

The Role of Higher Education in Social Mobility

Robert Haveman and Timothy Smeeding

Most Americans expect the nation's colleges and universities to promote the goal of social mobility to make it possible for anyone with ability and motivation to succeed. But according to Robert Haveman and Timothy Smeeding, income-related gaps both in access to and in success in higher education are large and growing. In the top-tier colleges and universities, almost three-quarters of the entering class is from the highest socioeconomic quartile. The pool of qualified youth is far greater than the number admitted and enrolled; hence America's top colleges could enroll more moderate- and low-income students without lowering their selection standards.

Higher-income parents make enormous efforts to ensure their children's academic success, while children of poor parents begin the "college education game" later and with fewer resources. Students in poor and minority neighborhoods are less well prepared academically; ill prepared to select colleges, apply for admission, and secure acceptance; and poorly informed about the cost of attending college and the availability of needs-based financial aid. Sharply rising college prices during the 1980s and 1990s, together with the growing inequality of family income, have raised the cost of attending college far more for low-income students than for well-to-do students. Financial aid has risen more slowly, and the share targeted on low-income students has been falling.

The authors offer bold policy recommendations to increase educational opportunities for low- and middle-income students. These involve the development of financing structures that will increase access for students from lower-income families. Public institutions could price tuition close to real costs and use added revenues to provide direct student aid for students from low-income families. Federal subsidies to students who attend wealthy institutions could be capped, with the savings redirected to students attending less well-endowed schools, both public and private. Finally, federal and state governments could redirect to lower-income students the financial support they now provide colleges and universities.

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Median income in 2000 for Americans with a bachelor's degree or higher was more than double that for high school graduates.¹ By 2010, 42 percent of all new U.S. jobs are expected to require a postsecondary degree.² Tomorrow, even more than today, postsecondary education will be among the most important determinants of labor market success, and therefore one of the nation's most crucial means of reducing persistent economic inequalities. President George W. Bush, among others, considers education a primary force for economic and social mobility in the United States. Indeed, during the second 2004 presidential debate, he cited it as the single most important means of improving mobility and leveling social and economic differences.

Traditionally, the nation's higher education system, especially its public component, has had two primary goals: economic efficiency and social equity. As to the first, without collective intervention in support of higher education, individuals by themselves are unlikely to invest sufficiently in postsecondary schooling, because they fail to take into account the social benefits that accrue to their added spending. Hence, a strictly market-based approach to postsecondary schooling would provide the nation's labor force with insufficient advanced skills and training. Society thus subsidizes postsecondary schooling in a variety of ways—through preferential loans, public provision, and below-cost tuition.

In addition to promoting economic efficiency, collective measures to support higher education have a second goal—to contribute to an “even start” for the nation's youth. The case for public provision of higher education and for public financial support to reduce the private costs of higher education (indeed, the

case for public education in general) has long rested on the desire to reduce the connection between parents' social class and their children's economic position as adults.

However, despite past U.S. efforts to promote postsecondary schooling for youth from lower-income backgrounds, evidence is mounting that income-related gaps both in access to higher education and in college graduation rates are large and growing. About 85 percent of eighth-grade students in the United States aspire to a college degree.³ But in 2001, only 44 percent of high school graduates from the bottom quintile of the income distribution were enrolled in college in the October after they graduated from high school, as against almost 80 percent of those in the upper quintile.⁴ Thomas Kane reports that even among students with similar test scores and class ranks and from identical schools, students from higher-income families are significantly more likely than those from lower-income families to attend college, particularly four-year colleges.⁵ Indeed, since the 1970s students from lower-income families have increasingly become clustered in public two-year postsecondary institutions, which often turn out to be the end of their formal education.⁶

These disparities in college access lead to widening gaps in the share of students remaining in college until graduation. Of eighth graders surveyed in the National Education Longitudinal Study (NELS) of 1988 conducted by the Department of Education, 51 percent from the highest socioeconomic quartile reported having a bachelor's degree twelve years later, as against only 7 percent of those from the lowest quartile.⁷ Melanie Corrigan reports that 59 percent of low-income students who began postsecondary education in 1998 had a degree or were still in school

three years later, as against 75 percent of higher-income students.⁸ Students from low-income families are less likely than students from high-income families to estimate accurately the cost of college, more likely to take remedial courses in college, and less likely to understand the college application process, in part because their parents did not attend college themselves and in part because their high schools, which send few students on to four-year baccalaureate degrees, lack useful and timely advice on college preparation.⁹

Higher Education, Inequality, and Social Mobility

The traditional role of colleges and universities in promoting social mobility has attracted the attention of both policymakers and social science researchers. In his discussion of what he calls “education-based meritocracy,” John Goldthorpe explains that a merit-based higher education system can offset the role of social class in determining economic outcomes. In a merit-based system, he notes, postsecondary schooling is a filter that keeps parents’ economic position from simply passing straight through to their children, thus simultaneously promoting economic efficiency, social justice, and social mobility.¹⁰

Goldthorpe posits three requirements for moving toward a less class-based society. First, the link between individuals’ social origins and their schooling must increasingly reflect *only* their ability. Second, the link between their schooling and their eventual employment must be *strengthened* by qualifications acquired through education. And third, the link between schooling and employment must become *constant* for individuals of differing social origins.¹¹

Goldthorpe notes that Michael Young, in his important 1958 book on *The Rise of Meritoc-*

racy, feared that in Britain the effect of higher education on social equality was being undermined by the interaction of public policies, the selectivity of colleges and universities, and evolving labor-hiring practices. He notes that Young was concerned about the way that “the purposes of the Education Act of 1944 were being interpreted by post-war governments. The Act established ‘secondary education for all,’ and was intended to give all

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children the fullest possible opportunity to develop their abilities, whatever form or level they might take.”¹² In Young’s view, the 1944 law was being used increasingly as a means of social selection—in the name of “merit”—for different grades of employment with differing levels of reward in terms both of money and of status.

Young’s fear, in mid-twentieth-century Britain, was that the employment process was undermining the goal of social equality. Today, however, the selection processes within higher education itself also appear to be a problem. The high concentration in the nation’s colleges and universities of youth from the top echelons of parental income and social class is disturbing and appears to be increasing. It exists at all levels of postsec-

ondary schooling but is especially evident at the nation's best (most selective) colleges and universities.

Two forces, operating in different directions, appear to have caused these growing inequalities. First, increasingly affluent higher-income parents with one or two children invest time, money, and influence to ensure their children's academic success from pre-

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school through graduate school. And second, children of less well-educated and less well-to-do parents begin the "college education game" later, with fewer choices and fewer resources. For example, in 2000 parents at the ninetieth percentile of the income distribution had available an average of \$50,000 to support each child, including his or her schooling, as against \$9,000 per child for families in the tenth percentile.¹³

Although resilience, luck, and persistence pay off for a minority of low-income children, the odds are increasingly stacked against their success.¹⁴ Therefore, policies designed to address these inequalities should focus not simply on the point at which students move from secondary to postsecondary education, but on the long-term path from kindergarten through college graduation.

Contrary to its stated goals and repeated claims, the U.S. higher education system fails to equalize opportunities among students from high- and low-income families. Rather, the current process of admission to, enrollment in, and graduation from colleges and universities contributes to economic inequality as measured by income and wealth. The system thus seems to intensify and reinforce differences in economic status. Though college attendance rates are rising, college graduation rates for U.S. students are growing slowly, if at all, and changes in the composition of the college-eligible and college-graduating populations appear to perpetuate existing class differences. If so, the current system of higher education will contribute to growing income and wealth inequality, which in turn will exacerbate these inequalities across future generations.

Does this mean that higher education retards social mobility? Not necessarily. But it seems clear that higher education does not promote social equality as effectively as it often claims to do and as it is popularly perceived to do.¹⁵ We therefore suggest some policies that would increase and equalize access to higher education and hence improve social mobility.

In this article, we explore the broad issues facing educators and policymakers seeking to eliminate income- and wealth-related disparities in college attendance and graduation. We first summarize some research findings and present some new measures of inequality in college access and enrollment. We then explore how elementary and secondary education contribute to inequality in postsecondary education, as well as how differences in the kind of information available to youth of different backgrounds affect how they apply to college, how they navigate the admission process, and once they are admitted, how

long they continue in college and whether they graduate. We also consider the implications for college success of the different varieties of higher education, including the community college system and remediation programs designed to ease inequalities among enrolled students. Each is important for assessing the overall effect of higher education on both economic inequality and mobility. Finally, we suggest policies that would enable higher education to enhance social mobility and advance the life chances of disadvantaged children.¹⁶ We concentrate on the most recent trends in college-going, but refer to the work of others who present evidence on longer trends in earlier periods.¹⁷

On Higher Education and Social Mobility: What Do We Know?

