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# Socioeconomic Stratification of Community College Transfer Access in the 1980s and 1990s: Evidence from HS&B and NELS

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Concerns surrounding the rising cost of college and increased student debt have contributed to a sense of crisis in college access for the middle class. In proposing cuts in interest rates on student loans that were later adopted as part of the College Cost Reduction Act of 2007, Representative George Miller, chairman of the House Committee on Education and the Workforce, argued: “Middle-class Americans are increasingly squeezed between the declining paychecks and the rising bills for basic items such as housing, health care, college tuition and energy” (quoted in Burd, 2007, p. 23). This view is shared by the general public. In *Squeeze Play: How Parents and the Public Look at Higher Education Today*, the National Center for Public Policy and Higher Education reported that “sixty percent [of the public] believe that

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the middle class is hardest hit by rising college bills since wealthy people can afford it and poor people may be eligible for financial aid” (Immerwahr & Johnson, 2007, p. 3).

In the mid-1990s, conventional wisdom held that the middle-class had experienced a “melt” from prestigious, high-priced colleges. The idea was dismissed by Michael McPherson and Morton Shapiro, who showed that attention to this issue had been driven primarily by private colleges’ loss of wealthy students who could afford to pay full price, not by a loss of middle-class students<sup>1</sup> (McPherson & Schapiro, 1998; “Report Says,” 1995). Since that time, however, college costs have continued to rise, and the financial aid system has become increasingly dependent on student loans (*Trends in student aid*, 2006), a trend that may well have taken a greater toll on the college enrollments of middle-class students. A recent study by Alexander Astin and Leticia Oseguera (2004) concluded that, from 1985 to 2000, the middle class had, in fact, been displaced from highly selective institutions by students with higher levels of parental income and educational attainment.<sup>2</sup> Commenting that their findings suggested “a kind of trickle-down effect” (p. 333), they also observed that there had been a substantial increase of middle-class students at nonselective colleges during the same time period. A study conducted by the American Council for Education (ACE) also concluded that, between 1989 and 1999, dependent undergraduates from all income levels had become more likely to enroll in community colleges. These findings suggest a reversal of trends reported by McPherson and Schapiro (1998), who described “a flight” of more affluent students from community colleges (p. 46).

More recently, noting the adoption in 29 states of articulation policies designed to facilitate transfer from lower-cost community colleges to four-year colleges and universities,<sup>3</sup> Gregory Anderson, Mariana Alfonso, and Jeffrey Sun (2006) argued that “the potential for a middle-class takeover<sup>4</sup> of

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<sup>1</sup>McPherson and Shapiro’s (1998) analysis of American Freshman Survey data from 1980 and 1994 demonstrated that upper-income students had increasingly elected to enroll in private universities and public colleges rather than in private colleges during that time period.

<sup>2</sup>Bowen, Kurzweil, and Tobin (2005, p. 132) also report that, between 1976 and 1995, 11 highly selective colleges saw an enrollment share increase from 39 to 50% of students from the top income quartile. They also observed a slight increase in the share of students from the lowest quartile. Middle-income students lost enrollment share relative to these other two groups.

<sup>3</sup>In this paper, we use the expression “four-year colleges” or “four-year institutions” to refer generically to public and private four-year colleges and universities because our analyses are not disaggregated by the institutional type or control of the four-year institution.

<sup>4</sup>The expression “middle-class takeover” was previously introduced by Barbara Townsend (2001) referring to the use of the community college for further education by “reverse transferees” with bachelor’s degrees and the proliferation of dual enrollment and other early college credit programs that middle-class students and families could take advantage of more easily than families with fewer financial resources.

community colleges looms large given the fiscal constraints faced by state governments and the trends in the demand for access to higher education” (p. 446). They reasoned that, if middle-class families were priced out of four-year colleges, they would turn to lower-cost community colleges to gain access to the baccalaureate, particularly if that access were sufficiently assured through state articulation policies. Anderson, Alfonso, and Sun (2006) concluded that the rise in articulation agreements from 1985 to 1995 was most likely fueled by pressure on legislators to adopt cost-effective higher education policies and, at the same time, remain responsive to the demands of the middle class for affordable college access. In a political struggle for college resources, they cautioned, legislators would redistribute resources to appease the powerful middle-class electorate and leave disadvantaged students with “false promises of transfer” (p. 445).

To explore whether a “middle-class takeover” occurred, in this study we examine changes in the socioeconomic composition of community college transfer students between the late 1980s and early 1990s, using national data for the high school graduating classes of 1982 and 1992. This time frame coincides with the period in which policymakers were actively shoring up articulation agreements and other transfer policies to increase the utilization of community college transfer as a cost-effective means to increase college access (Anderson, Alfonso, & Sun, 2006; *Clearing paths*, 2007; Long, 2005; Wellman, 2002). Articulation policies include content alignment, common course numbering and core course requirements, and guaranteed admissions. Other transfer policies include transfer grants or scholarships (for students meeting academic merit criteria), requirements for colleges to report their transfer rates and state transfer databases, and mandates for colleges to provide transfer counselors and services.

We look at transfer to selective and nonselective institutions because the concerns of the middle class for affordable college access are particularly attuned to access to selective institutions, as demonstrated by earlier attention to the “middle-class melt” phenomenon even in the absence of empirical evidence that such a melt had taken place. In addition, the Community College Transfer Initiative, funded by the Jack Kent Cooke Foundation, has brought growing attention to the substantial underrepresentation of low- and middle-income students among transfers to elite institutions (Dowd et al., 2006; Wyner, 2006).

For the most part, our results do not provide evidence of a middle-class takeover of the community college transfer function during this period. On the contrary, the direction of our point estimates provides evidence, albeit statistically insignificant, that middle-class students lost enrollment share among transfers to selective four-year institutions to more affluent students, whose parents had higher incomes and higher levels of educational attainment. However, our results do provide support for the contention of

Anderson, Alfonso, and Sun (2006) that, despite a flurry of policymaking aimed at creating effective transfer pathways, transfer access has not improved for poor students, who are severely underrepresented among the transfer cohorts in both decades. In conclusion, we explore a theoretical rationale for an “upper-class takeover” of transfer to selective colleges, based on theories of institutional economics (Cheslock, 2005; Hoxby, 2000) and student demand for college (Long, 2004).

### LITERATURE REVIEW

Our study contributes to the growing literature concerning trends in the socioeconomic stratification of higher education. Because prior studies have focused primarily on changes in the SES distribution of freshman enrollments (Astin & Oseguera, 2004; Bowen, Kurzweil, & Tobin, 2005; *Choice of institution*, 2004; Ellwood & Kane, 2000), we address a gap in the literature by examining changes in the SES distribution of community college transfer enrollments by selectivity of the receiving four-year college. Cheslock (2005) has demonstrated that transfer access to selective institutions has declined over time; but he did not control for socioeconomic status, and his data did not allow him to disaggregate community college transfers and lateral four-year college transfers.

