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Katherine M. Conway

Given the rapid influx of immigrants to the United States, both legal and illegal, in numbers well in excess of 1 million per year (Malone, Baluja, Costanzo, & Davis, 2003; U.S. Census Bureau, 2005), the high birth rate among immigrants (Camarota, 2005), and the low level of high school attainment for many immigrants (Vernez & Abrahamse, 1996; Fix, Passel, Enchautegui, & Zimmerman, 1994), the future of higher education in the United States may well depend on our ability to address the needs of the immigrant student or the student who is a child of immigrants. By 2005, immigrants accounted for slightly more than 12% of the U.S. population but constituted an even larger share of the school-age population due to the younger average age of immigrants and their higher than average birth rates. In 2000, 16.3% of the school-age population (ages 5–17) were immigrants or the children of immigrants (Camarota, 2001). Yet although children of immigrants are the fastest-growing segment of the school-age population (Hernandez, 1999) and although immigrants continue to arrive in increasing numbers, little research exists on immigrant students (Bailey & Weininger, 2002; Zhou, 1997) and data are lacking on immigrant college students. Research shows that immigrants enroll in higher education at a higher rate than their native-born peers and are 20% more likely to begin at a community college; but

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even these data are more than a decade old and reflect the fact that many institutions do not track immigrant students (Gray & Vernez, 1996; Vernez & Abrahamse, 1996). The dearth of research on immigrant students is even more surprising in light of the ongoing political debate surrounding immigration reform, at both the state and federal level.

The importance of immigrants and their children in higher education is most evident in the ongoing struggle to pass the DREAM (Development, Relief, and Education for Alien Minors) Act. During the period when I was conducting this research, federal legislators continued to argue the merits of the DREAM Act, first introduced in 2001. The DREAM Act proposes to give illegal immigrant children who have graduated from U.S. high schools the right to attend U.S. colleges and be eligible for in-state tuition benefits and other financial aid. Each year approximately 65,000 illegal immigrant children graduate from U.S. high schools and are faced with few options for further education because of their illegal status, despite having spent the better part of their lives in the United States through no choice of their own (Dream Act, 2007).

As evidenced by the DREAM Act, immigration is clearly a contentious issue and is complicated by the diversity and dispersion of immigrants throughout the country. Half of the U.S. foreign-born population is from Latin America, led by Mexico, Cuba, the Dominican Republic, and El Salvador. Twenty-seven percent are from Asia, led by the Philippines, China, Vietnam, and India. The remaining fifth are from Europe (U.S. Census Bureau, 2002). While immigrants arrive from all corners of the globe, the greatest number and fastest-growing group in the United States is from Mexico and now account for almost a third of all U.S. immigrants. Mexican immigrants are also younger and less educated (Hao & Bonstead-Bruns, 1998). Notwithstanding the heterogeneity of new immigrants, they share a belief that education is important and a willingness to sacrifice for their children to achieve educational goals (Portes & Hao, 2004). Half of the immigrants who have arrived since 2000 have settled in five states: California, New York, Texas, Florida, and New Jersey, a marked change from the past when 75–80% of immigrants settled in those states; consequently, there is presently a greater diffusion of immigrants across the country (Perry & Schacter, 2000). Thus, the immigrant issue is nationwide, not solely a condition affecting only certain states or cities.

The impact of this wave of immigrants will be felt not only in the classroom but also in the economy, as immigrants assimilate into society. By 2030 immigrants, legal and illegal, are projected to account for 18% of the U.S. labor force (Lowell, 2006). During the 1970–1990 period, the earnings of unskilled immigrants fell to 64% of the earnings of comparable unskilled native workers (Hao & Bonstead-Bruns, 1998). As the U.S. economy has evolved into a "knowledge" economy with service jobs that demand tech-

nical and informational skills, more jobs than ever require postsecondary education. The gap between high school and college graduates' earnings has widened such that college graduates can expect to earn close to 60% more than high school graduates (NCES, 2007). If immigrants are going to be valued and contributing members of society, then access to and success in postsecondary education is a necessity, not a luxury. Insufficient education is the reason for high levels of immigrant poverty (50% higher than natives) and is the reason that a third of all immigrant-headed households rely on some form of welfare (Camarota, 2007). "An immigrant with less than a high school education has a negative economic impact of $13,000, while a better-educated immigrant produces a long term gain of $198,000" to the economy (*The New Americans*, 1997). Given the economic ramifications, research on the education of immigrants and their children is crucial if policymakers are going to make informed decisions.

The Role of the Community Colleges

Studying immigrants in the community college is particularly important because the community college is the gateway to higher education for 45% of first-time freshmen (Community College Fact Sheet, 2006), but for an even greater proportion of minorities and the underprivileged, both groups that are in large measure made up of immigrants. Hispanics, the largest immigrant group, account for 10% of college students but 14% of community college enrollees (NCES, 2003). Though the community college already plays a vital role in meeting the demand for access to higher education, we can expect the community college's role to expand for several reasons. First, the community college is the most cost-effective provider of higher education, with tuition and fees that are less than half those of public four-year colleges and a tenth of the cost of a private four-year education (*2006–07 College Costs*, 2006). Legislators faced with competing claims on finite resources must try to balance voters' demands for college access against numerous other obligations, ranging from health care to national security. For that reason, many legislators have already made the decision that more students need to be directed to community colleges for the first two years of their baccalaureate education (Anderson, Alfonso, & Sun, 2006; Ruppert, 2001).

Yet even though community colleges are the least expensive option in higher education, as legislators become more concerned about funding costs, community colleges will be under increasing accountability pressures and may be forced to turn away the least prepared students as they attempt to bolster retention, transfer, and graduation rates (Alexander, 2000; Burke, 1997). "It is projected that between 2003 and 2018, 1.8 million students will be turned away from higher education. Of these 1.3 million will be Latinos trying to access the community colleges" (Siqueiros, quoted in Dolan, 2005, p. 50).

