

**REFLECTIONS ON COLLEGE
ACCESS & PERSISTENCE**

**IN HONOR OF THE 40TH ANNIVERSARY
OF THE HIGHER EDUCATION ACT**

**PROCEEDINGS & PAPERS
FROM A SYMPOSIUM HELD
IN WASHINGTON DC
SEPTEMBER 8, 2005**

**ADVISORY COMMITTEE ON
STUDENT FINANCIAL ASSISTANCE**

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The Advisory Committee on Student Financial Assistance (Advisory Committee) is a Federal advisory committee chartered by Congress, operating under the Federal Advisory Committee Act (FACA); 5 U.S.C., App.2). The Advisory Committee provides advice to the Secretary of the U.S. Department of Education on student financial aid policy. The findings and recommendations of the Advisory Committee do not represent the views of the Agency, and this document does not represent information approved or disseminated by the Department of Education.

The four research papers that form the body of this report were commissioned by the Advisory Committee on Student Financial Assistance as part of the dialogue on access and persistence the symposium sought to generate. These papers represent a segment of the varied and divergent opinions of the higher education community. These research papers and the data contained in them are the sole work of the authors, and do not necessarily represent the views of Advisory Committee members and staff.

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FOREWORD

by Clare Cotton, Advisory Committee Chairperson

When President Lyndon B. Johnson signed the Higher Education Act (HEA) into law over forty years ago, he said that its promise would be fulfilled when “a high school senior anywhere in this great land of ours can apply to any college or any university in any of the 50 States and not be turned away because his family is poor.” As a quick glance at the table of contents of this report will tell you, this promise remains unfulfilled. Although the HEA and its original intent still occupy an honored place in the collective mindset not only of the higher education community, but of all Americans, it is impossible not to notice, with even a cursory shuffle through the pages of this report, that fulfilling the legacy of the HEA is an ongoing and ambitious task.

I say “ongoing” because the HEA’s stated intent, “to strengthen the educational resources of our colleges and universities and to provide financial assistance for students in postsecondary and higher education,” is large in scope and short on specific instructions for how to get there. I say “ambitious” because the path toward equal educational opportunity and financial access to college is narrow and steep, while the road toward educational stratification by income is broad and littered with failed policies. Barriers to access and persistence in higher education are more daunting and severe for low-income students than they are for higher income students, and these barriers are diverse, ranging from inadequate information and low expectations to insufficient academic preparation. Even after breaching all of these barriers, low-income students are still derailed by what is, perhaps, the most significant barrier of all: insufficient financial aid, especially grant aid.

As part of the task of fulfilling the legacy of the HEA, the Advisory Committee on Student Financial Assistance (Advisory Committee) commissioned a series of papers by distinguished scholars in the higher education community on the current condition of access and persistence for low- and moderate-income students. The Advisory Committee, an independent committee established by Congress to advise Congress and the Secretary of Education on financial aid policy, commissioned these papers as part of its charge from Congress “to make recommendations that will result in the maintenance of access to postsecondary education for low- and middle-income students.” This report brings together these papers, which were edited by Dr. Donald E. Heller, Associate Professor of Higher Education at The Pennsylvania State University.

In addition to commissioning these papers, the Advisory Committee convened a “Symposium on Access and Persistence in Honor of the 40th Anniversary of the Higher Education Act” in Washington DC on September 8, 2005. This symposium brought together policymakers, practitioners, and researchers from across the country, and it provided the authors featured in

this report with an opportunity to present their papers to the Committee and to a panel of experts in the higher education community invited to serve as respondents. Two keynote speakers—Dr. Juliet V. García and the Honorable Jack Reed—eloquently set the tone for the day, calling on those present to renew their commitment to increasing the educational opportunities of low-income students. In the symposium’s first session, aptly titled “Fulfilling the Promise of HEA,” Mr. Jamie Merisotis and Dr. Michael S. McPherson laid out the case for the continued relevance of the HEA’s goals and ambitions. Mr. Merisotis noted that the various programs in the HEA, such as the federal student loan and TRIO programs, have always recognized that there are multiple barriers to access, including the need for better information, preparation, and counseling, *and* for direct financial support to needy students. Dr. McPherson sounded similar themes, noting that high school completion and family income are critical factors in college access and persistence, and all access barriers can be broken down into the same disturbing income distribution patterns—high-income students largely overcome these barriers, while low-income students do not. The session respondents, Dr. Anthony Carnevale and Dr. Bridget Terry Long, echoed these findings, noting that ensuring equal access to education benefits the economic health of our nation.

Following this opening session were three subsequent sessions that examined in more detail the multiple barriers to access and persistence confronting low- and moderate-income students. The cumulative effect of these sessions was to emphasize that there is no silver bullet that alone can eliminate gaps in educational attainment by race and income; rather, an inclusive strategy is needed that addresses all the obstacles to increased college enrollment and success confronting students from low- and moderate-income families. For example, in session two, “Intervening Early and Successfully,” Dr. Laura W. Perna outlined the challenges that early intervention programs face, including determining both how early to intervene and how to intervene comprehensively. The respondents, Dr. William G. Tierney and Dr. Joel Vargas, concurred with many of Dr. Perna’s findings, including the need for comprehensive services and additional funding. Dr. Sandy Baum’s presentation in the third session, “Lowering Work and Loan Burden,” detailed the financial barriers to access, such as inadequate grant aid and high levels of work burden (in excess of 20 hours per week). Respondent Dr. William E. Becker then discussed the implications of sound research on financial aid, cautioning that such research needs to avoid sample selection biases, while Mr. Thomas G. Mortenson concurred that the unequal distribution of aid creates high levels of work and loan burden for low-income students.

The Advisory Committee’s symposium concluded with a discussion of what is, perhaps, the greatest challenge facing the higher education and college access community today: how to increase the number of students who stay enrolled in college and persist to degree completion. In session four, entitled “Ensuring Persistence and Degree Completion,” Dr. John B. Lee explained how his research on persistence supports conclusions similar to those put forth by other symposium participants, namely that family income is the most significant factor relative to degree attainment in higher education. In response to his presentation, Dr. David W. Breneman, Ms. Colleen T. O’Brien, and Dr. Edward P. St. John agreed with Dr. Lee’s findings,

noting the important role that all parties—institutions, and financial aid researchers, and policymakers—can play in trying to improve the completion rates of low-income students while also providing them with increased need-based aid.

The papers in this report build upon the groundwork laid at this symposium, eloquently making the case for continuing to address the multiple barriers to access and persistence that low-income students face through improved policies and practice. The findings in these papers represent a call to action: the situation, problems, and special circumstances of low-income students should not be swept under the rug, but should be front and center in reauthorization discussions and beyond. What will it take to fulfill the promise of the HEA? A particular emphasis is made in this report on the need to reduce the financial barriers to enrollment and persistence, which are at the forefront of the Advisory Committee’s work. Unless a comprehensive strategy is put in place to lower financial barriers and reduce work and loan burden--while also addressing other barriers such as inadequate academic preparation--an increasing number of students are likely to be kept out of higher education. As Dr. Juliet García stated in her keynote address at the Advisory Committee’s symposium, “We can treat all of the other factors currently undermining access and persistence—academic preparation, counseling, and information—but if we continue to require Herculean effort by students . . . if we continue to force them to work and borrow as much as is required today, we will be facing the same access and persistence problem two decades from now. The policy research community must not lose sight of this message, must not get bogged down in arguments about which factor is most important . . . All of the factors are important.”

The chapters contained in this volume are not about privileging one factor related to educational attainment over another. The researchers who have contributed to this report recognize that the multiple barriers to college access and persistence must be addressed simultaneously if we are to make real progress in closing income related gaps in educational attainment. Not to do so, and leaving the promise of the HEA unfulfilled, will not only have dire consequences for each individual who is left without a baccalaureate degree, but will also have a potentially devastating impact on our nation’s future economic wellbeing. The work ahead of us, however, should not give us pause. After witnessing the collective energy behind this important task that was apparent at the Advisory Committee’s symposium in September, and after reviewing the call to action laid out in the papers included in this report, I am confident that our nation has the ability to raise educational attainment levels for all students in the 21st century--all we need now is the will to do so.

EXECUTIVE SUMMARY

Following the enactment of the G.I. Bill, President Harry S. Truman created the President's Commission on Higher Education, commonly referred to as the Truman Commission. This body, charged with identifying ways to expand educational opportunity, called on "the community, at the local, State, and National levels, to guarantee that financial barriers do not prevent any able and otherwise qualified young person from receiving the opportunity for higher education."¹ As the papers in this report discuss, this guarantee still remains elusive close to sixty years later, even after the passage of the HEA in 1965 and the implementation of the federal Pell Grant program in 1972.

This report examines both the challenges involved in closing income-related gaps in educational attainment and the potential solutions needed at each stage of the education pipeline. The report begins with the two keynote addresses delivered at the Advisory Committee's symposium in September 2005 in honor of the 40th anniversary of the Higher Education Act. The first address, provided by Dr. Juliet V. García, president of the University of Texas at Brownsville and former chair of the Advisory Committee, outlines the importance of developing sound policy research to expanding educational opportunities for low- and moderate-income students. In the second address, the Honorable Jack Reed, U.S. Senator from Rhode Island, discusses the legislative reforms he has proposed during the ongoing HEA reauthorization. These changes, which build upon the Advisory Committee's reauthorization recommendations, would ensure that more low-income students have financial access to college and would provide such students with a simplified application process and earlier information about financial aid.

The report then includes four papers commissioned by the Advisory Committee and written by respected and distinguished scholars within the higher education community. It begins with a discussion by Dr. Michael S. McPherson, president of The Spencer Foundation, and Dr. Morton Owen Schapiro, president of Williams College, on the current state of educational opportunity in America. Following this paper are three reports that address specific barriers to college success. Dr. Laura W. Perna, associate professor at the University of Pennsylvania, and Dr. Michelle Asha Cooper, director of research at the Advisory Committee, discuss strategies for improving early intervention efforts, while Dr. Sandy Baum, professor of economics at Skidmore College and policy analyst with The College Board, examines ways to reduce work and loan burden, particularly for low- and moderate-income students. The report also includes a paper by Dr. John B. Lee of JBL Associates, Inc. that examines strategies to improve rates of retention and persistence. The following provides a brief summary of each of these four papers.

¹ President's Commission on Higher Education. 1947. *Higher Education for American Democracy: The Report of the President's Commission on Higher Education*. Vol. 2. New York: Harper & Brothers.

Opportunity in America

In this report's first paper, McPherson and Schapiro discuss the current state of educational opportunity in America, calling particular attention to the persistent gaps in educational attainment rates by race and income since the 1990s. Although progress in enrollment rates peaked in the late 1990s, they note that lower income students today are more likely to drop out of high school, and those who attend postsecondary education are rarely enrolled at the most prestigious institutions. McPherson and Schapiro then turn their attention to the causes of this inequality in educational opportunity. They stress that, while financing constraints certainly contribute to differential access, differences in the academic preparation that students are likely to receive also contribute to the current state of educational opportunity. For example, they note that unequal educational opportunity begins very early in the schooling of children from low-income families. The authors comment that this inequality of opportunity and its effect on enrollment and persistence is unfortunate, as econometric research has demonstrated the substantial private and social returns to investing in college.

To improve college access and persistence, McPherson and Schapiro classify the necessary policy options into three areas:

- Academic preparation
- Recruitment and outreach
- Financial accessibility

First, they note that greater consistency between the expectations of high schools and the requirements of colleges would improve academic preparation. Second, in the area of recruitment and outreach, providing enhanced information to students and their families about the financial feasibility of attending college would certainly be beneficial. Third, because even those low-income students who are prepared and informed are still less likely to attend college—especially four-year colleges—than their more affluent peers, they conclude that it is both equitable and more efficient to target grant aid toward low-income high-need students.

McPherson and Schapiro close by calling for the federal government to take the lead in improving access by creating “a supplementary federal grant program that would reward states and individual institutions that directed their own resources toward financial assistance to high-need students.” Such an approach would protect lower income students from the effects of declining government support for public higher education and would help reduce the increasing burden on families to cover the costs of tuition and fees.

Intervening Early

Numerous early intervention programs at the local, state, and federal levels have been developed to provide students who are disproportionately underrepresented in higher education with the support they need to overcome barriers to college success. In the second

paper in this report, Perna and Cooper examine research related to the effectiveness of such programs, particularly those established at the federal level. First, they note that college enrollment and persistence for low-income students is limited not only by inadequate financial resources, but also by inadequate academic preparation and knowledge of academic requirements, as well as insufficient guidance and support from teachers, counselors, family, and peers. Thus, they argue that it is important for the federal government to support, encourage, and evaluate early intervention programs as well as ensure the adequacy of need-based financial aid.

After providing a brief overview of the federal involvement in early intervention, Perna and Cooper then discuss the challenges of evaluating the effectiveness of these programs and the positive impact that early intervention programs can have on access and persistence for low-income students. In addition, Perna and Cooper discuss the essential components of early intervention—academic preparation and achievement, counseling and advising, family assistance, and financial resources—and the extent to which these components are included in many early intervention efforts. For example, they note that while one-on-one high school counseling can play a key role in the development of aspirations, plans, and academic preparation, students from low-income families are least likely to have access to such counseling in the schools that they attend. Compounding this problem, low-income parents are often unable to become involved in their children’s education because of economic, social, and psychological barriers. In addition, Perna and Cooper note that encouraging students from low-income families to aspire and prepare for college would seem to require that students have the necessary financial resources to enroll and persist. They point out that while financial barriers serve to undermine college enrollment and persistence, even for college-qualified low-income students, early intervention programs rarely provide financial aid, nor do they adequately address the ways in which limited finances can and do hinder college-going.

Perna and Cooper also identify five strategies shared by the most successful early intervention programs:

- Begin early in the educational pipeline
- Offer services that are comprehensive and tailored to individual student needs
- Build in cultural features that match participants’ strengths
- Focus on those students who most need the services
- Partner and collaborate with government, educational, and private entities

According to Perna and Cooper, it is especially important that early intervention programs ensure that students and parents know early on what is required academically to enroll in college. The most successful early interventions also recognize explicitly that multiple factors—academic, social, and financial—can lower college enrollment and persistence for low-income students. Given that current programs serve only a tiny fraction of those in need, targeting help to the most needy students and leveraging resources through creative collaborations and partnerships are also absolutely essential. The paper concludes with an emphasis on the need

to conduct more research on early intervention programs in a manner that is both relevant and rigorous.

Lowering Work-Loan Burden

In the report's third paper, Baum discusses the current financial barriers confronting low- and moderate-income students and the impact of these barriers on access and persistence. Baum's paper begins with a review of current stratification by income in higher education. Even after taking academic preparation into account, students from different family financial backgrounds enroll and complete degrees at sharply different rates. She concludes that while it is impossible to completely disentangle the individual roles that academic, social, and financial factors play in the enrollment and persistence behavior of students, it is clear that the national effort to eliminate the effect of financial barriers has not been fully successful. Baum then addresses the current levels of borrowing and work that students are being forced to take on in order to enroll in college and persist to degree completion. The prospect of taking on high levels of debt is daunting to many students from low- and moderate-income families, and may prevent them from enrolling. In the absence of sufficient grant aid, Baum notes that such students often behave in ways that can have detrimental effects on their academic progress, such as enrolling part-time or working long hours, and often are forced to borrow heavily from private lenders or give up on college all together.

Baum goes on to discuss the need not only to increase available need-based aid, but also to ensure that existing financial aid resources go to those students with the highest level of need. For example, she notes that the highest-achieving low-income students receive merit-based state and institutional financial aid or attend colleges and universities with endowments and resources that make such grants possible. Low- and moderate-income students typically attend public colleges and do not have access to sufficient funds. Baum's paper concludes with several recommendations for lowering work and loan burden in order to improve access and persistence. First, she recommends targeting grant aid to the low- and moderate-income students whose behavior will be positively affected by additional need-based aid. She notes that providing grant aid to middle- and upper-income students whose enrollment behavior will not be changed by such resources will not increase overall rates of college enrollment and success, nor will it have a measurable impact on social welfare. In addition, Baum also recommends improving the federal need analysis formula in a variety of ways, such as modifying it to reduce the penalty on student work. She concludes by calling on the federal government to increase need-based aid by leveraging funds from additional stakeholders in higher education policy, including the states and the private sector.

Ensuring Persistence

Once students from low- and moderate-income families enroll in higher education, the academic, financial, and social challenges to degree completion that they face do not disappear. Rather, these challenges result in significant numbers of students who stopout or dropout of

college and never receive their degree. In the final paper in this report, Lee examines the various factors that help determine whether or not a student is likely to reach degree attainment. He first discusses the importance of increasing persistence by reviewing current rates of degree completion by income. Lee finds that family income plays a major factor in predicting whether a student will complete a baccalaureate degree. His research demonstrates that degree-seeking students who start at two-year institutions are less likely to complete a bachelor's degree than students who start at four-year institutions. Lee then goes on to examine the impact on persistence of institutional characteristics, such as the availability of remediation and student support services, and discusses the need for more refined persistence measurements.

Lee's paper then discusses the various enrollment patterns and behaviors that negatively affect persistence, including delayed enrollment, working off-campus, and commuting. He then notes the specific importance of adequate financial aid in student enrollment patterns, and the impact of financial aid on retention and persistence. For example, low-income and minority students are more sensitive to changes in college costs and financial aid than are their higher income peers. In addition, Lee's research shows that adequate financial aid that allows students to attend full-time without working long hours is essential to helping them persist and complete a degree. While Pell Grants are effective at promoting student persistence, they are covering a smaller percentage of the cost of attendance at both public and private four-year colleges. Lee notes that low-income students who received state grant aid that supplements Pell Grants are much more likely to persist and attain a bachelor's degree, even when other factors are controlled.

Lee concludes with several recommendations for increasing persistence and completion rates. Specifically, Lee recommends as a policy goal making "a four-year residential enrollment affordable for all who qualify." In other words, Lee recommends designing student aid programs to ensure that all high school graduates who qualify for admission to a four-year institution have the financial means to enroll full-time, live on campus, and work less than 20 hours per week. His recommendations for achieving this policy goal include expanding work-study options on-campus, and refining institutional research mechanisms to identify students who are at risk of dropping out by providing them with the aid needed to ensure their continuous enrollment. Finally, since students who think they have a lower chance of academic success opt for lower-cost options and engage in behaviors that may reduce the probability of success, such as working excessive hours or enrolling part-time, it is important to provide high school students with an early assessment of what is required to succeed academically and an early assurance that adequate financial will be available to make college possible.

Next Steps

This report concludes with a discussion by Ms. Judith N. Flink, Vice Chair of the Advisory Committee, of next steps for policymakers, researchers, and practitioners. As Flink notes,

future efforts to increase rates of access and persistence among low- and moderate-income students will take more than just enhanced research, coordinated policies, and improved practice. It will also take a renewed partnership between all stakeholders in higher education—the federal government, state governments, institutions, and private entities. Only by working together through such a partnership will we be able to focus our nation’s efforts on a common goal: ensuring that the HEA’s promise is fulfilled, and that no student is denied access to equal educational opportunity because of inadequate financial resources.

KEYNOTE ADDRESS: Why Policy Research Matters

by Juliet V. García

As you know, the Higher Education Act was signed into law on November 8, 1965 by President Lyndon Johnson. Its original intent was in large part to provide greater educational opportunity for needy students. At that time, millions of low-income students were completing high school prepared to attend college but, unlike their wealthier peers, could not afford to participate in the dream of higher education. Over the last 40 years, due largely to HEA, tens of millions of low- and moderate-income students have benefited from higher education who would otherwise not have been able to do so. I think you will all agree that the best way to honor HEA's considerable accomplishments is by promising to continue the fight until its original intent is fully achieved.

Dr. Juliet V. García is currently President of the University of Texas at Brownsville.

Dr. García served on the Advisory Committee from January 1997 through September 2002. During that time period, she was elected Vice Chair and, subsequently, Chairperson. Under her leadership, the Advisory Committee produced two of its major reports, *Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity* and *Empty Promises: The Myth of College Access in America*.

Despite our best efforts, however, the access crisis that gave rise to HEA 40 years ago is still with us today. Out of every 100 8th graders from low-income families, fewer than ten will earn a bachelor's degree. In contrast, their peers from high-income families will succeed in doing so five times more often. Despite our hard work and best intentions, we continue to live in a society in which educational attainment, and all of the huge private and public benefits that derive from it, depend on family income—perhaps as strongly as ever. More distressing, there is little reason for confidence that this wide divergence in educational opportunity will narrow anytime soon, and considerable reason to fear that it might in fact worsen.

One of the most rewarding things I have ever done was to have served on the Advisory Committee on Student Financial Assistance, especially as Chairperson during the release of two outstanding publications: "Access Denied" and "Empty Promises." This allowed me to see first hand how policy research can inform student aid policy and advance the cause of access and persistence for low- and moderate-income students. The majority of you are here today because of your past and continuing contributions to policy research in higher education and student aid. I want to encourage you to keep up the good work, and assure you that what you do matters greatly.

Why do I say this? Because there are two battles being waged on behalf of low-income

students, neither of which we can afford to lose. The first battle is the familiar one: the never-ending fight for authorizations and appropriations in Washington and state capitals. As you know, we are in the middle of a tough HEA reauthorization and many of us will be satisfied just to hang on to what we have, while making marginal improvements for low-income students. We cannot afford to lose this struggle. The second and equally important battle is the one being waged for the hearts and minds of policymakers and the American people. That battle—to persuade all concerned of the importance of college access and persistence—is one we cannot afford to lose either. And that is where you as policy researchers come in. We need your help to win that battle as well.

In that regard, one of the most important steps that you can take as policy researchers is to reject overly simple definitions of the problems we face and the simplistic policy solutions that go along with them. As you know, access and persistence behavior is very complex: a sequential process beginning before middle school with numerous factors involved, many of which are interrelated. These factors, of course, include

- family income and background, including parents' education;
- level of academic preparation, and adequate counseling and mentoring;
- quality and timing of information;
- the delivery system, including application forms and processes;
- and, last but not least, financial aid.

Indeed, the behavior is so complex, the factors so numerous, their interactions often so inscrutable, that we will never know for sure exactly what factor affects what outcome for whom, when, and how.

When we were writing the “Empty Promises” report in 2002, we tried to cut through this complexity by focusing on a subset of students: college-qualified high school graduates, as defined by the National Center on Education Statistics (NCES). We did this to control, as best we could, for all of the other factors that affect access *except* financial aid. The students we included in our estimates of losses were the cream of the K-12, low- and moderate-income student crop, all aspiring to attend a four-year college. There was no evidence that their decision to enroll or not in a four-year college was adversely affected by inadequate academic preparation, poor information or counseling, or the complexity of the aid application process. It appeared that their decision not to attend was primarily, if not solely, a function of the record-level financial barriers that they were up against at that time: over \$7,500 in work and loan burden even at public colleges. Those barriers have risen over the intervening years and are now approaching \$10,000.

The message of “Empty Promises”—and the message of the Advisory Committee today—is not that financial aid is more important than family background, or parents' education, or academic preparation, or counseling, or information. Rather, the message is that inadequate financial aid,

at the margin, has undermined all of our efforts and the hard work of students in all of the other areas, and—all things being equal—will continue to do so in the future.

Let me share an example from my own campus. Recently, we looked at the progress of students at the university who had graduated from their respective high schools in the top ten percent of their class. They were academically prepared, entered right out of high school, and were performing well at our institution. Yet, over a six-year period when all should have graduated with at least their bachelor's degree, too many of them had stopped out due to financial reasons. In a community where barely half of the population over the age of 25 has a high school diploma and only 13 percent have a bachelor's degree, I am sure you will understand that we cannot afford to lose even one college graduate, especially one who has done all of what we have asked him or her to do.

In its publication, "What Every Student Should Know About Federal Aid," the American Council on Education (ACE) illustrates that the financial aid packages of the lowest income students living on-campus *at a state university* now include over \$10,000 in annual work-loan burden. Thus, even if students are able to graduate in four years, cumulative debt could exceed \$30,000 unless hours worked are increased significantly, with likely adverse effects on academics. If it takes six years to graduate, as is often the case, cumulative debt could approach \$50,000. I don't have to tell you that this was not the original intent of HEA. Nor do I have to tell you that such barriers, if not lowered, will undermine all of our efforts in academic preparation, counseling, and information.

