

1. Proposal Cover Page

2007 AIR/NPEC RESEARCH GRANT PROPOSAL

First-Generation Community College Students:
The Impact of College Experiences and Outcomes on Educational Attainment

Data set of interest:
Beginning Postsecondary Students Longitudinal Study (BPS:96/01)

Grant Amount Requested: \$29,822

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2. Project Summary

The competitiveness of the United States depends largely on the ability of its students to attend a post-secondary institution and prepare for the workforce demands of the 21st century. The nation also benefits when it provides its academically prepared students with an opportunity to persist in attaining their educational goals. The positive impact that educational attainment has on the economic productivity of our entire citizenry has been evidenced by the correlates of obtaining a post-secondary education with decreased unemployment and public assistance and increased volunteerism, voting, and personal income. With our nation's competitiveness in the world economy at issue during the past decade, our ability to compete in the global economy is of particular concern.

With a steady increase in the percentage of students attending post-secondary institutions in recognition of the importance of a college education, we have seen a tremendous growth among community colleges, which have increasingly served the number of students from low to moderate income families. The National Center for Education Statistics Beginning Postsecondary Longitudinal Study revealed that 53% of students beginning their post-secondary education at two-year colleges were first-generation college students from families where neither parent had more than a high school education (Choy, 2001). Studies have also revealed that academically prepared first-generation college students are more likely to suffer from miscellaneous barriers and leave college at the end of the first year (Advisory Committee on Student Financial Assistance, 2006).

Although there has been a growing interest in first-generation college students, the majority of studies have examined first-generation students that attended four-year colleges. Of these studies, the emphasis has been on academic preparation, transition from high school to postsecondary education, and their persistence to degree attainment. The proposed study will examine the college experiences and development of a cohort of first-generation community college students from the Beginning Postsecondary Students 1996-2001 dataset. An examination of these factors should expand our understanding of the barriers faced by first-generation community college students and develop a course of action to assist these students in attaining their educational goals. Specifically, three stages of research will be conducted that will address the major purpose of the study:

- (1) The first stage consists of providing a profile of first-generation community college students.
- (2) The second stage consists of an examination of the differences between first-generation and other community college students in their academic and non-academic experience of college.

- (3) The third stage consists of determining the differences between first-generation and other community college students on psychosocial development variables. In order to ensure an accurate interpretation, this stage also includes determining whether or not interaction effects influence psychosocial outcomes for first-generation and other community college students.

These three stages are introduced to examine the extent that college experience differences translate to college outcome differences of first-generation and other college students.

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4. Project Description

a. Statement of the Problem

The National Center for Education Statistics Beginning Postsecondary Students Longitudinal Study revealed that 53% of entering community college students have parents who have never attended a post-secondary institution (Choy, 2001). Even with the increased enrollment of first-generation students in community colleges, which are typically more accessible than four-year colleges, first-generation students are at greatest risk for non-persistence (Advisory Committee on Student Financial Assistance, 2006). Given the importance of maintaining our competitiveness in the global economy, it is of paramount importance to understand the college experience and barriers that these first-generation students face while pursuing their educational goals, particularly since they represent the majority of the nation's freshmen in community colleges.

Community colleges have experienced significant growth especially in the number of students from low to moderate income families. Although there has been a growing interest in first-generation college students, the majority of studies have examined first-generation students that attended four-year colleges. There has been an exploration of academic preparedness, demographic characteristics, college choice, and degree goals of first-generation college students. The research has indicated that first-generation college students, overall, are disadvantaged with respect to family financial support, access to basic post-secondary planning resources, and setting educational goals. However, there is not much information regarding the impact of college experiences and outcomes on the psychosocial development of these community college students and it is clear that additional research needs to be done in this area (Pascarella, et al., 2004). The proposed study will examine the college experiences, as well as the academic and non-academic development of a cohort of first-generation community college students. This study will also help to illuminate the barriers to the attainment of first-generation students' educational goals. The outcomes from this research will provide a framework for the development of programs and services that may be useful in supporting them.

a.1. Literature Review

Four areas of research were found in the literature on first-generation college students. Compelling evidence from the first set of studies that have examined first-generation college students have indicated that this

group of students is at a distinct disadvantage with regard to their understanding of the financial aid and college admission processes, making informed decisions regarding their ability to pay for college, and having the recommended core high school coursework (Horn and Nunez, 2000; Terenzini, et al., 1996; Wartburton et al, 2001).

Another area of research examined first-generation students with regard to their transition from high school to college. These transition studies revealed that first-generation students have greater difficulty integrating into the college environment than do their counterparts (Rendon, et al., 1996; Terenzini et al., 1994).

The third area of research on first-generation college students examined the probability of persistence in college and attainment of their degree (Pascarella and Terenzini, 2005). These studies have indicated that first-generation students are more likely to leave school at the end of their first year (Advisory Committee on Student Financial Assistance, 2006).

Very few studies were found that explored the college experience, cognitive development, and psychosocial attainment of first-generation college students. This fourth area of research indicated that first-generation community college students were more satisfied with their community college experiences than other community college students (Nomi, 2005). College experience studies have also revealed that first-generation students were employed more hours per week, completed fewer credit hours, and studied less than their peers (Nomi, T., 2005; Terenzini et al., 1996). Of all of the studies on first-generation college students, few have addressed the impact of the college experience on their psychosocial attainment – and few, if any, have conducted such research on the community college constituency. The proposed study will address the community college void.