Second, in addition to low costs, community colleges will also be the likely destination of immigrant students because of remediation needs. Increasing numbers of college students have remedial needs; and in many cases, the community college provides their only access to higher education. Almost a dozen states have already passed legislation aimed at preventing public four-year colleges from offering remediation (Jenkins & Boswell, 2002). Because two-thirds of high school graduates in the United States currently graduate without the appropriate college preparatory classes (Greene & Winters, 2005) and because ever-increasing numbers of immigrants with ESL (English as a second language) needs are entering college, remediation will continue to be an issue in college admissions.

Third, the legislation challenging many affirmative action programs may result in even fewer minorities at four-year schools and an even greater proportion of minority students at community colleges. Of concern is the U.S. Supreme Court ruling against the University of Michigan which disallowed racial admission preferences at the undergraduate level (Levey, 2003). Given that many minority students are also immigrants, a disproportionate share of immigrants will attend community colleges (Leinbach, 2005).

If our higher education system cannot accommodate the increasing numbers of students who want to attend college, it will be a loss, not just for those students, but also for society. Most research supports the claim that returns to society are high enough to justify the cost of postsecondary education even for students who do not attain the degree (Grubb, 1999; Kane & Rouse, 1999). Students who attend college have lower levels of unemployment and less incidence of poverty. They report feeling healthier, are less likely to smoke or be imprisoned, and are more likely to be volunteers in their community, to donate blood, and to vote (Baum & Payea, 2005).

THE CONCEPTUAL FRAMEWORK

The framework for this study relies on numerous theoretical models of persistence (Bean & Metzner, 1985; Nora & Cabrera, 1996; Tinto 1975, 1986, 1993), to identify the independent variables used in the regression. Tinto stated that students enter college with a variety of background characteristics, which include personal attributes, family demographics, and academic preparation, as well as intent to attend and graduate from college. Over time, these intentions change as students interact with others in the academic setting and with the institution (Tinto, 1975, 1986, 1993). Positive interactions lead to greater integration and thus commitment, while negative interactions lead to less integration, less commitment, and ultimately to dropping out.

Tinto examined traditional students in four-year programs; but later research, drawing on models of organizational turnover, has specifically

addressed the non-traditional student and given greater weight to external forces. Because commuter students spend less time on campus, the impact of external forces is more significant in the Student Departure Model (Bean & Metzner, 1985; Metzner & Bean, 1987). Nora and Cabrera (1996) developed a Student Adjustment Model based on the similarities between the earlier models, and including issues such as employment, financial aid (Cabrera, Nora, & Castenada, 1993), and encouragement from friends and family (Nora, 1987).

Figure 1, the Model of Immigrant and Native Student Persistence, presents five groups of variables: Personal Attributes (gender, ethnicity, immigration status); High School Preparation (high school type and high school average); Academic Skills (the need for remediation in reading, writing, or math; ESL); Demands and Resources (parental responsibilities, income, full-time or part-time status); and Educational Aspirations (initial desire to attend either a senior or community college, planned program of study and degree type) which then are mediated by Institutional Factors (availability of remediation, counseling services, etc.). When the factors interact, there is a presumed effect on the students that may either hinder or encourage their persistence. Research support for the inclusion of the variables in the model follows.

Research has shown that women are more likely than men to pursue higher education, to persist (Freeman, 2005; Kim & Sedlacek, 1996; Voorhees, 1986), and to achieve higher GPA's (Chee, 2005), while Black and Hispanic students are more prone to drop out (Carter & Wilson, 1994; Porter, 1990). High school performance has been found to be a significant predictor of college performance (Hoffman & Lowitzki, 2005; Noble & Sawyer, 2002), and higher high school averages are positively correlated with persistence (Cejda & Rewey, 1998; Graham & Hughes, 1994; Pigge & Marso, 1992). Research on the success of students who take the general equivalency diploma (GED) versus earning a high school diploma is mixed (Beltzer, 1985; Cameron & Heckman, 1993; Murnane, Willett, & Boudett, 1997; Murnane, Willett, & Tyler, 2000), though the benefits of a rigorous high school diploma point clearly to college success (Adelman, 2006). Drop-out rates increase proportionately to the number of remedial courses a student is required to take (*Engaging Students*, 2005), but students who require remediation and get it early in their careers show greater persistence (Campbell & Blakey, 1996).

Research on bilingualism is mixed. Some studies show that bilingual students perform better in school (Bankston & Zhou, 1995; Hakuta, 1986; Rumbaut, 1995) while other research suggests that bilingual students perform no better or worse than monolingual students (Mouw & Xie, 1999), while one study shows that, in some cases, speaking Spanish depresses academic achievement (Lopez, 1976). Some research suggests that "only