Let me close with two success stories—two cases in which the limited financial aid available, combined with extraordinary effort on the part of the student, resulted in success. Alex Salinas is now a graduate student at the University of Texas at Brownsville. In 2004, when our institution went to the voters to ask them to tax themselves to help us grow the campus, Alex shared a story of hardship that sticks with me. When he was a little boy, he traveled with his parents to do migrant farm work. One day, he saw his mother tiredly massage her lower back to ease the strain. Alex said at that moment he decided he would not have to work in the fields, and he would help his parents to have a better life. He knew how important education would be in attaining those dreams, so he worked hard in school and was often sought out to represent students to important people.

When we asked him to meet the higher education commissioner for lunch, he wore a nice blue suit. Alex told the commissioner that there was a time when his parents bought him a suit to meet important people, but he had to leave the tag on so they could return it. He was proud that after earning his bachelor's degree and starting work, he would not have to return the suit that he was wearing. Alex completed his bachelor's degree with a combination of Pell Grants, loans, scholarships, and part-time work. He was an outstanding student leader who always participated in civic engagement projects so that he could be a role model for other students.

And then there is Jeanette Rosas who, when she was in high school, was told by her father that

he wanted her to learn what she *didn't* want to do for the rest of her life. So he sent her to work on farms as a migrant worker in the summers to earn her own tuition money. He was making the point that college was her one chance to better her life. And it worked. Jeanette recognized that she had to succeed not only for herself, but also to be a role model for her *hermanos* and *primos*. For five years, Jeannette served as a work-study student in the president's office where she has lived up to her reputation as the responsible one. In 2003, Jeanette graduated with a degree in business, a degree that she has put to use immediately in helping to expand her parents' home business, and she is now the full-time accounting technician in my office.

I wish Alex and Jeanette were here to tell you in their own words how extremely important financial aid is—especially grant aid—to the hardest working students. I am sure my friend, Mike McPherson, former president of Macalester College, one of the most selective liberal arts colleges in the nation, will tell you just how critically important the college's \$20,000 need-based grant is to the very best prepared low- and moderate-income students in the country. Just think how important financial aid must be to students like Alex Salinas and Jeanette Rosas.

The bottom line seems to me to be very simple: We can treat all of the other factors currently undermining access and persistence—academic preparation, counseling, and information—but if we continue to require Herculean effort by students like Alex and Jeanette, if we continue to force them to work and borrow as much as is required today, we will be facing the same access and persistence problem two decades from now. The policy research community must not lose sight of this message, and must not get bogged down in arguments about which factor is most important: family background, academic preparation, information or financial aid? All of the factors are important. And none can be left out, especially financial aid. We need a comprehensive strategy and approach that addresses all the factors comprehensively and simultaneously.

It is important for the policy research community to carry that message forward, and insist that we as a nation must renew our commitment to access and persistence through the kind of partnership that HEA envisions: one led by the federal government working in tandem with states, colleges, and private parties. If we do so, we will indeed achieve HEA's original intent and make good on the promises we made to low-income students and families 40 years ago.

KEYNOTE ADDRESS: Increasing Access to College in the HEA Reauthorization

by United States Senator Jack Reed of Rhode Island

More students are being priced out of college, and increasing access to college is critical, not only for individual progress, but for our progress as a nation. We all recognize that the most fundamental engine of success in life is an education; without that it's very difficult to utilize talent and move forward. Too many college students today are underprepared, underfinanced, and overworked. We can and should do something about that. Too many individuals don't go to college because they simply can't afford it. And that is denying them opportunity and denying the nation their talents.

We've made gains in the Higher Education Act, but we have to do more to close the gaps that remain. One gap is the difference in college attendance between high-income Americans and low-income Americans. Another is the gap between the aid that low-income students receive and the cost of attendance. These gaps are getting bigger, not smaller, which is why we should do something about them. For students with the lowest household earnings, the cost of education has risen to more than half their families' income. In 1981-1982, college tuition and fees were equal to about 31 percent of the mean household income for low-income students. In 2004-2005, it was equal to 68.9 percent.

Your work over the last several years has shown that the annual unmet need for many students is about \$4,000. The Advisory Committee's work not only points the way, but is a rallying cry for what Congress must do in this reauthorization. A recent report echoed the Advisory Committee's earlier findings in *Empty Promises*, showing that 400,000 qualified high school graduates from low- and moderate-income families will not pursue a four-year, full-time degree this year because they simply cannot afford it. They have the talent, they have the desire, but

Senator Reed is a member of the Senate Health, Education, Labor and Pensions Committee. As part of the current HEA reauthorization, he has sponsored two pieces of legislation that would implement several recommendations made by the Advisory Committee to substantially improve college access and persistence for low- and moderate-income students:

- The ACCESS Act (S. 1029), which would implement the Advisory Committee's major HEA reauthorization recommendation -- to create a public-private "national partnership for access and persistence" -- through establishment of "Grants for Access and Persistence (GAP)"; and
- The FAFSA Act (S. 1030), which would improve access to federal financial assistance for low- and moderate-income students.

Key provisions in both bills were successfully adopted by the HELP committee into the pending Senate HEA reconciliation bill (S. 1614).

These remarks are excerpted from Senator Reed's Keynote Address at the Advisory Committee's Symposium on Access and Persistence in September 2005.

they don't have the dollars. The decline in real dollars spent on grants, together with the increasing cost of college, has accelerated this phenomenon.

There's been a steep decline in the purchasing power of the Pell Grant, established by my predecessor, Senator Claiborne Pell. His vision was that every qualified student should be able to go to college. That vision still motivates us, but, unfortunately, the resources have not been provided as in the past. It's been estimated that, in 1976, the maximum Pell Grant covered 84 percent of the average four-year public tuition. Now, the maximum grant, about \$4,050, covers only 39 percent of the cost of a four-year public tuition. The decreased purchasing power is amazing. Over the last ten years, as Pell Grants have decreased, costs at public and private universities have increased much faster than inflation, and much faster than consumer prices.

In 2008, we will see the largest number of students in our history graduating from high school. We have to be ready for them, not just in terms of a college prep curriculum, but ready in terms of financing so they can go off to college. We need these young students because as we all recognize, the baby boomers are approaching retirement age. We have to replace this talent and continue to educate all of our dedicated and talented young people.

This situation calls for action, and I've introduced two pieces of legislation along with Senators Susan Collins of Maine, Ted Kennedy of Massachusetts, and Patty Murray of Washington. This is bipartisan legislation authored by myself and those I admire greatly. The first bill is called Accessing College through Comprehensive Early Outreach and State Partnerships Act, or ACCESS Act, which builds on the LEAP (Leveraging Educational Assistance Partnerships) program, one of the few programs, if not the only program, where there is a partnership between state and federal governments to provide grants to low-income students. LEAP was on the verge of extinction, but, working with Senator Collins, we were able to restore it to the budget several years ago. We want to build on that. LEAP is a rather modest program, \$65.6 million of federal money, but leverages additional state money. And, it's very effective.

We would like to incorporate some of the Advisory Committee's work into the LEAP program by way of the ACCESS Act. For example, this bill would incorporate your proposal to create grants for access and persistence, or GAP for short, under which states would be rewarded for creating vibrant partnerships between colleges, foundations, businesses, and intervention and mentoring programs with higher levels of federal matching dollars. The ACCESS Act would provide support for three key goals: first, providing low-income students with grants to fill the gap between tuition and their ability to pay. Second, it would provide early notification to low-income students of their eligibility for financial aid to help ensure that middle school students don't give up on the dream of college because they think there is no way they can ever afford it. Finally, it would increase participation of low-income students in early intervention, mentoring, and outreach programs. Research shows that successful college access programs offer these three components, and this builds upon long-standing Advisory Committee advice.

The second bill is entitled the Financial Aid Form Simplification and Access Act, or FAFSA Act, and it builds directly on Advisory Committee efforts with respect to the simplification study recommendations in *The Student Aid Gauntlet* report. The components of this proposed legislation include, first, allowing more students to qualify for an automatic zero expected family contribution, or auto-zero, and aligning the auto-zero eligibility level with the standards of other federal means tested programs like school lunch, SSI, and food stamps. The second objective would be to establish a short, easy, paper FAFSA, or EZ FAFSA, for students who qualify for the auto-zero. Third, we'd phase out the long form, using the savings to increase access to web-based forms by directing the Secretary of Education to utilize "smart" technology to create a tailored web-based application form to ensure that students answer the minimum, not maximum, number of questions. For those students who do not have access to the web, we propose creating a free telefile system for filing by phone. In addition, the Secretary would be required to work in cooperation with the states and schools to develop a system for early estimates of aid from multiple sources, inform students if they qualify to use the EZ FAFSA, and notify those participating in federal means tested programs of their potential eligibility for a maximum Pell Grant.

Generally, the FAFSA Act also increases the Income Protection Allowance for dependent and independent students to reduce penalties when students have to work in order to pay for college. We would like to ensure the equitable treatment of prepaid tuition and college savings plans. Embedded in all of these specific proposals are fundamental goals. First, students and families should not be required to prove over and over again that they are low-income. Second, students must have available simplified forms and an early information system that helps with the application process. The American Council on Education found that one out of every five dependent low-income students and one of every four independent low-income students failed to take advantage of financial aid programs simply because they did not submit a FAFSA. They either did not understand they had to, or were deterred by complexity of the forms. Third, we must end the Income Protection Allowance limits that punish low-income students who work one, or two, or sometimes more jobs to pay for college.

These two bills represent an important step toward ensuring that every student who works hard and plays by the rules gets the opportunity to fulfill their aspirations to go to college. I'm pleased to report that many aspects of these two legislative proposals have been included in the Senate HEA reauthorization bill, and that's good news. Because of concerns about costs, we have not been allowed to incorporate some of the provisions for the auto-zero, including the use of eligibility for federal means tested programs as the criteria for it. We have also not been able to overcome fully some of the Income Protection Allowance issues, but we'll continue to work on that as we go forward.

Let me conclude by thanking the Advisory Committee. Without your direction, your support, and your insights, we could not have proposed this legislation. I appreciate very much what you have done, how you have helped us, and how, more importantly, you will help thousands

and thousands of students across this country. Once again, thank you for your consideration and for all you do.

Opportunity in American Higher Education

by Michael S. McPherson and Morton Owen Schapiro²

The combination of the largest economic returns to higher education in more than a generation and growing inequality in income distribution leads many to think of our nation's colleges and universities as potential contributors to equalization amidst various forces leading to even further stratification. Therefore, it is not surprising that concerns about college opportunity in America seem to be on the rise. In this paper, we review data measuring inequalities in higher education participation and attainment, examine reasons underlying these differences, discuss the impact of unequal opportunity on individuals and society, and explore some of the most promising solutions.

The Current State of Educational Opportunity in Higher Education

It is useful at the outset to sketch a broad overview of economic and racial diversity in America's postsecondary universe. As is well known, children from poor families and from families where neither parent attended college are less likely to finish high school and, among those who do graduate from high school, are less likely to go on to college. Figures 1 and 2 summarize evidence on high school dropout rates by family income and by race. Looking first at income, while the general decline in dropout rates for students from less affluent families is encouraging, little progress has been made since the early 1990s, resulting in fairly large and persistent gaps by income. Turning to race, the news is much better for blacks than for Hispanics, although the size of the gap versus whites has not changed much for either group since the mid-1980s.

Figures 3 and 4 focus on college enrollment rates for those who do graduate from high school. These have increased at an impressive rate for high school graduates from all income backgrounds although, once again, substantial differences remain, and there has been little or no narrowing of the gaps over the past decade. While the decline in enrollment rates for Hispanics and for blacks experienced in the late 1970s and early 1980s was reversed in the mid-1980s, with encouraging increases over most of the subsequent period, college enrollment rates for whites today is still 10 and 15 percentage points higher than for blacks and Hispanics, respectively. Moreover, progress in college enrollment rates seems to have peaked in the late 1990s, with stagnation or decline since.

What about college completion? Table 1 shows that the probability of graduating from college varies with family income—ranging from a 77 percent completion rate for those entrants into

² We wish to thank Bibek Pandey for exceptionally able and cheerful research assistance.

four-year colleges who come from affluent families to only a 54 percent completion rate for those from lower income families.

High school dropout rates, college enrollment rates, and college completion rates all add up to explain educational attainment. Table 2 presents data on educational attainment over time by race. In 2002, 93 percent of whites aged 25 to 29 completed high school and 36 percent completed at least four years of college. Comparable percentages for blacks were 88 percent and 18 percent, while Hispanics lagged far behind with percentages of only 62 percent and nine percent.

Finally, it would be a mistake to imply that all college attendance is the same. Table 3 examines the type of college attended—and its selectivity—for students from different income backgrounds. While in 1999 fewer than 6 percent of all first-time, full-time freshmen from families with income below \$60,000 attended those highly selective four year private and public colleges and universities that are subject to media obsession, the comparable figure for students from families with income above \$200,000 is 26 percent. Thus, not only are lower income students more likely to drop out of high school, those who continue on in postsecondary education are only infrequently found at our nation's most prestigious institutions.

The Causes of Unequal Access and Persistence

What underlies these troubling facts? There are certainly significant financing constraints that contribute to differential higher education access. But there are equally important differences in pre-college preparation. Table 4 looks at college enrollment by family income and mathematics test scores. The top panel shows that students scoring in the top third in math are quite likely to go on to college, especially if they come from families above the 25th percentile in income. Even for students in the lowest quartile, the enrollment rate is 82 percent. However, as test score performance declines, enrollment rates plummet. The decrease is especially large for students from lower income backgrounds—for example, the 82 percent rate for those with the highest test scores mentioned above falls to 48 percent when math test scores are in the lowest third. Income clearly plays a role here, but scholastic performance also contributes to explaining college entry.

Tables 5 and 6 turn to a test where differences by income and race are well documented—the SAT. Differences by income are large (with an 1123 average score in 2002-2003 for students from the most affluent group, compared to an 864 average score for those from the least affluent backgrounds) and stable over time (with a gap of 256 points in 1995-96 and a gap of 259 points in 2002-03). Racial differences tell a similar story (see Table 6).

Table 7 focuses on high scoring SAT performers, tracing the course of educational experiences on the way to standardized test success. Examining the 1988 8th grade cohort (representative of all students nationwide), 97 percent of students from families in the top 25 percent of the income distribution eventually graduated high school, 68 percent ended up taking the SAT, and

15 percent scored over 1200. For students in the bottom 25 percent of the income distribution, 80 percent graduated high school, 32 percent took the SAT, and only 2 percent exceeded a score of 1200 on the SAT. The story is clear: low-income students are less likely to graduate high school; even if they do, they are less likely to take the SAT test; when they take the SAT, they are much less likely to do well. The same is the case when comparing students with at least one parent who attended college versus students whose parents have no college experience.

A final look at college preparation deals with science scores among 8th grade test takers. It is widely known that students in the U.S. tend to perform at mediocre levels compared with counterparts from other nations. Table 8 shows the U.S. average score to be in the middle of the pack, far below Korea and Japan. But the table also shows that the score in the U.S. is a weighted average of scores that differ considerably by race. Black and Hispanic Americans perform dismally on this test, while whites do quite well. These data underscore in a dramatic way the vast inequalities in educational opportunity that persist in American society.

Standardized tests receive a good deal of criticism, much of it deserved, but it is important not to be too hasty in dismissing the message that these score differences—as well as differences in high school academic performance—bring. That unwelcome message is this: educational opportunity in the U.S. is simply spectacularly unequal from the earliest days of a child's experience in schooling. For reasons most people could easily name, students from impoverished backgrounds are less well-educated and less well-prepared for college than are those from more favored backgrounds. There is no evidence to demonstrate that there is anything inherently wrong with these kids—this is not a matter of genetics. Rather, the simple fact is that they have grown up and been educated in circumstances that are much less favorable than those facing other Americans.

The Effects of Unequal Opportunity

The differences in educational attainment discussed above would not be so worrying if not for the relationship between education and a remarkable variety of outcomes. Many years ago, Howard Bowen produced an impressive catalog of the many ways in which higher education improves the quality of life for individuals and communities (Bowen 1977). We lack the space to review all these dimensions, and limit ourselves to discussing just a few central ones here.

It is not surprising that, as economists, we begin with income. Table 9 looks at median earnings for different educational levels. For both men and women, dropping out of high school has a striking economic cost, with male dropouts earning 68 percent of what male high school graduates make and females earning 69 percent as much as female high school graduates. Compared with those who stop at high school graduation, a bachelor's degree adds an additional 60 percent for males and 58 percent for females. Although these differences are not adjusted for a variety of factors other than the causal impact of additional schooling that may affect the comparative earnings of these groups, a formidable body of careful econometric work

shows that the economic return to individuals from investing in college is indeed substantial.³ Following a brief downturn in the 1970's, economic returns to higher education have remained consistently high for almost 30 years, a trend that shows no sign of abating. There is good reason to believe that the growth of technology will continue to fuel the demand for educated labor for many years to come.⁴

But the returns to postsecondary education do not stop with income. Broader social gains are also well known. Table 10 shows that, in the 2004 presidential election year, 74.2 percent of college graduates voted versus 52.4 percent of those who stopped at high school and 34.6 percent of those who made it to at least 9th grade but never got a high school diploma. A valuable recent paper by Thomas Dee (2004) provides evidence that this relationship is not simply a correlation, but instead that higher levels of education are causally related to higher levels of civic participation.

Table 11 presents data on incarceration rates. Beginning with the rate among high school dropouts, these fall by 37 percent for those with a high school diploma and by 95 percent for those with college degrees. Finally, even controlling for income, education has an important impact on health—something that has both individual and societal impacts. As shown in Table 12, the higher the level of educational attainment, the better the reported health, regardless of age or income. An extensive review of statistical studies that attempt to control for other factors in estimating the relationship between education and these and other non-market outcomes concludes that the causal effects of education are real and significant (Wolfe and Zuvekas 1995).

Policy Options

What, then, can be done to reduce inequality of educational opportunity in this country? As the data we have reviewed above show, problems of unequal opportunity manifest themselves long before college. Indeed, there is evidence that significant gaps in achievement levels between lower income students and others may exist even before kindergarten, and are certainly present (and growing) by early elementary school. Since these early inequalities appear to be connected not only to differences in school quality between students from different groups, but also to differences in health status, learning opportunities outside of school, and other factors, it is plain that for the nation to seriously address problems of unequal opportunity in education will require society-wide efforts that go beyond what colleges themselves or governmental policies in the realm of higher education alone can accomplish.

That said, it is clearly desirable for colleges, universities, and higher education policymakers to do what they can to address these inequalities at the postsecondary level, and indeed to do their best, as well, to influence education at earlier levels in desirable directions. Policy proposals to improve college opportunity for disadvantaged students can be classified into three broad

³ An extensive review of the literature is provided in Card (1999).

⁴ For a thoughtful analysis of the influence of technological change on the demand for different kinds of labor, see Levy and Murnane (2004).

areas: academic preparation, recruitment and outreach, and financial accessibility. Policies in any of these areas may be undertaken by individual institutions, by states, or by the federal government.

Academic Preparation

As we saw earlier, the correlation between family income and academic achievement in high school (as measured by test scores) is strong and persistent. Weak preparation at the high school level (often related to weak preparation earlier) is a serious impediment to access and success in postsecondary education. As we have noted, remedying this problem is a challenge for the nation as a whole and not simply for colleges and universities. Nonetheless, higher education may have a significant role to play in addressing these concerns. For example, the nation's teachers are prepared in colleges and universities, and the quality of their preparation is an important consideration in the effectiveness of schooling. Individual institutions may also have the means and the opportunity to assist directly in improving the schools in their surrounding areas.

Another route through which higher education may influence high school achievement is through having an impact on students' expectations and motivations. As Rosenbaum (2001) and Kirst and Venezia (2004) have argued, students in high schools populated by low-income students often have little information about what they will be expected to know and to be able to do upon entry to college.⁵ Students entering "broad access" public institutions will frequently have to take placement exams upon entry, exams that determine whether they can enroll in courses for college credit or whether they have to begin with "remedial" or "developmental" courses. Students generally have no exposure to these tests while in high school, and they are generally not aligned with high school exit exams or graduation standards. Students, therefore, may have little way to gauge whether they are indeed ready to succeed in college, particularly if they are growing up in neighborhoods which provide little everyday experience with college graduates. More consistency between what high schools expect of college-bound students and what colleges require for entry into their college-level courses is one plausible route toward improving academic preparation in high schools. Another constructive step may be to give students exposure to the college placement exams they will eventually face early enough in their high school career to influence their performance.

Federal programs that concentrate on improving students' high school preparation and their awareness of college opportunity also have a role to play here. GEAR UP is one such initiative, described in the following terms on the Department of Education's website:

The GEAR UP program is a discretionary grant program designed to increase the number of low-income students who are prepared to enter and succeed in postsecondary education. GEAR UP provides five-year grants to States and partnerships

⁵ Schneider and Stevenson (1999) provides a broad perspective on the high aspirations and unfocused plans of many young people.

to provide services at high-poverty middle and high schools. GEAR UP grantees serve an entire cohort of students beginning no later than the 7th grade and follow the cohort through high school. GEAR UP funds are also used to provide college scholarships to low-income students. (U.S. Department of Education 2005a)

The federal government also supports a set of outreach programs called TRIO, which the U.S. Department of Education describes in the following terms:

The Federal TRIO Programs are educational opportunity outreach programs designed to motivate and support students from disadvantaged backgrounds. TRIO includes six outreach and support programs targeted to serve and assist low-income, first-generation college students, and students with disabilities to progress through the academic pipeline from middle school to postbaccalaureate programs. TRIO also includes a training program for directors and staff of TRIO projects and a dissemination partnership program to encourage the replication or adaptation of successful practices of TRIO projects at institutions and agencies that do not have TRIO grants. (U.S. Department of Education 2005b)

Recruitment and Outreach

A second route toward expanding opportunities for disadvantaged students is through recruitment and outreach efforts. An important component of such efforts is provision of information to students and their families about the financial feasibility of attending college. This topic will be discussed under the next heading below. Even apart from finances, however, students and families may perceive college opportunity—or at least the opportunity to attend any institution other than the closest community college—as simply out of reach. The challenges here may be partly cultural: a perception that people “like me” are not welcome at, say, the state university. It may also be the case that disadvantaged students, who often attend schools where resources for college counseling are scarce, simply do not know that it matters where as well as whether you go to college, and may not know much about the range of alternatives available.

For selective colleges, a further step in outreach and recruitment (beyond better communications) may be available: providing an admissions preference for disadvantaged students, much as many such schools do now for athletes, for students of color, and for children of alumni (Bowen, Tobin, and Kurzweil 2005). Such preference may be justified in a variety of ways, including the educational benefits of diversity for all students, the importance of advancing the condition of disadvantaged students, and the effect of offering a higher probability of admission upon a student’s willingness to consider applying to such a college in the first place. (It is important to note that, despite the fact that persons of color are disproportionately likely to be low-income, an admissions preference in favor of low-income or first-generation college students would not be an adequate substitute for race-based affirmative

action, if the goal is to maintain or to increase the representation of students of color at selective colleges and universities.)

As valuable as it is, “socioeconomic affirmative action” has two important limitations. First, the majority of students in the U.S. do not attend selective colleges, and, therefore, the share of low-income students who are likely to benefit from these policies is limited. Second, even among selective colleges, the majority have significant financial limitations on their ability to provide assistance to needy students. Many, indeed, either turn down some needy students because they cannot afford to aid all who qualify, or offer some admitted students less financial assistance than a needs analysis of family resources says they require. These schools are simply not in a financial position to expand their efforts to admit low-income students, at least without some kind of assistance from outside.

Financial Accessibility

As we showed above, even after allowing for differences in academic preparation, low-income students are still less likely to attend college, and substantially less likely to attend four-year colleges, than their more affluent counterparts. As is true of almost any product or service, lowering its price tends to encourage its purchase and use, and a great many studies indicate that when college is made cheaper, whether through lower tuition or more student aid, students are more likely to attend.⁶

Thus, one kind of policy that may be used to encourage college enrollment of disadvantaged students is to increase the subsidies they receive toward attendance at college. Traditional routes toward such subsidies include state support of public higher education, used to hold the price down for all students; charitable support for private (and increasingly for public) higher education, used either to hold price below cost or to target aid toward disadvantaged students; and federal and state programs that subsidize college, traditionally through income- or needs-tested grants, but now also through tax credits and deductions for tuition.