There are clear inequities by socioeconomic status in transfer access to the baccalaureate. Analyses of national cohorts of high school graduates from the 1970s, 1980s, and 1990s show that students with higher socioeconomic status (SES) do, in fact, experience higher rates of transfer, in part because more affluent students have better academic preparation and have higher educational aspirations (Cabrera, Burkum, & La Nasa, in press; Dougherty & Kienzl, 2006; Dowd, Cheslock, & Melguizo, in press; Lee & Frank, 1990). These studies demonstrate that the transfer function is highly stratified by socioeconomic background, but not whether middle-class students have gained enrollment shares over time, particularly at the expense of poorer students as posited by Anderson, Alfonso, and Sun (2006).

We know that transfer from one four-year college to another (lateral transfer) is also highly stratified by socioeconomic background (Dowd, Cheslock, & Melguizo, in press), but we focus here on community college transfers for two reasons. First, the transfer function is an integral aspect of the community college mission (Dougherty, 1994; Shaw, 2001). The “2/4 transfer function,” as Wellman (2002) calls it, is “one of the most important state policy issues in higher education because its success (or failure) is central to many dimensions of state higher education performance, including access, equity, affordability, cost effectiveness, degree productivity, and quality” (p. 3). Second, lateral transfer among four-year colleges and universities provides opportunities for mobility, but such opportunities are

not written into state policies in the same manner as transfer from public two-year colleges. As Cheslock (2005) points out, four-year college lateral transfers are typically using transfer to improve their "institution-student match" (p. 11). These students are more likely to come from families with significant financial resources than students who are attracted to community college transfer to lower their total educational costs or to compensate for poor schooling in secondary school. The students about whom policymakers are primarily concerned when adopting transfer policies are those who begin their studies at community colleges. Given our focus on community college transfers, in the remainder of this article, the terms "transfer student" and "transfers" refer strictly to community college students who transferred to a four-year college.

A middle-class "takeover" of the transfer function would, indeed, be problematic, because transfer is a key part of the community college mission to provide access to higher education for low-income and academically underprepared students (Bragg, 2001; Dougherty, 1994; Dougherty & Kienzl, 2006; Shaw, 2001). However, it is possible that other trends in college admissions and finance kept middle-class students with bachelor's degree aspirations from crowding into the community college transfer pipeline. First, during this period, the college choice process became more strongly influenced by concerns for institutional quality (Long, 2004), and families appeared to reduce their preference for public colleges that had previously enjoyed a positive reputation on a regional basis (Hoxby, 2000). If the appeal of these colleges declined in general, the value of transferring to them would also have declined.

Second, articulation agreements are intended to reduce informational and structural barriers to movement between the two- and four-year sectors, and only a small number of transfer policies actually reduce tuition costs through grants or scholarships (Long, 2005; Wellman, 2002). The value of transfer scholarships in the states that offer them is small compared to the value of merit or non-need-based aid that now constitutes a much greater portion of state aid and institutional aid awarded by four-year colleges (Heller, 2006; Heller & Rogers, 2006; Price & Davis, 2006; *Trends in student aid*, 2006). Therefore, middle-class families may have been more attracted to the greater price subsidies available to them through direct enrollment than through transfer.

Finally, it is possible that transfer policies served students of different socioeconomic backgrounds equally well—or equally poorly. As demonstrated by numerous policy reports, there is widespread concern for the equity and effectiveness of the transfer function (*Clearing paths to degrees*, 2007; Dowd et al., 2006; Long, 2005; *Mortgaging our future*, 2006; Shulock & Moore, 2005; U.S. Department of Education, 2006; Wellman, 2002; Wyner, 2006) and little evidence that articulation policies have increased transfer

rates (Anderson, Sun, & Alfonso, 2006). Even if articulation policies offered the prospects of “seamless” transfer and reduced time to degree—as New Jersey legislators have now sought to do by guaranteeing the transfer of credits between two- and four-year public colleges in state law (Redden, 2007)—middle-class families may have been wary of the greater uncertainty of baccalaureate degree completion through transfer. Parents and students may accept the higher costs of four-year colleges as a trade-off for reduced uncertainty concerning college quality and degree completion. (See Turner, 2004, for a discussion of uncertainty in college choice.) Colleges with higher selectivity have higher degree completion rates (Melguizo & Dowd, in press) and greater resources to support degree completion (Titus, 2006), which may well have increased their appeal relative to community colleges during this period despite rising tuition costs.

In theory, if articulation policies are effective, they should provide a boost to first-generation college students, who are more constrained in their educational opportunities by information barriers and the challenges of navigating complex bureaucracies (Pak, Bensimon, Malcom, Marquez, & Park, 2006; Stanton-Salazar, 1997; Townsend & Wilson, 2006). The potential cost savings brought about if clear curriculum alignment reduces the time to degree also have a greater relative value for students with fewer financial means. These savings would be expected to increase low-income student participation in transfer relative to more affluent groups.

## METHOD

We operationalize our study of changes in the socioeconomic stratification of transfer access by examining changes in the SES distribution of the community college transfer cohorts of the graduating high-school classes of 1982 and 1992, disaggregating the analysis by the institutional selectivity of the receiving four-year college. For purposes of comparison, we also examine changes in the socioeconomic distribution of freshman enrollments in four-year institutions. In addition, we analyze the SES distribution of graduates from both the transfer and freshman cohorts. We take this step because transfer must provide a viable path to the bachelor’s degree for middle-class students to attract political support. The hypothesis of a middle-class takeover of the transfer function would be supported by evidence of an increase in the representation of middle-class students among transfer students who receive bachelor’s degrees.

### *Data*

We analyze two nationally representative longitudinal data sets from the National Center for Education Statistics (NCES): the High School and Beyond Sophomore Sample (HS&B/So) and the National Educational

Longitudinal Study (NELS:88/2000). The HS&B/So and NELS:88/2000 are representative of the graduating high school classes of 1982 and 1992 respectively. Therefore, the results of our analyses can be generalized to the population from those graduating classes of community college transfer students (“transfers”) and students who enrolled directly in the four-year sector as freshmen (“direct entrants” or “natives”). These students made their way through college in the 1980s and 1990s, which enables a comparison of changes in the SES composition of transfer and native student enrollment and graduation cohorts across the two decades. The ability to analyze these trends for transfer and native students simultaneously is an advantage of these data not afforded by the surveys of entering college freshmen analyzed in previous research.