One of the stated objectives of the nation's colleges and universities is to be a meritocratic filter between the economic position of the families in which children grow up and those children's economic position as adults. Higher education is expected to promote the goal of social mobility and to make it possible for anyone with ability and motivation to succeed. To be effective in this role, colleges and universities must seek out ability, motivation, and preparedness wherever it lies and then provide high-quality educational services to their students. The labor market will do the rest, rewarding those who acquire the skills that the nation's postsecondary system has to offer.¹⁸

How well are college and university admission, training, and completion fostering this meritocratic goal? If true "merit" could be measured, answering that question would be easy. One could simply assess the extent to which the most meritorious youth were being sought out, admitted, and trained. Indeed, if merit—ability, motivation, and prepared-

ness—were equally distributed among youth regardless of family income or economic position, an effective higher education sector would offer an equal chance of admission and graduation to all—high-income and low-income youth alike. But ability, motivation, and preparedness are all linked to the economic position of the children's families. Children from well-to-do families tend, on average, to have more of all three traits; children from disadvantaged families, to have less. Genetics plays a role in the allocation of ability and motivation, as do the choices made by and the environment created by families of differing incomes. As for preparedness, the nation's primary and secondary school systems train youth from various economic backgrounds for postsecondary schooling. Other articles in this volume address these precollege patterns.¹⁹

The absence of a reliable merit marker makes it more difficult to assess how well higher education promotes social mobility. One would be surprised if rates of college admission, matriculation, and graduation were equal regardless of families' varying economic circumstances, and as we will show, they are not. The question, then, becomes whether the inequality in the provision of higher education services is consistent with a pattern of training being offered to those with the most merit. Even more relevant, perhaps, is whether the inequality in higher educational attainment is increasing or decreasing.

Levels and Trends in Economic Inequality in Higher Education

Table 1 presents an overview of some of the findings of David Ellwood and Thomas Kane in their review of early research on the relationship between schooling and economic background over time. The type of schooling

Table 1. Proportion of Students Who Enroll in Colleges and Universities within Twenty Months of Graduating from High School

Percent

Cohort	Total	Vocational/technical school	Two-year college	Four-year college
High school class of 1980–82				
Bottom quartile	57	12	16	29
Top quartile	80	6	19	55
Total	68	10	19	39
High school class of 1992				
Bottom quartile	60	10	22	28
Top quartile	90	5	19	66
Total	75	7	23	45

Source: David Ellwood and Thomas J. Kane, “Who Is Getting a College Education: Family Background and the Growing Gaps in Enrollment,” in *Securing the Future: Investing in Children from Birth to College*, edited by Sheldon Danziger and Jane Waldfogel (New York: Russell Sage Foundation, 2000). Data are taken from the High School and Beyond study.

described in the table, college-going, says little about total years of completed schooling or college graduation. For students who graduated from high school during 1980–82, the overall rate of college-going is 80 percent for youth from the top income quartile of families, as against 57 percent for youth from the bottom quartile. Youth from the poorest families were concentrated in vocational and technical institutions, while those from the richest families tended to enroll in four-year colleges.²⁰

Between 1980–82 and 1992, the overall college enrollment rate rose 7 percentage points. But the rate for the highest-income youth increased 10 points, while the rate for the lowest-income youth increased only 3 points. In terms of attendance at four-year colleges, the gap between the highest- and lowest-income youth widened far more during this period. While the share of most disadvantaged youth enrolled in four-year colleges *fell* slightly (from 29 to 28 percent), that for the most well-to-do youth *rose* substantially (from 55 to 66 percent). The gap between the two groups widened from 26 percentage points to 38 percentage points.²¹

Inequality and the Quality of Colleges and Universities

The patterns revealed by Ellwood and Kane are consistent with tabulations of Anthony Carnevale and Stephen Rose, who analyzed detailed data from the High School and Beyond study and from the NELS of 1988.²² They divided all four-year colleges and universities into four tiers by quality, based on the Barron index of college selectivity, putting community colleges into a separate category; and divided all families into four socioeconomic status categories, based on their income and parental education and occupation.²³ Their findings are summarized in table 2.

In the 146 top-tier colleges and universities (accounting for about 10 percent of all college students), 74 percent of the entering class is from the highest socioeconomic quartile and only 3 percent from the lowest quartile. In the 253 colleges in the second tier (accounting for about 18 percent of all college students), the shares are 46 and 7 percent, respectively. Only in community colleges is the composition of entering students by fam-

Table 2. Socioeconomic Status of Entering Classes, by College Selectivity

Percent

Colleges grouped by selectivity	Socioeconomic status quartile ^a	
	Bottom	Top
Tier 1	3	74
Tier 2	7	46
Tier 3	10	35
Tier 4	16	35
Community colleges	21	22

Source: Anthony P. Carnevale and Stephen J. Rose, "Socioeconomic Status, Race/Ethnicity, and Selective College Admissions," in *America's Untapped Resource: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004), pp. 101–56. Data are from the National Education Longitudinal Study of 1988.

a. Compared to 25 percent of all youth in each quartile.

ily socioeconomic status similar to the composition of all youth of college age.²⁴

Patterns of Educational Attainment by Family Permanent Income

These family income–related gaps in higher education attainment rely on estimates of income that are somewhat difficult to interpret, and in some cases are suspect. First, among the national data collected, income values are sometimes for the households in which students reside, and hence do not necessarily pertain to the parents of these children.²⁵ Second, for some data sources, parental income is supplied by the students themselves in response to survey questions, and these responses are suspect.²⁶ Third, none of these studies allows for the "income needs" of the families of the youth being studied. It clearly matters whether a student from a family with \$50,000 a year of income is an only child or has several siblings who are also competing for family resources. Finally, and most important, the parental or family income data are one-year "snapshot" (or transitory) values and hence fail to reflect the long-term (or "perma-

nent") economic position of students' families.²⁷

Robert Haveman and Kathryn Wilson proceeded in a somewhat different way to get a reliable picture of inequalities in higher education attainment for a specific cohort of youth. Using the Michigan Panel Survey of Income Dynamics (PSID), they selected a nationally representative sample of 1,210 children who were born between 1966 and 1970 and followed them from 1968, the first year of the PSID (or their year of birth, if later), until 1999. This cohort would be expected to graduate from high school in the late 1980s and from college in the early 1990s. The authors measured educational outcomes—high school graduation, college attendance, college graduation, and years of schooling—at age twenty-five. For each individual, they also calculated permanent income relative to "needs" and the wealth of the family in which he or she grew up. The ratio of income to needs is the average real value of the family's income while the youths were aged two to fifteen, divided by the national poverty line (for a family of that size) and the average wealth (net worth) of the family in 1984, when the youths ranged in age from fourteen to eighteen.²⁸

Table 3 summarizes the educational attainment of youth from the bottom and the top quartiles and deciles of family "permanent" income-to-needs ratios.²⁹ While only about 22 percent of youth from the bottom quartile of families attended college, 71 percent from families in the top quartile at least entered a college or university. The gap is nearly 50 percentage points. Among the youth from the top quartile, 42–44 percent graduated from college, as against only 6–9 percent of youth in the bottom quartile, a gap of more than 35 percentage points. Transitions from high school graduation to college attendance

Table 3. Educational Attainment of 1966–70 Birth Cohort, by Decile and Quartile of Family Average Income-to-Needs Ratio^a

Percent

Educational attainment	Decile		Quartile	
	Bottom	Top	Bottom	Top
Share of cohort graduating from high school	56.8	97.7	64.1	96.1
Share of cohort attending college	19.5	78.2	21.6	71.2
Share of high school graduates attending college	34.3	80.0	33.8	74.1
Share of cohort graduating from college	6.3	49.1	5.6	42.1
Share of those attending college who graduate	32.3	62.8	25.9	59.1
Years of schooling	11.2	14.6	11.8	14.2

Source: Robert Haveman and Kathryn Wilson, “Economic Inequality in College Access, Matriculation, and Graduation,” conference on “Economic Inequality and Higher Education: Access, Persistence and Success,” Maxwell School of Syracuse University, September 23–24, 2005. Data are from the Michigan Panel Study of Income Dynamics (PSID).

a. The ratio of income to needs is the average real value of the family’s income while the youths were aged two to fifteen, divided by the national poverty line (for a family of that size) and the average wealth (net worth) of the family in 1984, when the youths ranged in age from fourteen to eighteen.

and from college attendance to college graduation are also shown. Again, substantial gaps exist between youth from the highest and lowest quartiles in the probability of making these transitions. The gaps between the attainment levels of youth from the top and bottom deciles are even greater, suggesting a continuous relationship between economic status and educational attainment.