While some programs designed to subsidize college tuition remain highly targeted on low-income students (the Pell Grant program being the leading example), there is reason to think others are becoming less targeted. Federal tax credits and deductions are aimed broadly across the middle class and provide little benefit for low-income families that do not, in many cases, pay taxes (Long 2004). State governments increasingly emphasize broad-based “merit” programs over means-tested state student aid programs (Heller and Marin 2002). And colleges and universities themselves devote an increasingly large fraction of their student aid resources to competing with other institutions to recruit middle- and even higher income students (McPherson and Schapiro 1998). A challenge, therefore, is to better coordinate the resources of the funders of higher education toward helping disadvantaged students. One option would be

⁶ As Susan Dynarski (2002) notes, this argument does not in itself assume that there are capital market imperfections (although capital market imperfections may figure importantly in arguments about whether such subsidies are efficient).

for the federal government to take the lead in such an effort by creating a supplementary federal grant program that would reward states and individual institutions that directed their own resources toward financial assistance to high-need students. Such a program might take the form of an additional grant augmenting Pell Grants for individual needy students who enrolled in states or at institutions that invested heavily in helping disadvantaged students (McPherson and Schapiro 1997).

An important advantage of targeting assistance toward low-income or high-need students is that it is a more efficient use of subsidy dollars. Against this advantage, however, weigh two disadvantages. First, targeted subsidies may be harder to sustain politically. As in the case of social security, offering assistance in a way that enables most people to perceive that they have a stake (even if the program winds up benefiting some people more than others) helps ensure its political viability (Skocpol 1991). The political success over many years of subsidized tuition in public universities, and, more recently, of federal tuition tax credits and state “merit scholarship” programs that are broadly targeted, points to the political significance of this point.

Second, targeting a program tends to make its operation more complicated and harder to understand. The existing financial aid system for U.S. higher education appears to suffer from this problem in a very serious way.⁷ The forms students and their families must fill out are complicated, particularly for English language learners and for first-generation college students, and families’ ability to make a reasonable guess about what college will wind up costing is much impaired. Except at the lowest-priced community colleges, often the very last piece of information families receive, after pursuing elaborate application and months of waiting, is the actual price they will have to pay. This net price information is generally not received until the spring of the student’s senior year in high school. For families that pay taxes, tuition tax credits and deductions add further to the complexity (Government Accountability Office 2005).

These considerations have led to calls for simpler ways to deliver subsidies to needy families. The Advisory Committee on Student Financial Assistance itself has produced a set of recommendations for simplifying the process of applying for financial aid (Advisory Committee 2005). Some authors have argued that the very simple message conveyed through state merit scholarship programs—to the effect that any student who earns an established level on standardized tests or for their high school GPA can attend the state university “free”—is so powerful that the cost of inefficient targeting of the subsidy may be worth paying (Cornwell, Mustard, and Sridhar 2003; Dynarski 2004).

Existing tax credits and deductions manage to combine relatively poor targeting with extreme complexity (Long 2004). Moreover, the actual delivery of the benefit through reduced taxes occurs at a considerable temporal distance from enrolling in college, thus likely diluting any impact on enrollment decisions. Targeting of the tax breaks for college could readily be improved by making them refundable, as is the Earned Income Tax Credit. This would allow

⁷ For an assessment of what is known and what needs to be learned about families’ perceptions of college affordability, see (Mundel and Coles 2004).

families who do not owe taxes to receive the amount of the credit as a refund, rather than as an offset against taxes. There would also be advantage in arranging a mechanism whereby the amount of the eventual credit would be advanced at the time of college enrollment instead of at the time taxes are paid.

A basic challenge regarding future improvements in college opportunities is the nation's willingness to invest in higher education. The difficulties in funding both disadvantaged students and the institutions they attend raise important public policy questions about the degree to which our society is actually willing to invest in the postsecondary education of students from impoverished backgrounds. Although there has been much attention to the large percentage increases in public tuition in recent years, there has been less emphasis on a major contributing cause of those tuition increases: a substantial reduction in the share of public higher education revenues supplied by state governments, as state budgets have been squeezed and Medicaid and other costs have skyrocketed. Indeed, the impression that the costs of public higher education are "skyrocketing" out of control depends on focusing only on tuition increases, while ignoring what has been happening to government support for public higher education. As Table 13 shows, rates of growth in spending on public higher education (combining that by governments and by families) have roughly paralleled rates of growth in GDP, whether viewed on an aggregate or a per capita basis, through the whole period from 1980 to 2000. Indeed in the 1990s aggregate spending on public higher education actually grew more slowly than GDP (Table 13, Panel B). Such an allocation of national resources to public higher education seems a puzzling and unsettling choice in light of the importance of higher education in the world we face. Weakening government support for public higher education coupled with an increasing burden on families to pay tuition is likely to be especially consequential for low-income students, who for obvious reasons are more vulnerable to shifts in public support than are their more affluent counterparts.

Conclusions

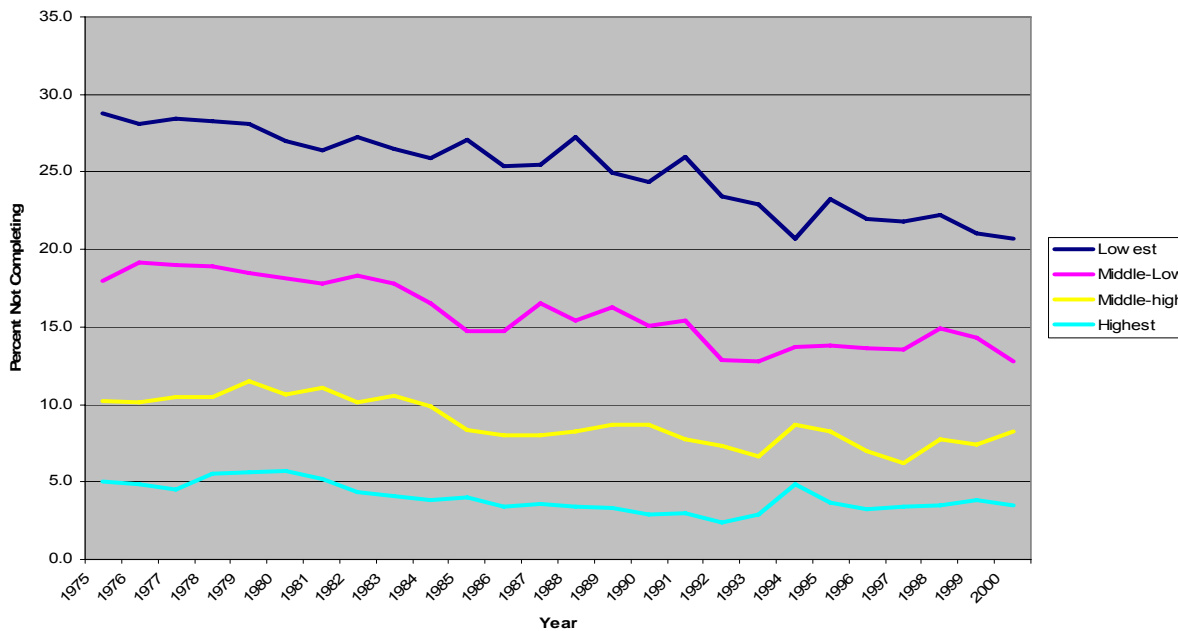
Unequal opportunity in the United States starts early and grows. The inequalities that exist at the end of high school provide highly uneven "starting points" for students considering postsecondary education. Inequalities in academic preparation and information about college are reinforced by inequalities in family income and social circumstances. In this paper we have presented some of the quantitative evidence documenting this picture.

We have gone on to review briefly the evidence that this inequality of opportunity has serious consequences. Education is an important determinant not only of persons' incomes, but of a wide range of other outcomes valuable both to individuals and to society. There is little doubt that a full-scale attempt to address these problems must begin with early childhood and must take into account not only the schooling of children from different socioeconomic backgrounds but also other aspects of their social circumstances. At the same time, our society cannot wait until these deep and persistent problems are addressed. There is good reason for colleges and universities, as well as the state and federal agencies that are concerned with postsecondary

education, to take seriously the challenge of expanding opportunity for access and success in college for disadvantaged young people.

We have reviewed policies on a number of fronts that could make a difference on this multi-dimensional problem. Much remains to be learned, but there is little doubt that, even with present knowledge, it is possible to identify policies that would help. The principal question is whether the nation can summon the political will to settle on and to pursue these policies.

Figure 1. High School Drop-out Rates by Family Income, 1975-2000



Source, Figure 1: *Digest of Education Statistics, 2003*. Table 108. <http://nces.ed.gov/programs/digest/d03/tables/dt108.asp>.

Note: Family income quartiles are the unit of measurement.

Source, Figure 2: *Digest of Education Statistics, 2003*. Table 107. <http://nces.ed.gov/programs/digest/d03/tables/dt107.asp>.

Figure 2. High-school dropout rate by race/ethnicity, 1972-2001

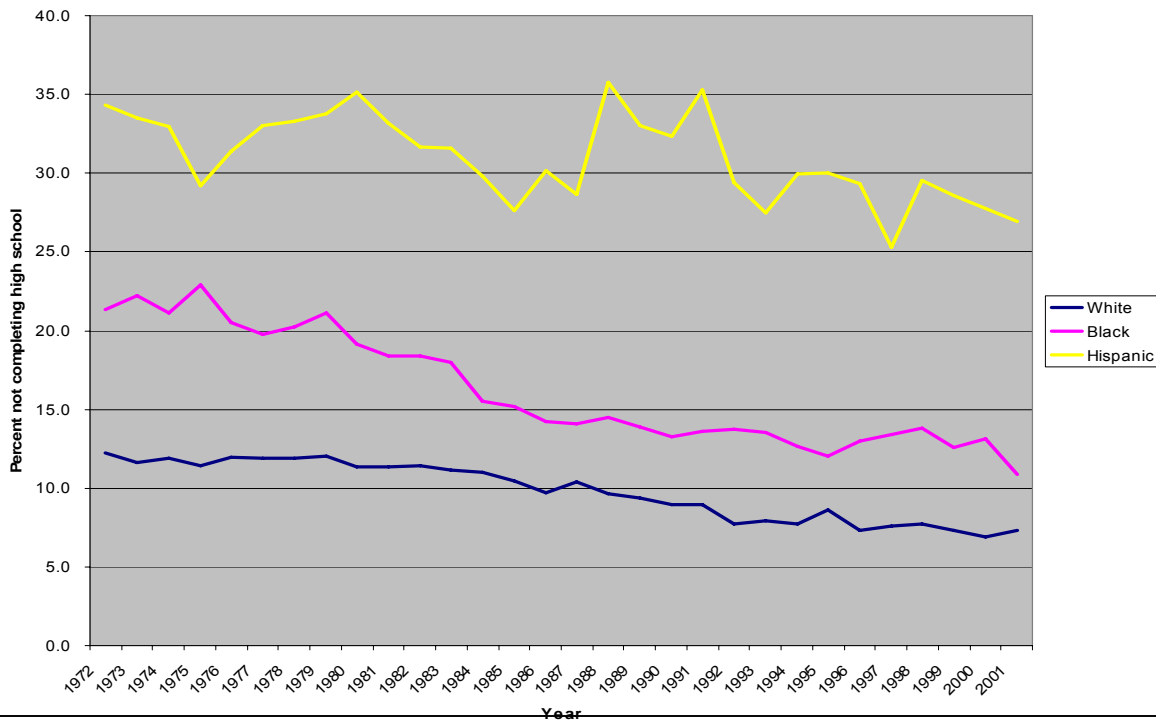
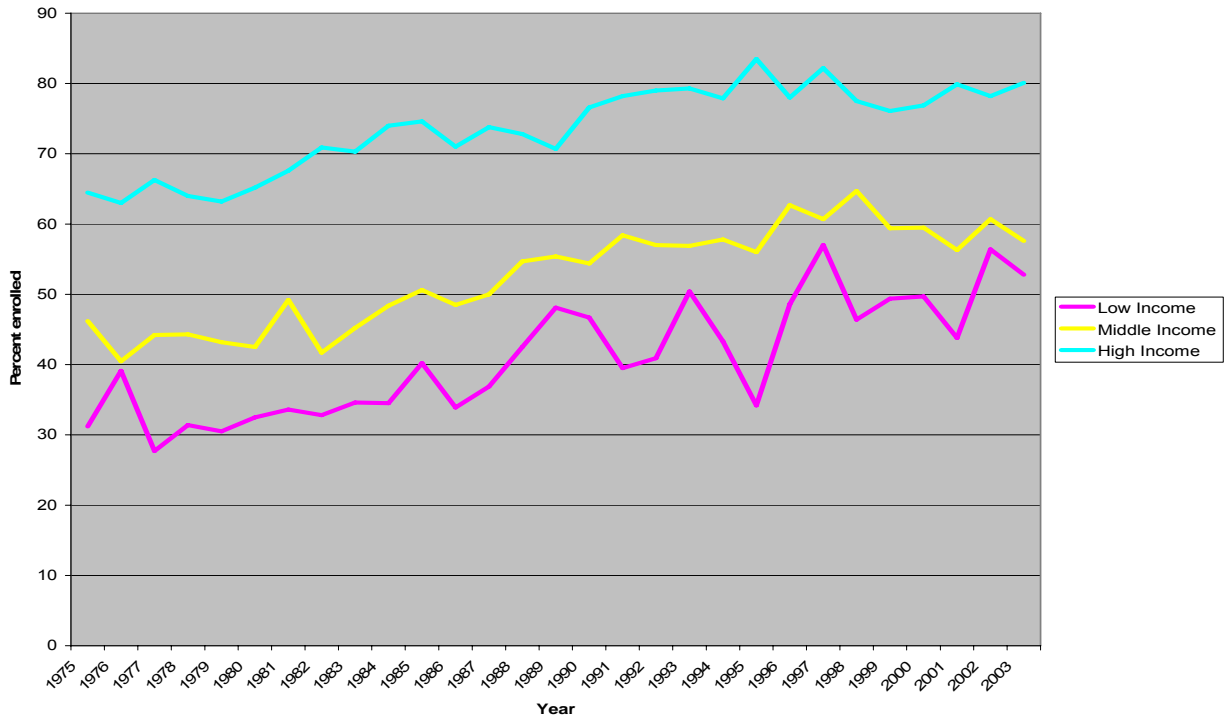


Figure 3. Enrollment rate of high school graduates, by income 1975-2003



Source, Figures 3 and 4: NCES, "Student Effort and Educational Progress." Table 20-1.

<http://nces.ed.gov/programs/coe/2005/section3/table.asp?tableID=268>.

Note, Figures 3 and 4: Students were enrolled in college by the October after completing high school. Family income is defined as follows: low-income equals the bottom 20 percent of all incomes, high-income the top 20 percent, and middle-income the 60 percent inbetween.

Figure 4. Enrollment rate of high school graduates by race/ethnicity, 1975-2002

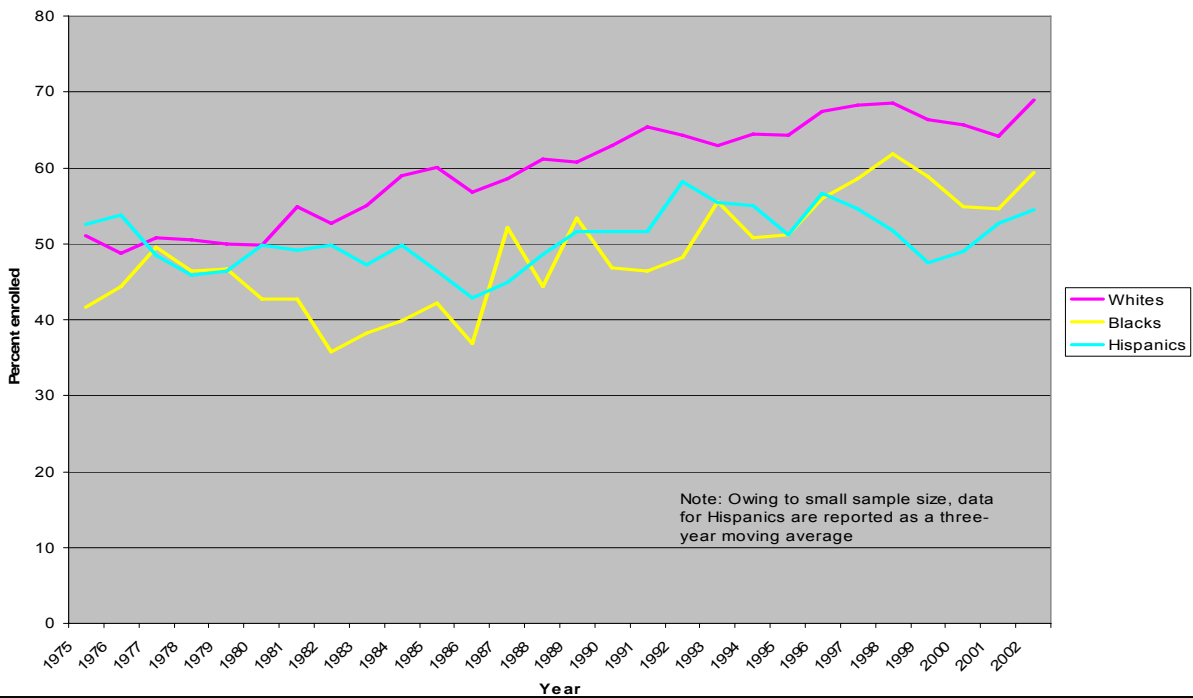


Table 1. Bachelor's degree completion rates of four-year college entrants by family income
 (students who entered four-year institutions in 1995-96 with the goal of earning a BA)

Family Income	Completion Rate
<\$25,000	54
\$25,000-\$44,999	59
\$45,000-\$69,999	68
\$70,000+	77

Source: *Education Pays 2004*, pg 35 (figure 24)

Percentage of population age 25 to 29						
Year	White		Black		Hispanic	
	high school completion or higher	four or more years of college	high school completion or higher	four or more years of college	high school completion or higher	four or more years of college
1980	89.2	25	76.7	11.6	58	7.7
1985	89.5	24.4	80.5	11.6	60.9	11.1
1990	90.1	26.4	81.7	13.4	58.2	8.1
1995	92.5	28.8	86.7	15.4	57.1	8.9
2000	94	34	86.8	17.8	62.8	9.7
2002	93	35.9	87.6	18	62.4	8.9

Note: Both "White" and "Black" categories exclude Hispanics

Source: *Digest of Education Statistics 2003*, Table 8
<http://nces.ed.gov/programs/digest/d03/tables/dt008.asp>

Table 3. Distribution of first-time full-time freshmen by income
And institutional selectivity, fall 1999

1999	<\$20	\$20-\$30	\$30-\$60	\$60-\$100	\$100-\$200	>\$200	All Groups
2-yr public	39.0%	38.8%	35.5%	29.8%	16.8%	10.1%	30.9%
2-yr private	3.7%	2.7%	2.4%	1.8%	2.2%	3.5%	2.4%
Low Select 4-yr	41.9%	41.8%	41.8%	42.4%	42.0%	35.4%	41.7%
Medium Select 4-yr	9.7%	11.5%	14.9%	18.0%	23.1%	25.6%	16.5%
High Select 4-yr	5.8%	5.2%	5.4%	8.0%	16.0%	25.5%	8.5%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Michael S. McPherson and Morton Owen Schapiro, *Handbook of the Economics of Education*, eds., Richard Hanushek and Finis Welsh. Amsterdam: Elsevier, forthcoming

Table 4. Postsecondary enrollment rates of 1992 high school graduates
by family income and math test scores

All

Math Test Scores	Lowest Income	Second Quartile	Third Quartile	Highest Income
Lowest Third	48	50	64	73
Middle Third	67	75	83	89
Top Third	82	90	95	96

Four-year

Math Test Scores	Lowest Income	Second Quartile	Third Quartile	Highest Income
Lowest Third	15	14	21	27
Middle Third	33	37	47	59
Top Third	68	69	78	84

Two-Year

Math Test Scores	Lowest Income	Second Quartile	Third Quartile	Highest Income
Lowest Third	33	36	43	46
Middle Third	34	38	36	30
Top Third	14	21	17	12

Source: *Education Pays 2004*, pg. 30

Table 5. Scholastic Assessment Test (total) score averages, by family income, selected years

Family Income	95-96	97-98	99-00	2002-03
less than \$10,000	873	873	872	864
\$10,000 - \$19,999	920	914	907	889
\$20,000 - \$29,999	964	959	949	927
\$30,000 - \$39,999	992	992	983	964
\$40,000 - \$49,999	1016	1015	1008	993
\$50,000 - \$59,999	1034	1032	1026	1012
\$60,000 - \$69,999	1049	1046	1039	1025
\$70,000 - \$79,999	1064	1059	1054	1041
\$80,000 - \$100,000	1085	1085	1079	1065
more than \$100,000	1129	1131	1129	1123

Source: *Digest of Education Statistics 2003, Table 133*

Note: SAT scores are re-centered

<http://nces.ed.gov/programs/digest/d03/tables/dt133.asp>

Table 6. Scholastic Assessment Test score averages, by race/ethnicity

Verbal

Race/Ethnicity	86-87	90-91	95-96	96-97	99-00	00-01	2001-02	2002-03
White	524	518	526	526	528	529	527	529
Black	428	427	434	434	434	433	430	431
Hispanic or Latino	464	458	465	466	461	460	458	457
Mexican American	457	454	455	451	453	451	446	448
Puerto Rican	436	436	452	454	456	457	455	456
Asian American	479	485	496	496	499	501	501	508
American Indian	471	470	483	475	482	481	479	480
Other	480	486	511	512	508	503	502	501

Math

Race/Ethnicity	86-87	90-91	95-96	96-97	99-00	00-01	2001-02	2002-03
White	514	513	523	526	530	531	533	534
Black	411	419	422	423	426	426	427	426
Hispanic or Latino	462	462	466	468	467	465	464	464
Mexican American	455	459	459	458	460	458	457	457
Puerto Rican	432	439	445	447	451	451	451	453
Asian American	541	548	558	560	565	566	569	575
American Indian	463	468	477	475	481	479	483	482
Other	482	492	512	514	515	512	514	513

Source: *Digest of Education Statistics 2003, Table 131*
 Note: SAT scores are re-centered
<http://nces.ed.gov/programs/digest/d03/tables/dt131.asp>

Table 7. Percentage of the 1988 Eighth-Grade Cohort Who Graduated from High School, Took the SAT, and Scored above 1200, by Family Income and Parental Education, from the National Educational Longitudinal Study

	<i>Percentage of Cohort Who Graduated from High School (Diploma or GED)</i>	<i>Percentage of High School Graduates Who Took the SAT</i>	<i>Percentage of Cohort Who Took the SAT</i>	<i>Percentage of Those Who Took the SAT Who Scored above 1200</i>	<i>Percentage of Cohort Who Scored above 1200</i>
Family Income					
Bottom quartile	79.9	34.2	32.2	7.4	2.4
2 nd quartile	90.1	40.3	38.8	7.9	3.1
3 rd quartile	94.8	50.9	49.3	12.0	5.9
Top quartile	97.1	70.1	68.4	21.4	14.6
Parental Education					
Neither parent attended college	76.9	30.8	28.0	3.3	0.9
At least one parent attended college	92.4	49.6	48.1	13.7	6.6

Source: Equity and Excellence in American Higher Education, William G. Bowen, Martin Kurzweil, Eugene Tobin, University of Virginia Press, 2005.

Note: Income quartiles are based on the 2000 Census, deflated to 1991 dollars. The third and fourth quartiles are slightly smaller than they should be, and the bottom two quartiles are slightly larger due to variable coding restrictions. The percentage of the cohort who took the SAT is not equal to the product of those who graduated from high school and the high school graduates who took the SAT, because there were non-graduates who took the SAT.