A useful body of research for continuing studies in the area of college experience and psychosocial attainment of first-generation college students, is the theoretical perspectives of social capital. Social capital is the form of capital inherent in the dynamic of relationships between individuals that enable such individuals to benefit (Bills, 2000). Research in this area has indicated that students with highly educated parents are more likely to have an advantage over first-generation college students with regard to their ability to acclimatize to their college environment since they are more likely to understand the culture of higher education (Coleman, 1988). First-generation students are more likely to be disadvantaged in understanding the extent of the impact a post-secondary education can have on their future social and economic attainment. This lack of understanding may translate to a less influential college experience for first-generation college students, including a differential effect on cognitive and psychosocial outcomes (Pascarella, et. al, 2004).

The majority of the first-generation college student literature focused on first-generation students who entered a four-year college (Bailey and Alfonso, 2005). Since first-generation students are more likely to enroll in community colleges when they begin their postsecondary education, it is beneficial to continue research efforts directed toward examining the impact of community college experiences on first-generation student outcomes, including psychosocial development. Furthermore, the government recognizes that global competitiveness not only depends on a significant investment in scientific developments and technology, but also on a significant investment in human capital and higher education (Advisory Committee on Student Financial Assistance, 2006).

b. Proposal of Work

The conceptual framework for the proposed research is based on research investigations regarding first-generation college students and is consistent with the work of Astin (1992). Astin's results suggested that four areas need to be taken into account in order to understand the impact of the college experience on students:

- (1) Demographics and precollege characteristics,
- (2) Institutional characteristics,
- (3) College academic experiences, and
- (4) College non-academic experiences.

Educational outcomes research has suggested that academic and non-academic experiences impact both college and social outcomes of students (Terenzini, et al., 1996). An examination of these factors should expand our understanding of the community college experience of first-generation students and the impact on their academic and social attainment (see Figure 1). Specifically, three stages of research will be conducted that will address the major purpose of the study. The first stage consists of providing a profile of first-generation community college students. The second stage consists of an examination of the differences between first-generation and other community college students in their academic and non-academic experience of college. The third stage consists of determining the differences between first-generation and other community college students on psychosocial development variables.

b.1. Beginning Postsecondary Students 1996-2001 Dataset

The proposed study uses the Beginning Postsecondary Students (BPS) 1996-2001 dataset of the National Center for Educational Statistics. The BPS 1996-2001 followed a cohort of students who started their postsecondary education during the 1995-1996 academic year. The BPS dataset is unlike other national longitudinal datasets currently available. The BPS dataset is comprised of individuals who first began their post-secondary studies in the 1995-1996 academic year, regardless of when they completed high school. Therefore, this dataset represents both traditional age (17-21) and nontraditional age students. This is a very important sampling issue since first-generation college students are less likely to be of traditional college age (Nomi, 2005).

The BPS 1996-2001 dataset will serve to improve our understanding of the college experience and psychosocial attainment of first-generation community college students by utilizing a nationally representative longitudinal dataset. The BPS 1996-2001 dataset provides sufficient n-counts to support the proposed study. Approximately 42% of the students surveyed reported their parents highest level of education was a high school diploma or less. Of those students, 57% pursued their postsecondary education at a two-year college.

b.2. First Stage Analysis and Variables

The first stage of the analysis will consist of providing a profile of the first-generation community college student population and their community college peers, as well as the institutional characteristics of both groups. The student profile will include descriptive statistics for race (SBRACEC1), gender (SBGENDER), citizenship status (SBCTZNY1), expected family contribution toward their first-year's college costs (EFC1), student family poverty level (SFPOV), and stated goal of living close to family while attending college (PGLIVCLS). Institutional characteristics will include the type of high school the student reported (HSTYPESR), community college student budget - adjusted for full-time and part-time attendance (BUDGETAJ), and the percentage of minorities enrolled at the first post-secondary institution in which the student attended (PCTMIN7).

b.3. Second Stage Analysis and Variables

The second stage of the analysis will consist of regressing academic and non-academic variables such as the total number of months enrolled in any post-secondary institution reported in 2001 (ENNUTT2B), reported annual salary in 2001 (QEINCEC), and degree type attained through 2001 (DGRETY2B) on select independent

variables including:

- 1) first-generation status (PBEDBOT2) defined in two different ways:
 - a) as a dichotomous variable where neither parent has beyond a high school education and its compliment
 - b) as a polytomous variable with three levels of parent education defined as
 - i) Low – which encompasses the definition of first-generation students for the dichotomous variable,
 - ii) Moderate – students with one or more parents with some college coursework, and
 - iii) High – students whose parents had both completed at least a bachelor’s degree;
- 2) sex (SBGENDER);
- 3) race categorized into Caucasian versus non-Caucasian, as well as for each race category as defined on the survey (SBRACECI);
- 4) parent-income level (PARINC95);
- 5) community service participation in high school (COMMSERV);
- 6) educational goals as indicated in high school (EPHDEGB1);
- 7) remedial college coursework during first year of college as a proxy for academic preparedness (REMED2);
- 8) pre-college attribution toward social attainment derived by the following variables
 - a) goals of being a leader in the community (PGLEAD),
 - b) becoming an authority in a field (PGAUTH),
 - c) influencing political structure (PGINFL),
 - d) succeeding in a career (PGSUCCAR),
 - e) being well off financially (PGFINC);
- 9) age derived from birth year (BDATE).