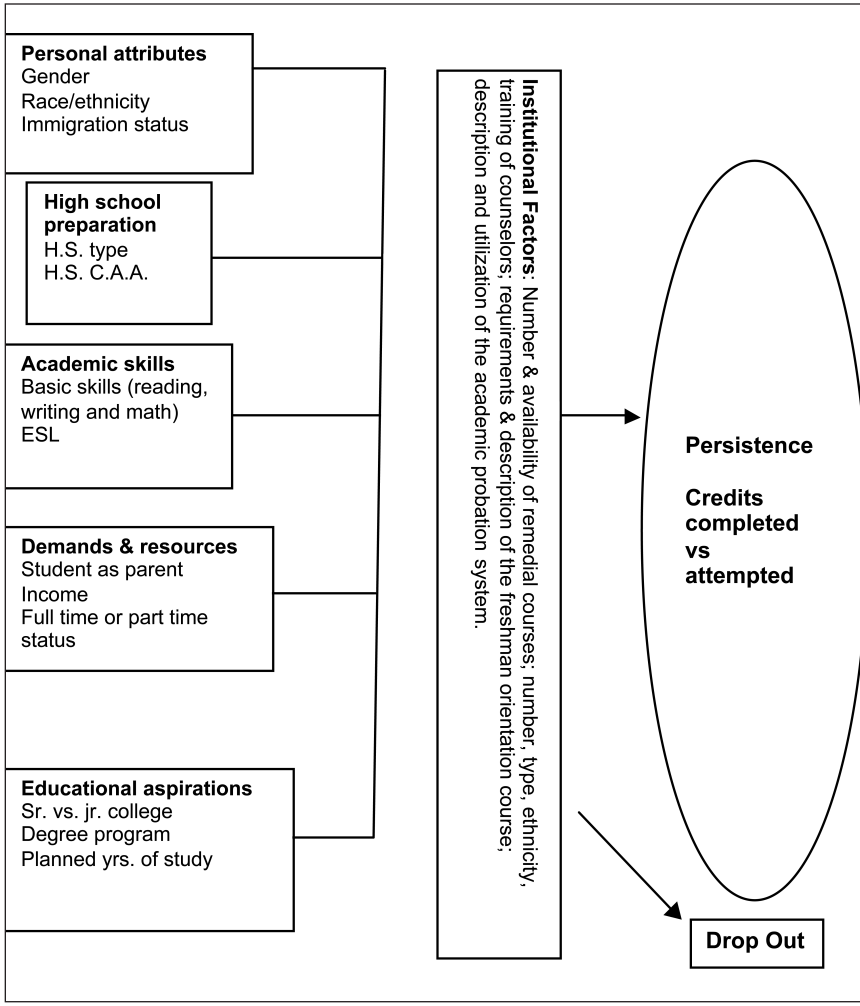

Figure 1. Model of Immigrant and Native Student Persistence.

15–25% of academic departures arise because of academic failures" (Tinto, 1993, pp. 81–82) and that a more serious concern is competing demands for the student's attention, such as family and work, that hinder their academic progress (Bean & Metzner, 1985; Stewart, Merril & Saluri, 1985). Adelman (2006) found that being a teenage parent was third behind socioeconomic status (SES) and parental income in negatively impacting postsecondary success. While some research suggests that part-time status is an indicator of potential attrition (Horn, 1998), others view part-time status as a choice

made after consideration of employment opportunities (Stratton, O'Toole, & Wetzel, 2003). Evidence supports the premise that having clear goals contributes to persistence (Astin, 1977, 1985; Tinto, 1975, 1986); consequently, indecision in choosing a degree program and college can hinder persistence. Redirection to a community college following application to a senior college was found to increase the likelihood of drop-out (Alba & Lavin, 1981), which the authors attributed to students becoming discouraged.

The continuous dependent variable, persistence, was measured as the number of real (non-remedial) credits completed as a proportion of the real credits attempted. Using the ratio (real credits completed/real credits attempted) and focusing only on real credits in both the numerator and the denominator, does not disadvantage students who attend part-time versus full-time, or students who are required to complete remedial credits. Persistence is a continuous variable that can range from zero (numerator 0 credits completed/denominator X number of credits attempted) to 1 (completing 100% of credits attempted).

The Research Questions

The purpose of this study was to add to the research on immigrants in higher education by exploring immigrant students and child-of-immigrant students in an urban community college. The research examined four student types: native students (native students born to native parents), first-generation native students (native students born to immigrant parents), U.S. high-schooled immigrants (foreign-born students who attended high school in the United States) and foreign high-schooled immigrant students, in an effort to explore two questions: (a) What are the characteristics (age, gender, ethnicity, immigration status, language skills, and academic ability/preparation) of students enrolled in an urban community college? and (b) Do persistence patterns, defined as the ratio of credits earned versus the number of credits attempted differ among student groups enrolled in an urban community college?

Method

The study used admissions data, and course enrollment and performance data merged with data from the ACT Asset Educational Planning Form ("ACT form") for the 2002 freshman cohort at a large northeastern urban community college. The variables were added to the regression models in blocks as shown in Figure 1. A detailed list of the variables and the data source appears in Appendix A. The sample was limited to traditional-age (18–24) students. As shown in Figure 2, from a freshman class of 3,280, I

identified the sample group of 1,667 students and classified it into the four groups: native students, first-generation native students, U.S. high-schooled immigrant students, and foreign high-schooled immigrant students.

The first research question, which sought to identify characteristics of the students and their academic aspirations, was answered by descriptive statistics (means, frequencies, and standard deviations). At the next step, I computed ANOVAs (analyses of variance). Where the variance among means was greater than expected, I ran post-hoc tests using Tukey HSD, Scheffe, and Bonferroni. At the next stage, I created pair-wise correlation matrices, one for the entire sample group, then individual matrices for each student group (natives, first-generation natives, U.S. high-schooled immigrants, and foreign high-schooled immigrants), to examine multicollinearity. During the stage of pair-wise correlation, the total number of cases examined dropped from N = 1,667 to a range of N = 1,213–1,506, depending on the variables, but remaining well within recommended sample sizes (Lawley & Maxwell, 1971; Long, 1997; Tabachnick & Fidell, 1996).

For the second research question, I used ordinary least squares (OLS) step-wise regression to explore persistence as measured by the ratio of credits completed versus attempted. OLS regression is widely known and easy to understand (Cabrera, 1994). The model of OLS is as follows:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_K X_{Ki} + \varepsilon_i$$

where Y is the dependent variables and X are the independent variables, α is the Y intercept, βs are slope parameters, and ε is the error term.

The Institutional Setting

The setting for this study was an urban community college located near the downtown business district of a large metropolitan area. Students commute by public transportation from throughout the metropolitan area. The student body is diverse, with students claiming ancestry from more than 100 countries. With more than 18,000 enrolled students, the college is classified as a community mega-connector college (enrollment = 10,000+) by the Department of Education's Integrated Postsecondary System (IPEDS) classification. Three-quarters of the students are enrolled in degree programs, with the remainder in continuing education classes. Studying students at a single institution may limit the applicability of these findings to other institutions; however, as Nora and Cabrera (1996) note, "Studying students at a single institution as opposed to multiple institutions controls for several threats to internal validity. Students are more likely to have been exposed to similar conditions with regard to course requirements, the faculty, and academic staff with whom they must interact, and with other institutional elements" (pp. 138–139).