Table 8. Science Scores from PISA 2000 (Eighth grade scores)

<u>Country</u>	<u>Score</u>
Korea, Republic of	552
Japan	550
Finland	538
United States Average Score for White Students	535
United Kingdom	532
Canada	529
New Zealand	528
Australia	528
Austria	519
Ireland	513
Sweden	512
Czech Republic	511
France	500
Norway	500
United States Average Score	499
Hungary	496
Iceland	496
Belgium	496
Switzerland	496
Spain	491
Germany	487
Poland	483
Denmark	481
Italy	478
Greece	461
Portugal	459
Luxembourg	443
United States Average Score for Hispanic Students	438
United States Average Score for African American Students	435
Mexico	422

Source: David Berliner, *Our Impoverished View of Educational Reform*, <http://www.tcrecord.org/Content.asp?ContentID=12106>

Table 9. Median earnings for different education level by gender, 2003

Education Level	Male	Female
Less than High School	\$24,100	\$18,100
High School Graduate	\$35,400	\$26,100
Some College	\$41,300	\$30,100
Associate Degree	\$42,900	\$32,300
Bachelor's Degree	\$56,500	\$41,300
Master's Degree	\$70,600	\$50,200
Doctorate Degree	\$87,100	\$67,200
Professional	\$100,000	\$66,500

Source: *Education Pays 2004*, pg 14 (figure 5)

Table 10. Reported voting. % of population at different education level, selected years 1964-2004

Year	Less than 9th grade	9th to 12th grade, no diploma	High School Graduate or GED	College or Associate Degree	Bachelors degree or more
1964	59.0	65.4	76.1	82.1	87.5
1966	44.6	49.9	60.1	64.8	70.5
1968	54.5	61.3	72.5	78.4	84.1
1970	43.4	47.1	58.4	61.3	70.2
1972	47.4	52.0	65.4	74.9	83.6
1974	34.4	35.9	44.7	49.6	61.3
1976	44.1	47.2	59.4	68.1	79.8
1978	34.6	35.1	45.3	51.5	63.9
1980	42.6	45.6	58.9	67.2	79.9
1982	35.7	37.7	47.1	53.3	66.5
1984	42.9	44.4	58.7	67.5	79.1
1986	32.7	33.8	44.1	49.9	62.5
1988	36.7	41.3	54.7	64.5	77.6
1990	27.7	30.9	42.2	50.0	62.5
1992	35.1	41.2	57.5	68.7	81.0
1994	23.6	27.3	40.7	49.5	63.8
1996	29.9	33.8	49.1	60.5	72.6
1998	24.0	24.6	37.1	46.2	57.2
2000	26.8	33.6	49.4	60.3	72.0
2002	19.4	20.8	37.1	45.8	58.5
2004	23.6	34.6	52.4	66.1	74.2

Source: US Census Bureau, Table A-2
<http://www.census.gov/population/socdemo/voting/tabA-2.xls>

Table 11. Incarceration rates by education level, 1997

Educational Attainment	% of population incarcerated
Less than High School	1.90%
High School	1.20%
Some College	0.30%
Bachelor's Degree or more	0.10%

Source: *Education Pays 2004* pg 20 (figure 11)

Table 12.

Percentage of population reporting excellent or very good health for different educational attainment, by income, 2001

Educational attainment	< \$20K	20K-34.9K	35-54.9K	55-74.9K	75K+
Less than High School	30	39	49	57	61
High School	40	50	62	67	71
Some College	46	58	67	74	77
Bachelor's Degree or more	65	72	73	80	83

Source: *Education Pays 2004*, pg 18 (figure 9a)

Percentage of population reporting excellent or very good health for different educational attainment, by age, 2001

Educational attainment	25-34	35-44	45-54	55-64	65+
Less than High School	62	51	36	30	26
High School	71	66	55	47	40
Some College	77	73	64	56	44
Bachelor's Degree or more	88	84	78	71	55

Source: *Education Pays 2004*, pg 18 (figure 9b)

Table 13. Comparative real growth rates in public higher education costs and GDP		
A. Public Higher Education Spending Per Student Compared to GDP Per Capita		
	Annual growth rates	
Period	Public Higher Ed	GDP
1980-81 to 1990-91	1.92%	2.07%
1990-91 to 1999-2000	2.25%	2.13%
B. Aggregate Public Higher Education Spending Compared to GDP		
	Annual growth rates	
Period	Public Higher Ed	GDP
1980-81 to 1990-91	3.14%	3.04%
1990-91 to 1999-2000	2.95%	3.38%

Note: "education costs" are measured as education revenues less revenues from auxiliary enterprises and student aid

Source: Educational costs and enrollments: Digest of Educational Statistics, 2002

GDP and population: Economic Report of the President, 2003

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Intervening Early and Successfully in the Education Pipeline

by Laura W. Perna and Michelle Asha Cooper

Introduction

As with any major milestone, the 40th anniversary of the enactment of the Higher Education Act of 1965 offers an opportunity to recognize and celebrate important achievements and identify necessary redirections. One area within HEA for both celebration and reconsideration is the federal government's involvement with early intervention.

One of HEA's accomplishments is its appreciation that student financial aid is necessary but not sufficient to ensure college access and persistence for low-income students. By providing "early intervention," several programs authorized under Title IV of HEA recognize that college enrollment and persistence for low-income students are limited not only by financial barriers but also by barriers that are associated with inadequate academic preparation, knowledge of college requirements, costs, and financial aid, and assistance from teachers, counselors, family members, and peers (Perna and Swail 2001). In other words, the federal government authorized early intervention programs in order to provide low-income and first-generation students with the opportunity to develop, early in the education pipeline, the college-related skills, knowledge, aspirations, and preparation that are required for postsecondary enrollment and attainment.

The early intervention and student financial aid programs that are authorized under Title IV of HEA have improved higher education opportunity, but disparities by family income continue. Although college enrollment rates of 18- to 24-year-old high school graduates increased over the past two decades regardless of family income, the current 30 percentage point gap in college enrollment rates between low- and high-income students is comparable to the size of the gap in the 1960s (Gladieux and Swail 1999). Descriptive analyses show that students with low family incomes are less likely than students with high family incomes to expect to graduate from college, take a college entrance examination, apply to a four-year college, and enroll in a four-year college, even when considering only high school graduates who are academically qualified for college (Fitzgerald 2004).

Perhaps in part because of these persisting gaps, some policymakers have questioned the value of continued federal support for early intervention during recent annual appropriations processes. For example, as part of his FY2006 and FY2007 budget, President Bush proposed eliminating federal funding for two TRIO programs (Upward Bound and Talent Search) and GEAR UP (Selingo 2005, 2006). Recognizing the contribution of these programs to college access and persistence for low-income students, both the U.S. Senate and House of

Representatives voted to sustain funding for TRIO and GEAR UP for the 2005-2006 fiscal year (Burd 2005; Field 2005).

A review of the literature supports the wisdom of continued legislative and financial support for early intervention. In anticipation of the 2006 reauthorization of HEA, this paper offers information and recommendations about early intervention. These recommendations are informed by a review of literature describing federally and nonfederally supported early intervention programs, as well as research describing the predictors of college enrollment and persistence more generally.

After providing a brief overview of the federal government's involvement with early intervention programs, this review describes what is known about the effects of early intervention on college access and persistence. The paper then suggests the central components of early intervention and offers five recommendations: 1) begin early; 2) include a comprehensive set of services; 3) adapt programs to build on cultural strengths of participants; 4) target services toward disadvantaged populations; and 5) involve partnerships between, or collaborations among, various entities including the federal government, state governments, colleges and universities, private foundations, non-profit community organizations, and K-12 schools. The paper argues that, in addition to sustaining financial and legislative support for early intervention, the federal government should also support and encourage rigorous but multi-faceted evaluations of early intervention and ensure the adequacy of need-based financial aid.

Overview of Federal Involvement with Early Intervention Programs

The federal government's involvement with early intervention began in the 1960s with the creation of the TRIO programs. Per the federal regulations, together the TRIO programs are:

designed to identify qualified individuals from disadvantaged backgrounds, to prepare them for a program of postsecondary education, to provide support services for such students who are pursuing programs of postsecondary education, to motivate and prepare students for doctoral programs, and to train individuals serving or preparing for service in programs and projects so designed. (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998)

Today five TRIO programs are charged with accomplishing this overarching goal. Upward Bound programs are designed to provide eligible individuals between the ages of 13 and 19 with the "skills and motivation" that are required to enroll and persist in postsecondary education. Over 900 Upward Bound and Upward Bound Math/Science programs are in operation across the nation (Council for Opportunity in Education 2005). Talent Search, which serves over 386,000 students, is intended to promote high school completion and postsecondary enrollment among low-income and first-generation college students who are between the ages of 11 and 27 by providing information about college admissions and financial aid (Council for

Opportunity in Education 2005). Student Support Services are intended to promote college persistence and graduation, transfer from two-year to four-year higher education institutions, and “an institutional climate supportive of the success” of disadvantaged students (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998). Students at 930 colleges and universities currently participate in this program (Council for Opportunity in Education 2005). The Robert E. McNair Postbaccalaureate Achievement Program is intended to prepare undergraduates from disadvantaged family backgrounds for doctoral study. This program has slightly more than 4,000 participants (Council for Opportunity in Education 2005). Educational Opportunity Centers are primarily designed to offer adults (i.e., individuals over age 18) with information about, and assistance with, college and financial aid requirements, applications, and procedures (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998). At present, there are 138 centers nationwide (Council for Opportunity in Education 2005).

Whereas TRIO programs offer student-centered early intervention, the federal government also supports school-centered early intervention (Gándara 2001). Authorized under Section 403, Part A, of Title IV under the 1998 amendments to HEA, GEAR UP supersedes the National Early Intervention Scholarship Program (NEISP), which Congress authorized in 1992. While NEISP offered matching grants to state-sponsored programs, GEAR UP offers grants not only to states, but also to partnerships comprised of at least one or more local educational agencies representing at least one elementary and one secondary school, one institution of higher education, and at least two community organizations (e.g., businesses, philanthropic organizations, state agencies, etc.). GEAR UP programs, which serve approximately 1.2 million students, are expected to offer supplemental support services to K-12 students who are academically at-risk, and information to students and parents about college and financial aid benefits and requirements (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-21 et seq., U.S. Department of Education 1998b; U.S. Department of Education 2005).

Impact of Early Intervention Programs on College Access and Persistence

In addition to the federal government, a variety of nonfederal entities (e.g., state governments, private non-profit organizations, foundations, and colleges and universities) also support early intervention (Perna, Fenske, and Swail 2000). These programs generally share a common mission, as most encourage low-income and potential first-generation students to take the steps that are required to enter and succeed in postsecondary education (Perna 2002). Despite the plentitude of early intervention programs, however, relatively little rigorous research examines the effectiveness of early intervention efforts, regardless of sponsor.

Many early intervention programs report that their programs improve such outcomes as college preparatory coursework in high school, high school graduation, postsecondary educational attendance, four-year college enrollment, and college admissions test scores (Cunningham, Redmond, and Merisotis 2003; Gándara 2001). Nonetheless, as others (e.g., Cunningham et al. 2003; Gándara 2001, 2002; Perna 2002) have noted, although many programs state that they

conduct “evaluations,” few “evaluations” assess program impact using rigorous research methodologies, such as a comparison or control group. As a result, some researchers draw conclusions about early intervention based on examinations of programs with limited analytic data (e.g., Gándara 2001) or that have been operating for relatively long periods of time (e.g., Cunningham et al. 2003).

The federal government (U.S. Department of Education 1995) and other researchers (Cunningham et al. 2003; Gándara 2002; Perna 2002) have noted challenges that are associated with conducting research on early intervention. Research is complicated by differences across projects in the population targeted, program goals, services offered, and availability of data tracking participants’ activities and outcomes, as well as variations in the local context of particular programs and the need to track and assess program participants and outcomes over time (Cunningham et al. 2003; U.S. Department of Education 1995). Noting these challenges, the U.S. Department of Education funded a study that did not attempt to evaluate the impact of participation in Talent Search, but that identified the needs of potential first-generation college students, suggested effective program components based on a review of the literature on college enrollment, and recommended measures for monitoring Talent Search Program processes and results.

The best available research on the impact of early intervention for low-income students has been supported by the U.S. Department of Education. The federally-sponsored evaluations of Upward Bound and GEAR UP are longitudinal, with additional data collections and analyses currently in progress (Myers, Olsen, Seftor, Young, and Tuttle 2004; U.S. Department of Education 2002). The most recently completed phase of the Upward Bound evaluation tracks outcomes for individuals through two years out of high school, i.e., through college entry but not through college persistence (Myers et al. 2004). To date, little is known about the effectiveness of GEAR UP, as the first report describes the programs that GEAR UP projects implemented during the first two years of funding, i.e., when students were in the 7th and 8th grades (U.S. Department of Education 2002).

The Upward Bound evaluation suggests that this program has a small but statistically significant impact, especially on four-year college enrollment rates (Myers et al. 2004). Using a longitudinal design with random assignment of applicants to Upward Bound “treatment” and “control” groups, Myers and colleagues (2004) found that Upward Bound participants and non-participants did not differ in terms of total academic coursework completed in high school, high school grade point averages, high school completion rates, postsecondary educational enrollment rates, or credits of postsecondary education completed. However, four-year college enrollment rates were higher for Upward Bound participants than for non-participants (Myers et al. 2004).

The evaluation also shows that participating in Upward Bound is more beneficial for some groups of students than for others. Specifically, Upward Bound is especially beneficial to individuals who had low educational expectations when they applied to the program, those

who were both from low-income families and potential first-generation college students, and Hispanics (Myers et al. 2004). For students with low educational expectations, Upward Bound participation increased the total number of credits completed in high school, the number of honors and Advanced Placement courses completed in high school, four-year college enrollment rates, and the number of credits completed at four-year colleges and universities. Upward Bound also raised four-year college enrollment rates among low-income, first-generation college students, as well as Hispanics. In addition, Hispanic participants completed more credits at four-year colleges and universities—at least through the first two years of college—than Hispanic non-participants (Myers et al. 2004).

Moreover, the longitudinal study of Upward Bound (Myers et al. 2004) may underestimate the program's benefits. While the evaluation involved random assignment of eligible Upward Bound applicants to treatment and control groups, the design does not take into account the potential selection bias that is associated with being an eligible applicant. In other words, individuals who applied to participate in Upward Bound but were not selected to participate may have been more motivated than individuals who did not apply to engage in behaviors that promote college-related behaviors and to locate external sources of support for these behaviors, regardless of whether they receive the Upward Bound "treatment." Because this motivation is not considered in the research design, findings from the study may understate the true effects of early intervention programs on student outcomes.

Studies examining one nonfederal early intervention program also suggest that these programs can promote college access and persistence for low-income students (St. John, Musoba, Simmons, and Chung 2002; St. John, Musoba, and Simmons 2003; St. John, Musoba, Simmons, Chung, Schmit, and Peng 2004). Indiana's 21st Century Scholars program promises to pay the costs of tuition and fees at the state's public colleges and universities for low-income middle-school students who graduate from high school with a grade point average of 2.0 or higher and enroll full-time in a postsecondary educational institution within two years of graduating from high school. In addition to guaranteeing financial assistance to pay college costs, the 21st Century Scholars program also provides participating students and their parents with a range of support services. Using longitudinal data and multivariate statistical techniques to control for other variables, St. John and colleagues (2002, 2003, 2004) found that, compared with non-participants, Indiana's 21st Century Scholars program participants were more likely to aspire to complete a bachelor's degree, apply for financial aid, and enroll in all types of colleges (public two-year, public four-year, private, and out-of-state) within two years of graduating from high school, and program participants were also more likely than non-participants to persist from the first to second semester of their freshman year of college.

Central Components of Early Intervention

While only a small number of studies examine the effects of any participation in early intervention programs on student outcomes, even fewer studies attempt to identify the most effective components of early intervention programs. A review of the literature more generally

suggests that improving college outcomes for low-income students requires addressing academic preparation and achievement, counseling and advising, family support, and financial resources (Perna 2006).

Academic Preparation and Achievement

Regardless of income, academic achievement is a critical determinant of college enrollment (Cabrera and LaNasa 2000; Perna 2005b). Research suggests that many early intervention programs include components that are designed to address academic preparation and achievement (Gándara 2001; Perna 2002). For example, the majority (26 of 33) of the early intervention programs that Gándara reviewed included some form of “academic enrichment,” defined broadly to include tutoring, summer or after school academic enrichment programs, accelerated coursework, and preparation for college admissions tests. Perna (2002) found that improving academic skills was a goal of about 90 percent of programs responding to a national survey, although providing rigorous academic preparation was a goal of only about two-thirds of the responding programs. About three-fourths of all programs that targeted low-income students offer study-skills training, two-thirds offer math/science instruction, two-thirds offer reading and writing instruction, one-third offer remedial instruction, one-fourth offer accelerated courses below the college level, and one-fourth offer accelerated courses at the college level (Perna 2002).

Research suggests that improving academic preparation and achievement among low-income students will increase their college access and persistence. Based on her review and synthesis of prior research, Perna (2005b) concluded that academic preparation and achievement are critical to college enrollment, but that average levels of academic preparation and achievement are consistently lower for students from low- than high-income families. Because low-income students often attend schools that have less rigorous curricula, fewer resources, and less qualified teachers, low-income students often do not have access to advanced courses (Pathways to College Network 2004; Perna 2005b). Based on her review of available information about early intervention programs, Gándara (2001) also noted the importance of improving academic preparation, particularly through access to, support for, and completion of rigorous coursework. In a report designed to identify ways to enhance the effectiveness of the Talent Search program, the U.S. Department of Education (1995) argued that improving academic preparation and achievement is required to promote college access and attainment for first-generation students.

Counseling and Advising

In a review of effective interventions for first-generation college students, the U.S. Department of Education (1995) identified the importance of counseling, especially counseling focused on providing career and financial aid information. “Counseling,” broadly defined, is one of the most common components of early intervention programs (Cunningham et al. 2003; Gándara 2001; Perna 2002). Gándara (2001) found that 28 of 33 programs had some form of counseling,

including counseling or advising that focused on college, financial aid, careers, and/or personal issues. Perna (2002) found that about three-fourths of all programs that serve low-income students offer academic advising, three-fourths offer career counseling and information, and about two-thirds offer personal counseling.

Research suggests that most students do not receive adequate counseling at the school attended. In its examination of GEAR UP, the U.S. Department of Education (2002) concluded that one-on-one counseling services were not supplementing services that students received through their schools, but were addressing an important unmet need as middle schools typically did not provide sufficient individual counseling. Based on her review and synthesis of prior research, McDonough (2005) concluded that high school counselors can play a central role in encouraging students to aspire to, plan for, and prepare for college enrollment. School counselors can also promote college enrollment by providing parents with information about college and ways to support their children's educational aspirations, and by ensuring that students are enrolled in college-preparatory courses (McDonough 2005). Nonetheless, the extent to which school counselors can achieve these outcomes is limited by the small number of counselors relative to the number of students at most schools, and the multiple tasks for which counselors are responsible (McDonough 2005). Most counselors allocate less than 70 percent of their time to direct student services (McDonough 2005). In fact, for schools in low-income neighborhoods, school counselors allocate less time to pre-college counseling and more time to personal and crisis counseling (Hawkins and Lautz 2005).

Research suggests that African American students and students with lower incomes are more dependent than other students on high school personnel for college-related knowledge and information (Furstenberg, Cook, Eccles, Elder, and Sameroff 1999; Lareau 1987). The 2004 National Association for College Admissions Counseling (NACAC) Counseling Trends Survey reveals that school counselors are often the primary providers of information about financial aid (Hawkins and Lautz 2005). But 85 percent of counselors from the lowest income schools reported that parents were either "not knowledgeable" or "slightly less knowledgeable than average," whereas 74 percent of counselors from the highest income schools reported that parents were "slightly more knowledgeable than average" or "very knowledgeable" about financial aid.

Individuals who most likely require college counseling, i.e., students from low-income, minority, and first-generation families, are the least likely to have access to regular one-on-one college counseling through the schools that they attend (McDonough 2005). Teachers are often unable to provide required college-related information, at least in part because of their focus on other priorities, including reducing high school dropout rates and teen pregnancies (Immerwahr 2003), and because they often have low expectations for African American and Hispanic student attainment (Freeman 1997; Immerwahr 2003). Research also shows that African American, Hispanic, and low-income students often lack trust and confidence in counselors because of perceived racist and socioeconomic stereotyping in advising (Gándara and Bial 1999).

Thus, counseling or advising may be an important component of early intervention programs, as low-income and other underrepresented groups of students often receive little college-related guidance from adults (Freeman 1997; Gándara and Bial 1999; Immerwahr 2003; McDonough 2005; Perna 2005b). One exploratory study suggests that Hispanics often make college-related decisions with little input from adults because their parents lack information about college and because the schools the students attend do not provide the necessary information (Immerwahr 2003).

Family Assistance

Administrators, as well as researchers and policy analysts, generally believe that “successful” early intervention programs include a “parental” involvement component (Swail and Perna 2000; Tierney 2002). About half (18 of 33) of the programs that Gándara (2001) reviewed included such efforts as inviting parents to participate in orientation or other programs and using parents as program volunteers. According to a 1999 survey, more than two-thirds (70 percent) of college preparation programs that target historically underrepresented minority groups have a parental involvement component, and one-third of all programs require parents of participating students to participate (Perna 2002).

Research suggests the potential benefits of promoting family involvement and support. Parents play a key role in the development of college aspirations and expectations for all students, but particularly low-income students (Hossler and Stage 1992; Hossler, Schmit, and Vesper 1999). Parental involvement is positively associated with both college aspirations and enrollment (Cabrera and La Nasa 2000; Horn 1998; Hossler, Braxton, and Coopersmith 1989; Hossler et al. 1999; Perna 2000; Perna and Titus 2005; Tierney and Auerbach 2005).

Nonetheless, although virtually all parents want to promote their children’s educational attainment, low-income parents often are unable to become involved in their children’s education because of economic, social, and psychological barriers (Perna 2005a). The involvement of families of underserved students may be limited by their lack of familiarity with the culture of the school environment, anxiety towards interacting with teachers and school or program personnel, limited language skills, and distrust of the educational system (Pathways to College Network 2004; Lareau and Horvat 1999). Other barriers to parental involvement may be associated with mother’s employment, parents’ education, family composition, and child care responsibilities, as well as parents’ self-efficacy for involvement (Kerbow and Bernhardt 1993; Tierney and Auerbach 2005). Based on their study of families living in low-income census tracts in Philadelphia, Furstenberg and colleagues observed that, although parents generally believed that their children needed a college education in order to be successful, many low-income parents not only lacked “adequate knowledge of the middle-class world to guide their children in how to succeed,” but also lacked the “resources to subcontract with those who did have that knowledge” (Furstenberg et al. 1999, 226).

Despite the high apparent prevalence of parental involvement components in early intervention programs, Tierney (2002; Tierney and Auerbach 2005) suggests that parents are only superficially involved, likely because programs often lack the time, funding, staffing, and other resources that are required for more substantial involvement. GEAR UP projects are required to have formal parental involvement components, but most of the 20 projects that the U.S. Department of Education (2002) reviewed had low participation in these activities.

While education advocates call for school and community leaders to “help families of underserved students overcome social and cultural hurdles that constrain full participation in their children’s education” (Pathways to College Network 2004, 20), little is known about the most effective ways to promote parental involvement in early intervention programs (Perna and Titus 2005). Tierney and Auerbach (2005) offered several potential strategies for increasing the involvement of low-income and minority families. Their recommendations include informing parents of strategies for helping their children progress along the educational pipeline from elementary school to college, enhancing parents’ perceived self-efficacy for involvement in their children’s education, and encouraging families to gain support from other families for their children’s college-related behaviors.

Financial Resources

Although high college costs and inadequate need-based grant aid restrict college enrollment and persistence even for academically qualified low-income students (Advisory Committee 2002; St. John 2003), relatively few early intervention programs provide financial assistance to students. Only 10 of the 33 programs that Gándara (2001) reviewed included a college scholarship. Perna (2002) found that about one-third of programs that target low-income students offer a scholarship and one-fifth offer tuition or fee reimbursement. Cunningham and colleagues (2003) found that 9 of 17 long-running state-sponsored programs provided participants with financial incentives; for two of these programs, financial incentives were the only program service offered. Student financial assistance for college prices may be a relatively less common component of early intervention efforts because programs may assume that financial aid is available to students through federal, state, and institutional sources, and/or because of the large amount of resources that providing student financial assistance requires.

Although financial assistance for college is relatively less common than other components of early intervention programs, research shows the need to address the financial barriers to college access and persistence. Low family income continues to be a barrier to college enrollment and persistence, as family income is positively related to such outcomes as number of applications submitted, enrollment in either a two-year or four-year institution, enrollment in a four-year institution, and number of years of schooling completed (Ellwood and Kane 2000; Hofferth, Boisjoly, and Duncan 1998; Hurtado et al. 1997; Kane 1999; Perna 2000). Moreover, changes in the costs of attendance have a greater effect on college enrollment for students from low-income families than for students from high-income families (Avery and Hoxby 2004; Heller 1997; Kane 1999; Long 2004).