The pattern of extreme inequality between youth from the top and bottom quartiles of the family income-to-needs ratio is similar in terms of the allocation of educational services. Table 4 shows the distribution of all high school graduates, college attendees, and college graduates in this cohort of youth, by decile and quartile of family income-to-needs ratio. Among high school graduates, nearly 30 percent are from the top income quartile, while about 20 percent are from the bottom quartile. At least in terms of attainment—though not necessarily in terms of quality-adjusted attainment—high school educational services are distributed relatively evenly among children from various economic back-

grounds. The pattern for college graduates, however, is quite different. Among all college graduates in this cohort, more than 50 percent are from families with income-to-needs ratios in the top quarter of the nation, while only 7 percent are from the lowest quarter of families. Similarly, the 10 percent of families in the lowest income-to-needs decile yield less than 3 percent of college graduates. Put differently, half of all higher educational services necessary for attaining a college degree are allocated to youth from the richest quarter of the nation’s families, as against only 7 percent allocated to youth from the poorest 25 percent of families and only 3 percent to youth from the poorest 10 percent of families.

How Large Is the Pool of Qualified Low-Income Students?

The question of whether colleges and universities have been making enough effort to admit and enroll qualified students is difficult to answer. The definition of “qualified” is directly related to the selection standards that schools themselves define and impose. Two studies have tried to answer this question for

Table 4. Distribution of 1966–70 Birth Cohort at Selected Levels of Educational Attainment, by Decile and Quartile of Family Average Income-to-Needs Ratio^a

Percent

Educational attainment	Decile		Quartile			
	Bottom	Top	Bottom	Third	Second	Top
High school graduate	6.6	11.6	19.0	25.2	27.1	28.7
Attended college	4.2	17.1	11.8	20.6	28.3	39.2
College graduate	2.9	23.2	6.6	17.4	25.9	50.1

Source: See table 3.

a. The ratio of income to needs is the average real value of the family's income while the youths were aged two to fifteen, divided by the national poverty line (for a family of that size) and the average wealth (net worth) of the family in 1984, when the youths ranged in age from fifteen to eighteen.

the highest-quality and most selective U.S. colleges and universities, and both have concluded that the available pool of qualified youth is far greater than the group of students admitted and enrolled at these institutions.

The first of these studies, by Carnevale and Rose, uses a simulation approach for 146 top-tier colleges and universities (again, accounting for about 10 percent of all college students). They consider an “SAT equivalent” score above 1,000 as evidence of ability to succeed at these first-tier schools, and then compare the share of low-income students who are qualified with the share of these students who are enrolled. Among students with scores above the cutoff, 5 percent were from the bottom socioeconomic quarter (3 percent of comparable students were enrolled), as against 21 percent from the bottom half (10 percent of comparable students were enrolled). More than 800,000 students had an SAT equivalent score of more than 1,000—four-and-a-half times the total number of student slots at the first-tier schools.³⁰

More recently, Gordon Winston and Catharine Hill have used a similar approach to determine whether the nation's most prestigious colleges and universities (twenty-eight

of the private colleges participating in the Consortium on Financing Higher Education) could increase their enrollment of low-income students without sacrificing academic standards. Using an SAT equivalent score of 1,420 as the cutoff for “high ability,” they show that 12.8 percent of all high-ability students are from the bottom two income quintiles, a total of about 4,300 students. Today these colleges matriculate only about 2,750 such students, leading the authors to conclude that the colleges could enroll more such students without decreasing selection standards.³¹

In focusing on the top-quality colleges and universities, these studies do not address the larger problem of lower-scoring but nevertheless qualified low-income students who attend less selective schools. Indeed, more than three-quarters of all college students attend colleges and universities that do not impose high selectivity standards.³² Hence, even if the most selective colleges and universities admitted qualified low-income youth, there would still be a nontrivial attendance gap between the rich and the poor.

Indeed, part of the gap between low-income students' population share and their enroll-

ment in colleges and universities is due to low test scores and other indicators of ability that are indirectly related to family income. For example, although 36 percent of low-income students at high-income high schools were in the top half of the test score distribution, only 24 percent of low-income students at low-income high schools scored at this level.

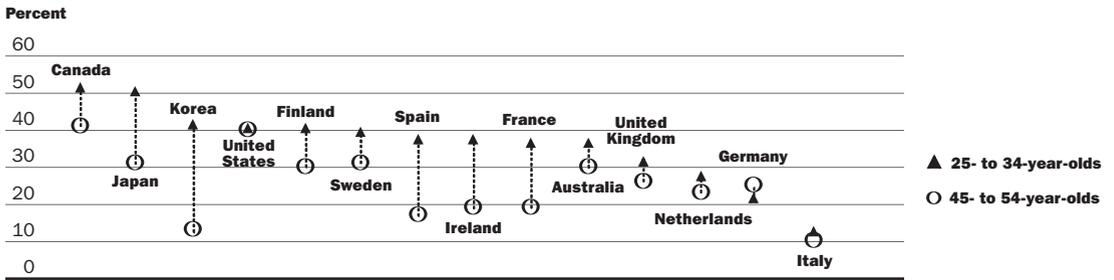
Indeed, part of the gap between low-income students' population share and their enrollment in colleges and universities is due to low test scores and other indicators of ability that are indirectly related to family income.

Although this evidence regarding the effectiveness of higher education's meritocratic filter is not decisive, these gaps are large. More significant, they appear to be growing. Colleges and universities may aspire to weaken the link between family socioeconomic class and life prospects, but their efforts have been discouraging—particularly in the case of the four-year colleges and universities, the traditional heart of the higher education system, producing the highest-quality educational services. In sum, the allocation of educational services (especially services of the highest quality) is concentrated among youth from families with the highest economic status, and the concentration appears to be increasing. This trend has been reinforced by the erosion in state financial support for public higher education over past years, as spending on other priorities, such as medical care for

low-income families, criminal justice, and K–12 education has been substituted for support of public colleges and universities.³³

Slow Growth in College Graduation Rates: Some International Evidence

At a time when the links between U.S. students' economic origins and their attainment of higher education are strengthening, progress in increasing the number of U.S. college graduates has stalled.³⁴ Indeed, for any given cohort, there has been virtually no change over the past two decades in the share of youth who have been awarded a postsecondary degree. Figure 1 compares schooling for two cohorts observed in 2002—one aged twenty-five to thirty-four (born 1966–75), the other aged forty-five to fifty-four (born 1946–55)—in fourteen industrialized nations. With two exceptions—reunified Germany and the United States—the share of adults with a postsecondary degree has increased in every country. Although the older U.S. cohort ranked second in the share of adults with a postsecondary degree (about 40 percent), the younger cohort ranked fifth. Four countries had gained parity with the United States or forged ahead, with Canada and Japan outpacing the United States by 10 percentage points. Another five countries had closed the gap to less than 5 percentage points. Only Italy trailed behind by more than 15 percentage points. If U.S. colleges and universities had been able to increase the rate of college graduation over this period, they would likely have been able to serve greater shares of youth from lower-income families, thus weakening the link between family economic origins and postsecondary attainment. The increased concentration of youth from higher-income families in America's colleges and universities, together with the constant rate of college completion, seems consistent with a trend toward zero-

Figure 1. Percentage of the Population That Has Attained Postsecondary Education, 2002

Sources: Dirk Pilat, "Canada's Productivity Performance in Comparative Perspective," *International Productivity Monitor* (Ottawa: Center for the Study of Living Standards), no. 10 (2005): 24–40; OECD, *Education at a Glance* (Paris: 2004), table A3.3, p. 71.

sum competition among institutions for a relatively constant stock of the best qualified students—who also are concentrated in the nation's highest-income families.³⁵

The Effect of Postsecondary Schooling on Earnings

Higher education influences social mobility not only because family income affects schooling but also because schooling affects the income of adult children. Research on the link between schooling and earnings is extensive.

