and school structure, are not considered to be alterable by the school, while school processes—school practices, policies, and climate—are alterable and can have direct effects on student outcomes. For example, findings regarding the effect of curricular offerings of advanced mathematics

courses on the educational outcome will contribute useful information to the Opportunities to Learn (OTL) research (McDonnell, 1995). Therefore, it is important to include an intermediate stage that the school does have control over when investigating the impact of school effectiveness on student outcomes.

Appendix A provides a list of variables to be used in this study. These variables are selected based on the literature on predictors of student academic achievement and school effectiveness (Lee, Smith, & Croninger, 1997; Rumberger & Thomas, 2000) and relevance to the objective of the proposed study. At the student level, four types of variables will be used: (1) demographic characteristics of students (e.g., gender and ethnicity); (2) family background characteristics which includes family structural variables (e.g., SES, non-traditional families, non-English-speaking households) and family practices (e.g., parental involvement, parental aspirations for child); (3) students' academic background variables (e.g., previous academic achievement, retention); (4) students' attitudes and behaviors (e.g., postsecondary education plan, academic expectation, engagement). At the school level, four types of school characteristics will be used; (1) student composition of schools (e.g., the mean SES of students in the school, proportion of minority students, proportion of nontraditional families, mean 10th grade grades); (2) school's structural characteristics (e.g., school size, type, location); (3) school resources (e.g., student-teacher ratio, proportion of certified teachers); (4) school process (e.g., school climate, school safety, teaching quality, academic press, curricular offerings and program).

As an outcome variable, using the newly released high school transcript data file, a composite variable will be created to measure the number of advanced mathematics course(s) taken (Trigonometry, Pre-Calculus, and Calculus) from the beginning of 9th grade to the end of 12th grade (a license to use restricted data files will be requested). The advanced mathematics

courses that met at least three times a week for more than one year will be counted. Selection of the advanced courses was made based on the previous findings. In a study on a nation sample of high school students, Adelman (2006) examined that student's highest level of mathematics (Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, and Calculus) reached in high school and their bachelor's degree attainment. He found that every step up the mathematics ladder multiplies the odds of earning a bachelor's degree and students who took at least one class beyond Algebra 2 in high school had significantly higher odds of earning a bachelor's degree. Since the critical boundary for mathematics momentum lies beyond Algebra 2, this study will examine the school effects on the proportion of students who take at least one of these three "gate keeper" courses students take (Trigonometry, Pre-Calculus, and Calculus).

Statistical Analysis: Since students in the ELS: 2000 data are nested within schools, hierarchical linear modeling (HLM) will be used in this study. HLM is especially useful for handling nested or multilevel data. This method allows researchers to partition the total variance in student-level outcomes into within-school and between-school variance and then to estimate the effects of both student-level and school-level factors on outcomes (Raudenbush & Bryk, 2002). Because the outcome variable in this study is dichotomous, non-linear HLM models will be used. Using HLM 5.04, a two-level multinomial logistic model with a four category dependent variable for the number of advanced mathematics course taken will be estimated. The association between three types of course taken (1, 2, or 3 course(s) taken among Trigonometry, Pre-Calculus, and Calculus) and two levels of explanatory variables (students and school level) will be simultaneously tested to compare to students took none of these advanced courses.

Specifically, a series of HLM models will be developed to address research questions specified above. The specification of the model building process is broken down into multiple

steps. The first model that will be estimated is the fully unconditional model or null model, which contains only the outcome measure without any explanatory variables at either the student or school level. The purpose of this model is to address the question of whether significant variance exists between schools to justify the modeling of between-school variance. The second model will introduce a series of student-level predictors to the within-school model based on the conceptual model and literature review. This model will help examine which student background characteristics have the strongest effect on high school students' college preparation. The primary purpose of this model is to control for the family background and educational background of students in an effort to equalize student inputs across schools. Therefore, after examining a large set of student-level variables, only those with statistically significant effects on the outcome will be retained in an effort to achieve a parsimonious model.

Next, a series of school-level variables on between-school variations in the outcome variable will be examined. School-level variables consist of two classes: background characteristics (i.e., student composition, school structure, and school resources) and school process (i.e., school practices, school climate and policies), as described in the conceptual framework. School background characteristics will be introduced sequentially, with only the significant variables from the proceeding step being retained in the subsequent model. Findings from these between-school models will provide a better understanding of which measures of school composition, school structure, and school resources have significant effects on high school students' college preparation. Schools may have little control over these factors, but in the long-term these factors could be altered through policy interventions. Finally, after determining the best set of school-level background characteristics, measures of school process will be added

to complete the between-school model. Findings from this school process model will help to identify the school-level variables that school-site personnel have control over.