Despite the fact that the HS&B and NELS survey data are getting older now—representing the experiences of college students in the 1980s and 1990s when we are well into the first decade of the new millennium—they are the best data for the purpose of this study. State data often do not include an SES variable, and indicators of income status based on receipt of financial aid would not be adequate to distinguish middle-class students from others. Analyzing institutional-level data combined with National Clearinghouse data to capture transfer outcomes would be valuable, but SES indicators would still be lacking and key variables may not have a consistent meaning over time.

Table 1 summarizes the administration of the HS&B/So and NELS:88/2000 surveys. The enrollment and graduation dates that would be expected for these cohorts based on a conventional time-to-degree of four years and a “2 + 2” community- to four-year college pathway are also noted. Under these traditional scenarios, community college transfers from the high school class of 1982 would enroll in four-year colleges in 1984 and graduate in 1986. The corresponding dates for the class of 1992 imply that students transfer in 1994 and graduate in 1996. Recognizing that many students take longer to complete their bachelor’s degree, however, we allow 8.5 years to graduation, bringing the end point of the analysis to the year 2000. This approach extends the time span under investigation beyond that of previous analyses of these NCES data, which examined socioeconomic stratification solely in terms of enrollment (e.g., Ellwood & Kane, 2000).

Our analysis also complements that of Astin and Oseguera (2004), who examined data from colleges that self-selected to participate in the Cooperative Institutional Research Program (CIRP) survey conducted by UCLA. Though the CIRP data were weighted by institutional type, control, and selectivity for inference to the national population, regional differences in college access and financing may be more difficult to capture. The CIRP data offer the advantage of a large census sample of entering freshmen, surveyed annually.



**TABLE 1**  
**ADMINISTRATION AND SAMPLE SIZES OF THE NCES SURVEYS**

<i>Survey</i>	<i>HS&amp;B/So</i>	<i>NELS:88/2000</i>
First administration	1980 (students are high school sophomores)	1988 (students are eighth- graders)
Cohort high school graduation year/traditional college start	1982	1992
Cohort traditional college graduation year	1986	1996
Follow-up surveys	1982, 1984, 1986	1990, 1992, 1994
Final follow-up	1992	2000
Time span	11.5 years	8.5 years
Original sample size	30,000	24,599
Final follow-up sample size	14,799	12,144

*Source:* High School and Beyond/Sophomore Cohort (NCES 2000-194) and National Education Longitudinal Study of 1988/2000 (NCES 2003-402)

These advantages are lacking in the HS&B and NELS:88/2000, which, though representative of the two cohorts of high school graduates, were not designed to be representative of college students enrolled at selective institutions. Consequently, the number of cases in the data who transfer from community colleges to selective colleges is relatively low. The robust sample sizes and statistical power of the original surveys are therefore diminished. Results obtained with small samples tend to be imprecise and are less likely to have statistical significance. In addition, the small number of cases in the transfer cohort makes it impractical to control for the effect of students' academic preparedness on their access to selective colleges or to disaggregate findings by private and public control. We note in the discussion points at which these limitations affect the results.

### ***Sample***

The study focuses on the educational experiences of traditional-age students. The analysis sample was restricted to students in the high school graduating classes of 1982 and 1992 who were either early or on-time graduates and who participated in all of the HS&B/So or NELS:88/2000 follow-up surveys. Students who dropped out of high school were excluded.

Following Adelman (2005), we define transfer students as those who (a) begin in a community college, (b) earn more than 10 credits that count toward a degree at the community college before attending a four-year

college and (c) subsequently earn more than 10 credits from four-year colleges. Native students are defined as those who began their studies at four-year colleges and earned more than 10 credits at a four-year college. This definition includes students who attended more than one four-year institution or who then transferred or alternated between a two-year and a four-year institution.

By defining transfers using a cut point of 10 credits earned at the community college, we include in the sample students who followed the traditional path of “articulated” transfer to the third year of college and “bridge” transfers, defined as those who completed a smaller number of credits before moving on to a four-year college as a lower-division student (Horn & Lew, n.d., p. 1). There is some evidence from a study in California that articulated transfers are less likely to be from higher income families in comparison to bridge transfers (Horn & Lew, n.d.). This finding suggests that our sample is more inclusive of higher SES students than it would be otherwise.

The final number of cases with non-missing values on the variables in our analyses is 573 transfers and 3,419 natives from the class of 1982 (representing weighted samples of about 142,000 and 766,100, respectively) and 877 transfers and 3,795 natives from the class of 1992 (with a weighted sample of 232,300 and 824,100, respectively) The weighted samples are smaller than the true population estimates due to missing cases.

We used design-adjusted chi-square tests of independence and tests of differences in means to determine the statistical significance of the observed trends. We conducted a two-sided test and set the alpha value at .05. The HS&B/So and NELS:88/2000 are complex survey samples with a stratified sampling design and unequal probabilities of selection for representative cases. The findings are therefore appropriately weighted (using the weights PSWT2 and F4F2P2WT) for point and population estimates. Similarly, we employed robust methods for variance estimation. The analysis was conducted in Stata, version 9 using the “svy,” and other functions.

### ***Key Variables***

The level of affluence of a student’s family is represented by a socioeconomic status (SES) index provided in the NCES data, which is based on the father’s occupation and education, the mother’s education, family income, and material possessions, categorized in quintiles. It is calculated as a simple average of the non-missing components after each component score has been standardized. The income variable in these data is unreliable due to problems with missing cases and measurement error. Therefore, NCES used data on the indicators of socioeconomic status, requested from both the parents and students across the multiple follow-up surveys, to construct the SES composite variable. This procedure substantially minimized the missing values on the SES variable, which in our analysis was available for 14,452

cases. Only 463 cases had missing information; and in our final sample, all of the individuals had valid information for this variable.

We analyze the results in SES quintiles, treating the three middle quintiles (upper-middle, middle, and lower-middle) as the middle class,<sup>5</sup> the highest quintile as students from the most affluent families, and the lowest SES quintile as the most socioeconomically disadvantaged group. It is important to note that our interpretation of the findings is not likely to be confounded by broader changes in the SES composition of the entire population of college students. The SES composition of the college population as a whole remained very similar across the decades under study (Long, 2004; U.S. Department of Education, 2005). It is therefore appropriate to interpret changes observed in our data as resulting from changes in the SES composition of the native and transfer cohorts.

To get a sense of the socioeconomic characteristics of individuals in each quintile, we cross-tabulated the quintiles by categorical variables indicating total family income and parental education. Most of the cases (80% or more) in the lowest SES quintile had a total family income below \$15,000 in 1980 dollars and below \$20,000 in 1987 dollars, with parental education at the level of a high school graduate or less. In the highest SES quintile, approximately one-third of the cases were in the three highest income bands (above \$35,000 in 1980 and above \$75,000 in 1987). The highest SES quintile was distinguished by the fact that a third of the cases had a parent with a master's or doctoral degree and over a third (36% in 1982 and 40% in 1992) had a parent with a bachelor's degree.