In a recent review of research, Orley Ashenfelter, Colm Harmon, and Hessel Oosterbeek compare the findings of several types of studies of the labor market returns to education. They find that across twenty-seven studies in nine countries, the market-based returns to schooling are large and robust, ranging from 6.6 to 9.3 percent. After adjusting for "publication bias" (the tilt inherent in the scholarly publication process leading to a higher probability of acceptance for studies with statistically significant results), they find estimated rates of return between 6.8 and 8.1 percent for the United States.³⁶

Building on these overall findings, a few studies have estimated how returns to school-

ing differ by quality and type of institution. Thomas Kane and Cecilia Rouse find that the returns to one credit at a two-year or four-year college are roughly 4–6 percent for every thirty completed credits. They find, further, that the "sheepskin effect" of degree completion over and above the value of the credits completed is small but positive for men who complete a B.A. and for women who complete the associate's degree.³⁷ Researchers have also estimated returns to the quality of four-year college. One study finds positive effects of elite colleges on earnings.³⁸ But another finds that students who attend more elite colleges do not earn more than students who were accepted by comparable colleges, but attended less elite colleges.³⁹

Similarly, a few studies have sought to identify the lifetime returns to education for youths from different socioeconomic backgrounds. In general, the earnings gains for students from high-income families exceed those for students from low-income families. For example, Jeff Grogger and Eric Eide indicate that, controlling for other characteristics, the discounted present value of income gains over the first nine years of work for white males with high grades in high school is 8 percent greater when family income is in

the \$70,000 annual income range than for students from families with annual income in the \$30,000 range.⁴⁰ Similar differences exist for students with other characteristics.

Steps in the College Process

Clearly, high-income youth are overrepresented in U.S. colleges. Why they are overrepresented, however, is not well understood. In this section we summarize what is known about how family background affects each of the steps in the process of applying to, securing admission to, and graduating from the nation's colleges and universities.

Preparing for College and Applying for Admission

Students must overcome several hurdles to succeed in postsecondary education, and the overall process is complex. First, students must be well-prepared in elementary and secondary school (see the article by Cecilia Elena Rouse and Lisa Barrow in this issue). High schools in poor and minority neighborhoods, however, tend to be of low quality and to lack the resources, both financial and human, to prepare students adequately for postsecondary schooling.⁴¹ Rigorous courses in all fields, but especially mathematics, are rare in these high schools, as are opportunities for honors course work or advanced placement—making it hard for students to build a proper academic foundation for college work. One study finds that only half of low-income high school graduates in 1992 who applied for admission to a four-year institution were “minimally qualified” to enroll, as against more than 80 percent of students from families with incomes of \$75,000 or more.⁴² Some observers claim that the nation's secondary schools give students poor signals about the preparation needed to succeed in higher education because advocates

and policymakers overemphasize “access” as opposed to “preparation.”⁴³

Nor do poor-quality high schools support and teach the study and work habits necessary for postsecondary success. Although the reasons for poor student motivation are surely complex and lie in part with the families and neighborhoods in which children are raised, the discipline and standards set by the nation's poorest schools also contribute.

The poor quality of schools in low-income neighborhoods also affects how much students know about how to select colleges, apply for admission, and gain acceptance. A recent study highlights some of the difficulties these students encounter. Thomas Kane reports data from a Boston program showing that inner-city, primarily minority students, report plans to attend college similar to those of their suburban, primarily white, counterparts. But only a third of the inner-city students had taken the SAT exam by October of their senior year, as against 97 percent of the suburban students.⁴⁴ Further, the low-income and minority students and their parents were ill-informed about the cost of attending college and were often put off by the high “sticker prices” emphasized by the media.⁴⁵ They were also unfamiliar with the availability of needs-based financial aid.

Michael Timpane and Arthur Hauptman provide a comprehensive discussion of academic preparation and performance and offer suggestions for improving both. They recommend that colleges and universities help improve K–12 education (for example, through teacher preparation and partnerships with elementary and secondary schools). They also support moves to help students make the transition from high school to college (for example, through increasing high school gradu-

ation standards and providing support services and early interventions), strengthening remediation programs, and improving the performance of low-income students while in college.⁴⁶

Finding and Getting Financial Aid

According to the College Board, financial aid for undergraduates and graduate students totaled more than \$122 billion in 2003–04, an 11 percent increase from the previous year, over and above inflation. Federal guaranteed loans account for about half of that total. Other federal support made up another 20 percent, with Pell grants constituting about three-quarters of that. State and institutional support made up the remaining 30 percent. But though financial aid itself is rising, the share targeted on low-income students has been falling, as needs-based assistance has been increasingly replaced by merit-based aid.

According to most recent analyses, trends in family income, tuition, and financial aid policy have most adversely affected those students least able to afford postsecondary schooling. For example, college prices (in real terms, net of inflation) were nearly flat during the 1970s but increased rapidly during the 1980s and 1990s, when tuition rose two and even three times as fast as the price of other consumer goods.⁴⁷ This trend, together with the growing inequality of family income, has raised the cost of attending college far more for students in low-income families than for those in well-to-do families. In the early 1970s, paying for a child to attend a public four-year college absorbed 42 percent of the income of a low-income family; by the 2000s, it took nearly 60 percent; for students from high-income families, the increase in income share was from 5 percent to 6 percent.⁴⁸ Moreover, students from lower-income families are more sensitive to

tuition increases than students from higher-income families.⁴⁹

Although these cost increases have been partially offset by increased student financial aid, the evidence suggests that major disparities continue to exist. In 2001 the Advisory Committee on Student Financial Assistance reported that “unmet need” is substantially higher for low-income students than for others, whether they attend public or private, four-year or two-year, colleges.⁵⁰ Several studies have tried to track the recent changes in the effective price of college attendance, taking account of changes in both financial aid and tuition. Amy Schwartz has summarized her own estimates as follows:

Evidence shows that sticker prices are rising, but increases in financial aid have been significantly offsetting. For two-year colleges, most of which are public institutions, the trend in net prices has been downward and current net prices are, on average, *negative*. Among four-year colleges, the net price of public colleges declined in the last decade with some modest increases in the last few years offsetting a larger decrease in the 1990s. The trend for four-year private colleges, however, has been unambiguously positive—net prices are significantly higher than a decade ago.⁵¹

Moreover, financial aid has increasingly come in the form of loans, rather than grants.⁵² During the early 1980s, for example, grants made up 55 percent of student aid; by 2001, that figure was down to 41 percent. By 2001, loans to students and parents by the federal government totaled nearly \$40 billion, more than five times the resources of the Pell grant program that was meant to be the primary source of assistance to low-income students. Although the maximum Pell grant covered about 60 percent of the

cost of attending a four-year public institution in the early 1980s, it covered only about 40 percent by 2001.⁵³

Michael McPherson and Morton Schapiro have concluded that colleges and universities are increasingly abandoning ability-to-pay principles and using student financial aid both to maximize net tuition revenue and to

Merit scholarships and other forms of non-needs-based assistance have grown over time, resulting in more aid to affluent students.

meet their goals for student quality. Merit scholarships and other forms of non-needs-based assistance have grown over time, resulting in more aid to affluent students.⁵⁴

In more recent work, McPherson and Schapiro track changes in merit and needs-based financial aid and find that at all institutions, low-income students receive more grant aid than high-income students, across the range of SAT scores. But at private colleges and universities, the gap in aid between low- and high-income students increased as aid for low-income students fell, relative to that afforded high-income students. Over the 1990s, among students with the highest SAT scores, low-income students received 4.9 times as much aid during 1992–93, but only 2.8 times as much during 1999–2000. The authors suggest that this movement of grant dollars toward higher-income families reflects not a greater “demand” for students with high SAT scores, but rather an excess supply of places at selective private colleges,