Significance of Study and Policy Implications

Postsecondary educational attainment has far-reaching consequences and in many ways affects individuals' life trajectories both socially as well as economically. Individuals who gain at least one postsecondary degree triple their annual incomes compared to their less educated peers (National Center for Educational Statistics, 1999). Postsecondary education is not only of importance to individuals, but also has many implications for society. The myriad of benefits to the society at large is significant and far-reaching. Some of the benefits are as follows: increased productivity, lower crime rates, and increased community service come from a well-educated citizenry (Hossler, Braxton, & Coopersmith, 1989; Kane, 2004). As minimum skill expectations have increased at every educational and employment entry point, so has the importance of attaining a postsecondary education.

The importance of taking more advanced courses in mathematics is well documented as having serious consequences not only on student academic performance, but also on access to higher education, and labor market outcomes. Numerous studies have found that taking courses in advanced mathematics in high school is the single most powerful predictor of college success (Adelman, 1999, 2006). However, U.S. high schools differ in their ability to support students' pathway to college. Therefore, this study will attempt to examine what makes some schools more effective in increasing student college preparation than other schools beyond the attributes of students. Examination of "between-school" differences in American high schools will help parents, educators, and policymakers gain a better understanding of significant school factors that promote or impede students' college preparation. It may also provide useful information for

policymakers and educators about which school characteristics may be altered to provide a more equitable distribution of educational opportunities for *all* students.

Innovative aspects of study and intended audience

Previous research has focused primarily on identifying school factors on achievement test scores as an academic outcome. Although test scores provide a direct measure of students' learning and college preparation, advanced mathematics coursework provides a more focused indicator of college preparation. Yet, most of the previous studies on high school mathematics course-taking are simply descriptive summaries of cross-sectional data (Davenport, Davison, Kuang, Ding, Kim, & Kwak, 1998). Some cross-sectional studies on school effects on students' mathematics course-taking were conducted using qualitative methods in a small, unrepresentative sample attending one or few schools (Harris, 1995; Polite, 1994). Previous longitudinal studies have mainly explored the student characteristics related to mathematics course-taking, but few have explored the school factors related to advanced mathematics course-taking using nationally representative sample (Downer-Assaf, 1995; Ma, 2000). Therefore, using the newly released longitudinal data from a nationally representative sample, this study intends to advance the research on college preparation by addressing the school effects on students' advanced mathematics coursework of high school students in the United States. Furthermore, the conceptual framework of the current study is innovative in modeling school effects and evaluating school effectiveness on the outcome. In addition to schools' background characteristics, by adding school process model, the proposed study hopes to provide a more in-depth knowledge about the effectiveness of schools on students' college preparation.

The findings from this study will be of interest to educational researchers, school personnel, and federal, state, and local policymakers. Results from the proposed study can shed

light on the dynamic interplay among multiple level variables over time. For example, it may be that school-level characteristics such as those related to resources or academic characteristics are found to be significant predictors of students' college preparation. Policy makers can then undertake meaningful interventions with regard to the level of effects to improve students' college preparation in the learning process so that they can help students have access to postsecondary education. Given that a growing demand for college preparation over the past thirty years in the U.S., understanding the factors that make a difference in increasing students' college preparation can lead to the development of more discerning and effective educational policies which will dramatically increase the educational attainment of the nation's youth.

Dissemination plan

The results of this study will be disseminated in a variety of ways. We plan to disseminate the results at professional conferences and in professional publications. Specifically, the findings will be presented at the national conferences such as the annual meetings of the Association for Institutional Research (AIR) and the American Educational Research Association (AERA). In addition, we will seek to publish the findings of this study in relevant educational journals.

Appendix A. Description of Variables.