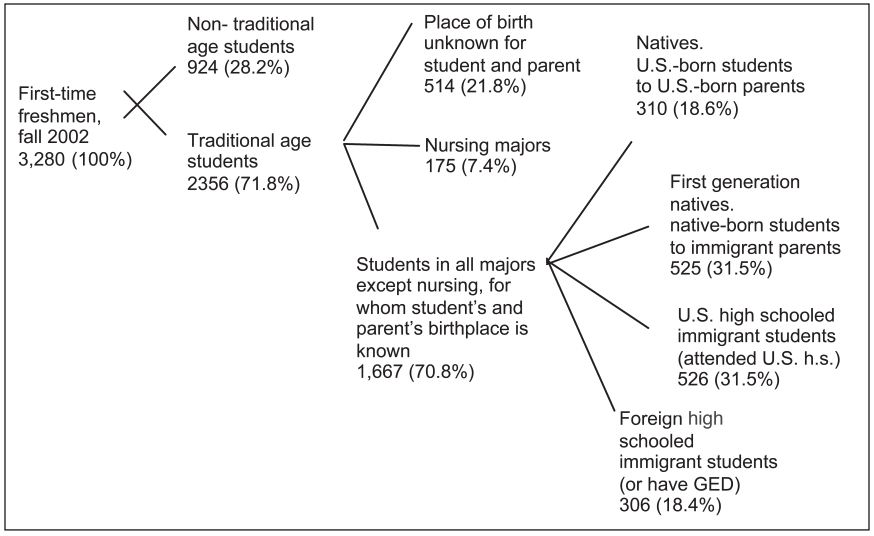

Figure 2. Schematic Breakdown of First Time Freshmen Population, Fall 2002.

Results

The students in this study shared some characteristics in that most were students of color, although the country of origin for the students varied across student groups reflecting changing immigration patterns to the city (studied) over time. As Table 1 displays, there were significant differences between the native and immigrant student groups at the $p > .01$ level on three variables: full/part-time status, remediation needs, and credit completion. Most students enrolled full-time, with most students switching to part-time status after the first year, although immigrants continued full-time to a greater extent than native students. Upon entry, 80% of the students in this sample needed some type of remediation. Native students needed more math remediation, and immigrants needed more reading or writing remediation, probably due to the fact that a greater proportion of immigrant students were ESL speakers.

Research Question 1: What are the characteristics (age, gender, ethnicity, immigration status, language skills, and academic ability/preparation) of students enrolled in this urban community college?

This study focused on traditional-age students in four groups: native students, first-generation native students, U.S. high-schooled immigrant students, and foreign high-schooled immigrant students. As shown in Table 2, in all four student groups, women constituted the majority, a finding consistent with national data for community colleges which report that

TABLE 1

SUMMARY OF POST HOC TESTS SHOWING SIGNIFICANT RESULTS

Dependent Variable	*Student Group (1)*	*Student Group (2)*	*Mean Difference (1-2)*		
			Tukey HSD	*Scheffe*	*Bonferroni*
Age	Foreign high school immigrant	Natives	1.51***	1.51***	1.51***
	Foreign high school immigrant	1st generation natives	1.63***	1.63***	1.63***
	Foreign high school immigrant	U.S.H.S. immigrant	1.57***	1.57***	1.57***
No. of basic skills tests passed[1]	Natives	U.S.H.S. immigrant	0.31**	0.31**	0.31**
	Natives	Foreign H. S. immigrant	0.29**	0.29*	0.29**
No. of FT semesters attended	Natives	1st generation natives	-0.35*	-0.35	-0.35*
	Natives	U.S.H.S. immigrant	-0.85***	-0.85***	-0.85***
	Natives	Foreign H. S. immigrant	-0.89***	-0.89***	-0.89***
	1st generation natives	U.S.H.S. immigrant	-0.50***	-0.50***	-0.50***
	1st generation natives	Foreign H. S. immigrant	-0.54***	-0.54**	-0.54***
# of Semesters on probation[2]	Natives	1st generation natives	-0.27**	-0.27*	-0.27*
	Natives	Foreign H. S. immigrant	0.55***	0.55***	0.55***

[1]Based on 1,341 cases.
[2]Excludes 49 students from immigration breakdown cohort whose GPA is unknown.

Dependent Variable	*Student Group (1)*	*Student Group (2)*	*Mean Difference (1-2)*		
	1st generation natives	U.S.H.S. immigrant	0.39***	0.39***	0.39***
	1st generation natives	Foreign H. S. immigrant	0.82***	0.82***	0.82***
	U.S.H.S. immigrants	Foreign H. S. immigrant	0.43***	0.43***	0.43***
No. of credits completed/					
attempted after 6 semesters[3]	Natives	U.S.H.S. immigrant	0.151***	-0.151***	-0.151***
	Natives	Foreign H. S. immigrant	0.205***	-0.205***	-0.205***
	1st generation natives	U.S.H.S. immigrant	0.156***	-0.156***	-0.156***
	1st generation natives	Foreign H. S. immigrant	0.210***	-0.210***	-0.210***

[3]Excludes 65 students from immigration breakdown cohort whose credits attempted were zero.
* $p < .05$, ** $p < .01$, *** $p < .001$

TABLE 2

DISTRIBUTION OF PERSONAL ATTRIBUTES/ACADEMIC PREPARATION BY STUDENT TYPE BY PERCENTAGE

	Native Students	*First Generation Native Students*	*U.S. High Schooled Immigrant Students*	*Foreign High Schooled Immigrant Students*	*Total (%)*
Total N	310	525	526	306	1,667
Female (%)	60.0	50.5	56.8	55.2	55.1
White (%)	24.2	9.3	14.4	19.9	15.7
Black	54.5	25.3	27.6	31.4	32.6
Hispanic	20.6	55.6	36.9	18.3	36.4
Asian/Pacific Islander	.6	9.7	21.1	30.4	15.4
U.S. citizen (%)	100.0	100.0	43.5	18.3	67.2
Perm. resident	---	---	45.1	26.8	19.1
GED	16.6	17.6	---	32.1	14.3
Passed no basic skills tests	9.3	14.5	25.5	15.1	17.2
ESL	11.0	21.0	51.9	56.9	35.5

59% of community college students are female (*Community College Fact Sheet*, 2006). Unlike their national counterparts, however, students in the study were much more likely to be minorities. Approximately a third of the sample group self-identified as Black, an additional third as Hispanic, and 15% Asian, making a total minority of 85%.