Research also shows the positive relationship between financial aid and such outcomes as college enrollment and persistence. Research shows that an offer of financial aid is an important predictor of college enrollment among high school graduates (Catsiapis 1987), college applicants (St. John 1991), and high aptitude high school students (Avery and Hoxby 2004), regardless of the type of aid (e.g., grant, loan, work, St. John and Noell 1989). St. John and Chung (2004) found that, compared with non-recipients, recipients of “last dollar” grants through the Gates Millennium Scholars program were 2.74 times more likely to maintain continuous enrollment.

While a small share of programs provide financial aid to offset college tuition and fees, few early intervention programs appear to address the ways in which limited financial resources restrict college-going processes beyond these costs of enrollment. As Gándara (2001) points out, limited financial resources may restrict a student’s ability to pay not only the costs of tuition, fees, and other costs of attendance, but also the costs of behaviors that promote college enrollment, including SAT/ACT preparation courses and registration fees, college application fees, and campus visits. An even larger financial barrier, especially for low-income students, is the cost of foregone earnings while enrolled in college (Kane 1999). One approach to addressing these concerns may be a direct cash stipend to participants. Data from a national survey show that one-third of programs that target low-income students provide participants with some type of cash stipend (Perna 2002).

Recommended Early Intervention Strategies

A review of the related literature suggests that “successful” early intervention programs may be characterized by five strategies: 1) begin early in the educational pipeline; 2) include a comprehensive set of services that vary based on a student’s position in the pipeline (Cunningham et al. 2003); 3) adapt services to recognize participants’ cultural strengths; 4) target services toward populations that most need the services; and 5) involve partnerships and/or collaborations among various government, educational, and private entities.

Begin Early in the Education Pipeline

Interventions that begin early in the educational pipeline recognize that college enrollment and persistence are the results of processes that begin years before the actual enrollment and persistence decisions are made. Based on their review and synthesis of prior research, Cabrera and La Nasa (2000) concluded that intervention programs should begin to focus on ensuring that students and parents know what is required to become academically qualified to enroll in college when students are in the 6th, 7th, and 8th grades. Nonetheless, data from a national survey suggest that only one-third of programs that target low-income students, historically underrepresented minorities, and potential first-generation college students begin working with students prior to the 8th grade (Perna 2002).

Several studies illustrate the benefits of intervening early. For example, in their longitudinal study of the effects of Upward Bound, Myers et al. (2004) found that, compared with other participants, individuals who participated in Upward Bound for longer periods of time and/or completed the program had higher rates of postsecondary educational enrollment, higher rates of four-year college enrollment, and completed more postsecondary educational credits. Gándara (2001) also concluded, based on her review of available information, that program effectiveness increases with program length.

Intervening early is critical to addressing academic barriers to college enrollment (Bonous-Hammarth and Allen 2005). Lower income students are less likely than other students to be academically prepared for college because of the characteristics of the elementary and secondary schools they typically attend and because of such school practices as curricular tracking and ability grouping (Pathways to College Network 2004; Perna 2005b). In a comprehensive review and synthesis of prior research, Perna (2003, 2005b) found that, compared with other students, low-income students attend schools with fewer resources, as measured by curricular rigor, teacher qualifications, and financial resources relative to student needs. Within a school, students from low-income families are relatively concentrated in lower curricular tracks and lower academic ability groupings (Perna 2005b).

Intervening early is also necessary to address the financial barriers to college enrollment (Bonous-Hammarth and Allen 2005). Based on their examination of Indiana's 21st Century Scholars program, St. John and colleagues (2002, 2003, 2004) concluded that the promise of the availability of financial aid for college during the 8th grade encouraged students to engage in behaviors that are required to prepare for college. Although the direction of causality is ambiguous, research consistently shows a positive relationship between knowledge and information about college costs and financial aid and such college-related behaviors as college expectations, application, enrollment, and choice, and such college financing strategies as students' willingness to borrow, students' use of financial aid, parental saving for college, and student application for financial aid (Perna 2005a). Nonetheless, descriptive analyses show that students and parents only acquire accurate information about college costs and financial aid during the latter years of high school—after they have made critical, and perhaps irreversible, decisions, particularly about their academic preparation (Perna 2005a).

Providing information about financial aid and other aspects of college enrollment early in the college-going pipeline may enable students and parents to engage in necessary behaviors (Perna 2005a). In a report by the American College Testing Service (ACT) on college readiness, the researchers (Wimberly and Noeth 2005) found that many students and their families do not consider finances during their early postsecondary planning. The authors recommend that school administrators, beginning as early as middle school, assist families with understanding and calculating college costs and developing a plan to meet these costs. Likewise, the Advisory Committee (2005) recognized the importance of intervening early to improve students' and parents' knowledge of financial aid in its *Final Report of the Special Study of Simplification of Need Analysis and Application for Title IV Aid*. The first of the Advisory Committee's ten

recommendations to Congress and the Secretary of Education is to “create a system of early financial aid information” that “would provide middle school students, high school students, and adults with adequate and early information about financial aid, including early estimates of their potential eligibility for aid from multiple sources in the context of college costs” (Advisory Committee 2005, 6).

Intervene Comprehensively

In addition to intervening early, programs should also intervene comprehensively (Cabrera and La Nasa 2001). Comprehensive interventions recognize that multiple factors, including inadequate academic preparation and achievement, counseling and advising, family assistance, and financial resources, impede college enrollment and persistence for low-income students. Based on their review of the longest-running state-sponsored programs, Cunningham et al. (2003) concluded that programs with multiple components appeared to be more effective than programs that focused on only one type of service.

Although a review of prior research consistently shows that a number of variables influence college-enrollment and persistence for low-income students (Cunningham et al. 2003; Perna 2005), only a small share of programs offer a comprehensive array of services (Gándara 2001; Perna 2002). Using descriptive data from a national survey, Perna (2002) concluded that only one-fourth of programs targeting low-income students reported having five “critical” components: 1) goal of college attendance, to facilitate student interest in college; 2) college tours, visits, or fairs, to promote aspirations for, and information about, college; 3) goal of promoting rigorous course-taking, to improve academic preparation and achievement; 4) parental involvement, to enhance family assistance and; 5) beginning by the 8th grade, to address academic and financial barriers early enough to promote college enrollment.

Adapt to Build on Cultural Strengths of Participants

Programs should adapt to reflect and build on the cultural perspectives of participating students and their families. The most effective programs are likely delivered in a manner that recognizes the importance of cultural integrity and the benefits of cultural differences. Effective interventions may be characterized by attention to recognizing students’ cultural wealth (Tierney and Jun 2001; Villapando and Solorzano 2005). Rather than trying to “fix” students who have cultural values and perspectives that are different from the cultural values and perspectives of the white middle-class, effective early intervention programs likely view cultural differences as assets or strengths (Tierney and Jun 2001; Villapando and Solorzano 2005). This perspective stresses the importance of affirming students’ cultural identities (Villapando and Solorzano 2005).

Research supports the benefits of tailoring interventions to recognize the culture of participants. For example, Gándara (2001) argued, based on her review of programs, that interventions are more effective when students and program personnel share cultural backgrounds and

perspectives. In their qualitative study, Tierney and Jun (2001) attributed the success of the Neighborhood Academic Initiative in promoting college enrollment of traditionally underrepresented groups of students in Los Angeles to the program's attention to promoting participants' cultural integrity. Among other strengths, Tierney and Jun found that the program promoted cultural integrity by affirming participants' identities, and by viewing participants' cultural backgrounds as a resource in increasing high achievement rather than as a barrier. Viewing culture as a central characteristic of participants, the program worked to establish connections and involvement not only from students but also from their families, neighborhoods, and schools.

Other researchers note the need to tailor interventions to the cultural perspectives of the target population. For example, Perna (2005c) argues that students and their parents do not have accurate knowledge about financial aid and college costs, not because information is not widely available, but because available information is perceived as inapplicable or is inaccessible. She speculates that the lack of usage of available information may be attributable to one of two factors. First, students and parents may not use available information because they do not consider "college" to be a realistic option, and thus irrelevant to their lives (Perna 2005c). Alternatively, information may be available but not accessible to students and their families because the information presentation does not recognize the users' native language, technological skills and resources, existing knowledge of higher education, literacy levels, or culture (Perna 2005c).

Target Populations That Most Need Program Services

Current TRIO and GEAR UP regulations recognize that, because resources are limited, they must be targeted to students who most need the services. For example, to receive federal funding through Upward Bound, all participants must be low-income or potential first-generation college students and two-thirds must be both low-income and first-generation. To be eligible for GEAR UP funds, a program must direct services to students attending schools in which at least fifty percent of the student body is eligible for free- or reduced-price lunch (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998b).

Other programs also recognize the importance of targeting resources toward needy populations. Perna (2002) found that three-fourths of programs responding to a survey targeted students from low-income families, two-thirds targeted potential first-generation college students, and two-thirds targeted students from historically underrepresented minority groups. About one-third of all programs targeted students with academic difficulty, defined as those who were at-risk of dropping out of high school and/or low academic ability (Swail and Perna 2002). Targeting programs to the most needy students is critical, given that existing programs serve only a small fraction of those who need such services (Council for Opportunity in Education 2005).

Collaborate with Other Providers

By leveraging resources through collaborations and partnerships with other entities, intervention efforts may be able to serve a greater number of needy students and/or provide needy students with a more comprehensive array of services that begin earlier in the education pipeline. A review of sources of financial support suggests that many interventions are collaborative efforts.

Most programs receive financial support from more than one source, including the federal government, state governments, private organizations and businesses, and colleges and universities (Cunningham et al. 2003). A national survey of early intervention programs revealed that about half of all programs receive financial support from the federal government, one-fourth from state governments, and one-fourth from colleges and universities, and that few programs receive support from only one source (Swail and Perna 2002). Moreover, many programs, including about one-half of TRIO, GEAR UP, and other federally and state supported programs, receive in-kind support from colleges and universities. Community organizations and local K-12 school systems also are important sources of in-kind support (Swail and Perna 2002).

The federal government currently recognizes the importance of coordination and collaboration in the regulations governing the TRIO programs and GEAR UP. The TRIO regulations require that the Secretary of the U.S. Department of Education “encourage coordination” of TRIO programs, “regardless of the funding source of such programs” (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998). The majority of programs awarded GEAR UP grants in 1999 were “partnership” projects (164 of 185, U.S. Department of Education 2002), i.e., projects that require involvement of K-12 educational entities, higher education institutions, and community-based organizations (1998 Amendments to Higher Education Act of 1965, 20 U.S.C. § 1070a-11, U.S. Department of Education 1998b). No more than half of the costs of GEAR UP partnerships may be funded with federal dollars; at least half of program operating costs must be paid with cash and in-kind contributions from other sources (U.S. Department of Education 2002).

Developing partnerships with multiple entities not only increases the financial resources that are available to support program services, but also has other benefits (Cunningham et al. 2003). Partnerships and collaborations may reduce duplication of efforts, maximize the reach of services, and ensure that needy students receive a comprehensive array of services. Partnerships and collaborations may also increase the likelihood that students receive services across successive educational levels (e.g., from middle to high school), a feature that is absent from many existing interventions (Gándara 2001).

Although they are not without their challenges (Cunningham et al. 2003; U.S. Department of Education 2002), partnerships and collaborations may increase the likelihood that interventions appropriately reflect the characteristics of the state and local context. For example, based on

their examination of long-running state-sponsored interventions, Cunningham and colleagues (2003) concluded that effective efforts included components that were consistent with state and local K-12 curricular reform initiatives, characteristics of state student financial aid programs and policies, and requirements for admission to the state's public colleges and universities.

Partnerships and collaborations may also improve outcomes of non-participants, as well as program participants. Recognizing that the number of students eligible to participate in early intervention programs—nearly 11 million—far exceeds the capacity of existing intervention programs—approximately 2 million—efforts must be made to link interventions and high school reform efforts (Council for Opportunity in Education 2005; Swail and Perna 2002). Collaborations that involve elementary and secondary schools likely increase the effectiveness of intervention programs for participating low-income students, and strengthen the school curriculum and culture for all low-income students.

Gándara (2001; Gándara and Bial 1999) concluded that, in order to effectively improve academic preparation, early intervention efforts must not merely supplement school activities, but also encourage schools to adopt curricular and cultural reforms that improve academic outcomes for all low-income students. Nonetheless, most early intervention programs aim to improve opportunities for individual students, rather than change the structures within schools that often limit low-income students' access to college-related academic and informational resources.

The U.S. Department of Education's (2002) first report on the GEAR UP program, a school-based intervention, suggests that efforts to stimulate school reform are more difficult than efforts to provide supplemental services. For example, the study notes that only one of the 20 GEAR UP projects reviewed was designed to produce substantial changes in the school's academic curriculum. A small number of the other 19 GEAR UP programs included components intended to supplement the school's instructional resources, such as enhancements to teacher training, technology, and course offerings. Most GEAR UP programs focus on providing other types of supplemental services to students (U.S. Department of Education 2002).

More Research Is Needed

In order to utilize resources in ways that most effectively and efficiently improve college access and persistence for low-income students, the development and implementation of interventions must be guided by research. As described earlier, however, while a small number of studies suggest the benefits of participating in an early intervention program, few studies have examined the effectiveness of particular program components or strategies. Little is also known about how to effectively implement particular components or strategies, such as family involvement. As a result, current knowledge is based largely on what is known about college enrollment and persistence for low-income students more generally.

Rigorous and useful research on interventions should have several characteristics. First, the research should be longitudinal in order to draw conclusions about the extent to which program participation causes a range of college-related outcomes that are realized over time, including increases in high school coursework, high school graduation rates, college enrollment rates, and college graduation rates. Longitudinal research may be especially useful for identifying the types of services that students and their families require at different points in the education pipeline.

Research should also be designed to compare outcomes realized by program participants with outcomes realized by a matched group of non-participants (Gándara 2001). While random assignment of students to intervention treatment and control groups is not possible in most cases, programs must be able to demonstrate the benefits of their efforts for participants relative to non-participants. Research should also examine program cost-effectiveness. Currently, very little is known about the costs of providing early intervention or the relationship between program costs and outcomes (Cunningham et al. 2003; Swail 2005).

A range of methodologies is required to understand the effectiveness of intervention programs and strategies. Given the complexity of these programs, the differences across programs in structures and participants, and the limitations that are inherent in all research studies, no one study is sufficient for understanding the contribution of early intervention programs to college access and persistence for low-income students (Swail 2005). A range of studies is also important given that the implementation, and outcomes, of intervention programs and strategies vary based on the local context of the program and the characteristics of the participants.

Research and evaluation should be a financially-supported component of design and implementation of interventions. At a minimum, programs should document the characteristics of program services and track the duration, intensity, and characteristics of student participation in these services (Gándara 2001; U.S. Department of Education 1995). Such data are required not only to document the effectiveness of interventions in promoting college access and persistence for low-income students, but also to begin to identify which intervention program components are most effective for different groups of students (Gándara 2001). But mandating that programs collect data to measure program costs and outcomes will likely increase administrative costs, thereby reducing the availability of resources available for services (U.S. Department of Education 1995).

Conclusion

The 40th anniversary of the Higher Education Act of 1965 provides an ideal opportunity to reflect on HEA's accomplishments and necessary redirections. Through the establishment and continued support for TRIO and GEAR UP, Congress recognizes that early intervention offers great promise for closing persisting gaps based on family income in college enrollment and attainment. Nonetheless, although existing early intervention programs provide invaluable

services to participating students, the potential benefits of early intervention are not currently maximized.

Early intervention programs are an important tool to accomplishing HEA's goal of increasing college access and persistence for low-income students. Ensuring adequate funding for early intervention programs should be a federal priority. Programs are expensive to operate, in part because the most effective services are labor-intensive (Gándara 2001). Specifically, the most effective programs appear to be those in which participants have regular interactions with program staff as they progress along the education pipeline from middle school, through high school, and through college (Cunningham et al. 2003).

The level of financial support determines the number of participants, the number of program personnel including instructional and administrative support, the structures for supporting volunteers, the facilities for program activities, the availability of transportation for participants to and from program activities, the number and types of special events and extra services, and the quantity and quality of instructional and advising resources (Swail 2005). Funding cuts, such as those proposed in President Bush's FY2006 budget, eliminate important services and compromise program effectiveness and integrity, as such cuts likely lead program administrators to make trade-offs between the duration and/or intensity of services and the number of participants (Cunningham et al. 2003).

This review of intervention strategies suggests that the federal government should support interventions that include components that address academic preparation and achievement, counseling and advising, family involvement, and financial resources. The most effective intervention strategies are likely to begin early, include a comprehensive set of services, adapt strategies to reflect the strengths and needs of participants, target services to needy populations, involve partnerships and/or collaborations among relevant entities, and reflect research-based knowledge of effective strategies.

In addition, federal policymakers should also ensure the adequacy of need-based financial aid. Like comprehensive school reform, successful early intervention will increase the demand for higher education, especially among students from lower income families. In order to fully realize the goals of early intervention, however, students must have the financial resources that are required to pay the costs of college attendance and persistence to degree completion. Ethically and morally, Congress cannot, on the one hand, encourage students from low-income families to aspire to, plan for, and become academically prepared for college, but then, on the other hand, fail to ensure that students have the necessary financial resources to realize their dreams. If financial assistance is not sufficient, then initiatives that effectively inform students that the amount of financial aid available to pay college costs is less than actual college expenses may actually discourage low-income students and their families from engaging in behaviors that promote college enrollment.

In conclusion, as we recognize the achievements of HEA, particularly its role in providing early intervention to increase college enrollment and educational attainment, we also call for careful consideration of next steps. Although additional research is required to more completely understand the contributions of early intervention, early intervention clearly offers great promise for reducing persistent gaps in higher education opportunity. We urge Congress to sustain legislative and financial support for early intervention, and increase financial support for research on early intervention programs as well as need-based financial aid.

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Lowering Work and Loan Burden: The Current Status of Student Reliance on Grants, Loans, and Work

by Sandy Baum

High school graduates from low-income families are much less likely to enroll in college than those from more affluent families. If they do enroll, they are less likely to attend four-year institutions and less likely to persist to earn degrees. While it is impossible to completely disentangle the role of financial constraints from the role of differences in aspirations, expectations, and academic preparation, it is clear that decades of effort and billions of public dollars have not completely succeeded in removing the financial barriers to equal opportunity in higher education in the United States. Explanations for the persistent problems include student aid funding limitations, questionable targeting of funds, and flawed program design, in addition to rapidly rising costs of attendance and fundamental inequalities in the opportunities facing children.

The differential participation and success rates associated with differences in financial status provide one form of evidence of the inadequacies of current higher education financing structures. Another perspective on the same issue emerges from examining the reliance on work and loans by students who have succeeded in enrolling in postsecondary institutions. After summarizing some of the evidence of insufficient funding for low- and moderate-income students, this paper discusses ways in which the student aid system could be modified to improve its effectiveness.

Differential College Access and Success

College enrollment rates have increased for high school graduates at all levels of the income distribution over the past twenty years, and the increases have been largest for lower- and middle-income students. Nonetheless, significant gaps across income groups persist. As shown in Table 1, in 2003, 80 percent of high school completers from families with incomes above \$78,800 enrolled in college in the first year following graduation. Sixty-one percent of middle-income students and 48 percent of those with incomes below \$48,400 enrolled. Within the bottom 40 percent of the income distribution, those in the lowest 20 percent were actually somewhat more likely than those in the second quintile to enroll in college immediately after high school (NCES 2005). In other words, although the gap between the college enrollment rates of high school graduates from different levels of the income distribution has narrowed somewhat over time, the experiences of students from families with very limited financial resources are very different from the experiences of those who are more affluent.

Table 1: College Enrollment Rates within 12 Months of High School Graduation, 18- to 24-Year-Old High School Completers

Income Quintile	2003 Family Income	1983	1993	2003
Lowest	<\$16,400	35%	50%	53%
2	\$16,401-\$31,100	34%	49%	44%
3	\$31,101-\$48,400	46%	59%	61%
4	\$48,401-\$78,800	59%	61%	65%
Highest	>\$78,800	74%	79%	80%
Enrollment gaps (percentage points)				
Highest quintile – Lowest quintile		40	29	27
Highest quintile – middle quintile		28	20	19
Source: Previously unpublished data from Consumer Population Survey, analyzed by NCES 2005.				

Among those students who do enroll, students from different family income levels are distributed across institution types in very different patterns. About a third of all beginning dependent students enroll in public two-year colleges, but in 1999-00, 40 percent of those from the lowest income group began in this sector, compared to 21 percent of those from families with incomes of \$90,000 or higher (Table 2). The pattern is reversed in the private four-year sector (CBO 2004). As is the case for the enrollment figures cited above, academic preparation and expectations certainly explain some of the differences in institutional choice. But the differences in cost of attendance across sectors are significant, and there is no question that financial constraints make the choices made by many more affluent students unavailable to many low- and moderate-income students.

Table 2: Stratification by Income within Higher Education, 1999-00 Full-Time Dependent Students in Their First Academic Year

Institution Type	Percentage enrolled				
	<\$30,000	\$30,000-\$59,999	\$60,000-\$89,999	\$90,000 +	All
Public 2-yr	40%	35%	32%	21%	33%
Public 4-year	39%	40%	43%	41%	41%
Private 4-yr	21%	25%	25%	38%	27%
Source: CBO, <i>Private and Public Contributions to Financing College Education</i> , 2004.					

Even after controlling for academic achievement levels, students from different family backgrounds exhibit startling differences in both enrollment and completion rates. Among students in the high school class of 1992 who scored in the highest third on mathematics tests

while in 8th grade, virtually all students from the highest socioeconomic (SES) quintile graduated from high school and had enrolled in college by the year 2000 (Table 3). In the middle SES group, 9 percent had completed high school but not enrolled in college. In the lowest SES group, 11 percent never graduated from high school, and another 15 percent had not enrolled in college. In other words, a quarter of the high achievers in the low SES group had no postsecondary education experience, while virtually all of those from the most affluent backgrounds had completed at least some college (Fox et al. 2005).

Table 3: Educational Attainment by Socioeconomic Status and Math Test Score during High School, High School Class of 1992

		Not a High School Graduate	High School Graduate	Some College	Bachelor's Degree or Higher	High SES / Low SES: Any College	High SES/ Low SES: B.A. or Higher
Low Score	Low SES	30%	25%	42%	3%	1.9	10.4
	Middle SES	10%	28%	56%	7%		
	High SES	11%	6%	53%	30%		
Middle Score	Low SES	12%	32%	48%	8%	1.7	6.4
	Middle SES	4%	20%	55%	21%		
	High SES	1%	5%	44%	51%		
High Score	Low SES	11%	15%	46%	29%	1.3	2.6
	Middle SES	0%	9%	44%	47%		
	High SES	0%	1%	25%	74%		

Source: M. A. Fox, B. A. Connolly, T. D. Snyder, *Youth Indicators, 2005: Trends in the Well-Being of American Youth*, National Center for Education Statistics, 2005-050, Indicator 21.

After students enroll in college, differences by family background are still associated with starkly contrasted experiences. The reality that 25 percent of 1992 high school graduates from the highest SES group with high test scores who enrolled in college had not earned a bachelor's degree by 2000 is a reminder that even high levels of academic achievement and relatively ample family resources do not remove all of the barriers to success in higher education. But the fact that half of the high-achieving middle SES students and over 60 percent of the low SES students with high test scores who enrolled in college had not completed a BA by 2000 points to

the role of finances in persistence (Fox et al. 2005). These figures suggest that differences in socioeconomic status have an even stronger relationship to BA completion rates than to college enrollment rates.

The differences in educational experiences by socioeconomic status are greater for those with lower test scores than they are for those with higher academic achievement levels. Among those with the highest test scores, high SES 1988 8th graders were 1.3 times as likely as low SES students with the same test scores to have enrolled in college, and 2.6 times as likely to have earned a BA by 2000. Among those with average test scores, high SES students were 1.7 times as likely to enroll in college and 6.4 times as likely to have earned a BA as those with similar test scores from the lowest SES group. And among those with the lowest test scores, high SES students were 1.9 times as likely to enroll in college and 10.4 times as likely to have earned a B.A. by the year 2000 as those with similar test scores from the lowest SES group (Fox et al. 2005).

This pattern can be interpreted in a variety of ways. One perspective is that while the goal should be similar patterns of educational attainment for students with similar levels of academic ability, regardless of financial circumstances, the relatively small gaps in enrollment rates for the high test score group are encouraging. At least for many of these students, adequate funding is available. The larger difference in degree attainment raises other issues, but even in terms of completion, the accomplishments of the highest-achieving, low-income students are impressive.