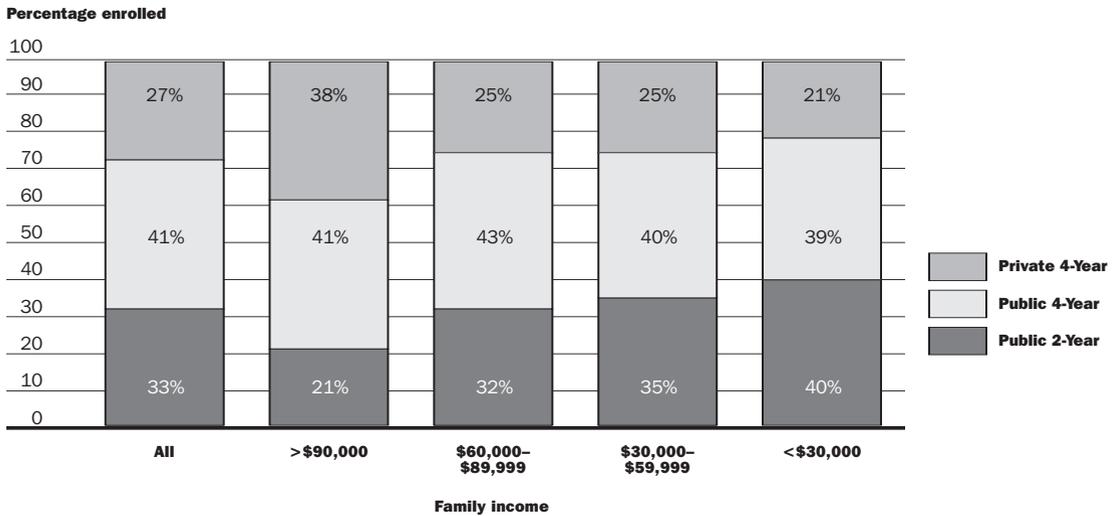
leading to a bidding down of the price through greater tuition discounts.⁵⁵

At public colleges and universities, on the other hand, student aid awards rose more rapidly with need, and the “net price” facing low-income students declined during the 1990s. But state budget difficulties since 2000 suggest this trend may be ending. Moreover, more complicated rules about how much interest lenders can charge on student loans have led to new legislation reducing subsidies to lenders, negatively affecting the cost and targeting of federally subsidized student loan programs.⁵⁶

One important issue is the extent to which the increase in merit-based assistance has increased the overall level of college attendance and completion. Susan Dynarski concludes that programs providing a substantial increase in merit-based student aid (thought of as tuition reduction) have increased both college attendance and students’ persistence in working toward a degree, especially among women, and in particular, nonwhite women.⁵⁷ Her evidence, however, does not effectively account for the possibility that colleges and universities may have offset external increases in student aid by increasing tuition.⁵⁸

Community Colleges

Community colleges and associate’s degree programs play an important but as yet poorly understood role in postsecondary education.⁵⁹ Indeed, Dan Goldhaber and Gretchen Kiefer show that although about 40 percent of all postsecondary students attend four-year public universities, lower-income children are twice as likely to attend public two-year (community college or associate’s degree) programs than are higher-income children, almost exactly in reverse proportion to the share of higher-income

Figure 2. Institutional Choice, by Income Level, 1999–2000^a

Sources: Reproduced from College Board, *Education Pays 2004* (Washington: College Entrance Examination Board, 2004); Dan Goldhaber and Gretchen Kiefer, “Higher Education and Inequality: The Increasingly Important Role Community Colleges Play in Higher Education,” unpublished manuscript, University of Washington, presented to the Maxwell School Conference on Economic Inequality and Higher Education: Access, Persistence and Success, September 23–24, 2005.

a. Values may not sum to 100 percent because of rounding. Percentages include full-time dependent students in the first year of undergraduate study.

children who attend private, four-year colleges (see figure 2).⁶⁰

Community colleges serve several important functions in postsecondary education. First, they provide the key access point to higher education for nonwhite and Latino students.⁶¹ For instance, almost 60 percent of all Latinos enrolled in higher education enroll first in community colleges.⁶² These students are highly tuition-price sensitive and often choose part-time instead of full-time enrollment.⁶³ Still, a full 30 percent of all community college enrollees want to go on to complete a four-year degree. Indeed, community colleges provide remedial education for students who are not yet qualified for four-year colleges and universities, though researchers know surprisingly little about this community college function. An estimated 55 percent of all community college students take courses in remedial mathematics or English.⁶⁴

Community colleges also offer technical and occupational training and certificates of competency in some fields, both of which increase the earnings of recipients beyond those of high school graduates.⁶⁵ By themselves, however, neither two-year degrees nor certificates lead to additional higher education and baccalaureate degrees. Moreover, students who attend community colleges in search of occupational degrees and certificates are more likely than students at four-year institutions to come from disadvantaged families, to delay enrollment and enroll part time, to interrupt their education, and to cite job skills as the reason for enrolling.⁶⁶ The technical training role is not well understood and is complicated by many “nontraditional student” labor market factors. For instance, one recent study estimates that 28 percent of community college enrollees already hold a bachelor’s degree and are taking courses to gain a technical certification of competency or for consumption purposes alone.⁶⁷

Still, the primary social mobility role of community colleges lies in their ability to raise college completion rates among low-income children. Indeed, many community colleges are linked to four-year institutions, providing a bridge to a four-year baccalaureate degree, though there is little systematic evidence of such arrangements. Jane Wellman suggests that transfer policies from two- to four-year state colleges, the primary road from commu-

The primary social mobility role of community colleges lies in their ability to raise college completion rates among low-income children.

nity colleges to public institutions granting higher degrees, are not always well articulated by states and that the effectiveness of state policies varies widely.⁶⁸ Further development of the National Student Clearinghouse (NSC) database would greatly enhance our ability to gather a more complete picture of this process.⁶⁹ According to NSC data, perhaps 30 to 35 percent of community college students transfer to four-year colleges.⁷⁰ But Goldhaber and Kiefer suggest that increasing these transfer rates will make capacity in receiving institutions a major policy issue.⁷¹

In summary, because community colleges are often the initial access point to higher education for disadvantaged students, understanding their role in providing bridges to schools of higher education is essential.

Remediation and Persistence

Being admitted to college does not assure graduation. Indeed Vincent Tinto has noted

that “access without support does not ensure equality of opportunity.”⁷² Low-income students are more likely to be not only academically unprepared, but also psychologically and culturally unprepared, for college. As table 3 shows, although 22 percent of youth from the lowest income quartile attend college, only 6 percent graduate. In contrast, half of all students from the highest income quartile who attend college manage to graduate within six years of matriculation. Poorly prepared students tend to be from lower-income backgrounds and are more likely to require remedial courses, additional counseling, and other services, and are therefore less likely to get a degree.⁷³ For example, in the California State University system, the remediation rate among freshmen is 60 percent, and only 39 percent of remedial students graduate. The problem is similar at community colleges, where 72 percent of students begin expecting to earn a degree and only 23 percent finish.⁷⁴

Nevertheless, remediation efforts appear to be effective. Eric Bettinger and Bridget Long use data from Ohio to assess the effects of remedial programs on students’ ultimate success in college. They show that remediation improves educational performance—students who enroll in both math and reading remediation courses are less likely to drop out of school, more likely to complete a bachelor’s degree, and less likely to transfer to a lower-level college than similar students not enrolled in these courses. Students in each type of remediation are almost 10 percent less likely to drop out than similar students not in remediation.⁷⁵

Summary and Policy Options

Although overall educational attainment in the United States has risen slightly, the gains are concentrated among high-income chil-

dren.⁷⁶ While the effects of the college selection process have contributed to the substantial and growing concentration of children from higher-income families among the student body, the erosion of public spending for higher education has also played a role. As a result, these institutions have had to rely on some combination of increases in private giving, increased use of own-source funds such as endowments, reductions in costs and services, and increases in tuition and associated fees. This last development works together with the admissions and selection process to reduce access—especially for the offspring of less affluent families—to college and university (and especially community college) education. Finally, public educational assistance has tilted away from youth from low-income families toward the most meritorious and highly qualified youth, and therefore toward those from middle- and higher-income families. These developments come at a time when success in the labor market and in other aspects of social and economic life increasingly requires postsecondary training.

In response to these developments, colleges and universities, together with state governments and secondary schools, must develop financing structures that will both maintain quality and increase access for students from lower-income families. The policies we suggest are premised on the belief that students from high-income families will fare well regardless of ability, so that more of the resources available to secure college admission and matriculation should go to students from lower-income families.