b.4. Third Stage Analysis and Variables

The third stage of the analysis will examine the differences between first-generation community college students and their peers on variables selected from the BPS 1996-2001 dataset that best represent the college

experience and psychosocial attainment. The dependent variables that will be used for the least-squares regression analysis consist of the following survey items or derivation of items: overall satisfaction with their first institution (SATISALL), social integration (SOCINT), and academic integration (ACADINT). Due to the categorical nature of the variables, a logistic regression will be used to examine the differences between first-generation and other community college students with respect to their intellectual growth (SNINTELL), community service, including voluntary work in PTAs, community centers, youth organizations, hospitals, etc. in 2001 (QFVOL), overall job-satisfaction reported in 2001 (QESAT8C), and highest degree ever expected as reported in 2001 (QFHIDEG).

Because first-generation students are more likely to enter college with less social capital than their peers, it may be that the college itself, will act as a compensatory experience. A conditional effect may be revealed, depending upon college generation status. It is conceivable that a larger effect could be realized for students whose parents have lower education levels than students whose parents are highly educated. Therefore, upon completion of the initial set of third stage analyses, we will further determine if there are any significant interaction effects. A series of cross-products terms will be computed between selected variables. The set of cross-products terms will then be examined and added to the regression models used in the earlier analysis. If there is a significant increase in variance as indicated with R^2 due to the introduction of a cross-product term or set of cross-product terms, then a significant interaction effect will be evident (Kleinbaum, et al., 1988).

c. Dissemination Plan

The results of the proposed research will be shared with a wide variety of audiences. Conference proposals will be submitted for the 48th Annual AIR Forum in Seattle, WA, the 88th Annual Convention of the American Association of Community Colleges in Philadelphia, PA, and the Council for the Study of Community Colleges 50th Annual Conference, which is held in conjunction with the American Association of Community Colleges' 88th Annual Convention in Philadelphia. Because the proposed study will be utilizing a national dataset on such an important issue, manuscripts will be prepared and submitted for publication to journals that focus on community college issues and academic persistence. Such journals include the *Community College Journal*, the *Journal of Higher Education*, and *The Review of Higher Education*.

The authors of this project are involved with a number of professional organizations and a national research organization that distributes information to a wide audience of education and policy professionals. The updated

findings of this study will be presented on the website of the National Learning and Achievement Organization (www.learnandachieve.org), submitted to the National College Access Network for national dissemination, and presented in the American Educational Research Association – Survey Research Special Interest Group’s newsletter. The study will begin in June 2007 and be completed in May 2008. The time and task schedule is presented in Table 1.

d. Policy Relevance

Increasingly more students are attending post-secondary institutions as they recognize the importance of a college education for securing employment and a higher standard of living. Community colleges have experienced significant growth especially in the number of students from low to moderate income families. First-generation college students from families where neither parent had more than a high school education constitute the majority of the freshman class of community colleges (Choy, 2001). Although there has been a growing interest in first-generation college students, the majority of studies have examined first-generation students that attended four-year colleges. The proposed study will examine the college experiences and cognitive development of a cohort of first-generation community college students. An examination of these factors will expand our understanding of the barriers faced by first-generation community college students and help provide a course of action to assist these students in attaining their educational goals. Thus, this research project can expand the knowledge available to community college administrators on factors external to the institution, such as student generation status, that have significant impacts on student persistence and psychosocial attainment.

Understanding these factors can lead to the development of a framework to design effective programs that can assist first-generation students overcome the barriers they face in pursuing their educational goals. Postsecondary education is the key to a stronger workforce for our nation and a higher standard of living for our citizenry (Lotkowski, et al, 2004). Better educated people have a better chance of obtaining secure jobs that provide opportunities for advancement, pay higher wages, and offer greater health and retirement benefits than do those who are less educated. In addition, an increase in the number of citizens with a postsecondary education correlates with decreased unemployment and public assistance and increased volunteerism, voting, and personal income (VanDerLinden, 2002).

e. Innovative Aspects of the Project

The proposed project contains several innovations. Between 1992 and 2004, the percentage of college-qualified students increased, as measured by their course-taking patterns. The largest increase was realized for students from low to moderate income families (Advisory Committee on Student Financial Assistance, 2006). Even with increased academic preparedness for college, the population of students with the highest risk for non-persistence of their post-secondary educational goals are students from families where neither parent had more than a high school education. This study will provide a thorough examination of first-generation community college students and the barriers they face in college and their college experiences.