Not surprisingly, both income and parental education rose between the lower-middle and the upper-middle quintiles. The distribution of income in the middle quintile peaked between \$20,000 and \$35,000 in 1980 (30% of the cases) and between \$25,000 and \$50,000 in 1987 (57%). The income distribution in the middle quintiles overlapped substantially with that of the lowest quintile, particularly in the earlier decade. The middle-SES groups were, therefore, distinguished more strongly by higher rates of high school graduation and a greater upward range in the income distribution. By the 1990s, the middle quintiles were characterized by parents with some college education and, in the upper-middle group, 20% with a bachelor's degree.

The institutional selectivity of a student's four-year college is represented by the most selective four-year institution attended. The institutions were grouped into two categories, selective and less selective, based on their rankings in the *Barron's Profiles of American Colleges* (2003, 2005). Institutions are defined as "selective" if they were ranked as "most" or "highly" competitive

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<sup>5</sup>According to a poll conducted by the Gallop Organization, over 90% of Americans—all but the wealthiest and poorest—consider themselves "middle class" (Immerwahr & Johnson, 2007).

in the Barron's index and "less selective" otherwise.<sup>6</sup> Given Cheslock's (2005) finding that transfer access has declined much more dramatically in private selective institutions than in public ones, we would ideally have been able to distinguish institutional control in our analyses. As noted above, however, the small sample size of transfer students and the small number of public and private selective institutions in the data prohibit further disaggregation. We keep this limitation in mind when discussing our findings.

It should be noted also that transfer and articulation policies primarily pertain to public four-year colleges. However, to compete for transfer enrollments, private colleges, particularly less selective ones, follow suit by adopting articulation agreements with individual community colleges and aligning their requirements with established general education requirements in their state. When students meet state requirements for transfer, they also become eligible for admission to many private colleges, increasing their overall prospects of transfer.

### *Degree Completion*

To analyze the comparative rates of bachelor's degree attainment across the two cohorts, we used the 8.5 year time span of the NELS88/2000 survey to set the end point for degree completion, shortening the 11.5 year time span of the HS&B. Graduates in HS&B who earned their degree after 8.5 years were treated as non-degree recipients.

## RESULTS

### *Aggregated Enrollment of Natives and Transfers*

Table 2 presents the SES enrollment distribution of those students from the class of 1982 and 1992 who entered the four-year sector directly after high school graduation ("natives") and those who transferred from community colleges ("transfers"). The results show that, when institutional selectivity is not taken into account, the SES distributions did not change substantially over time. In both decades, the distribution of native students is strongly skewed toward the highest SES quintile, whereas the lower-middle- and lowest-SES students are underrepresented. Though not as skewed as the native distribution, transfer students from the highest-SES quintile and the upper-middle quintile are overrepresented. The lowest-SES students

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<sup>6</sup>Institutions in the most competitive bracket had a student body with an average SAT I or ACT score at or above 655 or 29, respectively. Students typically ranked in the top 20% of their class and had an average high school grade point average of B+ or higher. These institutions accept fewer than a third of their applicants. The equivalent values for institutions ranked as highly competitive are SAT I/ACT scores at or above 620/27, average GPA of B or higher, and an admissions rate less than or equal to 50%.

**TABLE 2**  
**DESCRIPTIVE STATISTICS FOR NATIVE<sup>1</sup> AND TRANSFER<sup>2</sup> STUDENTS**  
**(STANDARD ERRORS)**

<i>Variable Name and Definition</i>	<i>Class of 1982 Native</i>	<i>Class of 1992 Natives</i>	<i>Class of 1982 Transfers</i>	<i>Class of 1992 Transfers</i>
College enrollment by socioeconomic status <sup>3</sup>				
Highest	0.42 (0.01)	0.42 (0.02)	0.29 (0.03)	0.30 (0.03)
Upper middle	0.25 (0.01)	0.25 (0.01)	0.33 (0.03)	0.29 (0.03)
Middle	0.17 (0.01)	0.16 (0.01)	0.19 (0.02)	0.21 (0.02)
Lower middle	0.12 (0.01)	0.11 (0.01)	0.14 (0.02)	0.15 (0.02)
Lowest	0.05 (0.01)	0.06 (0.01)	0.06 (0.01)	0.05 (0.01)
Enrolled at selective institution <sup>4</sup>	0.22 (0.01)	0.25 (0.01)	0.12 (0.02)	0.13 (0.02)
Attained a bachelor's degree 8.5 years after high school graduation (degree = 1, no degree = 0)	0.71 (0.01)	0.73 (0.01)	0.51 (0.03)	0.60 (0.03)
Sample size	3,419	3,795	573	877
Weighted N	766,100	824,100	142,000	232,300

<sup>1</sup>"Native" = a student who first attended a four-year institution; includes students who attended more than one four-year institution or who then transferred or alternated between a two-year and a four-year institution.

<sup>2</sup>"Transfer" = a student who (a) begins in a community college, (b) earns more than 10 credits that count toward a degree at the community college before attending a four-year college, and (c) subsequently earns more than 10 credits in the four-year sector.

<sup>3</sup>Composite variable based on parental education and occupation.

<sup>4</sup>Selective institutions are defined as those ranked as "most" or "highly competitive" in *Barron's Profile of American Colleges* in 2004 or 2005.

Weight Class of 1982: PSEWT2; Weight Class of 1992: F4F2PWT.

Source: High School and Beyond/Sophomore Cohort (NCES 2000-194) and National Education Longitudinal Study of 1988/2000 (NCES 2003-402).

are severely underrepresented. This disproportionate SES representation within the cohorts is statistically significant. Only 13% of the transfer cohort from the high school class of 1992 enrolled at selective colleges, compared to 25% of native students, which indicates that there is less access to selectives through transfer than through direct enrollment as a freshman.

### NATIVE STUDENT ENROLLMENT DISAGGREGATED BY INSTITUTIONAL SELECTIVITY

Table 3 presents the results disaggregated by institutional selectivity. Among native students, the highest SES quintile enrollment share increased between the two cohorts from 58% to 67%, a statistically significant jump of 15.5%. The point estimates also suggest that as the proportion of highest-SES students increased, the upper-middle-SES quintile lost enrollment share, with a decline from 23% to 18%. However, this change is not statistically significant. At less selective institutions, the SES composition of native students remained largely the same.

#### *Transfer Student Enrollment Disaggregated by Institutional Selectivity*

As in the native cohort, the share of the highest SES students appears to have grown among transfers to selective institutions. The point estimates indicate an increase from 42% to 51%, a jump of 21.4%, with the difference made up primarily by a decline in the enrollment share of middle-SES students. (See Table 3.) However, these changes are not statistically significant due to the large standard errors of the estimates. At less selective institutions, the SES composition of the transfer cohort appears to be largely the same across the two decades, with no change greater than four percentage points and none statistically different from zero.