On the other hand, the data reveal that even among this talented group, there are far too many students for whom finances appear to be creating barriers. In addition, the larger gaps among the other test score groups are very disturbing. Certainly some of these students are making rational decisions to follow other paths after high school. But it is also reasonable to believe that only the most talented low-income students are benefiting from merit-based state and institutional scholarships, or are able to gain admission to college and universities that can afford to provide them with adequate financial aid. More typical low- and moderate-income students, including many who could succeed in college, do not have access to the necessary funds and find it necessary to work long hours and incur high levels of student debt.

Student financial aid for college certainly cannot close all of the gaps in educational attainment across demographic groups. Subsidies to college students have, however, already made a significant difference in the lives of many who could otherwise not have continued their education. Well-targeted, properly-designed financial aid programs have the potential to diminish the differences that persist. Examining the forms of aid available and how that aid is allocated can provide insight into ways in which the effectiveness of current student aid dollars can be improved, and can highlight the most important uses for the new dollars that must be forthcoming if educational opportunities are to be maintained and augmented.

Student Borrowing

Many of the low- and moderate-income students who do manage to enroll in college are forced to rely heavily on work and loans to finance their education. The failure of grant aid to keep pace with the cost of attendance, and the redirecting of dollars away from students whose ability to finance higher education is most in jeopardy has resulted in rising levels of borrowing and longer work hours for many students. Increasing proportions of students who earn both two-year and four-year degrees in public, private non-profit, and for-profit institutions are borrowing to help finance their education. Despite the fact that federal student loan limits have not increased for many years, the typical borrower is accumulating more federal debt each year. In 1995-96, 22 percent of students earning associate degrees at public institutions had federal student loans, with a median debt of \$4,742 in 2003 dollars. By 2003-04, 28 percent of these students had federal student loans, with a median debt of \$5,879, nearly a 25 percent increase. Almost 90 percent of students earning associate degrees from for-profit institutions borrow from the federal government, and typical students accrue almost two-and-a-half times as much debt as their community college counterparts.

The proportion of students earning bachelor's degrees from public colleges and universities who graduate with federal student debt has increased from 49 percent in 1995-96 to 58 percent in 2003-04, and the median debt level has increased by 33 percent, from \$12,553 in 2003 dollars to \$16,671. Sixty-nine percent of students earning BAs from private institutions borrow, with a typical federal debt level approximately \$400 higher than that of public college graduates (ACE 2005).

Largely because of the constancy of federal loan limits, students are increasingly turning to private sources to borrow additional funds. Private student loans increased from about 6 percent to about 18 percent of total student borrowing between 1996-97 and 2003-04 (College Board 2005). As Table 4 indicates, students in every sector are relying on nonfederal loans⁸. Median total debt levels for associate degree recipients in for-profit institutions and for bachelor's degree recipients in private non-profit institutions are over \$2,000 higher than median federal debt levels. This trend is of particular concern because private loans are not subsidized in any way. Interest rates are not regulated, and the terms of the loans are determined by the lenders. Moreover, there is considerable evidence that students are accumulating significant amounts of credit card debt while they are in school (Nellie Mae 2005).

⁸ Median debt levels for private or nonfederal loans equals "total debt" minus "federal debt."

**Table 4: Federal Student Debt Levels of Degree Recipients, 1992-93 to 2003-04
and Total Debt, 2003-04**

	FEDERAL DEBT 1992-93		FEDERAL DEBT 1995-96		FEDERAL DEBT 1999-00		FEDERAL DEBT 2003-04		TOTAL DEBT 2003-04	
	% borrowing	median debt	% borrowing	median debt	% borrowing	median debt	% borrowing	median debt	% borrowing	median debt
Public AA	19.7%	\$2,625	21.6%	\$3,937	24.9%	\$5,200	28.3%	\$5,879	34.7%	\$6,146
For-profit AA	NA	NA	81.7%	\$9,315	88.4%	\$11,440	89.2%	\$14,067	90.3%	\$16,601
Public BA	24.8%	\$6,300	48.7%	\$10,422	57.9%	\$14,848	58.0%	\$14,671	61.5%	\$15,471
Private BA	40.4%	\$9,680	51.5%	\$14,250	65.5%	\$16,942	69.2%	\$17,125	72.8%	\$19,376

Source: ACE Issue Brief, *Federal Student Loan Debt, 1993 to 2004*, June 2005; calculations by the author

To date there is no evidence that these debt levels are having a severe detrimental effect on typical borrowers, and many of the headlines about students drowning in debt exaggerate the situation (Baum and O'Malley 2002). Higher education is an investment that carries a high rate of return for most individuals, and students graduating with about \$20,000 in debt are able to repay their loans without undue sacrifice, particularly in a low interest rate environment. However, as interest rates rise, many students will find their monthly payments higher than they had anticipated. Moreover, many undergraduates accumulate debt measurably greater than average. About 20 percent of BA recipients graduate with debts exceeding \$30,000 (Baum and O'Malley 2003). While it is difficult to define specific limits on manageable debt levels, a significant portion of those who borrow so heavily are likely to experience some degree of difficulty in repayment.

Aside from the minority of borrowers who accumulate particularly high levels of debt, there are two other major causes for concern about student debt. First, students from low-income families tend to have a more difficult time repaying their loans than other students with similar debt levels and similar post-college earnings. Pell Grant recipients are much more likely than other borrowers to report that they are burdened by their debt and that it has a significant impact on their lifestyles (Baum and O'Malley 2003). This is not a surprising finding, since these students are unlikely to get assistance from their families either for debt repayment or to meet other financial obligations. They are also more likely than others to have responsibility for contributing to the support of their families of origin.

A second major problem is that our knowledge of the impact of student debt is limited to those individuals who do go to college. A particular concern is the possibility that the prospect of accumulating quantities of debt that sound daunting to people from low- and moderate-income families may prevent them from enrolling. Although isolating the impact of attitudes toward debt and other factors affecting patterns of college enrollment and financing is difficult, there is evidence that loan aversion limits the educational choices of students from low-income backgrounds (Caliber 2003). Concern over the prospect of accumulating debt may also be

causing some students to devote much of their time to the labor force, choosing to work more hours over borrowing more, such that their jobs interfere with their academic success.

Student Employment

The image of college students washing dishes or driving taxis in order to put themselves through school has long been part of the legend associated with the American dream. Among some segments of the current generation, shelving books in the library or working at the Gap puts gas in the car or permits more frequent nights out. But for a sizeable fraction of today's college students, long hours of work are the only option for paying the tuition bill. A \$4,050 Pell Grant, a \$2,625 Stafford Loan, and perhaps another \$2,000 in state grant aid simply do not add up to the total cost of attendance for students whose families do not have the resources to contribute to their education. In other words, many students face what has come to be known as "unmet need" and are forced to work in order to meet their tuition bills.⁹ And how many hours can a student really be expected to work and still successfully meet academic expectations?

In 2003, 48 percent of full-time college students were employed (Table 5). Thirty percent worked 20 or more hours per week, and 9 percent worked 35 or more hours per week. A decade ago, 46 percent were employed, 25 percent worked 20 or more hours per week, and only 5 percent worked 35 or more hours per week (Fox et al. 2005). The increases in student employment are even clearer when 2003 data are compared with earlier decades (i.e., 1973 and 1983). Whatever the merits of work and self-sufficiency, it is clear that spending so much time and energy in the labor force diminishes the time and energy these students can devote to their studies.

Table 5: Work Patterns of Full-Time College Students

	Full time college students		
	Employed	Hours per week worked	
		≥ 20	≥ 35
1973	36.4%	16.8%	4.4%
1983	40.4%	18.8%	3.8%
1993	46.3%	24.6%	5.1%
2003	47.7%	29.5%	8.8%

Source: M. A. Fox, B. A. Connolly, T. D. Snyder, *Youth Indicators, 2005: Trends in the Well-Being of American Youth*, Indicator 30.

⁹ On one level, unmet need is a simple concept. Calculate a student's Expected Family Contribution (EFC) and add it to the financial aid awarded. Any difference between that total and the cost of attendance is unmet need. But we measure unmet need only for enrolled students. Presumably those students for whom the gap is largest are among those who do not enroll for financial reasons.

For students who do not have family financial support, the choices for financing higher education are limited. In the absence of sufficient grant aid, they can enroll part-time, diminishing the chances that they will complete their degrees; they can borrow large amounts of money through relatively expensive private lenders; or they can work excessive hours. Or, of course, they can give up on higher education altogether because it is not affordable.

The Targeting of Student Aid

In order to effectively increase educational opportunities, student aid must be targeted at those students whose behavior will be modified because of the availability of these funds. Subsidies to students who would enroll in the same type of college at the same time even without assistance may diminish the other sacrifices required, but they will not increase rates of college enrollment and success, nor will they have a measurable impact on overall social welfare. The enrollment patterns of students from low-income backgrounds are much more price-sensitive than the enrollment patterns of more affluent students. A considerable amount of evidence gathered by many researchers over many years confirms this reality and common sense supports it (Leslie and Brinkman 1997). The high rates of enrollment among students from high-income families—especially those with average and high levels of academic achievement—leave little room for improvement.

Moreover, it is clear that middle- and upper-income students, whose parents have relatively high levels of education and who enjoy school environments supportive of college preparation, have both a strong commitment to postsecondary education and the financial resources to make it possible, albeit frequently only with a significant level of sacrifice of other forms of consumption. And perhaps most significant for financial aid policies, finding \$2,000 for tuition and fees at a public two-year college—or \$5,000 for a public four-year college—is feasible for most middle- and upper-income families. It involves making choices, but those choices are not generally between education and food or shelter.

In contrast, for students from low-income backgrounds, the story is quite different. Finding these funds may be virtually impossible. Receiving aid, and especially grant aid, can easily make the difference between going to college and foregoing higher education. Many have parents without any college experience and attend high schools where college enrollment is not the norm. The relatively low enrollment rates of low-income students leave significant room for many more of them—including many with high levels of academic achievement – to enroll in college and, particularly, to earn degrees.

The best way to assure that student aid is targeted at students whose behavior it will be most likely to modify in significant ways is to measure financial need in a reasonable way and to allocate aid dollars based on that need. The Federal Methodology (FM) that serves as the basis for distributing federal student aid is not perfect (Baum 2006). On one hand, the formula yields EFCs that are far higher than what many families and students can possibly manage. On the other hand, it ignores significant resources available to other students and families. In some

ways, the FM may be viewed as a rationing system, better thought of as a federal eligibility index, and does not necessarily provide a reasonable measure of ability to pay. Perhaps most significant, the complexity of the federal aid system and the associated application process confuses and intimidates students who are most dependent upon it.

Perhaps the most serious problem with the FM is the penalty imposed on student earnings.¹⁰ Students who work to help pay for their own education or to support their families lose aid eligibility: an additional dollar of income increases the expected student contribution by 50 cents. A more efficient and equitable need analysis system would expect a contribution from earnings from all students, but would not discourage work effort or allow students who work long hours one year because of inadequate financial aid to be eligible for even less aid the following year because of their previous earnings. The current system increases the aid award of students who can afford to minimize their work effort relative to those students whose financial circumstances dictate greater commitment to the labor force.

Other factors that diminish the ability of the need analysis system to effectively target aid dollars on students who need them most include the failure to account at all for home equity, the elimination of assets from consideration for families with incomes below an arbitrary cut-off, and the exclusion of the resources of non-custodial divorced parents. By removing significant amounts of financial resources from consideration, these aspects of the formula make it more difficult to distinguish between students who have true financial need and those who do not. Despite the political sensitivity of expecting families to contribute more for college because of the value of their primary residences, it is clear that two families with similar incomes, one of whom has considerable home equity and the other of whom rents, have very different financial capacities. Similarly, while many low-income students whose parents are not married have no access to the resources of their non-custodial parents, many others do have that access. Directing aid resources towards students who have affluent non-custodial parents clearly deprives others with real need of those resources.

These need analysis provisions are not just technical details. An inadequate methodology for allocating public subsidies reduces the amount of aid available to low-income students. If funding were unlimited, it might not be such a serious problem that some of the dollars are going to students whose need is an artifact of the system. But under prevailing budget constraints, every dollar that is misdirected in this way is a dollar that fails to increase access to higher education.

The most important revision to the distribution system for federal aid, however, would be to make it simple and transparent for low-income students. A recent analysis by the American Council on Education estimated that more than 20 percent of dependent students with incomes less than \$20,000 did not apply for federal financial aid in 2003-04 (ACE 2006). The variety of

¹⁰ In *The Student Aid Gauntlet* (2005), the Advisory Committee on Student Financial Assistance recommended that Congress reduce the “student work penalty,” by increasing the Income Protection Allowance (IPA) for all students. The Higher Education Reconciliation Act of 2005 (S.1932) increased the IPA for all students.

available aid programs, the differences in eligibility criteria for different programs, the unpredictable award levels, and the complexity of the application process combine to make the system impenetrable for many low-income potential students. A system that promises young people predictable and reliable financial aid awards well in advance of high school graduation might well have a positive, measurable impact on the enrollment rates of low- and moderate-income students (Advisory Committee 2005; Blanco 2005).

Even the best need analysis system cannot direct subsidies to the students who need them most if the aid programs are not properly designed. The Pell Grant program is very effective at directing its funds toward students with the lowest incomes, given the constraints of the FM. However, the change in federal policies that allocates an increasing proportion of education subsidies through the tax system instead of through direct grants significantly diminishes the effective targeting of federal dollars. Only about 57 percent of the tax credits and 30 percent of the benefits of the tax deductions accrue to households with annual incomes below \$50,000 (College Board 2005). In 2004, about \$8 billion dollars in benefits from the Hope and Lifetime Learning tax credits and the tuition deduction were enjoyed by taxpayers with positive federal income tax liabilities. This subsidy is fast approaching the \$13 billion in Pell Grants distributed to low-income students.

Part of the explanation for the skewed distribution of benefits of the tax-based higher education subsidies is the fact that they are limited to covering tuition and fees net of grant aid. Students enrolled in low-price institutions—a disproportionate number of whom are low-income—still incur significant room, board, and other living costs. Federal grants and loans can be used to meet these expenditures, but tax benefits cannot (Cooper 2005). This structure, combined with the fact that the tax credits are not refundable and are available only to taxpayers with tax liabilities, limits the usefulness of the subsidy for low-income students, who are disproportionately enrolled in low-price institutions.

The problem of the targeting of federal aid is compounded by the fact that both state governments and colleges and universities have followed similar paths. While these entities, like the federal government, continue to allocate most of their grant aid on the basis of need, both sources of student aid are increasingly linked to academic achievement rather than financial resources.¹¹ In other words, both the equity and the efficiency of student aid policy are declining because of a failure to keep the needs of low- and moderate-income students at the forefront.

Eliminating the Barriers

Just as individual students have a limited number of options for financing higher education, public policy can move in a limited number of directions to improve educational opportunities. Clearly, in order to diminish financial barriers for low- and moderate-income students, the price

¹¹ For more information about the proliferation of merit-based student aid programs, see D.E. Heller, 2006, *Merit and College Access*.

of attending college has to decline and/or the resources available to pay that price have to grow. Rising family incomes in the lower half of the income distribution would be a happy solution, but higher education policy cannot solve this problem—except through providing better educational opportunities. While loans and work will and should continue to play a significant role in student financing, many students already face burdens that threaten their academic success. In other words, more dollars in grant aid to low- and moderate-income students are a vital component of the future of college finance.

More Pell Grant dollars should certainly be a major part of the policy agenda. But current budgetary realities also dictate more creative approaches. The dollars that are already on the table have to be targeted more effectively and used more efficiently. As discussed above, one important aspect of such an effort is to assure that subsidies go to those students on whose behavior they can have a significant impact. Tax credits and deductions help many students whose opportunities would be more limited in their absence. But the reality is that there is no evidence that these programs have had a significant positive impact on postsecondary enrollment rates (Long 2004). And they are not available to the lowest income students. Allowing these programs to continue to grow without modifying them in order to benefit students from truly disadvantaged families is not a constructive direction for public policy. Surely it is possible to apply the political advantages of the tax-based programs to benefit students whose access to higher education is most limited. Making the tax credits refundable and, as discussed above, allowing them to cover total cost of attendance rather than just tuition and fees, would be constructive steps.

Another important direction for the federal government is to effectively leverage funding from other sources. Important as the federal contribution to student financing is, it is only one element of a partnership among state, federal, and local governments; students and families; colleges and universities; and both non-profit and for-profit private entities. The federal government has a clear mission to remove financial barriers to college for students all over the country who are prepared to benefit. While the other members of the partnership share this goal to some extent, they also have other priorities. States are interested in keeping talented students at home rather than having them cross state lines to study. Institutions are interested in improving the academic profile of their student bodies. Private entities may be interested either in developing certain skills within the workforce or in furthering specific social missions.

The federal government can modify the behavior of its partners. Increased incentives to states to augment their need-based aid programs—preferably in combination with mentoring programs and early commitments to the provision of adequate grant aid—have the potential to reverse the drift of state student grant programs away from need-based programs towards merit-based programs. Strengthening the Leveraging Educational Assistance Partnership (LEAP) program is one possible avenue for this effort. The LEAP program involves a partnership between the federal government and states in support of increased need-based aid; federal matching dollars are used to provide states with an incentive to strengthen their need-based aid programs. Institutions can also be provided with financial incentives to enroll and

graduate more low-income students, who are frequently more expensive both to enroll and to support academically than others. Proposals to provide subsidies to institutions based on the number of Pell Grant recipients they enroll and graduate deserve attention.

Federal matching funds for states, institutions, and private entities have great potential. It is also critical that the multiple policies in place to assist students be better coordinated. Receiving aid from one source should not cause needy students to lose aid from other sources. Students should not have to make difficult choices about whether it is advisable to pass up one form of tax benefit for fear of losing a more valuable alternative benefit. They should not have to worry about whether the work effort they are putting in to make ends meet will cause them to lose their Pell Grant funding the following year. And they should not have to jump over large bureaucratic hurdles to make paying for college a reasonable possibility.

None of these solutions will be effective in the absence of adequate state appropriations for public colleges and universities, and vigorous efforts on campus to spend funds wisely and keep costs in check. But no matter how successful we might be at limiting growth in college tuition levels, students from low-income families will never have adequate opportunities without generous public subsidies. The federal government must make this effort a high priority and must attend not only to the level of funding, but also to program design and coordination, and, in particular, to the effective targeting of subsidies to students whose opportunities are most constrained.

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Ensuring Persistence and Degree Completion

by John Lee

This paper examines the question of how price of attendance and financial aid influence the decision to continue with college once a student has enrolled. Students drop out of college for a number of reasons. Some find that they are not interested, a few have the opportunity for a good job, others find college too academically challenging, and some struggle with family problems that make it impossible to continue. Often, these assorted events are interrelated with affordability issues, making the research difficult to interpret.

The Importance of College Persistence and Degree Completion

A good deal of federal education policy since the 1960s has been based on the premise of using student aid to equalize access. It continues to be important for the future good of the country that everyone has a chance to go to college regardless of their ability to pay. Recently the debate has turned toward finding ways to improve student success. An example of this new focus on success is provided by a quote from the Education Trust announcing their interactive website on college graduation rates:

While there's still lots of work to do to make sure more young people have access to college, it's clear that what happens once they *get* to college matters, too.

—Kati Haycock, director of the Education Trust, 2005.

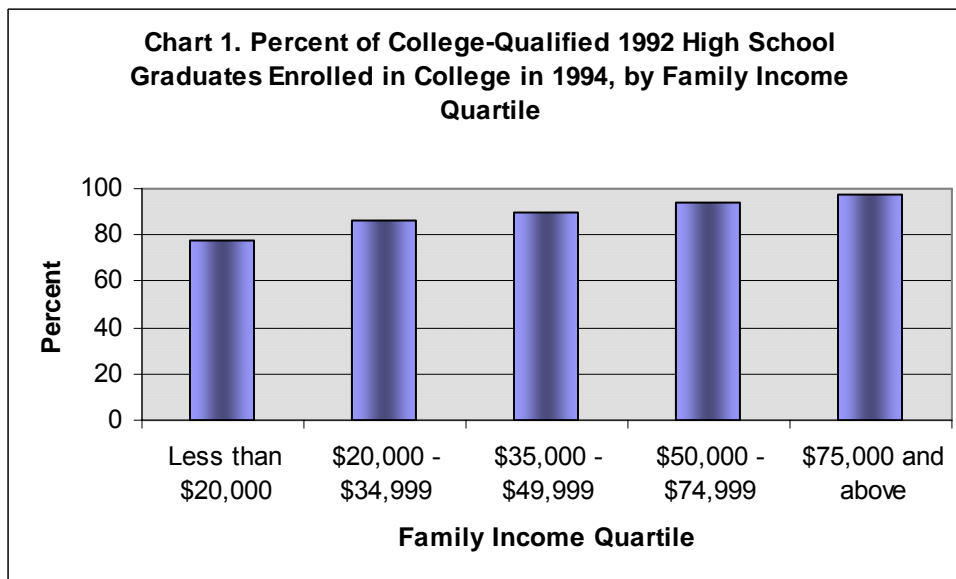
Graduation, dropout, and persistence rates have become topics of increasing concern as more states require reporting of graduation rates as part of accountability requirements. In a survey of state higher education agencies, two-thirds report at least one initiative to promote bachelor degree completion. Seven have programs facilitating transfer from community colleges to four-year institutions. Roughly half the states collect accountability data, such as retention and graduation rates; nine of these tie performance measures to funding. Finally, about half would like to do more to foster completion, but feel constrained by their budgets (GAO 2003).

In addition, Congress has explored the possibility of including incentives for postsecondary institutions to reward high rates of persistence and completion (Fiske 2004). The U.S. Department of Education's (ED) National Center for Education Statistics (NCES) has been providing standardized measures of six-year graduation rates for several years. National Collegiate Athletic Association (NCAA) colleges have been reporting detailed graduation rates for athletes for several years.

Many of the same student attributes that predict enrollment in college are associated with leaving college. Research shows that low-income students are at greater risk of dropping out

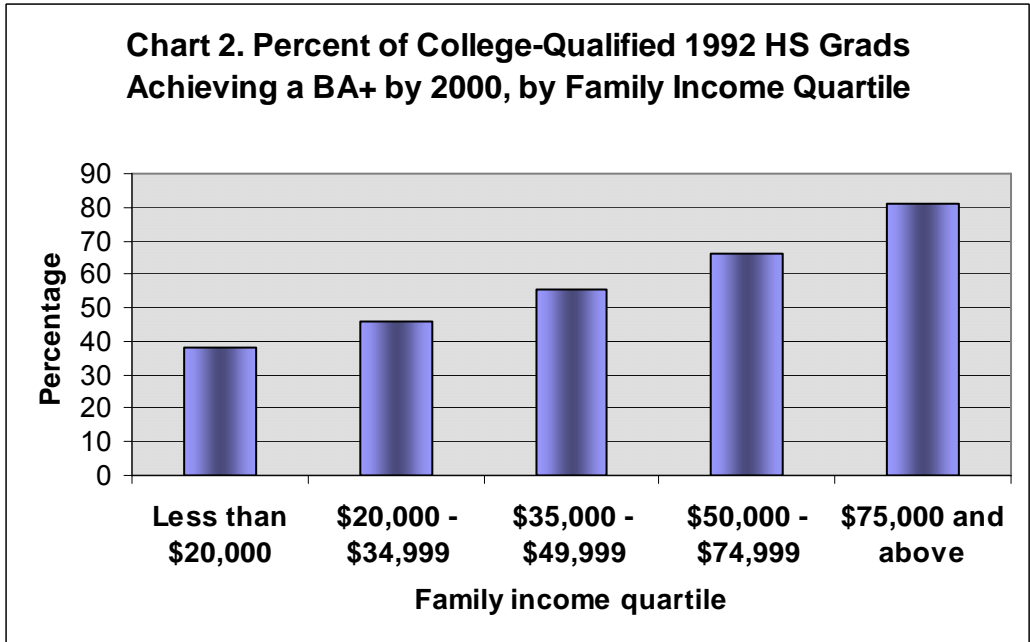
than middle- and high-income students, especially adult low-income students who have additional familial or work responsibilities (Corrigan 2003; Metz 2002; Braunstein et al. 2000). According to a recent ED study, 41 percent of low-income students entering a four-year college graduated within five years, compared with 66 percent of high-income students (Leonhardt 2005).