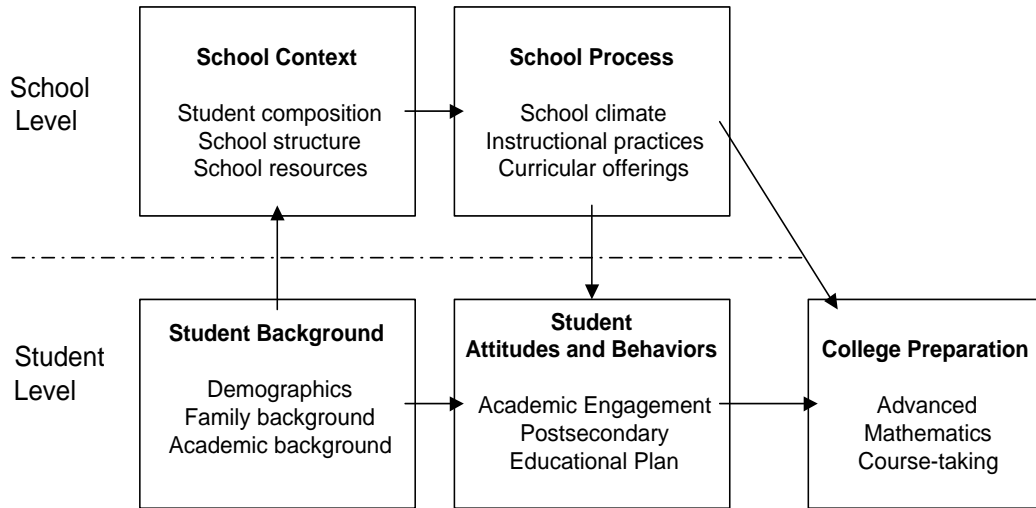
Student-Level Variables (estimated at the student level of analysis)

- Demographic characteristics
 - Gender
 - Ethnicity
- Family background
 - SES
 - Non-traditional families
 - Non-English-speaking households
 - Parental involvement
 - Parental aspirations for child
- Academic background
 - Previous academic achievement
 - Retention
- Students' attitudes and behaviors
 - Postsecondary education plan
 - Academic expectation
 - Academic engagement

School-Level Variables (estimated at the school level of analysis)

- Student composition
 - Mean SES
 - Proportion of minority students
 - Proportion of nontraditional families
 - Mean 10th grade grades
- School Structure
 - School size
 - Type (Private/Public)
 - Location (Urban/Rural)
- School Resources
 - Student-Teacher ratio
 - Mean Teacher salary
 - Proportion of certified teachers
- School process
 - School climate
 - School safety
 - Student rating of teaching quality
 - Mean level of parent involvement in school policy
 - Percentage of students in academic track
 - Academic press (percentage of students who feel discipline is fair)
 - Curricular offerings and program

Appendix B: Conceptual framework of how student-level and school-level factors affect High School Students' college preparation.



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6. Bio-Bibliographical Information

A. Sukkyung You (PI)

Sukkyung You, Ph.D. is an Assistant Researcher and Lecturer for the Department of Education, at the University of California, Santa Barbara. She received a doctoral degree in the Research Methodology emphasis at UCSB on December, 2005. For her dissertation, she explored how individual and contextual factors influence adolescents' school engagement using multilevel growth curve modeling. After graduation, she started teaching and research at UCSB. Her research interests deal with statistical analyses of educational data and various educational issues such as students' achievement, motivation, and studies of ethnic minority students. Dr. You has extensive knowledge and experience in quantitative research methodology (particularly, structural equation modeling, latent growth modeling, latent growth mixture modeling, and hierarchical linear modeling). For her teaching and research projects, Dr. You has used structural equation modeling and hierarchical linear modeling extensively which will be used for the proposed project. Further, Dr. You has also participated in an advanced training institute in hierarchical linear modeling and structural equation modeling (2004) sponsored by American Educational Research Association (AERA).

Sukkyung You's Recent Publications and Presentation

PUBLICATIONS

Conley, S., Muncey, D.E., & You, S. (2007). Standard-based evaluation and teacher career satisfaction: A structural equation modeling analysis. Journal of Personnel Evaluation in Education, 18 (1), 39-65.

Ho, H-Z., O'Farrell, S.L., Hong, S., & You, S. (2006). Developmental Research: Theory, Method, Design and Statistical Analysis. In Green, J.L., Camilli, G., & Elmore, P. (Eds.), Handbook of Complementary Methods in Education Research. (3rd Ed.) pp. 207-225. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

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PAPER IN REVIEW

You, S., Ho, H-Z., & Hong, S. Longitudinal effects of perceived control and academic achievement: A process model across ethnic groups.

Hong, S. & You, S. Multivariate autoregressive cross-lagged modeling of the reciprocal longitudinal relationship between perceived control and academic achievement.