The United States has a uniquely mixed system of public and private higher education. In most other rich nations, where higher education is more universalistic and almost to-

tally public, the cost of higher education is more fully subsidized, but homogeneity may also breed mediocrity. Still, the experiences of these countries can be instructive, as can the U.S. experience. Our policy recommendations are deliberately bold and are designed to increase educational opportunities for low- and middle-income students and therefore to increase intergenerational social and economic mobility. We take as given a pool of high school graduates who want more education, even if they are not fully and equally well prepared for it.

Strengthen Student Preparation

Our first recommendation is to strengthen links between K–12 and postsecondary education and to place a greater emphasis on college preparatory coursework in the former. Students should begin school on a more equal footing, and universal high-quality preschool for all children may be a first step toward that goal. Middle and secondary schools should better prepare their students for higher education in its many forms.

Reducing Scope through Partnering

Colleges and universities should get out of the business of providing services and functions for which they do not have a comparative advantage.⁷⁷ These services include remedial education (which at best should be left to community colleges or contract providers), but also dormitories, food services, and back-office operations. Colleges should instead focus on the core competencies in which they specialize. This paring back would be coupled with increased partnering with other service providers—private or public—who specialize in these services. Tuition charges would then be able to reflect the real cost of providing the core educational services, and students and their families could arrange for these related services in separate markets. In addition to

reducing the costs of colleges, such a program would probably increase the range of choice available to the potential consumers of these auxiliary services.

Pricing and Performance in Public Higher Education

The vast majority of low-income students will be educated by public universities. Although tuition at public institutions has been rising,

One somewhat dramatic approach would be for institutions to simultaneously price tuition close to real costs and use the bulk of additional revenue to provide direct student aid targeted at students from low-income families.

it still falls well short of reflecting the real resource cost of the educational services provided. As a result, students who pay the full tuition—largely students from more well-off families—are receiving an implicit subsidy. One somewhat dramatic approach would be for institutions to simultaneously price tuition close to real costs and use the bulk of additional revenue to provide direct student aid targeted at students from low-income families. In addition to addressing the current inequity in the allocation of educational services, such an approach would tend to ration the limited supply of educational services (student slots) to those who value these services the most. Such a solution would also require a heavy advertising plan to make sure

that lower-income families understood that the net price of college was far below the sticker price, which is often the only information they have to react to.⁷⁸

Pay for performance is another innovation for public universities to consider. Today, state government financial support to public institutions typically comes in the form of a lump-sum appropriation. As an alternative arrangement, the level of state government support could be tied to the performance of institutions, such as retention rates, graduation rates, the ability to limit cost and tuition increases, or increases in their share of students from below-median-income families. Such an arrangement would have desirable incentive effects and would redistribute resources from low- to high-performing schools. While a number of states have started to set performance benchmarks for state universities, so far they have been reluctant to tie state appropriations to performance. But why not subject postsecondary education to the same pay-for-performance pressures as elementary and secondary education?

Limiting Public Subsidies to Wealthy Private Schools

At present, a substantial amount of federal subsidies (guaranteed student loans, Pell grants, tax subsidies) is made available to students who attend very wealthy institutions. These subsidies could be capped for wealthy universities that are able to increase their available student assistance. The savings of this policy could be redirected to students attending less well-endowed schools, both public and private.

Substituting Public Direct Student Assistance for Institutional Support

As four-year colleges and universities have become increasingly selective in student re-

cruitment, students with the highest qualifications—most often those from the highest-income families—have been the targets of recruitment efforts and the recipients of increased merit-based assistance. This trend reflects a variety of forces, including the desire to increase institutional rankings in prominent publications, such as *U.S. News and World Report*; the tastes of faculty and other institutional stakeholders; and the pursuit of financial gains associated with the rapid increases in federal merit-based assistance that have been targeted on higher-income families. These forces are at play in both public and private higher education.

In response to this trend, state governments (as well as the federal government) could redirect to students the financial support they now provide to colleges and universities, say, in the form of higher education vouchers. The direct student assistance could be targeted toward students from lower-income families. Such an arrangement would not only enhance equity but also require schools to compete for students and redirect their attention toward the tastes and demands of their student constituents and away from those of other institutional stakeholders, such as faculties.

Lessons from Abroad: Redirecting Public Support for Higher Education

Several countries are experimenting with a relatively new form of publicly supported student aid, known as income-related loans. In this system, former students repay debt contingent on their future incomes, meaning that their ultimate capacity to pay is given weight, and then only up to a limited point. In other words, loans are repaid by taxing post-school earnings to recover only the costs incurred, plus a small interest rate. Australia and New Zealand, in particular, are in the forefront of these policies. The especially successful Australian program is being adopted in Asian nations as well.⁷⁹

Conclusion

The U.S. system of higher education reinforces generational patterns of income inequality and is far less oriented toward social mobility than it should be. If higher education is to improve the chances for low- and middle-income children to succeed, the current system must be dramatically redirected, and the sooner the better. Big problems, such as those outlined above, require innovative thinking and bold reform.

Notes

1. National Center for Education Statistics, *Digest of Education Statistics* (U.S. Department of Education, 2002), table 382.
2. M. Lindsay Morris, “Low-Income Women and the Higher Education Act Reauthorization,” *On Campus with Women* (Association of American Colleges and Universities) 3, no. 3 (Spring–Summer 2004), www.aacu.org/ocww/volume33_3/national.cfm (accessed on April 25, 2006).
3. Michael Kirst, “Overcoming Educational Inequality: The Role of Elementary and Secondary Education Linkages with Broad Access to Postsecondary Education,” paper presented to the conference on Economic Inequality and Higher Education: Access, Persistence and Success, Maxwell School of Syracuse University, September 23–24, 2005 (hereafter, Maxwell School conference on Economic Inequality and Higher Education).
4. National Center for Education Statistics, *The Condition of Education*, NCES 2003-067 (U.S. Department of Education, 2003), table 18-1.
5. Thomas J. Kane, “College Going and Inequality,” in *Social Inequality*, edited by Kathryn Neckerman (New York: Russell Sage Foundation, 2004); Pell Institute, *Indicators of Opportunity in Higher Education* (Washington: Pell Institute, 2004).
6. Thomas G. Mortenson, “Students from Low-Income Families and Higher Educational Opportunity,” *Postsecondary Education Opportunity* 78 (1998): 1–2.
7. National Center for Education Statistics, *National Education Longitudinal Study, 1988* (U.S. Department of Education, 2002); National Center for Education Statistics, *The Condition of Education 2000* (U.S. Department of Education, 2002), table 382.
8. Melanie E. Corrigan, “Beyond Access: Persistence Challenges and the Diversity of Low-Income Students,” *New Directions for Higher Education* 121 (2003): 25–34.
9. National Center for Education Statistics, *The Condition of Education* (U.S. Department of Education, 2001); John Wirt and others, *The Condition of Education 2004*, NCES 2004-077 (U.S. Department of Education, National Center for Education Statistics, 2004), table 19-2, p. 143.
10. John Goldthorpe, “Education-Based Meritocracy: The Barriers to Its Realization,” paper presented to the Center for Policy Research, Maxwell School of Syracuse University (April 2002), www.cpr.maxwell.syr.edu/seminar/spring05/goldthorpe.pdf.
11. The effect of higher education on social mobility depends on both the effect of family income on schooling and the effect of schooling on offspring income. In our discussion, we emphasize the first of these components. However, we also provide some evidence on the latter linkage—that between schooling attainment and earnings.
12. Goldthorpe, “Education-Based Meritocracy” (see note 10).
13. Lars Osberg, Timothy M. Smeeding, and Jonathan Schwabish, “Income Distribution and Public Social Expenditure: Theories, Effects, and Evidence,” in *Social Inequality*, edited by Kathryn Neckerman (New York: Russell Sage Foundation, 2004), pp. 821–59. See also Susan Mayer, “How Did the Increase in Eco-

conomic Inequality between 1970 and 1990 Affect American Children's Educational Attainment?" unpublished manuscript, University of Chicago and Russell Sage Foundation (2005), on the effects of economic segregation on educational attainment.