#### *Native Student Graduation Cohort Disaggregated by Selectivity*

Table 4 presents changes in the SES composition of native and transfer students who earned their bachelor's degree within 8.5 years of high school graduation. At selective colleges, the share of native graduates from the highest quintile increased from 61% to 68%, while representation in the three middle quintiles decreased. The change in the highest SES quintile is significant, indicating that the representation of high-income students among the bachelor's degree recipients of selective colleges increased during this period. The SES composition of native graduates from less selective colleges did not change significantly over time.

#### *Transfer Student Graduation Cohort Disaggregated by Institutional Selectivity*

The point estimates for the transfer student graduation cohort, though not statistically significant, suggest that the share of the highest-SES quintile increased from 39% to 54% at selective institutions. The increase is offset by a decrease (also not statistically significant) in the upper-middle quintile, which declined from 35% to 22%. At less selective institutions, there is a large and statistically significant increase from 10% to 17% of the lower-middle quintile. The corresponding decline, though not statistically significant,

**TABLE 3**  
**INSTITUTIONAL SELECTIVITY OF NATIVE<sup>1</sup> AND TRANSFER<sup>2</sup> STUDENTS BY SOCIOECONOMIC STATUS<sup>3</sup>**  
**(STANDARD ERRORS)**

Socioeconomic Status	Selectivity of Four-Year Institution Attended by Natives Less Selective <sup>4</sup>		Selectivity of Four-Year Institution Attended by Transfers Less Selective				
	Class of 1982	Class of 1992	Class of 1982	Class of 1992			
Highest	0.58* (0.03)	0.67* (0.03)	0.37 (0.01)	0.42 (0.08)	0.51 (0.10)	0.27 (0.03)	0.27 (0.03)
Upper Middle	0.23 (0.02)	0.18 (0.02)	0.25 (0.01)	0.27 (0.08)	0.28 (0.09)	0.33 (0.03)	0.29 (0.03)
Middle	0.11 (0.02)	0.08 (0.02)	0.18 (0.01)	0.19 (0.07)	0.15 (0.05)	0.19 (0.02)	0.22 (0.03)
Lower Middle	0.05 (0.01)	0.04 (0.01)	0.13 (0.01)	0.13 (0.03)	0.05 (0.02)	0.15 (0.02)	0.16 (0.02)
Lowest	0.03 (0.01)	0.03 (0.01)	0.06 (0.01)	0.07 (0.03)	0.02 (0.01)	0.06 (0.01)	0.06 (0.01)
Total	1.00	1.00	1.00	1.00	1.00	1.00	1.00

<sup>1</sup>“Native” = a student who first attended a four-year institution; includes students who attended more than one four-year institution or who then transferred or alternated between a two-year and a four-year institution.  
<sup>2</sup>“Transfer” = a student who (a) begins in a community college, (b) earns more than 10 credits that count toward a degree at the community college before attending a four-year college, and (c) subsequently earns more than 10 credits in the four-year sector.  
<sup>3</sup>Composite variable based on parental education and occupation.  
<sup>4</sup>Selective institutions are defined as those ranked as “most” or “highly competitive” in *Barrow’s Profile of American Colleges* in 2004 or 2005.  
 Weight Class of 1982: PSEWT2; Weight Class of 1992: F4F2PWT.  
 Source: High School and Beyond/Sophomore Cohort (NCES 2000-194) and National Education Longitudinal Study of 1988/2000 (NCES 2003-402).  
 \*Cross-cohort difference significant at 5%.

**TABLE 4**  
**INSTITUTIONAL SELECTIVITY OF NATIVE<sup>1</sup> AND TRANSFER<sup>2</sup> BACHELOR'S**  
**DEGREE RECIPIENTS BY SOCIOECONOMIC STATUS<sup>3</sup>**  
**(STANDARD ERRORS)**

Socioeconomic Status	Selectivity of Four-Year Institution Attended by Natives Less Selective <sup>4</sup>		Selectivity of Four-Year Institution Attended by Transfers Less Selective	
	Class of 1982	Class of 1992	Class of 1982	Class of 1992
Highest	0.61* (0.03)	0.68* (0.03)	0.42 (0.02)	0.42 (0.02)
Upper middle	0.21 (0.02)	0.17 (0.02)	0.26 (0.01)	0.27 (0.02)
Middle	0.10 (0.02)	0.08 (0.01)	0.17 (0.01)	0.17 (0.01)
Lower middle	0.05 (0.01)	0.04 (0.01)	0.11 (0.01)	0.10 (0.01)
Lowest	0.03 (0.01)	0.03 (0.01)	0.04 (0.01)	0.04 (0.01)
Total	1.00	1.00	1.00	1.00

<sup>1</sup>“Native” = a student who first attended a four-year institution; includes students who attended more than one four-year institution or who then transferred or alternated between a two-year and a four-year institution.  
<sup>2</sup>“Transfer” = a student who (a) begins in a community college, (b) earns more than 10 credits that count toward a degree at the community college before attending a four-year college, and (c) subsequently earns more than 10 credits in the four-year sector.  
<sup>3</sup>Composite variable based on parental education and occupation.  
<sup>4</sup>Selective institutions are defined as those ranked as “most” or “highly competitive” in *Barron's Profile of American Colleges* in 2004 or 2005.  
 Weight Class of 1982: PSEWT2; Weight Class of 1992: F4F2PWT.  
 Source: High School and Beyond/Sophomore Cohort (NCES 2000-194) and National Education Longitudinal Study of 1988/2000 (NCES 2003-402).  
 \*Cross-cohort difference significant at 5%.



occurred in the highest- and upper-middle quintiles.<sup>7</sup> This finding suggests that transfer and financial aid policies aided the least affluent middle-class students in completing their degrees, potentially by reducing the time to degree through clear curriculum alignment.

## DISCUSSION

Anderson, Alfonso, and Sun (2006) warned that a “middle-class takeover” of the community college transfer function was looming. There were two main reasons to suspect that the middle-class share of transfer students might have increased in the late 1980s and early 1990s. First, the rising costs of four-year colleges may have made enrollment in the four-year sector increasingly difficult for middle-class families. Second, articulation and transfer policies intended to make bachelor’s degree completion through transfer easier may have made community colleges a more attractive option for initial enrollment in postsecondary education.

Our findings, based on a study of traditional-age college students, do not support the conclusion that a middle-class “takeover” occurred. It appears, if anything, that middle-class students, particularly those in the high-middle-SES quintile, may have experienced a “melt” from transfer access to selective institutions. The trends we observe suggest that the representation of the highest-SES students may have increased at the expense of upper-middle- and middle-SES students, specifically at selective four-year colleges. Although not conclusive, these findings lead us to ask whether we should be concerned about an “upper-class takeover” of the transfer function, particularly to selective institutions, rather than a “middle-class takeover.”