While the native students were, by definition, U.S. citizens, the immigrant students were more likely to be permanent residents or student visa holders. A third of the sample group was non-citizens compared to 8% nationally (*Community College Fact Sheet*, 2006).

Among the native students and the U.S. high-schooled immigrants, the majority had attended a public high school in the metropolitan area where the community college is located. Length of residency seemed to impact high school location. More natives than first-generation natives had attended public schools outside the metropolitan area or even outside the state, with both types of native students attending more non-metropolitan public high schools than among U.S. high-schooled immigrant students.

A sizeable proportion of the sample group took the GED exam in lieu of a high school diploma: 17–18% of natives contrasted to nearly a third of foreign high-schooled immigrant students. The overall total—14% of the sample group taking the GED—is on a par with nationwide data (Cameron & Heckman, 1993).

More than half of the immigrant students in the sample were ESL speakers, compared to 11% of the native students and 21% of the first-generation native students. A third of the total college freshman class spoke English as a second language. This ESL pattern is indicative of migratory patterns generally; native students are least likely to need ESL, followed in frequency by students born to immigrant parents, then by immigrant students who have lived here long enough to attend U.S. high school, and finally by the most recent group—immigrants who attended high school abroad. As expected, the most popular language by far, was Spanish, given the predominance of immigrants from Latin America.

In addition to ESL needs, students in the sample group had other remediation needs. Overall, slightly less than 20% of the sample group passed the exams that would exempt them from reading, writing, and math remediation; in other words, more than 80% of students needed remediation. Almost a third of the sample group passed only one remediation test. The largest number of students needed writing remediation, followed by math, and, last, by reading. Native students had the highest exemption rate; 25% in that group passed all three exams, compared to 19% for first-generation native students and U.S. high-schooled immigrant students. Foreign high-schooled immigrant students needed the most remediation; only 14% of those students passed all three exams. The results were more disparate by

subject area, however. In math, the foreign high-schooled students outperformed the other three student groups, while in writing foreign high-schooled students performed least well.

Research Question Two: Do persistence patterns, defined as the ratio of credits earned versus the number of credits attempted, differ among student groups enrolled in this urban community college?

I ran two persistence regression models for each of the four student groups. The variables that showed a significant effect were largely unchanged between the second semester and the sixth semester regression for each group of students. I measured persistence as the ratio of real credits completed to real credits attempted.

A variable that contributed to persistence across student groups was holding a high school diploma versus the GED. Having a high school diploma was positively related to persistence for three of the four student groups. The group of U.S. high-schooled immigrants, by definition, had earned a U.S. high school diploma and so contained no GED holders.

The college admissions average was a significant variable for two of the four student groups, while basic skills proficiency was significant for the other two student groups. Both were indicators of pre-college academic preparation. The college admissions average (equivalent to high school GPA in the university system studied) was positively associated with persistence for native students and U.S. high-schooled immigrant students. This average was not, however, a significant variable for first-generation native students and foreign high-schooled immigrant students, the groups with, respectively, the lowest and highest mean college admissions average scores. For these two student groups, a positive correlation with basic skills proficiency seemed to displace the college admissions average variable in the model.

Gender was significant for only one student group: being female was a significant positive variable for native students. Race/ethnicity was significant for native students; being Black was negatively correlated with persistence, while in the group of U.S. high-schooled immigrants, being Hispanic was a significant negative variable. Given the large numbers of Black and Hispanic students in each of the four student groups, it isn't entirely clear why only certain student groups would be impacted. Only the native student group had a majority of students who self-identified as Black (54.5%). There is no obvious answer why being Hispanic would be detrimental to only the U.S. high-schooled group, particularly when a majority of the first-generation native student group was Hispanic (55.6%).

It is possible that being an ESL student hindered the amount of material that U.S. high-schooled Hispanic immigrants learned in high school. While a proportion of the Hispanic native students were ESL, this group was smaller in number than the ESL speakers among the immigrant students.

The native students' better English skills aided in their mastery of subject matter (e.g., science, history) in English and the foreign high-schooled immigrants learned the subject matter in their native tongue, leaving the U.S. high-schooled immigrants at the greatest disadvantage. U.S. high-schooled immigrants were more likely to be ESL and were studying the subject matter in English. Also, the U.S. high-schooled group contained a greater proportion of Mexican immigrants than any other group (8.4%); in general, immigrants from Mexico have low levels of academic preparation. The foreign high-schooled group contained a large proportion of immigrants from Central and Latin America, particularly Colombia and Ecuador, who are also historically undereducated and ill-prepared for postsecondary education (Waldinger & Gilbertson, 1994).

I found that enrollment in a transfer program was negatively correlated with persistence for the native students and positively correlated for the first-generation native students, but enrollment type had no bearing on the models for the two immigrant groups. Given the higher math scores in many transfer programs and the lower math preparation of native students on entry, there might be a connection between math ability, program choice and persistence. For first-generation students, the positive correlation between enrollment in a transfer program and persistence might represent their level of commitment to the goal of attaining a baccalaureate.

Discussion

Given the large and growing number of minority students attending community colleges, the data from this overwhelmingly minority sample are a good case study for what the future of higher education may look like. Nationally, minority students are more likely to attend a community college, with 47% of Black college students, 55% of Hispanic students, and 47% of Asian/Pacific Islander students nationwide enrolled at community colleges; minorities in the aggregate account for 34% of community college enrollment (*Community College Fact Sheet*, 2006). For the decade ending in 2004, Hispanics had the largest gains in college enrollments—up 67% to 1.7 million students. African Americans remain the largest minority group enrolled with 2 million students, an increase of 44% during the same 10-year period (Cook & Cordova, 2007). Unfortunately, growing minority enrollment access does not equate to success. My finding that Black and Hispanic students are less likely to persist is consistent with other research (Carter & Wilson, 1994; NCES, 2003).