You, S., Hong, S., & MacSwan, J. Latent growth mixture modeling of language-minority Latino children's growth in academic achievement.

Sharkey, J.D., You, S, Felix, E.D., & Furlong, M.J. Using large-scale databases to probe adolescent risk and resiliency: Applications of the California Healthy Kids Survey.

PRESENTATIONS

You, S. (April, 2006). Factors influencing Adolescents' Academic Engagement: A Multilevel Latent Growth Curve Analysis. Paper presented at the annual conference of the American Educational Research Association Meeting in San Francisco.

You, S. (May, 2005). Latino Language-Minority Children's Achievement: Latent Growth Mixture Modeling Approach. Paper presented at the annual conference of the UC Language Minority Research Institute in San Francisco.

You, S. (April, 2005). Identifying significant factors related to adolescents' academic engagement using multilevel longitudinal modeling. Paper presented at the annual conference of the American Educational Research Association Meeting in Montreal.

You, S. & Hong, S. (April, 2005). Identifying factors related to the math achievement of

- language minority Latino children. Paper presented at the annual conference of the American Educational Research Association Meeting in Montreal.
- Hong, S. & You, S. (July, 2004). Latino Language-Minority Children's Achievement: Latent Growth Mixture Modeling Approach. Paper presented at the annual conference of the American Psychological Association Meeting in Honolulu.
- You, S. & Hong, S. (April, 2004). Latent Growth Mixture Modeling of Language-Minority Latino Children's Growth in Academic Achievement. Paper presented at the annual conference of the American Educational Research Association Meeting in San Diego.
- You, S. & Hong, S. (April, 2003). Longitudinal Relationship between Perceived Control and Academic Achievement: Multivariate Latent Growth Modeling and Autoregressive Cross-lagged Modeling Across Ethnic Groups. Paper presented at the annual conference of the American Educational Research Association Meeting in Chicago.
- You, S. & Hong, S. (August, 2002). Cross-lagged/latent growth modeling of academic achievement and locus of control. Paper presented at the annual conference of the American Psychological Association, Chicago, Illinois, USA.

SPECIALIZED TRAINING

- April 2004 **AERA Institute on Statistical Analysis for Education Policy**
 Three-day seminar focused on early childhood education policy issues that can be addressed using modern methods for causal inference with data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99. The Institute addressed these issues using hierarchical linear modeling (HLM) and structural equation modeling (SEM). Sponsored by NCES and NSF, Washington, D.C.
- April 2003 **National Center for Educational Statistics Early Childhood Longitudinal Study Data Training**
 Two-day seminar covered various aspects of related measurement, weighting and software issues. Sponsored by NCES and AERA, Washington, D.C.

GRANTS

- UC Language Minority Research Institute, Individual Research Grant.
 Principal Investigator (with Dr. Sehee Hong). Growth mixture modeling of Latino children's growth in academic achievement: Identifying heterogeneity in the developmental trajectories. (2003-2004). \$21,439.

B. Russell Rumberger (co-PI)

Russell Rumberger is a Professor in the Gervirtz Graduate School of Education at the University of California, Santa Barbara and Director of the University of California Linguistic Minority Research Institute. He received a Ph.D. in Education and a M.A. in Economics from Stanford University in 1978 and a B.S. in Electrical Engineering from Carnegie-Mellon University in 1971. He serves on the editorial board of four journals: *American Educational Research Journal*, *Teachers College Record*, *Economics of Education Review*, and the *Sociology of Education*. He conducts academic and policy research in two areas of education: education and work, and the schooling of disadvantaged students. His research in the area of education and work has focused on the economic payoffs to schooling and on educational requirements of work. His research on at-risk students has focused on several topics: the causes, consequences, and solutions to the problem of school dropouts; the causes and consequences of student mobility; the schooling of English language learners; and the impact of school segregation on student achievement.

Russell Rumberger's Recent Publications

“School dropouts.” In Encyclopedia of the American High School, edited by Kathryn Borman, Spencer Cahill, and Bridget Cotner. New York: Greenwood Publishing, forthcoming.

“Immigration, Language, and Education: How Does Language Policy Structure Opportunity?” (with Patricia Gándara). In *Education of Immigrant Youth: The Role of Institutions and Agency*, edited by Jennifer Holdaway (in press).

“Understanding and addressing the education achievement gap in the United States during the first four years of school” (with Brenda Arellano). In *Equity and education*, Volume 3, edited by Richard Teese, Stephen Lamb, & M. Duru-Belat. New York: Springer (in press).