It is important to note that our findings give impetus to Anderson, Alfonso, and Sun’s (2006) primary concern that, despite the rhetoric of the community college as the central postsecondary access point for the poor, community colleges provide access to the baccalaureate for much greater numbers of affluent students, potentially diminishing the sector’s capacity to focus on the needs of its poorest students. The enrollment share of students in the lowest-SES quintile in the transfer enrollment and graduation cohorts ranged between only 2 and 6%. Transfer access for poor students

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<sup>7</sup>We also examined changes in the distribution of transfer graduates from each SES quintile by institutional selectivity. The results indicate that a higher percentage of transfers from the highest SES quintile graduated from selective institutions in the 1990s than in the 1980s, with an increase from 17% to 28%, accompanied by a corresponding drop from 83% to 72% of those receiving degrees from less-selective institutions. While the middle quintile estimates remain quite stable over time, a lower percentage of students from the lowest SES quintile received degrees from selective institutions by the later decade (declining from 18% to 6%). However, these differences are not statistically different from zero due to large standard errors.

is not entirely a “false promise” (Anderson, Alfonso, & Sun, 2006)—nearly 12,000 students from the lowest SES quintile in the class of 1992 transferred—but their number is quite small in comparison to the number of students from more affluent families who transfer. In addition, despite the heightened attention to articulation and transfer policies in this period, the share of low-income student enrollment did not increase. This indicates that the policies were ineffective in reducing socioeconomic inequities in transfer access for the poorest students, whom many consider the primary constituency of the community college.

There are several reasons why we may not observe an increase in the middle-class share of transfer students in our study. First, of course, such an increase may not have occurred. Second, it may have occurred in some states but not in others (particularly in those with effective articulation agreements), and the national data obscure that variation. Third, such an increase may have occurred later, in the new millennium, and is not reflected in the SES distribution of transfers from the high school class of 1992. Finally, and as we discuss further below, despite rising costs, middle-class families may have retained a preference for four-year colleges during this period because they placed a greater emphasis on institutional quality than on costs (Hoxby, 2000; Long, 2004).

Our findings suggest several avenues for further research. In this section we raise a number of hypotheses based on studies of student demand for higher education (Avery & Hoxby, 2004; Hoxby, 2000; Long, 2004) and of the institutional economics that determine transfer enrollments (Cheslock, 2005; Hoxby, 2000). Scholars have expressed concern that the provisions of transfer and articulation policies may redirect resources away from economically disadvantaged students and promote greater use of the transfer pathway by more affluent students (Anderson, Alfonso, & Sun, 2006). To analyze the potential effects of such policies on the socioeconomic stratification of transfer, it is necessary to specify the nature of the policy incentives as they pertain to students with different socioeconomic and academic characteristics.

We find theoretical support for the hypothesis of an “upper-class takeover” of the transfer function in research conducted by Hoxby (2000) and Long (2004).<sup>8</sup> Their studies indicate that, in the 1990s, college students rated as

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<sup>8</sup>Hoxby (2000) analyzed a panel of 1,221 institutions that had consistently awarded bachelor's degrees between 1940 and 1991. Long (2004) analyzed changes in the factors influencing college choice and enrollment among traditional-age high school graduates represented in the National Longitudinal Study (NLS), HSB and NELS over the decades of the 1970s, 1980s, and 1990s. She analyzed aggregated samples as well as subsamples of high ability students (defined as those with an SAT score greater than or equal to 1100), low-income students (family income between \$23,000 and \$25,000 in year 2000 dollars), and students on the margins of college enrollment (family income less than \$24,000, SAT less than 900, and parents without any college education).

typical in terms of their academic ability, income, and parental education demonstrated an increasing demand for quality in their enrollment choices. Meanwhile, enrollment sensitivity to tuition price declined, presumably in part due to the fact that tuition discounting became more common in the private sector and merit aid became a larger share of financial aid budgets at public and private institutions alike. In contrast, high-ability students had consistently demonstrated a demand for quality from the 1970s to the 1990s. For the purposes of analyzing the effects of transfer policies on the socioeconomic stratification of transfer, it is useful to recognize that high-ability students of any income group are the least likely to be swayed in their enrollment choices by transfer policies, because they view community colleges as lower-quality colleges.

We hypothesize that those most likely to be influenced by transfer policies are those of moderate ability from high to moderate socioeconomic backgrounds. This hypothesis follows in part from the fact that more low-income and low-ability students have always relied on low-cost, open access community colleges as a portal into higher education—and it appears that this pattern continued into the 1990s (Long, 2004). Low-income and low-ability students should benefit from effective policies that improve curriculum alignment and reduce the costs of transfer (whether financial, structural, or informational), but their initial enrollment choice should be less affected since, on average, they already had a preference for the community college.

Moderate-ability students may be viewed as being on the cusp of eligibility for admission to a selective college. If articulation agreements ensure access to public selective institutions, they have an incentive to start at a community college and transfer to a more selective institution than they might have entered by enrolling directly in the four-year sector. Public selective institutions are not as restrictive in their transfer access as private ones. However, their transfer enrollment rates did decline more steeply than at their less selective public counterparts from 1984 to 2002, a period in which transfer enrollment rates at less selective publics did not decline at all (Cheslock, 2005; Dowd et al., 2006). This means that moderate-ability students who elected to take a chance on the community college route to a flagship public university would be likely to have a less selective transfer option at their disposal if they were not admitted to their first choice of institutions.

Among those moderate-ability students who would become eligible for transfer admissions to an elite public, those with sufficient family income to pay the full tuition, room, and board costs of college would be at an advantage in actually transferring and completing their degrees. Colleges that compete nationally for high-ability students must offset their costs by enrolling students of lesser ability who do not require substantial expenditures from the financial aid budget (Hoxby, 2000). Transfer students are

likely to be at a disadvantage in receiving merit aid because indicators of institutional quality are typically based on the median SAT scores and high school rank of the entering freshman class (Dowd, Cheslock, & Melguizo, in press). Given that transfers neither add to nor subtract from quality rankings, they primarily have value to tuition-dependent institutions when they can afford to enroll without institutional aid. Such a situation would clearly advantage more affluent students over others in transfer admissions.

Public colleges are sometimes constrained from showing such a distaste for transfers in their admissions by state policies (Cheslock, 2005); but only Arizona, Maryland, Massachusetts, Texas, and Virginia earmark tuition subsidies or grants specifically for transfer students (Long, 2004, 2005). Based on their extremely low transfer enrollment rates (Cheslock, 2005), private selective institutions appear even less willing to pay what Hoxby (2000) terms "implicit wages" (tuition discounts) to transfers. These institutional economics would be expected to favor wealthy students in gaining transfer access to selective institutions.