My research showed that native women were more likely to persist, a finding supported by other research on female persistence (Kim & Sedlacek, 1996; Voorhees, 1986); however, there may be a negative effect for female

immigrants and the daughters of immigrants, a finding supported by some research (Tillman, Guo, & Harris, 2006). For first-generation native students with immigrant parents and both groups of immigrant students, being female was not a significant variable for persistence. At least one study found that being Hispanic and female was a detriment to persistence because women were more likely to have domestic responsibilities, combined with negative family expectations for higher education (Olivas, Chacon, Cohen, & Trover, 1986). Those findings are consistent with this study's data, which show that the group with the greatest proportion of Hispanic students is also the group (first-generation native students) with the smallest proportion of female students.

While overall immigrants needed more assistance initially with remediation, much of this need may be attributed to language deficiencies; immigrant students had better high school grades. Nationally, 47 million people (18% of those age five and older) reported speaking a language other than English at home on the 2000 census, an increase of 4% or 15 million people in a decade (Schmidley, 2001). After acquiring language facility, or perhaps after acclimating to American educational styles, immigrant students earned higher GPA's and completed more credits by the end of six semesters, as shown in Table 3.

Acculturation or language proficiency are possible factors in immigrant success, as opposed to college coursework per se, since immigrants were less likely to enroll in the required remediation during their first semester, but were more successful in persisting, as measured by the ratio of credits earned versus credits attempted, and by higher grade point averages. Forty-two percent of community college students enter college needing remediation, yet enrollment in remediation often discourages students and increases attrition rates. Some research indicates that the need for reading remediation is the leading predictor that a student will drop out of college (Wirt, Rooney, Hussar, Choy, Provasnik, & Hampden-Thompson, 2005). Immigrant students may be avoiding the discouraging aspect of remediation by delaying coursework until they feel they have mastered the language. A larger proportion of the first-generation native students in this study enrolled in their required remedial course in the first semester compared with the other student groups, so these enrollment decisions may have contributed to their greater persistence in contrast to the native student group. This possibility is supported by research showing that students are more likely to persist when they enroll in remediation early in their college careers (Campbell & Blakey, 1996).

In an environment where high school graduates increasingly need remediation when they enter college, U.S. high school teachers are awarding more A grades than ever before (31.6% in 1997 versus 12.5% in 1969) (Hansen,

Table 3

Numbers of Students Enrolled, GPA Credits Earned, and Graduation Rates by Student Type at the End of the Sixth Semester

	Native Students	*First Gen. Native Students*	*U.S. H.S. Immigrant Students*	*Foreign H.S. Immigrant Students*	*Total*
Starting N	310	525	526	306	1667
Mean cumulative GPA on a 4.0 scale *	2.46	2.34	2.52	2.96	2.54
Mean no. of real credits completed	23.20	25.03	32.77	38.06	29.53
Percent persisting in the community college	.235	.326	.354	.294	.312
Graduates as a percent of starting group	.065	.084	.110	.209	.111
Percent persisting in the university system	.332	.402	.479	.451	.422

*Based on 704 cases.

1998). The gap between high school and college curriculums should be eliminated to avoid the potential for discouragement due to remedial placement. More effort should be made to integrate the K–12 and postsecondary systems to make the transition to college as seamless as possible. Kirst and Venezia (2003) describe the disconnect between high school and college: "Students graduate from high school under one set of standards, and three months later, are required to meet a whole new set of standards for college" (pp. 12–13). A practical step would be aligning state or local requirements for high school graduation with the entrance requirements for the state or community college systems. For example, to receive a high school diploma in the city where the community college is located, a student needs to score 55 or better on the regents' exam (Avitia, 2006); but a student who enrolls in the local community college system with a score below 75 is placed in remedial classes. There are plans to raise the passing score on the regents' exam to 65, but ultimately there should not be a gap. A college-bound high

school student should receive a diploma that satisfies the entrance requirement of the local community college.

This research indicates that native students were the least prepared in math, and national data support the conclusion that students are not taking enough math classes in high school (Adelman, 2006). Furthermore, many community college students did not begin to think about college until it was too late to take the high school math courses required for college (Immerwahr, 2003; Noeth & Wimberly, 2002). A survey and series of focus groups with more than 3,000 eighth, ninth, and tenth graders found that 25% of eighth graders had not thought about college. Among tenth graders who planned to attend college, only two-thirds were taking a college preparatory curriculum (Wimberly & Noeth, 2005). There should be greater coordination between college and middle school (eighth–ninth grades) counseling staff so that students interested in college can be placed on a college preparatory track at the onset of high school.

The data from this study revealed that the longer a student resided in the United States, the greater the likelihood that the student would not attend a public high school. Research has shown that private and parochial high schools have more rigorous graduation requirements than public schools and students in private high school scored higher on standardized tests. Students who attended private school in eighth grade were more likely to attend college and attain a bachelor's degree (Broughman & Swaim, 2006; Dabbs, 2003). Given that native students were more likely to attend a private school and also needed less remediation in college suggests a relationship between high school type and college preparation. Nationally, 71% of students graduate from public high schools and of those, 34% are deemed college ready. There are also stark differences by race: 40% of White students, 23% of Black students, and 20% of Hispanic students graduate "college ready" from the nation's public schools. For the 2002 graduating class, the state in which this community college is located and the second most popular destination of immigrants, had the lowest high school graduation rates among all states with available data, for both Blacks (42%) and Hispanics (36%) (Greene & Winters, 2005). The vast majority of U.S. high school students will continue to attend public schools but more should be done to mimic the successful graduation rates of private and parochial high schools.