14. Susan Mayer, "How Economic Segregation Affects Children's Educational Attainment," unpublished manuscript, Russell Sage Foundation (2005).
15. While there is no empirical estimate of the effect of the higher education system on social mobility, English social researchers suggest that, relative to parental socioeconomic status, the education sector explains 20 percent of the variance in the status of offspring in that country.
16. While our policy discussion recognizes the possibility that efforts to intervene in the development of human capital before the secondary and postsecondary levels may be more effective in attaining increased social mobility, we conclude that policies targeted on the higher education system are necessary to enable "college-qualified" youth to access and complete postsecondary schooling.
17. Robert D. Mare, "Change and Stability in Educational Stratification," *American Sociological Review* 46 (1981): 72–87; Robert Hauser, "Trends in College Entry among Whites, Blacks, and Hispanics," in *Study of Supply and Demand in Higher Education*, edited by Charles Clotfelter and Michael Rothschild (University of Chicago Press, 1993), pp. 61–104.
18. For an economic treatment of this issue, see Igal Hendel, Joel Shapiro, and Paul Willen, "Educational Opportunity and Income Inequality," *Journal of Public Economics* 89 (2005): 841–70.
19. Some would argue that in the face of the advantages enjoyed by youth from higher-income families, the higher education sector should target its services on those youth who lack these genetic and family-based advantages. We do not address this issue here, but note that the argument cannot easily be ignored if a goal of the higher education system is to promote social mobility.
20. David Ellwood and Thomas J. Kane, "Who Is Getting a College Education: Family Background and the Growing Gaps in Enrollment," in *Securing the Future: Investing in Children from Birth to College*, edited by Sheldon Danziger and Jane Waldfogel (New York: Russell Sage Foundation, 2000). Ellwood and Kane also report such gaps for students with similar mathematics test scores. For example, while 59 percent of high-income youth in the middle two quartiles of test scores attend a four-year college, only 33 percent of youth from the lowest income quartile and with test scores in this range attend these institutions. See also Paul Barton, "Toward Inequality: Disturbing Trends in Higher Education" (Princeton, N.J.: Educational Testing Service, 1997).
21. Over the period covered by these two cohorts, the earnings return to college-going also increased substantially. It appears that youth from high-income families responded strongly to these increased returns from higher schooling and (of more concern) will reap the gains of these returns in their future careers.
22. The High School and Beyond survey was sponsored by the National Center for Education Statistics to study the educational, vocational, and personal development of young people, beginning with their elementary or high school years and following them over time as they begin to take on adult roles and responsibilities. The survey included two cohorts: the 1980 senior and sophomore classes. Both cohorts were surveyed every two years through 1986, and the 1980 sophomore class was also surveyed in 1992.
23. The Barron indicator of college selectivity is from Barron's *Profiles of American Colleges*.

24. Susan Dynarski finds that even after controlling for ability, as measured by test scores, the college participation gap between youth in families in the top and bottom quartiles is 22 percentage points; without controlling for ability, the gap was 30 percentage points. See Susan Dynarski, "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion," Working Paper 7422 (Cambridge, Mass.: National Bureau of Economic Research, 1999).
25. The estimates in table 1 reflect the efforts of Ellwood and Kane, "Who Is Getting a College Education?" (see note 20) to measure parental family income in a consistent way across data sources (see p. 320).
26. The family income levels reported on student aid application forms (that is, supplied by parents) are generally substantially higher than the income levels reported by the students themselves in response to survey questions.
27. This distinction is also very important if one wishes to infer more than correlation between family income and higher education attainment. A number of recent studies have found that permanent household income is a significant determinant of both college attendance decisions by youth and the level of family investments in children, while transitory income is not. See Michael P. Keane and Kenneth I. Wolpin, "The Effect of Parental Transfers and Borrowing Constraints on Educational Attainment," *International Economic Review* 42, no. 4 (2001): 1051–103; Steven Cameron and James Heckman, "Life Cycle Schooling and Dynamic Selection Bias: Models and Evidence for Five Cohorts of American Males," *Journal of Political Economy* 106 (1998): 262–332; David Blau, "The Effect of Income on Child Development," *Review of Economics and Statistics* 81, no. 2 (1999): 261–76; Pedro Carneiro and James Heckman, "The Evidence on Credit Constraints in Post-Secondary Schooling," *Economic Journal* 112, no. 482 (2002): 705–34.
28. Robert Haveman and Kathryn Wilson, "Economic Inequality in College Access, Matriculation, and Graduation," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
29. The estimates are similar when wealth is used as the indicator of economic position.
30. Anthony P. Carnevale and Stephen J. Rose, "Socioeconomic Status, Race/Ethnicity, and Selective College Admissions," in *America's Untapped Resource: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004), pp. 101–56.
31. Gordon Winston and Catharine Hill, "Access to the Most Selective Private Colleges by High-Ability, Low-Income Students: Are They Out There?" paper prepared for the Macalester-Spencer Forum, 2005.
32. Kirst, "Overcoming Educational Inequality" (see note 3).
33. See Thomas Kane and Peter Orszag, "Higher Education Spending: The Role of Medicaid and the Business Cycle," Policy Brief 124 (Brookings, September 2003).
34. Note that the focus here is on the completion of postsecondary schooling, and the data in figure 1 refer to degree attainment, not college attendance, per se. There have been increases in the extent of college-going in the United States over past decades. Susan Dynarski reports that "in 1968, 36 percent of 23-year-olds had gone to college. By 2000, that figure had grown to 55 percent. Over the same period, the share of young people with a college *degree* has risen relatively slowly." The reason for the disparity is the growth in college dropouts—students who start but do not complete college. Dynarski states that "in the 2000 Census, just 57 percent of those age 22 to 34 with any college experience had completed an associate's or bachelor's degree." See Susan Dynarski, "Building the Stock of College-Educated Labor," Working Paper 11604 (Cambridge, Mass.: National Bureau of Economic Research, 2005), www.nber.org/papers/w11604.

35. In the future, it may be possible to study the linkage between family economic position and educational attainment using new data sources, for example, the Trends in International Mathematics and Science Study (TIMSS; <http://nces.ed.gov/timss/>) and the OECD's Program for International Student Assessment (PISA; <http://nces.ed.gov/surveys/pisa/>), in a cross-national context. These data sources have information on the test scores that are a precursor to college-going, thus enabling study of the linkage between family position and test scores. Ludger Woessmann makes an initial foray into these data and finds that although family background has a strong effect on student test scores, there is little variation across countries. However, in France and Flemish Belgium the effect of family background on test scores is smaller than average and in Germany and England it is larger, representing respectively greater and lesser degrees of inequality of educational opportunity. See Ludger Woessmann, "How Equal Are Educational Opportunities? Family Background and Student Achievement in Europe and the United States," Discussion Paper 1284 (Bonn, Germany: IZA, 2004).
36. Orley Ashenfelter, Colm Harmon, and Hessel Oosterbeek, "A Review of Estimates of the Schooling/Earnings Relationship, with Tests for Publication Bias," *Labour Economics* 6 (1999). Ashenfelter, Harmon, and Oosterbeek distinguished the studies by model, sample, extent of control for relevant variables, and the nature of the labor market (such as country). For example, across all of the studies the estimated rate of return to schooling averages 7.9 percent (S.D. = .036). When direct controls for schooling are employed, the average return drops to 6.6 percent (S.D. = .026); when data using twins are employed, the average return is 9.2 percent (S.D. = .037); when an instrumental variable approach is employed, the average return is 9.3 percent (S.D. = .041).
37. Thomas J. Kane and Cecilia Elena Rouse, "Labor-Market Returns to Two- and Four-Year College," *American Economic Review* 85, no. 3 (1995): 600–14.
38. Dominic Brewer, Eric R. Eide, and Ronald G. Ehrenberg, "Does It Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings," *Journal of Human Resources* 34, no. 1 (1999): 104–23. The study controls for selection on unobservables.
39. Stacy Berg Dale and Alan B. Krueger, "Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables," *Quarterly Journal of Economics* 117, no. 4 (2002), pp. 1491–527.
40. Jeff Grogger and Eric Eide, "Changes in College Skills and the Rise in the College Wage Premium," *Journal of Human Resources* 30, no. 2 (1995): 280–310.
41. Mayer, "How Economic Segregation" (see note 14); Kirst, "Overcoming Educational Inequality" (see note 3).
42. National Center for Education Statistics, *Digest of Education Statistics* (U.S. Department of Education, 2002).
43. Kirst, "Overcoming Educational Inequality" (see note 3); P. Michael Timpane and Arthur M. Hauptman, "Improving the Academic Preparation and Performance of Low-Income Students in American Higher Education," in *America's Untapped Resources: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004); Vincent Tinto, "Economic Inequality and Higher Education: Access, Persistence, and Success," comments delivered at the Maxwell School conference on Economic Inequality and Higher Education.
44. Kane, "College Going and Inequality" (see note 5), contains an excellent discussion of these issues.