Less selective four-year colleges need to replace students lost to attrition by enrolling transfers, so a different set of institutional economics prevails. In a sense, it could be said that institutions treat community college transfer students much as consumers treat "inferior goods." (An inferior good is something that consumers buy less of when their income rises. For its application to college admissions, see Nagler, in press.) As a college becomes financially better off, it can afford to enroll the vast majority of its students through freshman admissions and thus admits fewer transfers. Less selective institutions are not so affluent. They may, therefore, find it necessary to award financial aid packages to middle-income transfers similar to those awarded to freshmen, enabling those students to transition to the higher cost four-year sector.

### FUTURE RESEARCH

Our findings bear further study using data inclusive of large numbers of freshman and transfer entrants to institutions of varying levels of selectivity. In addition, the link we have drawn between changes in financial aid, the higher education market, and implicit wages offered to students are worthy of investigation using multivariate predictive methods. Our analysis did not control for academic ability. Therefore, the higher rates of transfer access to selective institutions among high-SES students could be explained in large part by higher levels of academic preparation among the children of wealthy and well-educated parents. Notwithstanding differences in preparation by SES as students begin postsecondary education (Bowen, Kurzweil, & Tobin, 2005), the skewed distribution in the transfer cohorts are an indication of outcome inequity in the transfer function.

The notion of a middle- or upper-class takeover implies resource competition among social classes in which traditional low-income, first-generation college students lose out. To understand how and where such a takeover might occur requires a better understanding of the ways students of better educated parents with higher incomes secure resources for themselves and, in doing so, how they displace students of poorly educated parents with lower incomes or use resources that would otherwise be directed toward those students.

A number of questions are worth investigating through case study research to specify the nature of resource competition in community college. For example, are high-SES students more informed about class registration procedures? Do they, therefore, enroll in class early, shutting low-SES students out of sections when they close? Do high-SES students make better use of transfer centers and online transfer databases to ensure that they meet transfer requirements? Do assessment procedures for placement into transfer courses and honors programs advantage high-SES students, holding ability constant? It is possible that resource competition occurs, not at the campus level but across colleges in a system, due to funding mechanisms that direct resources to more affluent communities (Dowd, 2004, Dowd & Grant 2006, 2007).

It is also important to consider whether there are positive aspects of high-SES students' use of community colleges. High-SES students may be more academically prepared and may exert positive academic peer effects on less-prepared students (Winston & Zimmerman, 2004). In addition, they may be more effective in pressuring faculty and administrators to provide quality academic experiences and consumer-friendly administrative and counseling services. However, for poor students to benefit from peer effects, social classes must be mixed within the same colleges and classrooms rather than segregated based on neighborhood wealth. If community colleges are heavily segregated by the socioeconomic status of their students, as Titus (2006) found in his study of the four-year sector, then the opportunity for positive peer effects is lowered. In considering the value of SES diversity in the community college, therefore, it would be important to look within classrooms and colleges to determine where and how opportunities for interactions among diverse students arise.

In this study, we did not examine differences in transfer access by racial and ethnic background. However, it is possible that the hypothesized resource competition takes place among racial-ethnic groups, either within colleges or across colleges in different communities. Changes in the distribution of transfer access by race and ethnicity should also be investigated in future studies.

The questions we have raised here bear investigation because the answers would valuably inform the design of policies that would promote a more

equitable distribution of transfer access. For example, it may be that information is a necessary but insufficient condition for reducing the socioeconomic stratification of transfer. To promote transfer equity, it may well be necessary for both states and private institutions to invest more broadly in transfer scholarships, as has been recommended by several observers (Dowd et al., 2006; Long, 2005; Wyner, 2006). The disappointing findings concerning the extremely low and stagnant enrollment of the poorest students among transfers suggests that policies based primarily on reducing structural and informational barriers to transfer are not enough to address inequities in transfer access.

## REFERENCES

- Adelman, C. (2005). *Moving into town—and moving on: The community college in the lives of traditional-age students*. Washington, DC: U.S. Department of Education.
- Anderson, G. M., Alfonso, M., & Sun, J. C. (2006). Rethinking cooling out at public community colleges: An examination of fiscal and demographic trends in higher education and the rise of statewide articulation agreements. *Teachers College Record*, 108(3), 422–451.
- Anderson, G. M., Sun, J. C., & Alfonso, M. (2006). Effectiveness of statewide articulation agreements on the probability of transfer: A preliminary policy analysis. *Review of Higher Education*, 29(3), 261–291.
- Astin, A. W., & Oseguera, L. (2004). The declining “equity” of American higher education. *Review of Higher Education*, 27(3), 321–341.
- Avery, C., & Hoxby, C. M. (2004). Do and should financial aid packages affect students’ college choices? In C. M. Hoxby (Ed.), *College choices: The economics of where to go, when to go, and how to pay for it* (pp. 239–299). Chicago: University of Chicago Press.
- Barron’s profiles of American colleges*. (2003, 2005). Hauppauge, NY: Barron’s Educational Series.
- Bowen, W. G., Kurzweil, M. A., & Tobin, E. M. (2005). *Equity and excellence in American higher education*. Charlottesville: University of Virginia Press.
- Bragg, D. D. (2001). Community college access, mission, and outcomes: Considering intriguing intersections and challenges. *Peabody Journal of Education*, 76(1), 93–116.
- Burd, S. (2007, January 12). Democrats’ plan to slash the interest rate for student loans draws criticism. *Chronicle of Higher Education*, p. A23.
- Cabrera, A. F., Burkum, K. R., & La Nasa, S. M. (in press). Pathways to a four-year degree: Determinants of transfer and degree completion. In A. Seidman (Ed.), *College student retention: A formula for student success*. Westport, CT: ACE/Prager.
- Cheslock, J. J. (2005). Differences between public and private institutions of higher education in the enrollment of transfer students. *Economics of Education Review*, 24, 263–274.