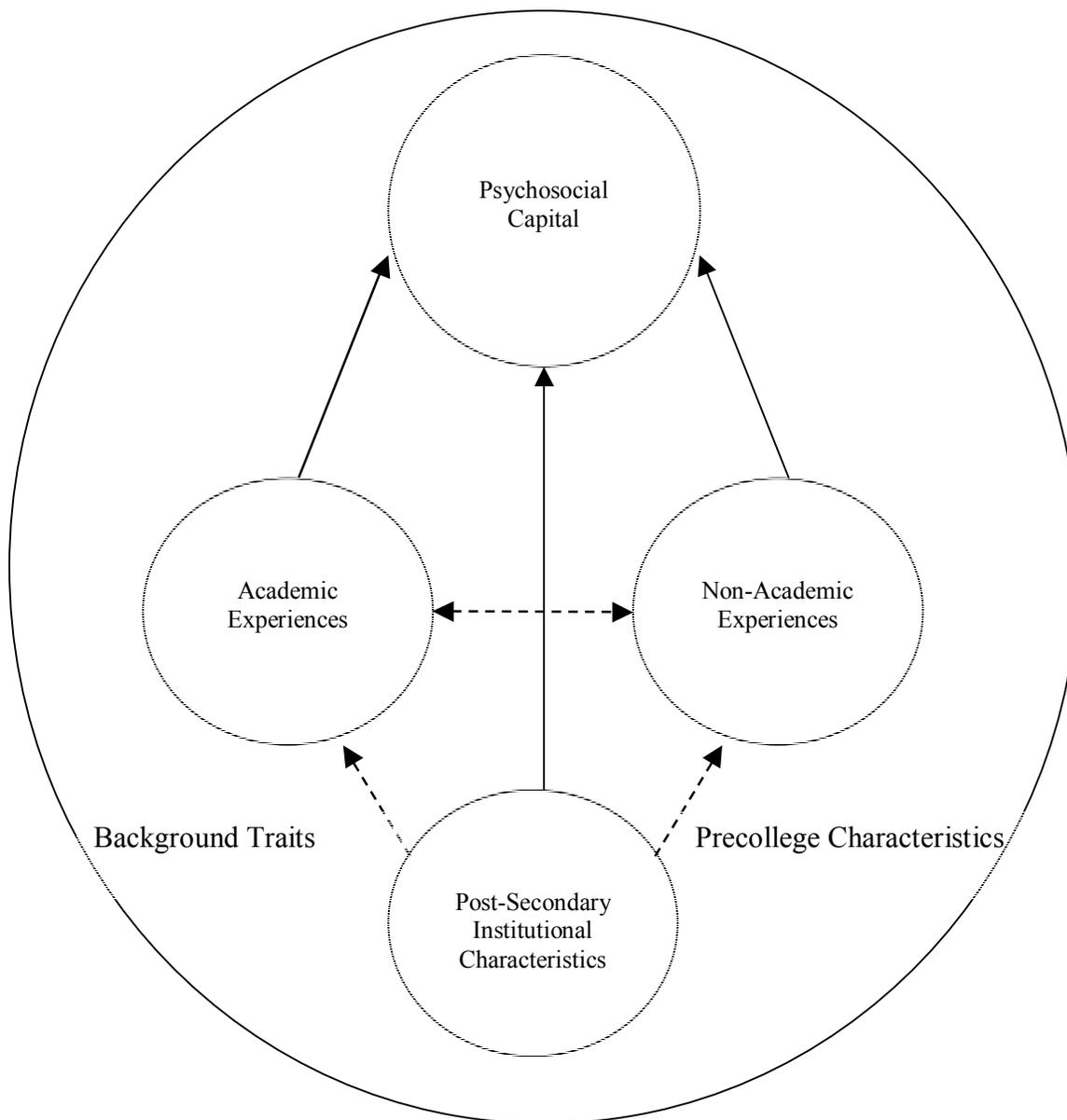
The study will also illuminate the impact of the college experience on the psychosocial attainment of first-generation college students. This study draws upon the useful theoretical perspective for understanding the effects of first-generation student status on the college outcomes through the body of work on social capital. Since students bring varying of levels of social capital to college, it is a reasonable expectation that the college experience itself lends to an increase in social capital. Because first-generation students are more likely to enter college with less social capital than their peers, it may be that the college, itself, will act as a compensatory experience. It would also be useful to know if there is a conditional effect. It is conceivable that a larger college effect is realized for students whose parents have lower education levels than students whose parents are highly educated. An increased understanding of the college experience on social capital will provide a framework for developing specifications for future programs aimed at increasing the level of attainment of students from low to moderate income families.

f. Discussion of Audience to Whom the Research Project Will Be Important

Post-secondary education provides both economic and societal benefits, as well as increased global competitiveness. Economic advantages include higher productivity, decreased reliance on public assistance, and lower rates of unemployment. Societal benefits include a higher standard of living and a better quality of life. Similarly, our global competitiveness depends upon the success of its citizens in meeting the challenging demands of the 21st century workforce. The findings of this study will be of interest to professionals in the fields of higher education, sociology, and survey research. The policy implications of the study should also prove beneficial to federal, state, and local policy makers in the areas of economic development, labor, and postsecondary education.

g. Appendix

g.1. Figure 1. Conceptual Framework of the Study



g.2. Table 1. Time and Task for BPS Study on First-Generation Community College Students: The Impact of College Experiences and Outcomes on Educational Attainment