The following two charts show the link between income and graduation. Chart 1 shows the percentage of college-qualified 1992 high school graduates who had enrolled in college by 1994. College-qualified means that they took a college-qualified math class and had received a high school diploma. About 80 percent of the lowest income students in this group went on to college, compared with almost all of the highest income students. The access gap between the lowest and highest income group is about 20 percent.



Source: National Education Longitudinal Study (NELS), JBL Associates analysis.

Chart 2 shows the percentage of those college-qualified high school graduates who started college by 1994 and had achieved a baccalaureate degree by 2000. Less than 40 percent of the students in the lowest income group had succeeded by this standard, compared with over 80 percent of the students in the highest income group. Income is a major factor associated with a student's chances of completing a bachelor's degree.



Source: National Education Longitudinal Study (NELS), JBL Associates analysis.

The access measure in this case does not take into account the type of institution in which the student started; the degree measure does not include associate degrees or certificates as outcomes. We know that where students start their education, what their goals are, whether they attend full- or part-time, and whether they live at home or on campus all affect their chances of completing a baccalaureate degree. All of these factors influence the quality of the educational experience and the likelihood of completing a degree.

Our nation’s success in improving college-going rates increases the importance of boosting retention. According to a 2004 report published by the Pell Institute, a growing number of postsecondary students have characteristics that will put them at risk of dropping out of college. As the proportions of low-income, first-generation, and minority students increase on college campuses, so does the importance of effective retention strategies to ensure graduation.

Degrees Matter to Both Students and Society

A number of recent studies have shown that degree completion leads to greater earnings and reduced rates of unemployment compared with students who have only completed high school (Schuh 2005; Baum 2004). College graduates, unlike non-graduates, have seen increases in pay above inflation (Leonhardt 2005). Census data indicate that over the last two decades, the economic returns to a college degree have been increasing.

Economists differ about the reasons for the increased salaries paid to those who have earned a college degree. The most straightforward explanation is that education makes workers more productive by adding to their ability to produce goods and services. Employers are willing to

pay for that extra productivity, thus explaining the rising relative wages for more educated workers. A competing explanation for the college wage premium is that the value of a college degree may have less to do with what one learns than it does with sending a signal to employers about abilities they value but cannot ascertain directly. The degree provides that signal. As a result, a student who leaves college after three years does not necessarily earn 75 percent of the premium that a degree holder commands (Rusalkina and Hicks 2002).

Students who complete a postsecondary degree are not only more likely to earn substantially more over their lifetime, but they gain knowledge; critical-thinking skills; and personal, political, and social awareness (Kuh 1995). In addition, a growing number of students are borrowing to attend college. Dropping out of college not only diminishes the potential income of students, but also leaves many of them with debt to be repaid (Gladieux 2005). The combination of lost income and loan repayment may leave student dropouts in a worse economic position than if they had not attended college at all.

Performance Measures Reflect Institutional Characteristics

Generally speaking, the more expensive the college attended, the higher the chances that a student will graduate. Bachelor's degree-seeking students who start at two-year institutions are less likely to earn a four-year degree than are students who start at a four-year institution. The decision to attend a two-year college as a way to save money may result in a lower chance of graduation, even when measurable student differences are taken into consideration. Students at public four-year institutions are less likely than students at private not-for-profit institutions to earn a bachelor's degree. Finally, institutions with large numbers of low-income students have lower graduation rates than those with fewer low-income students. In part, these differences reflect the mix of students enrolling, but they may also be influenced by the resources and programs that are available to students (Fiske 2004).

Because of both financial issues (lack of money and/or high tuition) and institutional admission standards, large numbers of low-income and academically underprepared students tend to enroll in institutions that are either underfunded for the demands of such students or overwhelmed by the number in attendance. This significantly affects these students' chances of success.

The research is unambiguous in showing that institutionally-provided student services make a difference to student persistence. A quick review of just some of the institutional approaches that show evidence of improving persistence makes an important point—that although these efforts take staff and money to develop and implement, we often ask the most overburdened and underfunded institutions that enroll large numbers of students who are most at risk of dropping out to provide these services:

- A recent National Bureau of Economic Research study on remediation found evidence of the positive impact of remediation: students who took remedial English were 17 percent

more likely to graduate in four years and 19 percent less likely to transfer out compared with those who did not take the class (Bettinger and Long 2005).

- Freshman-year seminars ease the transition to campus life by helping students develop their academic and career goals and select courses and majors (Toblowsky, Mamrick, and Cox 2005).
- Freshman Interest Groups (FIG), Blocks or Clusters, and Learning Communities (LC) all use group approaches to enhance learning. Academic support programs offer a “home base” on campus and support services such as supplemental instruction, group study, mastery classes, and workshops that provide additional academic support to at-risk students (Schroeder, Minor, and Tarkow 1999).
- Interactive and engaging classrooms enhance student persistence, especially at commuter colleges (Kuh, Gonyea, and Palmer 2001).
- Academic advising is an important component in improving retention rates (Thomas 1990).
- A national evaluation found that students in Student Support Services had higher GPAs, took more credits, and had higher retention (through the third year of college) than did comparison groups (Chaney et al. 1997).

It is important for colleges and universities to systematically evaluate the services they offer high-risk students to help improve student success rates. These and other program approaches are most effective when the institution supports the effort and makes student success an institutional priority.

Measuring Persistence

Deciding how to measure persistence structures the research questions. Different measures of graduation have been used in policymaking and research. Institutional graduation rates collected for and disseminated by ED have moved to the forefront in policy discussions. Some institutions, especially community colleges, argue that such a measure does not reflect the reality of how students progress through their education. A better measure, and one that overcomes some of these criticisms, is a system graduation rate that captures the transfers and stopouts that may re-enroll later at another college. Even that measure misses the students who may be seeking specific job skills or are taking courses for general interest and have no intention of getting a degree.

ED collects graduation rate information from all degree-granting postsecondary institutions in its annual Graduation Rate Survey (GRS). Persistence is measured based on year-to-year enrollment, culminating in the completion of a postsecondary degree. Graduation rates are

calculated on 150 percent of the expected time to degree completion. The cohorts used to define graduation rates do not include students who start as part-timers or transfer from another institution, neither do they include students who are taking non-credit classes (Seidman 2004). Students who stopout, transfer to or from another institution, start part-time, or exceed the 150 percent of time used to calculate the graduation rate reduce the reliability of the measure for many institutions. Given the diverse missions and range of students served, community colleges are least well represented by traditional graduation rates.

Students who enroll full-time for four consecutive years generally choose traditional colleges and universities, but many students do not follow this path. A 2002 study of national student enrollment data indicates that only 37 percent of students with a bachelor's degree goal graduate within four years (Berkner et al. 2002). Of all first-time students with a bachelor's degree goal, 55 percent completed within six years at their original institution; 63 percent of students completed a bachelor's degree when transfer students were included.

A more sensitive measure of academic progress is persistence, which is generally defined as student progress from year-to-year or semester-to-semester. This refinement captures more detailed information about events surrounding the decision to continue or not. Some variation of this measure is the one generally used by researchers.

Persistence Research Comes from Different Traditions

This increasing interest in improving student success has resulted in a growing body of research that addresses different aspects of the issue. The research comes at the problem from decidedly different perspectives, which makes it difficult to summarize. Most of the primary national research describes the relationship of student characteristics to persistence. This is possible because of national longitudinal databases that provide data at the student level.

A second string of research comes from what can be generally summarized as academic and social integration theory. This is the province of a great deal of academic research that suggests that students who engage with the academic, social, and cultural life of the college are more likely to continue. The weakest research is on programs that colleges and universities can implement to improve student graduation. Much of this work is based on research carried out at individual colleges. Often, these campus studies are descriptive and have no control group, which reduces the confidence one has in the results.

The research problem is complicated by the reality that progress toward college graduation is influenced by many factors. Key student characteristics, such as race/ethnicity, socioeconomic status, being older and/or having a family, are all predictive of persistence (Hoyt 1999; Naretto 1995; Murtaugh 1999; Somers 1995; Zhu 2002) and are often interrelated. Affordability is another key factor in the persistence discussion, which poses difficult research questions.

The problem lies in untangling these interrelated factors that affect college persistence. Being low-income is often associated with inadequate academic preparation and attending colleges with fewer resources. Trying to decide which one of the contributing events is most important is to miss the point that they all must be addressed if we want to improve persistence and graduation rates.

We are left to guide policy with a patchwork of research that is mostly descriptive and, at best, depends on correlation techniques to draw conclusions. Some research comes out of economic traditions and reviews the relationship of different measures of student price to student persistence. Other studies come out of a sociological tradition and review issues of student fit and cultural transition to college. Educational research looks at the effect of different classroom approaches and methods of institutional program delivery on persistence. All of these approaches contribute to our understanding of what needs to be done if we are to improve student persistence, but each addresses only a piece of the problem.

Decision Theory

Concepts gleaned from decision theory help integrate some of these strands of research. The critical decisions that a student makes about where to attend college and how to pay college costs are important in determining success in the long run. This decision process can be understood in economic terms. Expected value theory says that the fair price for a gamble is the probability times the payoff. The first theory of risky choice was proposed by Pascal and Fermat in 1654. The theory has been used more recently by Becker (1976) to frame the discussion about college enrollment decisions.

Risk is defined as the willingness to expose oneself to potential loss. The potential loss in the case of enrolling in college is the lost time in the labor market and the payment of the direct costs of attendance. In addition, a failing student faces the loss of status and self-esteem associated with dropping out of college. The value of the possible outcome is discounted by the probability of its realization, in this case, the probability of graduating.

The qualitative sense of risk for students considering college is their estimation of the chance that they can succeed. Students narrow their search for colleges in terms of affordability and academic selectivity. High school students get clear indicators of their relative academic competitiveness through grades, level of curriculum taken, and test scores. Parents, counselors, and teachers encourage the top scorers to apply to more competitive and/or more expensive schools. Those students in the middle or lower portions of the academic distribution do not receive the same encouragement and are more likely to limit their search to less selective and less expensive colleges.

Low-income students who believe themselves to be at academic risk may reduce the amount of time and money they are willing to invest in their education. Students may attend a local college part-time so they can live at home and work full-time as a strategy for minimizing their

risk. The resulting choices may actually reduce the chances of persisting until graduation. A high-income student with the same level of perceived academic risk can afford the costs of attending college full-time as a residential student because he or she has more family resources. The higher income student may be better able to risk failure because he or she has a smaller relative share of family income involved in going to college compared with the lower income student.

Part of the problem is that students from families that lack college experience may not have a realistic assessment of college attendance, the academic skills needed, or the potential benefits of a college degree. The decision is also complicated by the fact that potential students may anticipate that they will not fit into the college student community, which would reduce the social rewards associated with attending college.

This framework integrates the combined effect of improved academic performance at the secondary level, making students more confident so that they will succeed in college, with the simultaneous importance of reducing the financial risk that low-income students face, allowing them to invest themselves more fully in the educational experience of college.

Decisions That Affect Persistence

Students who make attendance decisions due to financial necessity, drawing themselves away from the campus and its academic, cultural, and social life, face an increased likelihood of dropping out. This is based on Tinto's (1993) theory of academic and social integration. There are disagreements on some points, but the theory helps to untangle the student persistence puzzle (Beil et al. 1999; Cabrera et al. 1992; Okun et al. 1996; Pascarella et al. 1986; Thomas 1990; Tinto 1993). Social integration is an important factor with traditional students who live on campus (Wlodkowski 2002). Academic integration is more important at the community colleges, because students are primarily on campus to take classes (Tinto 1993). One study found that, of community college students who persist, younger students value integration more, whereas older students tend to value study skills or academic integration (Grosset 1991).

Dowd's (2004) research supports the usefulness of combining decision theory and social integration to explain student persistence. She found that students who are not integrated into the campus community do not have the same expectation of success as they begin their educational experience; thus, they are less willing to take the risk of continuing their enrollment and are more likely to drop out.

Delayed Enrollment

Upon graduating from high school, some students may delay college enrollment in order to save money to help pay the costs of attendance; this delay affects persistence (Zhu 2002). According to the U.S. Department of Education, delayed entry to college leads to lower rates of

persistence (NCES 1997). Forty percent of students who delay enrollment eventually complete a degree, compared with 58 percent of immediate entrants (NCES 2005).

Students who are ambivalent about enrolling in college may put off the decision until just before the start of the academic year, in hopes that other opportunities may open up. Late registration is predictive of dropping out (Smith et al. 2001). A study of college students in California had similar findings (Woo 2004).

Working off Campus

Students who work extensively off campus have less time to become part of the college community. Off campus work commitments are negatively correlated with academic success and persistence (King 1998; Woosley 2003/2004). Adult students, in particular, tend to drop out primarily because of time constraints or financial issues related to competing family and work demands. Finding time to study is difficult and perhaps not as high a priority as for traditional-age students who do not have the same level of commitments outside the classroom. Full-time employment is more common among nontraditional students, with 91 percent of adult students versus 43 percent of traditional-age students working at least 40 hours per week (Wlodkowski 2002). Three-quarters of four-year students work while they are in school and one-quarter of them work full-time (Choy 2002). Providing adequate financial aid that allows students to attend college full-time without working excessively is central to helping them succeed.

Commuting

One money-saving approach that students take is to live at home while they attend college. Because they do not live on campus, commuter students face a greater challenge in becoming integrated or attached to the institutions they attend than do students who are resident on the campus. Some evidence suggests that a welcoming environment can affect retention and graduation for both residential and commuting students.

Commuter students do not stay on campus, so programs and services may not be widely used. Use of campus facilities may have an independent effect on retention. At the University of Maryland, hours spent on campus studying, conducting research, and in the library were connected to the retention of second-semester freshmen. Specific uses of the student union (but not overall hours) were also related to retention. Non-academic activities, such as attending a dance or concert in the student union, eating at the campus dining hall, and working as a campus employee, also influenced retention. For African American students, studying in the library, working out at the campus gym, and participating in student union sponsored trips were related to retention (Mallinckrodt 1987).

Living on campus can help to foster a sense of belonging and retention. The positive effects likely occur through the opportunities for social integration that residence halls afford (Mallinckrodt 1987; Skahill 2002-2003; St. John 2001). Campus housing is important to help students make connections and, thereby, attain their goals (Skahill 2002-2003). Residence hall

living also has positive effects on graduation (Astin 2001; Fidler 1996). The influence of campus residency can vary by student type. At North Carolina State University, on campus residency predicted persistence for African American students only (Kim 1996). At the University of Maryland, campus residence had significant effects on both persistence and graduation for white and African American students (Galicki 1989). At institutions with high overall retention rates, the effects of residence halls appear to be lower or not significant (McGrath 1997; Crissman 2001; Kanoy 1996).

Older Students

The retention issues of older and returning students differ from those of younger students. In part, this is because the opportunity cost, defined as lost income, of attending college is higher for older students. They also have more problems with work and family obligations than do their younger classmates. Baker (1996) found that low-income, full-time workers leave college at high rates. Baker also found that finances were more of an issue for older students than their academic performance. For students over the age of 23 at two-year colleges, persistence was negatively influenced by tuition charges to a greater degree than for younger students (Hippensteel 1996).

Older, nontraditional students at two-year institutions often work full-time while they are enrolled in college and have less time for social activities; therefore, flexibility in college offerings is more important than fostering campus integration (Baker 1996). Nontraditional students enrolled in the College of Business Administration at a metropolitan commuter university cited work conflicts and loss of income, not academic problems, as reasons for leaving (Thomas 1999). Work conflicts led to a lack of participation in extracurricular activities, as well as problems in scheduling classes. The study cited the lack of social integration and a lack of funds as factors contributing to their decisions to leave. The students needed to work to afford college, which left them little time to participate outside the classroom. The majority said they had planned to stop out rather than to leave permanently—43 percent of the dropouts planned on returning, and 47 percent had interrupted their education previously.

Academic Predictors

Before reviewing the effect of financial issues on persistence, it is important to realize that college is an academic meritocracy that rewards students with the most academic ability. A student's previous academic record is a strong predictor of their college performance. High school GPA, SAT, and ACT scores have all been identified as strong retention predictors (Astin 1987; Zhu 2002). Adelman's (1999) study based on longitudinal data finds that a rigorous high school curriculum is the strongest predictor of postsecondary persistence and success. The exception to this finding is the success of at-risk students in shorter vocational programs. The traditional academic predictors do not apply to students in these programs (Lee 1998).

Importance of Finances to Ensuring Persistence

The research on the direct effects of tuition and student aid on persistence is mixed. Researchers have used different methods and different datasets, which have produced inconsistent results.

Tuition and Other Contributors to Price

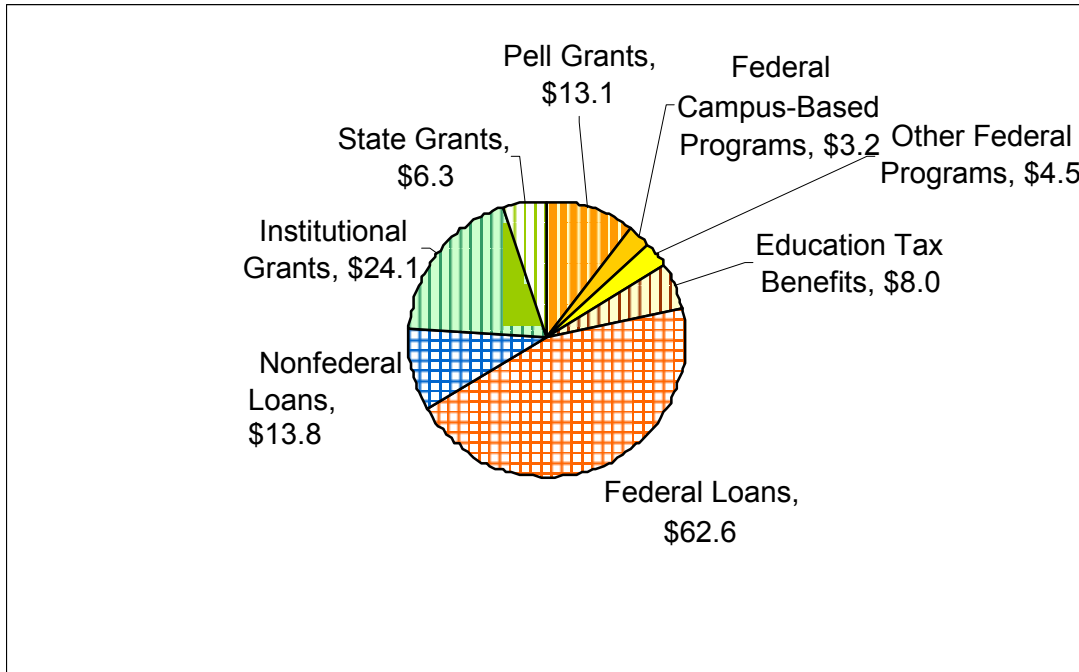
Studies have shown that low-income and minority students are more sensitive to changes in tuition and financial aid than are higher income students (Hu and St. John 2001; Heller 1997; Paulsen and St. John 2002). Increases in tuition may affect low-income students' decisions to persist. Both incoming and continuing students have been found to be price-sensitive.

Price sensitivity becomes critical when tuition in public institutions takes unexpected increases in response to shrinking state support. In general, tuition has been increasing faster than either families' ability to pay or student grant aid. According to the U.S. Department of Education's *Condition of Education 2005*, tuition and fees per student at public institutions increased 99 percent between 1969-70 and 2000-01 (in constant 2000-01 dollars), compared with only a 3 percent increase in government appropriations per student (Wirt et al. 2005). Studies have found that higher tuition levels have a negative relationship with persistence (Braunstein et al. 2000; Cofer 2001).

A 1998 study (Heller) found that continuing students are more price-sensitive to tuition increases than incoming freshmen, especially at the community college level. Research on tuition changes and persistence at community colleges is limited, but it generally shows a negative correlation (Cofer 2001). St. John and Starkey (1994, as cited in Cofer 2001) found that for each \$100 increase in tuition, there was a drop of 1.4 percent in traditional-age student persistence at community colleges. As the amount of need-based aid decreases and tuition increases, persistence declines (Hu 2001).

Student Aid

Student aid is becoming an increasingly important source of higher education revenue. Overall, about \$129 billion in student aid was distributed to college students in the 2004-05 academic year (College Board 2005) in the form of federal, state, and institutional aid, and private and employer grants. Additionally, students borrowed approximately \$14 billion in private (nonfederal) loans. Chart 1 shows a rough distribution of the types of aid awarded to students in billions of dollars. About \$76 billion, well over half of the total, is in the form of private and federal loans. If tax benefits are included, about \$56.6 billion is awarded in the form of grants. Work-study is not shown separately on the chart, but it makes up about 1 percent of the total at \$1.2 billion.



Source: College Board, Trends in Student Aid 2005.

Research on the relationship between financial aid programs and student persistence and degree completion is inconsistent, although it generally shows that aid has a positive effect, especially when aid packages include grants and work-study (Cabrera et al. 2005). A 2003 study found that grants, loans, and work-study programs affect persistence (Heller 2003). Financial aid was found to have a positive relationship with persistence at two-year colleges (Hoyt 1999; Cofer and Somers 2000) and on minority students as well (Hu and St. John 2001).

In general, research has shown that financial assistance is an important factor in enrolling and retaining low-income students (Nora 2001; Tinto 1993), although some studies have been inconclusive (Braunstein 2000; Pascarella and Terenzini 1991, as cited in Astin 2001). Changes in the amount of state and federal government appropriations and the growing complexity of aid packages may explain these mixed results (Astin 2001): students are receiving aid from as many as ten different sources. Another explanation is the possibility that aid packages are inadequate to meet the needs of low-income students (Singell 2002).

The findings are not unanimous, but research indicates that receipt of student aid is a stronger predictor of retention than academic problems for two-year public college students (Nora 1990). For two-year college students over the age of 23, within-year persistence was negatively influenced by tuition charges, to a greater extent than for younger students (Hippensteel 1996).

The effects of financial aid can vary by institutional type. Murdock (1987) found that financial aid influences persistence by making college affordable and reducing reasons for dropping out. The effects of aid on retention were stronger for students at two-year colleges, possibly because these institutions enroll relatively more minority and low-income students than do those in

other sectors. The effect of aid on persistence was also stronger at private institutions, where the students may have required more aid because of higher tuition. Students are less likely to leave an institution if they are receiving a significant amount of aid, which they do not want to lose, and also because they feel a sense of loyalty to the institution which is the source of aid (Muraskin et al. 2004).

Loans

Students and families are expected to pay a larger portion of college expenses as federal financial aid shifts from grants to loans, and state funding for public postsecondary education deteriorates. Loan aid (from all sources) has increased dramatically over the past decade, rising 173 percent, compared with an 85 percent increase in total grant aid (Redd 2004). The fastest-growing aid components over the last ten years are unsubsidized loans and nonfederal loans. These types of loans, awarded without regard for need, are available to middle- and upper-income students, in addition to low-income students.

As tuition increases, so does the proportion of loan aid a student receives (Schuh 2005). In fact, the higher the cost of attendance, the more likely a student will receive any form of financial aid. According to a 2001 study (O'Brien and Shedd, as cited in Nora 2001), student loans were the most common form of financial assistance used by low-income students. Most students who attend both public and private colleges rely on the Stafford loan programs in addition to Pell grants to finance their college education (Fenske, Porter, and DuBrock 2000, as cited in Nora 2001). However, research indicates that low-income students are more reluctant to borrow, which may push them toward two-year programs with lower tuition costs (Project on Student Debt 2006).

Research suggests that loans may either improve or hinder persistence. In part, this may be due to the fact that loans are self-selective. Some students may elect not to take loans, whereas the offer of a grant is less likely to be turned down by a student. If a student is more confident of graduating, he or she may be more willing to encumber future earnings with repayment than a student with lower expectations of success.

The supportive line of research suggests that if students can borrow instead of working excessively, they are more likely to have more time for their studies, thus improving their chances to persist (Dowd 2004). Other studies indicate that increased debt burden has begun to affect student persistence. One study, conducted at a private college, found that as loans played a larger role in student financial aid packages, within-year persistence declined (St. John 1998, as cited in St. John 2000). Another study at a Midwestern research university found that the receipt of loans was negatively related to retention (Li 1999).

Grants

A 2004 study of students at public colleges in Ohio found that students who received a Pell Grant were less likely to drop out of college than were those who did not (Bettinger 2004). However, an earlier study of three-year persistence rates of Pell Grant recipients and non-recipients found that Pell recipients at four-year institutions were no more likely than non-recipients to drop out, even though they had more risk factors (Wei, Horn, and Carroll 2002). The same was true for Pell recipients at public two-year and private for-profit less-than-four-year institutions.