45. Thomas Kane and Cecilia Rouse, "The Community College: Educating Students at the Margin between College and Work," *Journal of Economic Perspectives* 13, no. 1 (1999): 63–84; Amanda Pallais and Sarah E. Turner, "Access to Elites: The Growth of Programs to Increase Opportunities for Low Income Students at Selective Universities," paper presented to the Maxwell School conference on Economic Inequality and Higher Education; Michael McPherson, "Comments," presented to the Maxwell School conference on Economic Inequality and Higher Education.
46. Timpane and Hauptman, "Improving the Academic Preparation" (see note 43).
47. Much of the following discussion rests on Lawrence E. Gladieux, "Low-Income Students and the Affordability of Higher Education," in *America's Untapped Resources: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004), which includes a number of important recommendations for reform of federal, state, and institutional student financial aid. Many of these focus on increasing the targeting of assistance on students from low-income families.
48. College Board, *Trends in College Pricing, 2001* (New York, 2001).
49. For analysis of the causal impact of college costs on attendance, see Thomas J. Kane, "College Entry by Blacks since 1970: The Role of College Costs, Family Background, and the Returns to Education," *Journal of Political Economy* 102, no. 5 (1994): 878–911; Susan Dynarski, "Hope for Whom? Financial Aid for the Middle Class and Its Impact on College Attendance," *National Tax Journal* 53, no. 3 (2000): 629–61; Susan Dynarski, "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion," *American Economic Review* 93, no. 1 (2003): 279–88; Susan Dynarski, "The New Merit Aid," in *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*, edited by Caroline Hoxby (University of Chicago Press, 2004). For a review of this literature, see Susan Dynarski, "The Behavioral and Distributional Implications of Aid for College," *American Economic Review* 92, no. 2 (2002): 279–85.
50. Advisory Committee on Student Financial Assistance, *Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity* (Washington, 2001).
51. Amy Ellen Schwartz, "The Cost of College and Implications for Income Inequality," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
52. Leonard E. Burman and others, "The Distributional Consequences of Federal Assistance for Higher Education: The Intersection of Tax and Spending Programs," Discussion Paper 26 (Washington: Urban Institute Tax Policy Center, 2005), summarize the last decade of federal policy developments in this area as follows: "Since 1997, federal higher education subsidies have increasingly been delivered through the tax code rather than through traditional direct spending programs, such as grants, loans, and work study . . . and have been directed toward students from middle- and upper-middle-income families." Using a micro-data simulation model developed for estimating the distributional effects of higher education policies, they find that while two-fifths of Pell program expenditures flow to students in tax units with adjusted gross income (AGI) of less than \$10,000, the tax provisions provide little benefit to households at the lower end of the income distribution and concentrate the bulk of their benefits within the broad middle- and upper-middle class, with roughly \$50,000 to \$100,000 in cash income. They find that tax units in this income range receive almost 42 percent of the benefit from the various tax provisions, and that about one-seventh of the total tax benefit flows to tax units with cash incomes of \$100,000 or more.
53. Century Foundation, "Left Behind: Unequal Opportunity in Higher Education" (Washington, 2004).

54. Michael McPherson and Morton Owen Schapiro, *The Student Aid Game: Meeting Need and Rewarding Talent in American Higher Education* (Princeton University Press, 1998).
55. Michael McPherson and Morton Owen Schapiro, "Watch What We Do (and Not What We Say): How Student Aid Awards Vary with Financial Need and Academic Merit," draft paper for presentation at the conference on Opening Opportunity or Preserving Privilege, Chicago, 2005.
56. Congressional Budget Office, "H.R. 609, College Access and Opportunities Act of 2005," presented to the House Committee on Education and the Workplace (July 25, 2005).
57. Dynarski, "Building the Stock" (see note 34).
58. This behavioral response is often referred to as the "Bennett hypothesis," after former secretary of education William Bennett, who argued that "increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions." See William J. Bennett, "Our Greedy Colleges," *New York Times*, February 18, 1987, p. A31. For rather different conclusions on this response, see Bridget Long, "The Institutional Impact of the Georgia HOPE," *Journal of Human Resources* 39 (2004): 1045–66; and Benjamin Scafidi and others, "Merit-Based Financial Aid and College Tuition: The Case of Georgia's Hope Scholarships," unpublished manuscript, Georgia State University (2003).
59. Kane and Rouse, "The Community College" (see note 45).
60. Dan Goldhaber and Gretchen Kiefer, "Higher Education and Inequality: The Increasingly Important Role Community Colleges Play in Higher Education," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
61. Eric P. Bettinger and Bridget Terry Long, "The Role of Institutional Responses to Reduce Inequalities in College Outcomes: Remediation in Higher Education," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
62. Goldhaber and Kiefer, "Higher Education and Inequality" (see note 60).
63. Ibid.; Kane and Rouse, "The Community College" (see note 45); Thomas Kane, *The Price of Admission: Rethinking How Americans Pay for College* (Brookings, 1999).
64. Bettinger and Long, "The Role of Institutional Responses" (see note 61).
65. Thomas Bailey, Gregory Kienzl, and Dave E. Marcotte, "The Return to a Sub-Baccalaureate Education: The Effects of Schooling, Credentials and Program Study on Economic Outcomes" (Institute on Education and the Economy and the Community College Research Center, Teachers College, Columbia University, 2004).
66. Thomas Bailey and others, "Educational Outcomes of Occupational Postsecondary Students" (Institute on Education and the Economy and the Community College Research Center, Teachers College, Columbia University, 2004).
67. Debbie Sydow, comments presented to the Maxwell School conference on Economic Inequality and Higher Education.
68. Jane Wellman, "State Policy and Community College—Baccalaureate Transfer" (National Center for Public Policy and Higher Education, Stanford University, August 2002); Kirst, "Overcoming Educational Inequality" (see note 3).

69. Richard Romano and Martin Wisniewski, "Tracking Community College Transfers Using National Student Clearinghouse Data," Working Paper 36 (Cornell Higher Education Research Institute, 2003).
70. *Ibid.*
71. Goldhaber and Kiefer, "Higher Education and Inequality," table 1, p. 19 (see note 60), show that nearly half of all community college enrollment is in five large states—California, Florida, Illinois, Texas, and New York—and in all but New York, community college enrollments exceed enrollments in public four-year colleges. California alone has 24.4 percent of the nation's community college students, but only 9.2 percent of the nation's public four-year college enrollees.
72. Tinto, "Economic Inequality" (see note 43).
73. Pallais and Turner, "Access to Elites" (see note 45).
74. Kirst, "Overcoming Educational Inequality" (see note 3). Of course, were we to create policies to promote retention and persistence to a degree for low-income and low-qualification students, per student costs would be likely to increase.
75. Despite the positive impact of remediation on educational outcomes, these authors note that the institutional variation they exploit to obtain their results necessitates excluding from their sample the lowest ability students, who would be in remediation at any institution. The impact of remediation on these students is unknown. Bettinger and Long, "The Role of Institutional Responses" (see note 61); Eric P. Bettinger and Bridget Terry Long, "Addressing the Needs of Under-Prepared Students in Higher Education: Does College Remediation Work?" Working Paper 11325 (Cambridge, Mass.: National Bureau of Economic Research, 2005).
76. Mayer, "How Economic Segregation" (see note 14); Pell Institute, *Indicators of Opportunity* (see note 5); Haveman and Wilson, "Economic Inequality" (see note 28).
77. Thomas Garrett and William Poole, "Stop Paying More for Less: Ways to Boost Productivity in Higher Education," *Regional Economist* (Federal Reserve Bank of St. Louis, January 2006).
78. Pallais and Turner, "Access to Elites" (see note 45); McPherson, "Comments" (see note 45).
79. Bruce Chapman and Chris Ryan, "The Access Implications of Income Contingent Charges for Higher Education: Lessons from Australia," *Economics of Education Review* 24, no. 5 (2005): 491–512. In early 1993, the Clinton administration introduced broad-based reforms to student loan programs, including an option for students to adopt income-contingent repayments for some part of their student loan obligations, up to 20 percent of an agreed income. See Evelyn Brody, "Paying Back Your Country through Income-Contingent Student Loans," *San Diego Law Review* 31 (1994): 449–518.