- “How much is too much? The influence of preschool centers on children's social and cognitive development” (with Susanna Loeb, Margaret Bridges, Daphna Bassok, and Bruce Fuller). Economics of Education Review (in press).
- “Does Segregation (Still) Matter? The Impact of Student Composition on Academic Achievement in High School” (with Gregory J. Palardy). Teachers College Record, 107 (Spring 2005), 1999-2045.
- “Does Resegregation Matter? The Impact of Student Composition on Academic Achievement in Southern High Schools” (with Gregory J. Palardy). In How Brown Lost Its Way: School Segregation in the South, edited by Jack Boger and Gary Orfield, pp. 127-147. Chapel Hill: University of North Carolina Press, 2005.
- “Test Scores, Dropout Rates, and Transfer Rates As Alternative Indicators of High School Performance” (with Gregory Palardy). American Educational Research Journal, 41 (Spring 2005): 3-42.
- “Why Students Drop Out of School.” In Dropouts in America: Confronting the Crisis, edited by Gary Orfield, pp. 131-155. Cambridge: Harvard Education Press, 2004.
- “What Can be Done to Reduce School Dropouts.” In Dropouts in America: Confronting the Crisis, edited by Gary Orfield, pp. 243-254. Cambridge: Harvard Education Press, 2004.
- “Seeking Equity in the Education of California’s English learners” (with Patricia Gándara). Teachers College Record, 106 (October 2004): 2032-2056.
- “Multilevel Models for School Effectiveness Research” (with Gregory Palardy). In Handbook of Quantitative Methodology for the Social Sciences, edited by David Kaplan, pp. 235-258. Thousand Oaks, CA: Sage Publications, 2004.
- “School Completion/School Achievement as Outcomes of Early Childhood Development” In: Tremblay RE, Barr RG, Peters RDeV, eds. Encyclopedia on Early Childhood Development [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2004:1-5. Available at: <http://www.excellence-earlychildhood.ca/documents/RumbergerANGxp.pdf> . Accessed February 6, 2004.
- “The Advantages of Longitudinal Design,” In Rigorous Designs to Evaluate Technology Effects, Volume 1, edited by Geneva Haertel and Barbara Means, pp. 205-229. New York: Teachers College Press, 2003.
- “English Learners in California schools: Unequal resources, unequal outcomes” (with Patricia Gándara, Julie Maxwell-Jolly, & Rebecca Callahan). Education Policy Analysis Archives, 11, Retrieved October 7, 2003 from <http://epaa.asu.edu/epaa/v11n36/>.

- “The Early Employment and Further Education Experiences of High School Dropouts: A Comparative Study of the United States and Australia” (with Stephen P. Lamb). Economics of Education Review, 22 (2003): 353-356.
- “The Causes and Consequences of Student Mobility.” Journal of Negro Education, 72 (2003): 6-21.
- “What Can be Done to Prevent and Assist School Dropouts?” In Intervention with children and adolescents: An interdisciplinary perspective, edited by Paula Allen-Meares & Mark W. Fraser, pp. 311-334. New York: Allyn & Bacon, 2003.
- “Student mobility.” In Encyclopedia of Education, 2nd edition, edited by James Guthrie. New York: Macmillan, 2002.
- “Chicano Dropouts: An Update of Research and Policy Issues” (with Gloria Rodriguez). In Chicano school failure and success: Research and policy agendas for the New Millennium, 2nd edition, edited by Richard R. Valencia, pp. 114-146. New York: Falmer Press, 2002.
- “The Schooling of English Learners” (with Patricia Gándara). In Crucial Issues in California Education, edited by Elizabeth Burr, Gerald Hayward, and Michael Kirst, pp. 23-44. Berkeley: Policy Analysis for California Education, 2000
- “The Distribution of Dropout and Turnover Rates among Urban and Suburban High Schools” (with Scott L. Thomas). Sociology of Education, 73 (January 2000): 39-67.
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- "Dropping Out of Middle School: A Multilevel Analysis of Students and Schools." American Educational Research Journal 32 (Fall 1995): 583-625.