Research Activity	Time Period
Reviewing and synthesizing related literature	Jun 2007 - Jul 2007
Write a comprehensive review that summarizes the research on the persistence, psychosocial attainment, and college experiences of first-generation college students	Jul 2007 - Aug 2007
Submit Progress Report to AIR	Aug 2007
Cleaning, coding, and constructing independent and dependent variables	Aug 2007 - Sep 2007
Conduct all analyses for Stages 1, 2, and 3 of research project	Sep 2007 - Dec 2007
Submit Proposal to AIR Convention	Sep 2007
Submit Proposal to AACC Convention	Nov 2007
Submit Proposal to CCHE Conference	Jan 2008
Discuss research findings and develop appropriate areas future research	Feb 2008
Prepare conference papers, manuscripts for journal submissions, and AIR Final Report	Mar 2008 - Jun 2008
Make presentation at AACC and CSCC conferences	Apr 2008
Make presentation at AIR conference	May 2008
Submit Final Report to AIR	Jun 2008

5. References Cited

- Advisory Committee on Student Financial Assistance (2006). *Mortgaging our future: How financial barriers to college undercut America's global competitiveness*. Washington, DC.
- Astin, A. (1993). *What matters in college*. Jossey-Bass: San Francisco, CA.
- Bills, D. (2000). *Credentials, signals, and screens: Explaining the relationship between schooling and job assignment*. Unpublished manuscript, University of Iowa, Iowa City.
- Carroll, D. (2002). *Beginning Postsecondary Students Longitudinal Study First Follow-up 1996-98 (BPS:96/98) Methodology Report*. U.S. Department of Education. Washington, DC.
- Choy, S. (2001). Essay: Students whose parents did not go to college: Postsecondary access, persistence, and attainment. In J. Wirt, et al. (Eds.), *The Condition of Education 2001*. National Center for Education Statistics. Washington DC.
- Coleman, J. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Grubb, W. (1991). The decline of community college transfer rates: Evidence from National Longitudinal Surveys. *Journal of Higher Education*, 62 (2), 194-217.
- Horn, L., & Nunez, A. (2000). *Mapping the road to college: First-generation students' math track, planning strategies, and context of support* (NCES 2000-153). National Center for Education Statistics, Washington, DC.
- Kleinbaum, D., Kupper, L., and Muller, K. (1988). *Applied Regression Analysis and Other Multivariate Methods*. Duxbury Press: Belmont, CA.
- Lotkowski, V., Robbins, S., and Noeth, R., (2004). *The Role of Academic and Non-Academic Factors in Improving College Retention - ACT Policy Report*. ACT, Inc., Iowa City, IA.
- National Center for Education Statistics (2005). *National Postsecondary Student Aid Study 2003-2004*. U.S. Department of Education. Washington, DC.
- Nomi, T. (2005). *Faces of the Future: A Portrait of First-Generation Community College Students*. American Association of Community Colleges. Washington, DC.
- Pascarella, E., Pierson, C., Wolniak, G., and Terenzini, P. (2004). First-generation college students additional evidence on college experiences and outcomes. *Journal of Higher Education*, 75 (3), 249-284.
- Pascarella, E. and Terenzini, P. (2005). *How college affects students: A third decade of research, volume 2*. Jossey-Bass: San Francisco, CA.
- Terenzini, P., Pascarella, E., and Blimling, G. (1996). Students' out-of-class experiences and their influence on learning and cognitive development: A literature review. *Journal of College Student Development*, 37, 149-162.
- The National Academies (2005). *Rising above the gathering storm: Energizing and employing America for a brighter economic future*. Washington, DC.
- VanDerLinden, K. (2002). *A portrait of America's community college students: 1999-2000*. American Association of Community Colleges. Washington, DC.

6. Biographical Sketches

a. Veronica Lotkowski

Veronica Lotkowski is a senior research consultant with the National Learning and Achievement Organization (NLA) in Iowa City, Iowa. She received her Ph.D. in Educational Administration from the Ontario Institute for Studies in Education (OISE) of the University of Toronto and her M.A. in Public Administration and Public Policy from the University of Toronto. After graduating she was a research associate at OISE where she conducted a nation-wide study of comprehensive school reform and later worked at the University's Institute for Child Study where she was involved in research to improve integrated services for underserved and underrepresented populations. Her research interests have focused primarily on students at-risk of academic failure and drop out, issues affecting student access to postsecondary education, college retention, financial aid, and improving educational transitions.

As a Senior Research Consultant for the National Learning and Achievement Organization, she is responsible for the design and undertaking of a variety of policy-related research studies in accordance with the National Learning and Achievement Organization's mission, which includes improving student access to postsecondary education, facilitating smooth educational transitions, improving early postsecondary planning and preparation, and establishing mentoring programs. Dr. Lotkowski is directly responsible for the following areas at the National Learning and Achievement Organization:

- Creating a policy research agenda that supports major strategic objectives.
- Serving as an internal expert on current and anticipated policy issues in education.
- Establishing collaborative research efforts with nationally visible organizations.
- Representing the National Learning and Achievement Organization at targeted meetings and conferences focusing on educational policy.