Whether students attend a public or a private high school, the mere fact of getting a high school diploma versus a GED is advantageous. In this study, students who held a high school diploma, versus a GED, were more likely to persist across all four student groups. The GED exam, originally intended to enable returning veterans to quickly catch up on missed education and enroll in college, has become an alternative to finishing high school for some students. The test, when initiated, required the applicant to be at least age

20; this threshold was subsequently lowered to age 16 (Chaplin, 1999). The number of test takers in the age 16–19 group is rising; nationally, one in seven high school diplomas issued today is for the GED credential (*Who Took the GED?*, 2002).

Some research has indicated that GED holders are much less likely to attain a baccalaureate degree (Murnane, Willett, & Boudett, 1997; Murnane, Willett, & Tyler, 2000) while other earlier studies have shown that GED holders persist at rates similar to high school diploma holders (Beltzer, 1985; Cameron & Heckman, 1993). Additionally, this research could not differentiate between GED holders according to the language in which they took the exam; it is available in English, Spanish, and French. The impact of offering the GED in languages other than English should be assessed to determine if students who take the non-English exam are benefited or hindered in their efforts to attain a college degree.

While research on the GED and persistence in higher education is mixed, research on the contribution of a strong high school curriculum is not. As Adelman (2006) observes, "The academic intensity of the student's high school curriculum still counts more than anything else in precollegiate history in providing momentum in completing a bachelor's degree" (p. xviii).

High school GPA is a well-documented predictor of college success (Brown & Burkhardt, 1999; Lufi, Parish-Plass, & Cohen, 2003; Mukherjee, 1974), and was found to be positively correlated with persistence for the native and U.S. high-schooled immigrant student groups. GPA was not significant for first-generation native students and foreign high-schooled immigrant students, the groups with respectively the lowest and highest mean college admissions average scores (the equivalent of high school GPA in this study); but for these two groups, basic skills proficiency (the factor that determines remedial placement) was a significant positive factor in persistence.

Overall, this research is consistent with earlier findings (Cabrera, Nora, & Castenada, 1993; Tinto, 1975, 1986, 1993) that show, as contributors to persistence, various background characteristics, pre-college academic preparation, outside demands or resources, and intent to attain a degree. The model showed differences among the four student groups as well as similarities across all groups of students. The most significant difference between student groups was in race and gender and intent to transfer. Being female was positively associated with persistence and being Black was negatively associated with persistence but only for the native student group. Being Hispanic was negatively associated with persistence for the U.S. high-schooled student group only. Intent to transfer, as indicated by enrollment in a transfer program was negatively correlated with persistence for natives

and first-generation native students. Transfer programs' negative correlation to persistence may be connected to inadequate math preparation because the transfer programs studied generally required higher levels of math, and these two student groups had the lowest level of math preparation. Across the four student groups, having a high school diploma and pre-college preparation either in the form of high school GPA or sufficient proficiency in basic skills to avoid remediation were positive factors.

LIMITATIONS

Immigrants

"Immigrant" is a broad classification; and even a focus on "Hispanic" or "Asian" immigrants does not adequately answer questions about those specific ethnic groups, since they are notably heterogeneous (Teranishi, 2002). In my study, the immigrant groups varied within the racial classifications and were also subject to change over time. Across the four student groups, the origin of the Hispanic population in this study shifted geographically over time, as indicated by the changes from one generation of immigrants (natives, to natives with immigrant parents groups—settled in the United States long enough to start a family), to more recent arrivals (the immigrant students who arrived in time to attend U.S. high school), to the most recent arrivals (immigrant students who attended high school abroad). The largest group of Hispanic native students with U.S.-born parents identified largely with Puerto Rico. Native students with Hispanic immigrant parents identified themselves more often as Dominican, followed by Puerto Rican. Immigrant students who attended U.S. high schools identified as Dominican, Ecuadoran, and Mexican, while the most recent Hispanic immigrants were Dominicans to Colombian/Ecuadorian. Because this research focused on differences across immigrant group status, it could not control for differences within specific ethnic groups.

Research on immigrants should also consider that students without citizenship or permanent residency status may be reluctant to provide information and that these groups may therefore seem underrepresented. In this research, a larger proportion of the sample group versus the population of the entire freshmen class were students with less secure forms of immigration status; those with student visas and temporary visas constituted 12.3% of the sample versus 9.5% of the national population. Their sheer numbers mitigated the risk to some extent.

Research on immigrant students that includes neighborhood of residence as a variable would also contribute to the literature on persistence. Hispanics, the largest and fastest-growing immigrant group, increasingly reside in Hispanic enclaves. In 2000, 43% of Hispanics lived in neighborhoods where

there was no necessity to communicate in English (Samuelson, 2006). Some scholars assert that immigrants who live in neighborhoods where English is not the primary language may be hindered in mastering English and thus perform poorly in school because they can easily continue to function socially in their native tongue (Lazear, 1995; Gronquist, 2006). On the other hand, immigrants who live in immigrant-dominant neighborhoods may benefit from social and cultural capital that enables their academic success (Zhou & Bankston, 1994). Children of immigrants quickly learn English regardless of their neighborhood context, though living in an ethnic enclave may hinder their parents' language acquisition (Portes & Schauffler, 1994). Replication of this study in a less diverse, non-urban setting might provide different findings.

Institutional Effect

An estimated 40% of first-time community college students attend more than one institution (Bailey, Jenkins, & Leinbach, 2005). To the extent that students leave the university system before their sixth semester, the reasons could be both positive and negative. Swirling (moving in a laterally and perhaps haphazard fashion in and out of secondary institutions) can negatively affect their persistence (Adelman, 2006; Rab, 2004).

This research did not examine the institutional effects of attending this particular community college, which is very large in enrollment size and overwhelmingly minority. Research has shown that attendance in a large, minority-dominated community college will hinder persistence (Bailey, Calcagno, Jenkins, Kienzl, & Leinbach, 2005). More research needs to explore the effects of the institution on each of these student groups. Further research should examine the social integration of students in each group by studying their attendance and participation in college organizations.