- "Doubling School Success in Highest-Risk Latino Youth: Results from a Middle School Intervention Study (with Katherine Larson)." In Changing Schools for Changing Students, edited by Reynaldo F. Macias and Reyna G. Garcia Ramos, pp. 157-179. Santa Barbara, California: Linguistic Minority Research Institute, University of California, 1995.
- "Labor Market Outcomes as Indicators of Education Performance." In Making Education Count: Developing and Using International Indicators, edited by Centre for Educational Research and Innovation, pp. 265-286. Paris: Centre for Educational Research and Innovation, OECD, 1994.
- "Keeping High-Risk Chicano Students in School: Lessons from a Los Angeles Middle School Dropout Prevention Program" (with Katherine A. Larson). In Educational Reforms for At-Risk Students, edited by Robert J. Rossi, pp. 141-162. New York: Teachers College Press, 1994.
- "Technological Change and the Demand for Educated Labor," In International Encyclopedia of Education, 2nd edition, edited by Torsten Husen and T.N. Postlethwaite, pp. 6256-6261. New York: Pergamon Press, 1994. Reprinted in the International Encyclopedia of Economics of Education, 2nd edition, edited by Martin Carnoy (1995).
- "The Economic Returns to College Major, Quality, and Performance: A Multilevel Analysis of Recent Graduates" (with Scott Thomas). Economics of Education Review 12 (1993): 1-19. Reprinted in The Economics of Higher Education, edited by Clive R. Belfield and Henry M. Levin. Cheltenham, England: Edward Elgar Publishing, forthcoming.
- "Education and Training for 16-18 Year Olds in the UK and the USA," (with David Raffe). Oxford Studies in Comparative Education 2 (1992): 135-157. Reprinted in Something Borrowed, Something Learned? The Transatlantic Market in Education and Training Reform, edited by David Finegold, Laurel McFarland, and William Richardson, pp.125-147. Washington, D.C.: The Brookings Institution, 1993.
- "The Impact of Racial and Ethnic Segregation on the Achievement Gap in California High Schools" (with J. Doug Willms). Educational Evaluation and Policy Analysis 14 (Winter 1992): 377-396.
- "The University of California Educational Leadership Institute: A New Strategy for Linking Research and Practice," Educational Researcher 21 (August-September 1992): 20-24.
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- "The Impact of Surplus Schooling on Worker Productivity," (with Henry M. Levin and Mun C. Tsang) Industrial Relations 30 (Spring 1991): 209-228.
- "Family Influences on Dropout Behavior in One California High School (with R. Ghatak, G. Poulos, P. Ritter, and S. Dornbusch) Sociology of Education 63 (October 1990): 283-299.
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7. Budget**A. Itemized Budget**

<u>Category</u>	<u>Requested Funds</u>
Personnel:	
Sukkyung You (PI) (31% FTE, 12 months)	\$18,567
Russell Rumberger (Co-PI) (.5 Summer 1/9)	\$ 5144
Benefits at various per UC policy	\$ 3,850
Travel (AIR forum and AERA conference)	\$2000
Materials and Supplies (books, printing, dissemination costs)	\$439
Total amount of reward	\$30,000

B. Budget Explanation

B.1. Project Time Frame

This is a 12-month project, proposed to begin on June 1, 2007 and end on May 31, 2008. The estimated total project costs being sought from AIR are \$30,000. These include remuneration for the personnel described below; traveling to professional conferences; editing of reports and other publication; and supplies.

B.2. Personnel

Sukkyung You (PI) will be responsible for analyses, writing journal articles, preparing presentations of the research products.

Russell Rumberger (Co-PI) will be co-responsible for overall guidance of the project.

B.3. Travel and other costs

The PIs will travel to two academic conferences (AIR and AERA) to present findings from this study. Funds are also requested for project specific supplies and expenses. Postage and reproduction costs are requested for printing and dissemination of final reports.

8. Current and Pending Support

8.1. Current Support

Sukkyung You (PI): is currently receiving university funding through her appointment as a lecturer and researcher.

Russell Rumberger (Co-PI): receives, aside from his full-time University appointment, two summer ninths as Director of UC LMRI (University of California Linguistic Minority Research Institute) and .5 summer ninth from an IES-funded project.

8.2. Pending Support

This project is also being submitted to AERA (American Educational Research Association) research grant. This support amounts to approximately .26 FTE for 12 months (4/1/07 – 3/30/08) from AERA for Dr. You and .5 of one summer ninth for Prof. Rumberger.

9. Facilities, Equipment, and other Resources

The proposed study will be conducted at the Department of Education, at the University of California, Santa Barbara. This institution provides the computer and library support needed to carry out the project.