Prior to joining the National Learning and Achievement Organization, Dr. Lotkowski was a senior research associate in Policy Research at ACT, Inc. where she conducted studies concerning the impact of statewide student assessment on college attendance and success, planning for postsecondary education, and the return on investment of attending college. Dr. Lotkowski was primarily responsible for the development, management, and completion of educational policy research studies that informed a wide variety of educational policy-making constituencies of important educational policy issues. These constituencies included federal, state, and local government legislators,

college and school district personnel, and educational organizations, foundations, and business groups. In her role as senior research associate for ACT, Dr. Lotkowski was also responsible for the following:

- Independently designing and conducting educational policy studies regarding such topics as college student retention, the return on investment of higher education, and the impact of statewide standardized assessment on student achievement.
- Managing research projects through coordination and liaison with policy research teams of internal and external staff in completing policy studies. Conducted project research team meetings and follow-ups, identified data requirements, coordinated data collection, analysis, and synthesis, reviewed relevant literature, drafted reports, and disseminated findings.
- Maintaining knowledge of current educational policy issues by keeping abreast of educational literature, attending conferences, and maintaining personal contact with both ACT field staff and other external clients.
- Developing an on-going agenda for future policy research topics related to ACT's research.
- Overseeing continued development, expansion, and up-dating of the policy research dissemination plan of over 7000 policy-makers at the federal, state, and local government levels as well as college and school district personnel, educational organizations, foundations, and businesses, and professional contacts.
- Developing and maintained a program of policy research presentations at a broad array of constituent conferences on policy issues that support ACT's visibility.
- Reviewing other Policy Research Department staff members' manuscripts for publication.
- Maintaining regular contact with other staff members and ACT policy constituents regarding important educational policy issues and initiatives.

a.1. Non-Proprietary Publications

Lotkowski, V.A., Robbins, S.B., & Noeth, R.J. (2004). *The role of academic and non-academic factors in improving college retention*. Iowa City, IA: ACT, Inc.

a.2. Presentations

National Academic and Advising Association, Annual conference, Cincinnati, OH. October, 2004. Paper entitled *The role of academic and non-academic factors in improving college retention*.

a.3. Service Activities

Dr. Lotkowski has mentored young women, primarily from the Portuguese, Hispanic and Indo-Caribbean communities between the ages 16-29 and helped them learn skills to re-enter the educational system and/or the labor force; offered guidance, counseling, and support on a variety of issues, such as career and educational options, financial matters, and family and personal issues. Dr. Lotkowski has also worked with the *Physical Inactivity Working Group* to develop a multi-strategy program model to maximize young children's (ages 3-8) physical activity across ethno-racially diverse communities.

b. Tammie Cumming

Tammie Cumming is the Executive Director of the National Learning and Achievement Organization and leader of its Student Recognition and Accessibility team. Tammie received her Ph.D. from the University of Iowa in Educational Measurement and Statistics and her M.A.E. from the University of Florida in Educational Research Methodology. Dr. Cumming brings considerable experience and expertise to this project. She has been involved in large-scale assessments and research projects for over 15 years, initially while at the University of Iowa and ACT, Inc. and currently at the National Learning and Achievement Organization. As the Executive Director for the National Learning and Achievement Organization, Dr. Cumming is responsible for managing a staff of over a dozen researchers. Most recently, the National Learning and Achievement Organization was invited by the Bill and Melinda Gates Foundation to participate as a coalition member in their national education campaign, STAND UP, devoted to increasing awareness of educational problems and raising high school graduation rates.

Throughout the years, Dr. Cumming has worked with a variety of clients and has fostered successful, cordial, and professional working relationships with clients in a variety of research projects. Prior to her employment at the National Learning and Achievement Organization, she served as the Program Manager for the K-12 Assessment Programs to develop an end-of-course biology exam for the Department of Defense Education Activity (DODEA). In this role, she managed the development of an electronically delivered high-school level biology test, and also facilitated several range-finding and scoring calibration sessions with external subject-matter consultants. Dr. Cumming also led her team to develop a winning proposal to define the framework and specifications for the National Assessment of Educational Progress (NAEP) 2011 writing test.

Prior to Dr. Cumming's responsibilities in management at ACT, she was charged with providing psychometric support for ACT's Educational and Social Research service group. In her duties supporting ACT programs, Dr. Cumming was primarily responsible for the design, statistical analyses, and dissemination of research results. She was responsible for consulting with numerous statewide systems in higher education and made presentations to the Board of Regents of the states she served.

b.1. Honors and Distinctions

Advisory Committee on Student Financial Assistance public hearing, December 2006. Invited participant.

Congressional Medal of Distinction recipient, October 2006. Awarded for outstanding leadership in business and outstanding contributions to the local economy.

b.2. Select Publications

- Cumming, T. & Dunbar, S. (in progress). Psychometric Issues in Assessing Driver's Performance in a Simulation Environment. *Measurement of Problem Solving Using Simulations*, Lawrence Erlbaum Associates.
- Porter, J., Blose, G., Valiga, M., & Cumming, T. (submitted) Controlling for Random Respondent Behavior in a Large, Multiple-Institution Student Survey. *Research in Higher Education*.
- Cumming, T. (2003). Reliability Issues in a Complex Simulation Environment. *Doctoral Dissertation*.
- Breland, H., Maxey, J., Gernand, R., Cumming, T., and Trapani, C. (2000). Trends in College Admission 2000. Research Report, *Association for Institutional Research*.
- Bloomfield, J., Grant, A., Levitan, L, Christensen, M., Cumming, T., Brown, T., Reinach, S., & Watson, G. (1999). Driving Performance and Commuting via an Automated Highway System. Federal Highway Administration Technical Report No. FHWA-RD-96-185. McLean, VA: Turner-Fairbank Highway Research Center.
- Mollenhaur, M., McGehee, D., Cumming, T., & Dingus, T. (1999). ADVANCE Safety Evaluation. The Volpe National Transportation Systems Center, Report No. DTRS-57-93-D-00100.
- Bloomfield, J., Grant, A., Levitan, L, Cumming, T., Maddhi, S., Brown, T., & Reinach, S. (1998). Using an Automated Speed, Steering, and Gap Control System and a Collision Warning System when Driving in Fog. Federal Highway Administration Technical Report No. FHWA-DHTFH61-92-C-00100. McLean, VA: Turner-Fairbank Highway Research Center.