- Choice of institution: Changing student attendance patterns in the 1990s.* (2004). ACE Issue Brief. Washington, DC: American Council on Education.
- Clearing paths to college degrees: Transfer policies in SREB [Southern Regional Education Board] states.* (2007). Atlanta, GA: Southern Regional Education Board.
- Dougherty, K. J. (1994). *The contradictory college: The conflicting origins, impacts, and futures of the community college.* Albany: State University of New York Press.
- Dougherty, K. J., & Kienzl, G. S. (2006). It's not enough to get through the open door: Inequalities by social background in transfer from community colleges to four-year colleges. *Teachers College Record*, 108(3), 452–487.
- Dowd, A. C. (2004). Community college revenue disparities: What accounts for an urban college deficit? *Urban Review*, 36(4), 251–270.
- Dowd, A. C., Bensimon, B. E., Gabbard, G., Singleton, S., Macias, E. Dee, J., Melguizo, T., Cheslock, J., & Giles, D. (2006). *Transfer access to elite colleges and universities in the United States: Threading the needle of the American dream.* Jack Kent Cooke Foundation. Retrieved on June 28, 2006, from [www.jackkentcookefoundation.org](http://www.jackkentcookefoundation.org).
- Dowd, A. C., Cheslock, J., & Melguizo, T. (In press). Transfer access from community colleges and the distribution of elite higher education. *Journal of Higher Education*.
- Dowd, A. C., & Grant, J. L. (2006). Equity and efficiency of community college appropriations: The role of local financing. *Review of Higher Education*, 29(2), 167–194.
- Dowd, A. C., & Grant, J. L. (2007). Equity effects of entrepreneurial community college revenues. *Community College Journal of Research and Practice*, 31(3), 231–244.
- Ellwood, D. T., & Kane, T. J. (2000). Who is getting a college education? Family background and the growing gaps in enrollment. In S. Danziger & J. Waldfogel (Eds.), *Securing the future: Investing in children from birth to college* (pp. 283–324). New York: Russell Sage Foundation.
- Heller, D. E. (2006). Merit aid and college access. *Symposium on the consequences of merit-based student aid* (pp. 1–13). Madison: Wisconsin Center for the Advancement of Postsecondary Education, University of Wisconsin.
- Heller, D. E., & Rogers, K. R. (2006). Shifting the burden: Public and private financing of higher education in the United States and implications for Europe. *Tertiary Education and Management*, 12, 91–117.
- Horn, L.J., & Lew, S. (2007). *Unexpected pathways: Transfer patterns of California community college students.* Research Brief. Berkeley, CA: MPR.
- Hoxby, C. M. (2000). *The effects of geographic integration and increasing competition in the market for college education.* Revision of NBER Working Paper, No. 6323. Retrieved on December 26 2006, from <http://www.economics.harvard.edu/faculty/hoxby/papers.html>.
- Immerwahr, J., & Johnson, J. (2007). *Squeeze play: How parents and the public look at higher education today.* National Center for Public Policy and Higher Education, No. 07-4. San Jose, CA: National Center for Public Policy and Higher Education.

- Lee, V. E., & Frank, K. E. (1990). Students' characteristics that facilitate transfer from two-year to four-year colleges. *Sociology of Education*, 63(3), 178–193.
- Long, B. T. (2004). How have college decisions changed over time? An application of the conditional logistic choice model. *Journal of Econometrics*, 121, 271–296.
- Long, B. T. (2005). *State financial aid policies to enhance articulation and transfer*. Boulder, CO: Western Interstate Commission for Higher Education.
- Melguizo, T., & Dowd, A. C. (In press). Baccalaureate success of transfers and rising four-year college juniors. *Teachers College Record*.
- McPherson, M. S., & Schapiro, M. O. (1998). *The student aid game: Meeting need and rewarding talent in American higher education*. Princeton, NJ: Princeton University Press.
- Mortgaging our future: How financial barriers to college undercut America's global competitiveness*. (2006). Washington, DC: Advisory Committee on Student Financial Assistance.
- Nagler, M. (In press). Funding shocks and optimal university admissions and financial aid policies. *Atlantic Economic Journal*.
- Pak, J., Bensimon, E. M., Malcom, L., Marquez, A., & Park, D. (2006). *The life histories of 10 individuals who crossed the border between community colleges and selective four-year colleges*. Retrieved on June 28, 2006, from [www.jack-kentcookefoundation.org](http://www.jack-kentcookefoundation.org).
- Price, D. V., & Davis, R. J. (2006). *Institutional grants and baccalaureate degree attainment*. Washington, DC: National Association of Student Financial Aid Administrators.
- Redden, E. (2007, September 14). Un-complicating community college transfer. *Inside Higher Ed*. Retrieved in October 2007 from [www.insidehighered.com/news/2007/09/14/newjersey](http://www.insidehighered.com/news/2007/09/14/newjersey).
- Report says "middle-income melt" at colleges is a myth*. (1995). Retrieved on December 27, 2006, from [www.chronicle.com/che-data/articles.dir/articles-41.dir/issue-22.dir/22a0221.htm](http://www.chronicle.com/che-data/articles.dir/articles-41.dir/issue-22.dir/22a0221.htm).
- Shaw, K. (2001). Culture and ideology in keeping transfer commitment: Three community colleges. *Review of Higher Education*, 25(1), 91–114.
- Shulock, N., & Moore, C. (2005). Diminished access to the baccalaureate for low-income and minority students in California: The impact of budget and capacity constraints on the transfer function. *Educational Policy*, 19(2), 418–442.
- Stanton-Salazar, R. D. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Educational Review*, 67(1), 1–40.
- Titus, M. A. (2006). Understanding college degree completion of students with low socioeconomic status: The influence of the institutional financial context. *Research in Higher Education*, 47(4), 371–398.
- Townsend, B. K. (2001, November). *Four-year college students' use of the community college: A middle-class takeover?* Paper presented at the Association for the Study of Higher Education conference, Richmond, Virginia.
- Townsend, B. K., & Wilson, K. (2006). "A hand hold for a little bit": Factors facilitating the success of community college transfer students to a large research university. *Journal of College Student Development*, 47(4), 439–456.



- Trends in student aid.* (2006). Retrieved February 1, 2007, from [www.collegeboard.com/prod\\_downloads/about/news\\_info/trends/trends\\_aid\\_07.pdf](http://www.collegeboard.com/prod_downloads/about/news_info/trends/trends_aid_07.pdf).
- Turner, S. E. (2004). Going to college and finishing college: Explaining different educational outcomes. In C. M. Hoxby (Ed.), *College choices: The economics of where to go, when to go, and how to pay for it* (pp. 13–56). Chicago: University of Chicago Press.
- U.S. Department of Education. (2005). *Trends among high school seniors, 1972–1992* (No. NCES 95-380). Washington, DC: National Center for Educational Statistics.
- U.S. Department of Education. (2006). *A test of leadership: Charting the future of U.S. higher education*. Washington, DC: Education Publications Center.
- Wellman, J. V. (2002). *State policy and community college-baccalaureate transfer*. San Jose, CA: National Center for Public Policy and Higher Education and the Institute for Higher Education Policy.
- Winston, G. C., & Zimmerman, D. J. (2004). Peer effects in higher education. In C. M. Hoxby (Ed.), *College choices: The economics of where to go, when to go, and how to pay for it* (pp. 395–421). Chicago: University of Chicago Press.
- Wyner, J. (2006, February 10). Educational equity and the transfer student. *Chronicle of Higher Education*, p. B6.