Conclusion

Providing access to, and successful persistence through, postsecondary education for an increasing number of immigrants and their children has become a necessity. Immigrants and their children account for almost a fifth of the school-age population, and the number of immigrants in U.S. households rose 16% in the last five years (Camarota, 2001; Pickoff-White, 2006). Combined with higher birth rates and a greater propensity to pursue higher education, the immigrant effect on colleges will continue to be significant (Camarota, 2005; Vernez & Abrahamse, 1996). The results of this study indicate that, while immigrants may need additional help at the onset of their higher education journey, they quickly become acclimated and succeed at rates outpacing those of native students as measured by credits attained and grade point average. Concerns that cause us as a nation to want

to "protect" our borders may be unfounded. Immigrants can be productive, successful members of our society, and research supports the belief that both legal and illegal immigrants provide a net benefit to the economy (*Paying Their Way*, 2006).

This study supports the hypothesis that immigrant students do well in academia in relation to their native-born peers and suggests that efforts to help immigrants gain access to higher education are worthwhile. Furthermore, this effort should focus on community colleges. Nearly half of all new freshmen begin at a community college, and immigrant students are 20% more likely than native students to begin at the community college (Gray & Vernez, 1996; Vernez & Abrahamse, 1996). At the national level, the implications from this research are that immigration policy should enable, rather than hinder, immigrant students in their quest for higher education.

The experience of immigrants is not homogeneous however; certain groups of students, particularly Hispanics, lag behind others. This study found that Black immigrant students who had completed their secondary education abroad had better persistence rates than all other groups of any race, native born or immigrant, after both two semesters and six semesters in terms of credit completion. The negative persistence effect for Hispanics and the disparity between the persistence of Black immigrant students and Black native students should encourage further examination by researchers of the quality of academic preparation afforded to minorities in U.S. high schools.

Regardless of the success of any particular student group, the overwhelming result is that too few community college students persist. Approximately one-fifth of starting first-time full-time freshmen complete a degree or certificate within three years. Lack of a credential in three years is somewhat mitigated by the fact that many who begin full-time studies quickly switch to part-time. My analysis suggests that, in addition to attendance patterns, lack of college readiness was a contributing factor, with more than 80% of the students needing some remediation. Subject (math, writing, and reading) remediation needs were initially significant variables in the regression analysis; however, these measures, along with high school grades, dropped from the model with the addition of "never on probation." Never being on probation, that is, maintaining a satisfactory grade point average, may be a result of pre-college readiness; and the variables dropped from the model, including need for remediation and high school GPA may be more influential in predicting persistence than the model may indicate because probationary status is more of an effect. The ANOVA revealed a significant difference between native students and both immigrant student groups for the number of basic skills tests that they passed. Math was the weakest area for native students but the strongest area for immigrant students. Immigrant students had the weakest skills in writing.

Another important aspect of college readiness is attending high school. This research indicates that GED holders do not perform as well as those with a high school diploma and that having a high school diploma contributes positively to persistence. More should be done to encourage students to take a rigorous academic curriculum over four years of high school rather than to opt out with a largely multiple choice test. Students would not only benefit from the academics of a high school education but also from the structure and socialization. At the state level, policymakers should focus on greater coordination between K–12 and postsecondary educators, increased emphasis on math in high school, and a greater emphasis on programs for Black and Hispanic students.

In conclusion, a number of problems arise when many students are deemed deficient at the onset of their college experience. First, the students are discouraged. They enter college and receive an immediate message in the form of placement test results that their skills are inadequate. After earning a high school diploma, they should be confident that they can perform at a college level, particularly at the open enrollment public college in their community. Second, if the community college degree is to maintain its value, community colleges need to maintain a distinction between what is college level and what should have been covered in high school. If the community colleges continue to provide access and maintain standards at a college level, then more cooperation needs to be fostered between the high schools and the colleges. Third, the public, and legislators in response to the public, will continue to question the wisdom of paying for something twice (e.g., math in high school and remedial math in college). More of the burden will fall on the students' shoulders in increased tuition with more aid in the form of loans versus grants, and those who are least able to afford the education—yet arguably need it the most—will be shut out.

Appendix A
Definition of Variables and Sources of Data

Variable	*Source*
Dependent Variable:	
Persistence	
Continuous variable, ranging from 0% to 100% of credits completed as a proportion of credits attempted	Student transcripts

Appendix A, cont.

Variable		*Source*
Independent Variables		
Personal attributes		
Gender	Coded 1 = Female, 0 = Male	Self-reported. Admissions question #3
Ethnicity	Coded as White, Black, Hispanic, Asian or Pacific Islander, American Indian, or Native Alaskan	Self-reported. Admissions questions #21 and 22
Immigration	Coded citizen, permanent resident, status, temporary visa, other	Self-reported. Admissions questions #15 and 16
High school preparedness		
H.S. Type	Coded 1 = U.S. H.S.; 0, GED	Self-reported. Admissions question 11
H.S. C.A.A.	Coded 1 = > 74.3, 0, < 74.3	Self-reported. ACT Asset Ed. Plan. Form
Academic skills		
Basic skills	Coded 1 = Passed all basic skills,	Scores on freshman skills assessment
	0 = Failed 1 or more basic skills tests	ACT Asset Educational
Subject skills	Coded 1 = passed reading skills, 0 = Needs reading remediation; 1 = passed writing, etc.	Writing, reading, and math test results
Independent Variables		
Language skills		
	Coded 1 = English is native language 0 = native language is not English	Self-reported. Admissions question 24a

Appendix A, cont.

Variable		*Source*
Educational aspirations		
College choice		
	Coded 1 = applied sr. college, 0 = applied community college	Self-reported. Admissions question #10b
Amount of education planned		
	Coded as 1 = four-year degree or more, 0 = two-year degree or less	Self-reported. ACT form Question #18
Degree program		
	Coded 1 = transfer-oriented program 0 = terminal-vocational program	Self-reported. Admissions question #10
Demand and resources		
Student parent		
	Coded 1 = no children,	Question #19
	0 = has children	
Income	Coded 1 = not low income; 0 = low income	Composite: self-reported.
Attendance	Coded 0 = full-time student registered ≥12 hours; or 1 = part-time ≤11 hours	Student transcripts

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