b.3. Conference Paper Presentations

- Zhao, X., Cumming, T., & Valiga, M. (2006). Investigating the Factorial Structure and Measurement Invariance of Student Satisfaction across Ethnical and Gender Groups: Results from a National Two-Year College Student Sample. *American Educational Research Association*, San Francisco, CA.
- Zhao, X., Cumming, T., & Ying, P. (2006). Using Univariate and Multivariate Generalizability Theory to Estimate Score Reliability of Student Satisfaction. *American Educational Research Association*, San Francisco, CA.
- Harris, D., Cumming, T., & Sanclemente, J. (2005). Tips for Graduate Students: Advice for Finishing School, Obtaining a Job, and Starting a Career. Training Session presented at the *Annual Meeting of the National Council on Measurement in Education*, Montreal, Canada.
- Porter, J., Blose, G., Valiga, M., & Cumming, T. (2004). Controlling for Random Respondent Behavior in a Large, Multiple-Institution Student Survey. Paper presented at the *Annual Meeting of the Association of Institutional Researchers*, Boston, MA.
- Cumming, T., & Rizzo, M. (1999). Reliability of driving performance measures across upgrades to a high-fidelity motion-based simulator. Paper presented at the *Annual Meeting of the International Symposium on Automotive Technology and Automation*, Dusseldorf, Germany.
- Rizzo, M., Cumming, T., Anderson, S., & Nawrot, M. (1998). Visual function profiles in Alzheimer's Disease. Paper presented at the *Annual Meeting of ARVO*, Fort Lauderdale, FL.
- Rizzo, M., Cumming, T., Laird, K., & Nawrot, M. (1998). Visual function profiles in mild to moderate Alzheimer's Disease. Paper presented at the *Ninth Annual Meeting of American Neuropsychological Society*, Honolulu, HI.

Rizzo, M., McGehee, D., Dawson, J., & Cumming, T., (1998, February). Simulated intersection collisions in drivers with Alzheimer's disease. Paper presented at the *Ninth Annual Meeting of American Neuropsychological Society*, Honolulu, HI.

Rizzo, M., McGehee, D., Cumming, T., Dawson, J., & Laird, K. (1997, May). Simulated crashes at intersections in drivers with Alzheimer's disease. Paper presented at *the Annual Meeting of the American Neurological Association*, San Francisco, CA.

Bloomfield, J., Cumming, T., Grant, A., Levitan, L., & Brown, T. (1997, September). Driving Performance when commuting via an automated highway system. Paper presented at the *Annual International Conference on Vision in Vehicles*, Marseilles, France.

Cumming, T. & Watson, G. (1996, January). Simulator Validation: Theory and Practice for Human Performance Assessment. Paper presented at *the Annual Proceedings of the Transportation Research Board National Conference*, Washington, D.C.

b.4. Discussant

To Respond or Not to Respond: Factors Influencing Responses to Surveys. Paper session at the Annual Meeting of the *American Educational Research Association*, Montreal, Canada, April 2005.

Issues involving measurement properties of data collected in high-fidelity, motion-based simulators (National Advanced Driving Simulator, Iowa Driving Simulator, and Daimler-Chrysler Simulator). Paper session at the *Annual Meeting of the International Symposium on Automotive Technology and Automation*, sponsored by the National Highway Traffic Safety Administration, Dusseldorf, Germany, July 1999.

Validity and Reliability issues arising with simulation environments and driving performance data collection. Paper session at the *Annual Meeting of the Transportation Research Board*, Washington, DC, January 1997.

b.5. Computer Experience

SAS, SPSS, Multilog, Bilog, GENOVA, Microsoft Office (Access, Powerpoint, Excel, Word), Exceed, Ultraedit

b.6. Professional Organizations

American Association of Community Colleges
American Educational Research Association
Council for the Study of Community Colleges
National College Access Network
National Council on Measurement in Education
National Scholarship Providers Association

7. Budget

a. Itemized Budget

The National Learning and Achievement Organization, Inc.

2007 AIR/NPEC RESEARCH GRANT

First-Generation Community College Students:
The Impact of College Experiences and Outcomes on Educational Attainment

Timeline: June 1, 2007 through May 31, 2008

Salaries and Fringe

Veronica Lotkowski	18.5% Effort, \$54,000 base salary	\$9,990
Tammie Cumming	14.0% Effort, \$72,000 base salary	\$10,080
Salary Sub-total		\$20,070
<i>Fringe</i>	26% of salary	\$5,218
Total Salaries and Fringe:		\$25,288

Travel to Conferences

American Association of Community Colleges Convention		\$1,515
Air Travel	\$500	
2 nights lodging	\$320	
Registration Fee	\$695	
Council for the Study of Community Colleges		\$445
Air Travel	conference is held prior to AACC convention so air travel won't be calculated	
2 nights lodging	\$320	
Registration Fee	\$125	
AIR Annual Forum		\$1,350
Air Travel	\$500	
2 nights lodging	\$320	
Registration Fee	\$530	
Total Travel:		\$3,310

Other Direct Costs

Editing of publishable material	12 hours at \$60/hour	\$720
Materials and Supplies	\$42/month for 12 months	\$504
Total of Other Direct Costs:		\$1,224

TOTAL AMOUNT OF AWARD: \$29,822

b. Budget Justification

b.1. Project Timeline

The proposed study takes place over a period of 12-months, with an anticipated beginning date of June 1, 2007 and will end on May 31, 2008. The estimated total project amount sought from AIR/NPEC is \$29,822. This total reflects the salaries and fringe for the personnel described below, traveling to professional conferences, the editing of reports and publishable material, and materials and supplies.

b.2. Personnel

Veronica Lotkowski, the Principal Investigator for the proposed project, will spend 18.5 percent of her FTE total hours for the year on this project. She will be co-responsible for the overall guidance of the project, analyze the results of the analyses, write reports and journal articles, write proposals for participation in professional conferences, and prepare presentations of the research project. Salary projections in the proposed budget adhere to the salary schedule of the National Learning and Achievement Organization. Based on the rate of pay of the Principal Investigator, the amount needed for the one-year period equals \$9,980. Fringe benefits and health insurance cover FICA, retirement, and insurance for staff. Fringe benefits and health insurance for the one-year period total \$2,597 for the Principal Investigator.

Tammie Cumming, the Co-Principal Investigator for the proposed project, will spend 14 percent of her FTE total hours for the year on this project. She will be co-responsible for the overall guidance of the project, manage the data, conduct all statistical analyses, and assist Dr. Lotkowski with the interpretation of the results. Salary projections in the proposed budget adhere to the salary schedule of the National Learning and Achievement Organization. Based on the rate of pay of the Co-Principal Investigator, the amount needed for the one-year period equals \$10,080. Fringe benefits and health insurance cover FICA, retirement, and insurance for staff. Fringe benefits and health insurance for the one-year period total \$2,621 for the Co-Principal Investigator.

b.3 Travel

Travel expenditures are requested in the amount of \$3,310 to cover the costs of presenting the findings of this study at the 2008 Council for the Study of Community College Annual Conference/2008 American Association

of Community Colleges Convention, which are held in conjunction, as well as the 2008 Annual Forum of the AIR. All expenses included in this item are based on actual expenditures from attending these conferences in the past.

b.4. Other Direct Costs

The principal investigator will photocopy library materials and other research-based information to gain additional perspectives and complete the project. A monthly general supplies budget is also requested for photocopying, paper, inkjet cartridges, and mailing expenses. This budget also includes the services of an editor that will help us to prepare the reports and manuscripts for publication. The total amount requested for these other direct costs is \$1,224.

8. Current and Pending Outside Support

Tammie Cumming

Source: Coca-Cola Scholars Foundation

Project: *Evaluation of the Coca-Cola Scholarship Program's Selection Algorithm*

Duration: March – June 2007

Source: ASPIRE

Project: *A longitudinal evaluation of the ASPIRE program.*

Duration: April – October 2007

9. Facilities, Equipment, and Other Resources

Headquarters Facilities

The National Learning and Achievement Organization Headquarters are located in Iowa City, Iowa, which is also home to the University of Iowa. Iowa City is served by a major regional airport 25 miles to the north in Cedar Rapids. The Iowa City facilities include resources made available through the University of Iowa to meet the National Learning and Achievement Organization's specifications and to accommodate the National Learning and Achievement Organization programs. Our facility is protected by a system designed to detect intruders as well as fire and smoke.

Legal Issues in Education

Years of experience of our staff have given the National Learning and Achievement Organization an acute awareness of key legal issues in education. The National Learning and Achievement Organization is scrupulous about adhering to ethical, legal, and professional standards. To ensure that our work complies with *The Standards for Educational and Psychological Testing of the American Educational Research Association, American Psychological Association, and National Council on Measurement in Education*, we engage in technically sound and legally defensible practices. These procedures have been uniformly successful in providing substantive support based on the most current research in the field of psychometrics and educational measurement.

Technology Resources

The use of state-of-the-art technology has enabled the National Learning and Achievement Organization to begin development of a large-scale educational program on a national level. Our computer facilities are housed in a raised-floor, controlled-environment and employ some of the most advanced technologies for data analysis available. Our computing network supports the needs of technical, professional, and executive staff, including communications, file and print sharing, database accesses, internet and intranet applications, and mass storage of data. It also supports a complex electronic messaging system that enables communications between all of the National Learning and Achievement Organization staff, nationwide, and its clients. The National Learning and Achievement Organization's computing environment also provides firewalls and other security tools to help maintain the integrity of our host and network. The National Learning and Achievement Organization provides its staff with a wide variety of software tools, including word processing, spreadsheets, graphics, specialized statistical software, and electronic mail. In addition, proprietary software for specialized applications is also used.