Even though Pell Grants have been shown to be effective at promoting student persistence or neutralizing the effect of other risk factors, especially among low-income students, they are covering a smaller percentage of the cost of attendance as the rate of tuition increases at both public and private four-year institutions surpasses the increases in Pell Grant awards (Redd 2004). In 1982-83, 56 percent of the average cost of attendance at public four-year colleges was covered by the maximum Pell Grant award, while only 38 percent was covered in 2002-03. However, average tuition and fees at public two-year colleges remain well below the maximum Pell Grant (College Board 2005).

According to the U.S. Department of Education, the average age of Pell recipients increased 29 percent between 1994-95 and 2002-03; almost 30 percent of all Pell recipients are over the age of 25 (Redd 2004). As the average age of the recipients increases, so does their chance of enrolling at lower cost, public two-year institutions. Research has shown that nontraditional students (those over the age of 25) are more likely to enroll part-time and to have children and less likely to attend higher cost, four-year colleges and universities with longer degree programs.

Recent studies at the institutional and state level have shown that students who receive grant aid are more likely to persist (DesJardins, Ahlburg, and McCall 2002; St. John, Musoba, and Simmons 2003). A 2004 EdFund report found that California students who received the state's Cal Grant were much more likely to persist and attain a bachelor's degree, even when controlling for family income, grade point average, and parents' highest level of education (Woo et al. 2004). Another study found that at an open-admission HBCU, returning students were more likely to be grant or scholarship recipients (McDaniel and Graham 2001). Even though these studies are limited to institutional and state programs, their findings may hold true nationally.

When Cofer (2001) looked at NPSAS:93 and 1996 data to compare within-year persistence at public two-year institutions, he found that student aid had a stronger positive effect in 1996 than it did in 1993. He attributes this difference to the relatively small tuition increases in community college tuition and a positive increase in the availability of financial aid. Grants had a larger positive relationship with persistence than either tuition or loans in both the study years.

Work-Study

Work-study and institutional financial aid (grants and loans) have been found to influence student persistence. Work-study seems consistently to have positive effects on retention that other types of aid do not always demonstrate. According to a study released by ED, work-study is the only form of financial aid with a positive effect on degree completion (Adelman 1999). Nora's 1990 study found a positive relationship between campus-based aid programs and retention, especially among Hispanic students (Metz 2002). Although much of the early research was done at four-year colleges, more recent studies involving two-year colleges have shown similar outcomes. The problem with using work-study as a tool to help reduce the number of dropouts is that work-study programs comprise only one percent of student aid funding, totaling about \$1.2 billion (College Board 2005).

Studies have shown that students who work part-time, especially those who work on campus, are more engaged in the college community and more focused on academics (King 2002). Students who worked part-time and took out loans were more likely to persist than students who only worked part-time. However, data also show that students who work more than 25 hours a week are more likely to leave college before graduating (AFT 2003).

Institutional Aid and Emergency Funds

According to Astin (2001), only institutional grants have been shown to have a positive effect on retention. Institutional aid can have positive effects when the student perceives the aid as a reward for personal achievement, unlike need-based federal aid, which low-income students expect to receive (Muraskin et al. 2004).

The relationship between financial aid and persistence of nontraditional students is not usually addressed. According to a recent report by the American Council on Education, less than 30 percent of postsecondary institutions set aside institutional aid specifically for low-income adult students. Not surprisingly, community colleges are the most likely to allocate aid for these students. Although nontraditional students usually qualify for federal financial aid programs, they are often ineligible for other types of state and institutional aid, such as merit-based scholarships and grants.

Recommendations

Persistence and graduation rates are becoming increasingly important as states include student outcome measures in their accountability plans. Improving student persistence will take the cooperation of institutions, states, and federal programs. Affordability is a necessary part of reducing the number of dropouts, but it is not a complete solution to the problem.

Affordability affects persistence in two ways. The first is the series of decisions that a student often makes to be able to afford college; these decisions, such as enrolling part-time and

working many hours, reduce their chances of success. The measure of access should not be an either/or event, but rather a graduated index that uses enrollment as a full-time, resident student in a four-year college or university as the standard against which other, less involving access strategies are judged. The policy goal should be to make a four-year residential enrollment affordable for all who qualify. The second effect of affordability on persistence is that assuring all students sufficient funds to enroll and continue in college without undue financial need would likely have a positive effect.

This paper makes a case for incorporating academic and financial calculations that influence enrollment choices into a conceptual model based on decision theory. A student's calculation of his or her chances of success in college influences his or her willingness to commit to the more expensive enrollment options. Students who believe that they have a lower chance of success are more likely to opt for more affordable enrollment options, such as enrolling part-time, that reduce the probability of success. Both improving academic skills and reducing the price of attendance will increase the willingness of low-income students to commit themselves to enroll full-time at a four-year residential college.

The approach suggests that increasing students' academic potential will allow them to be more confident about enrolling as full-time residential students. The second suggestion is to reduce the direct cost of attending college with grants or low tuition so that students are not faced with the choice of working too much or borrowing excessive amounts of money to attend college as a full-time resident student. Implicit in this approach is the need to provide high school students with a realistic assessment early in their education of what they need to do to succeed academically and to make it clear that money will be available to make their college education possible.

The results detailing the effects of student aid and tuition on persistence are not consistent. Generally, inadequate student aid and tuition increases have been found to be related with dropping out, but the findings have not been unanimous. The research suggests that sudden changes in the price of attendance or unforeseen expenses contribute to the decision of students at the margin of affordability to leave college. These events are hard to capture in most of the datasets that are used to estimate the relationship between affordability and persistence.

The research suggests a series of specific actions that can be taken by institutions, states, and federal agencies to improve student persistence:

- Increase opportunities for low-income students to work on campus: college work-study is a small share of the student aid package and is harder to manage than other financial aid programs, but it is a positive tool for helping students become engaged with their campus.
- Make sure that all students apply for aid, since many who do not apply may be eligible (King 2006).

- Design student aid programs to make it possible for all high school graduates who qualify to attend a four-year college full-time as a resident on campus, without having to work more than 20 hours a week.
- Establish an emergency student aid account on campus that can be used to help low-income students deal with unexpected expenses.
- Make sure that, at some point early in high school, students and their families understand that they can afford college and that committing themselves to a rigorous high school curriculum is important to long-term success.
- Colleges and universities should determine which students are at risk of dropping out of the institution and identify and analyze their reasons for leaving, in order to help devise solutions for the problem.

It is incumbent on all partners to make sure resources are available to give at-risk students a reasonable chance at success. Institutions need to pay systematic attention to reducing the academic, social, and bureaucratic barriers to student success. States and local communities need to make sure that funds are available to support the programs that serve students who are at risk. The federal government needs to continue to commit funds to supplement programs that serve low-income and first-generation students, both with financial aid and support programs.

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EPILOGUE

by Judith Flink, Advisory Committee Vice Chairperson

If there is one clear message to be drawn from the papers and symposium proceedings included in this report, it is that a renewed commitment to equal educational opportunity is a necessary condition for our nation to progress socially and economically. This report also clearly demonstrates that such a commitment requires a revitalized and expanded partnership between all stakeholders in higher education—the federal government, state governments, institutions, and the private sector. Consider the following excerpts from the keynote speakers at the Advisory Committee’s symposium in honor of the 40th anniversary of the HEA:

Dr. Juliet García

*“... we as a nation must renew our commitment to access and persistence through the kind of **partnership that HEA envisions: one led by the federal government working in tandem with states, colleges, and private parties.**”*

*The Honorable
Jack Reed*

*“We would like to incorporate some of the Advisory Committee’s work into the LEAP program by way of the ACCESS Act. For example, ... your proposal to create grants for access and persistence, or GAP for short, under which states would be rewarded for **creating vibrant partnerships between colleges, foundations, businesses, and intervention and mentoring programs...**”*

All of the authors of the papers presented in this report also called on the federal government to partner with states, institutions, or the private sector in order to increase the need-based grant aid available to low-income students. Consider this recommendation by Dr. Sandy Baum: “Increased incentives to states to augment their need-based aid programs—preferably in combination with mentoring programs and early commitments to the provision of adequate grant aid—have the potential to reverse the drift of state student grant programs away from need-based programs towards merit-based programs.” The other authors featured in this report also sounded similar themes, calling on the federal government to provide incentives to states, institutions, and the private sector to increase the financial resources provided to low-income students throughout their college career.

Our keynote speakers and authors were, thus, unanimous in recommending a renewed partnership led by the federal government. Indeed, without such a partnership, and without the increases in grant aid that it would make possible, ever-escalating college costs will continue to undermine the hard work of needy students and families, offsetting our efforts to improve

academic preparation, counseling, and information. None of the stakeholders alone can guarantee financial access and persistence for those students who prepare academically for college. It will take all of us pulling together to do so.

That is why the Advisory Committee's core proposal in the current HEA reauthorization was the creation of a new access and persistence partnership led by the Department of Education. Such a partnership would use federal matching grants to leverage additional resources from state coalitions made up of the state government, institutions, private corporations, philanthropic organizations, and community-based early intervention programs. These resources would be used to provide every low-income student in participating states with an early assurance that, if they take the necessary steps to prepare for college, there will be sufficient grant aid to cover the majority of their college costs at a four-year public institution. This type of partnership has the potential to ensure that more low-income students who graduate from high school college-qualified have the financial resources they need to enroll immediately in a four-year institution, go to school full-time, live on campus, and work less than 20 hours per week, thereby dramatically increasing their chances of attaining a baccalaureate degree. However, this partnership is also likely to increase the pool of college-qualified high school graduates from low- and moderate-income families, by sending a signal to such students that their academic preparation for college will not be wasted, and that they will be able to afford college when they complete high school.

Such a partnership, which currently is part of the Senate's HEA reauthorization bill (S. 1614) in the form of a program titled Grants for Access and Persistence (GAP), requires sufficient funding to make the federal matching grants a real incentive to states and institutions. As Senator Jack Reed of Rhode Island, who first proposed GAP in the Accessing College through Comprehensive Outreach and State Partnerships (ACCESS) Act, noted in his remarks at the Advisory Committee's symposium, "We all recognize the most fundamental engine of success in life is an education; without that, it's very difficult to utilize talent and move forward....Too many individuals don't go to college because they simply can't afford it. And that is denying them opportunity and denying the nation their talents." Senator Reed's remarks echo the original intent of the HEA and the hopes of President Johnson that this nation will commit to ensuring that all students, regardless of income, have the opportunity to pursue their dreams and achieve a baccalaureate degree. Fulfilling these hopes requires a concentrated national effort directed at a common goal, and a political will that rises above partisan rancor. The Advisory Committee's partnership proposal represents an opportunity to build this will and bring different parties and stakeholders together to work toward this common goal. Through this partnership, there is the hope that we will at last make significant progress towards ensuring that economic status no longer determines educational opportunity in America.

APPENDIX:

Summary of the ACSFA September 8, 2005 Symposium¹²

The Advisory Committee on Student Financial Assistance met on September 8, 2005, at the Holiday Inn Capitol Hotel, Columbia Ballroom, in Washington DC. The purpose of the symposium was to address the imperative within the Higher Education Act that all Americans have access to higher education and the benefits it affords. In that regard, the goals of the symposium were to assess where the nation stands in meeting HEA's original intent, to identify what remains to be done, and to forge a consensus on how to accomplish that. The symposium structure consisted of presentations addressing each of four main issues: fulfilling the promise of HEA, intervening early and successfully, lowering work and loan burden, and ensuring assistance and degree completion. These were followed by responses from prominent scholars, policy analysts, and others.

Symposium panelists were commissioned to provide the papers that compose this symposium report. Summaries of panelist presentations and responses to them are provided below.

Session I: Fulfilling the Promise of HEA

Presenting Authors: Mr. Jamie P. Merisotis, President, The Institute for Higher Education Policy (IHEP), and Dr. Michael S. McPherson, President, The Spencer Foundation.

Respondents: Dr. Anthony P. Carnevale, Senior Fellow, National Center on Education and the Economy (NCEE), and Dr. Bridget Terry Long, Associate Professor of Education and Economics, Harvard Graduate School of Education.

Mr. Merisotis: The intent of the HEA of 1965, in its own words, is "to strengthen the educational resources of our colleges and universities and to provide financial assistance for students in postsecondary and higher education." Progress on the federal level toward those goals has been made by the establishment of two types of programs: financial aid programs and academic enrichment programs. The financial aid programs include the Pell Grant program, which offered \$12.6 billion to students last year, and is the primary federal grant program and the most important in terms of access; the Leveraging Educational Assistance Partnership (LEAP) program, which is currently funded at \$64 million, and is a critical bridge from the federal government to states; the Supplemental Educational Opportunity Grant (SEOG) program, funded at \$760 million, which provides a bridge between the federal government and campuses; and the Federal Work Study program, funded at \$1.2 billion, which provides self-help aid to students.

The HEA recognizes the need for information, preparation, and counseling support in addition to financial support to students. The academic enrichment programs consist of the TRIO programs and GEAR UP. The TRIO programs were developed in the 1960s and 1970s, and include Upward Bound, Talent Search, Student Support Services, the Robert E. McNair Postbaccalaureate Achievement Program, and Educational Opportunity Centers, each of which has its own constituency. The GEAR UP programs are relatively recent, and are comprehensive early intervention programs that serve various states and communities in partnership with the federal government. These programs are designed to address the behavioral and preparedness factors that affect access, persistence, and degree attainment by providing information about college and college costs, academic support and counseling, assistance with completion of forms, and, finally, encouraging parental support and involvement. These programs, however, serve only a small fraction of the total eligible population.

¹² Note: This appendix represents a summary of the presentations made at the symposium. A full text of the symposium proceedings is available at www.ed.gov/acsfa.

The challenges still faced by the HEA programs are multiple. The most significant among them are lack of information about college costs and aid eligibility, and academic preparedness. Low- and moderate-income families lack adequate financial resources to attend college, and often overestimate college costs, not fully understanding their eligibility for financial aid. The Advisory Committee, since its inception, has addressed these issues through simplification of need analysis and understanding of the public pricing structure. Even if students do not know their eligibility status, they would find that the amount of grant aid at four-year public colleges falls short. Roughly half of America's low- and moderate-income high school graduates are not academically prepared for college. The Advisory Committee's work has focused on this issue as well. Enrollment in college preparatory classes by this segment of the high school population has not increased dramatically in recent years and their test scores remain relatively stagnant.

In conclusion, the higher education community needs to focus on three key priorities: reinvigorating the access and persistence partnership among the federal government, states, colleges, private philanthropists, and the K-12 community; improving integration and coordination among the existing federal programs, which often present a cacophony of voices about available aid, making information confusing in and of itself; and implementing a comprehensive strategy effectively aimed at all of the factors that undermine access and persistence.

Dr. McPherson: A review of the basic descriptive data on access to college shows a familiar picture, which risks a sense of inevitability—we all know that poor students are less likely to attend college, and that students of color are less likely to succeed in high school and persist beyond it. However, these inequalities are not beyond human capacity to address, and a major point of policymaking is to find solutions.

In terms of educational attainment among 25- to 29-year-olds, postsecondary completion rates have improved modestly, to more than one-third, for whites. African Americans have seen consistent improvement both in high school completion rates, which still lag behind whites, and in college completion rates, which is just half that of whites. For the Latino population, high school completion rates have not improved as much, and the four-year college completion rate is very disappointing at under 10 percent.

High school completion and family income are critical factors in college access and persistence. Trends in high school completion for the three major racial/ethnic groups show that the Latino population shows very little improvement in the high school dropout rate, with a high rate of high school incompleteness. For African Americans, there is a persistent reduction in the dropout rate, which remains significantly higher than the dropout rate for whites. In terms of family income, another critical factor in access and persistence, dropout rates are very low for the highest income quartile, and very high for the lowest income quartile.

College enrollment rates for high school graduates show some progress for all race/ethnic groups, but gaps persist between groups. During the late 1970s, gaps between race/ethnic groups had largely closed, but reopened shortly after that and have stayed more or less constant since. By income, enrollment rates for the highest income groups are high, but moderate- and low-income groups continue to lag behind.

Another factor that affects enrollment is academic preparation. Looking at test scores in math controlled for by income, even among the highest income groups, low scores in math correlate with low levels of college enrollment. Among students in the top third of test scores among the highest income group, only 16 percent fail to attend a four-year college directly out of high school. Among students in the lowest income group, but the top third of test scores, about a third fail to begin a four-year college education. Income is not just a byproduct of academic preparation.

College completion is affected by family income as well. Only about a quarter of those from the highest income group fail to complete college, while almost half of the lowest income group fail to complete college.

The international comparison is interesting. The Organization for Economic Cooperation and Development (OECD) countries, composed of 30 industrialized nations, cooperate in keeping data on transitions to postsecondary education. Other countries have had rapid increases in college attendance in the last 20 to 30 years. Between 1998 and 2001, the OECD average entry rate to postsecondary education increased so that it now exceeds that of the United States. In 1998, 44 percent of U.S. students started postsecondary education, while 40 percent of OECD

students did. In 2001, the OECD rate rose to 47 percent, while the U.S. rate fell, and the U.S. was only one of two countries that experienced a decline.

Data from the National Educational Longitudinal Study (NELS) shows that for students in the lowest income quartile, only 2.5 percent are able to achieve high scores on standardized tests, while for those in the top quartile, 15 percent are able to achieve high scores. Fewer than one percent of students for whom neither parents attended college are able to achieve high scores, while 6.6 percent of those who have at least one parent who attended college achieve high scores.

Compared to the other OECD countries, the average score for U.S. 8th graders in science is in the middle of the pack. Looking only at U.S. white student science scores, the U.S. would be fourth in the world, but looking only at U.S. African American and Latino students, the only country the U.S. outscores is Mexico. These facts have ramifications for how we perceive elementary and secondary school policy in the U.S., as well as social inequality generally. The U.S. has created a system that produces stunning examples of inequality very early in the educational system.

Dr. Carnevale: The facts of the matter are not in dispute; recent studies have shown beyond a doubt that both class and race are factors in the organization and functioning of the U.S. postsecondary education system. The intent of the HEA in 1965 was to eliminate this type of problem. The difference between 1965 and now is that the American economy was roaring between 1946 and 1972. The HEA was a grand gesture toward the discovery of poverty in America at a time when the Soviet Union presented an alternative social system in competition with the American system. After 1973, there was economic failure, and ever since, the U.S. has been fighting to maintain the status of the American middle class, while HEA goals and other legislation directed at poverty have largely disappeared.

Context is everything, which is particularly true with the HEA. Throughout the 1960s and into the 1970s, the country managed to retain alternative routes to the middle class through education toward professional training, or white collar jobs, and through established industries such as auto and steel, or blue collar jobs. The latter route has been lost. Higher education has become the preferred route to the economic shelter of the professions, and also the only route to middle class status. The change in status has changed the context of the discussion. Higher education is often judged by the amount of upward mobility it provides, having always been a sorting system rather than a leavening factor. Education is now seen as a barrier to opportunity, rather than an alternative means to opportunity. What is currently under discussion is not education, but jobs, which are integral to American culture and the political system.

The economic justification for higher education has gotten lots of attention and funding, but the system has not delivered on its promises to provide equality. As the data show, the American education system is increasingly segregated by race and income. The underlying industrial organization of this system is such that this will become more rather than less the case. In the 1970s, benefits were provided to the poor and middle class because the economy could not provide jobs. In the 1980s, benefits were reduced and the blue collar economy began to deteriorate. More recently, jobs are being moved off-shore, up to 350,000 jobs per year, most of which are held by individuals with a bachelor's degree or better. According to economic projections, the off-shoring can be withstood. However, projecting to 2012, the economy will be several million people shy of current production in graduate education, four to five million shy in bachelor's education, and a few million in associate degree education.

There is no doubt that American higher education has been a force for progressive change, particularly for women and increasingly for minorities. The point is that the standard for progressive change has gone up now that higher education is the only route to middle class status, which creates a profound problem in a system based upon merit, which inevitably sorts by class. Any standardized testing metrics for excellence in education are a laundering mechanism for class, with a strong correlation between high scores, achievement, and income class.

The primary conflict higher education faces is between merit-based opportunity and the broader American commitment to upward mobility and opportunity, which is unrelated to intellectual merit. Arguing for the latter will increasingly become arguing for jobs and career pathways. The difference between academic knowledge and the

kinds of knowledge that produce earnings, skills, and ability will have to become more explicit in the research, so that relationships between education and job prospects can be tracked.

Dr. Long: The HEA's original goals should be supported, despite American tendencies toward meritocracy, because the public returns are so high, including lower crime rates, lower rates of government dependency, better health outcomes, and the jobs and innovation that result from university communities. There are also other macroeconomic elements to be considered, such as outsourcing, the need for skilled labor, and global competition. The skills a college education confers in and of itself are multiple: interacting with others, learning how to work in teams, and learning how to learn.

As President Garcia noted in her keynote address, looking at numbers obscures people. Demographic trends show that we must get behind the numbers to identify and understand the populations we will be serving, such as the African American and Latino communities. If we care about the economic health of our country, we need to make sure we have the skills in our labor force to succeed.

There are five questions that need to be asked of access. The first is whether students are graduating from high school; up to a third of the population never graduates. The imperative for this segment must be to get them into the system by achieving a high school diploma later. The second question, whether students actually attend college, is the one upon which researchers currently spend the most time. The third question, to which institutions students are headed, gets very little notice. These can be broken down into two- and four-year institution statistics, but another way to do it is by the types of resources students receive when they attend college. Huge differences exist between two- and four-year institutions, and more selective institutions have more resources due to greater endowments and can provide better facilities and more financial aid. Four, whether students persist in college, will be discussed at length in session four of this symposium. The fifth question, whether students have continuing access to life-long learning, is impacted by labor market data that suggests skills with which an individual graduates in her twenties are not necessarily skills that same individual will need in her thirties and forties.

In conclusion, the research shows that grants have a greater impact on college access. Tallying the total amount of funds spent on student aid will not do as a sole government effort. Distinctions need to be made among the categories of grants, loans, tax credits, and work-study. Loans have potential long-term negative effects, having been shown to affect decisions students make about choice of major and job, as well as decisions to buy a home, get married, or start a family.

In order for it to be helpful, students have to know that aid exists. Reform efforts currently discuss complexity of forms and processes; however, potential recipients do not even know about some long-standing aid programs.

More focus is needed on whether the current system reflects reality. For example, the need-based system is designed around the traditional student, but up to 75 percent of students are nontraditional in some way, whether it is age, independence from parents, support of their own dependents, or commitment to existing jobs. Approximately 40 percent of students require remediation, and whether the current system provides support to these students should be studied. Another issue is that the average time-to-degree is longer than four years.

Finally, postsecondary institutions and businesses are potential partners in the struggle by governments to fund higher education. Recently, business has become much more vocal about higher education. These entities should work together to ensure that aid dollars give the most bang for the buck.

Session II: Intervening Early and Successfully

Presenting Author: Dr. Laura W. Perna, Associate Professor, University of Pennsylvania.

Respondents: Dr. William G. Tierney, Professor of Higher Education, University of Southern California, and Dr. Joel Vargas, Senior Project Manager, Jobs For the Future.

Dr. Perna: The purpose of early intervention programs is to help low-income and first-generation students develop, early in the education pipeline, the college-related skills, knowledge, aspirations, and preparation that are required for postsecondary enrollment and attainment. The HEA recognizes that financial aid is necessary, but not sufficient, for access to higher education, thus, the establishment of TRIO and GEAR UP. The difference between the two is that TRIO is a student-centered intervention, while GEAR UP is a school-centered intervention. Other intervention programs are sponsored by states, private organizations, colleges, and universities.

Despite the large number of operational programs, there is very little rigorous research that examines their effectiveness. Challenges to conducting research on early intervention programs include: differences among target populations, goals, and services offered; availability of data tracking activities and outcomes; and local operational contexts. The best available research on the impact of programs on low-income students has been sponsored by the U.S. Department of Education.

The federally-sponsored evaluations of Upward Bound (a TRIO component) and GEAR UP are longitudinal, with additional data collections and analyses currently in progress. To date, little is known about the effectiveness of GEAR UP. The first published report merely describes the programs established and implemented when students were in the 7th and 8th grades. The Upward Bound evaluation shows a small, but statistically significant impact on four-year college enrollment. Participation in Upward Bound is especially beneficial to students who have low educational expectations upon starting the program, who are both low-income and first-generation college students, and who are Latino. Although this is a rigorous and credible study, there are indications in its design that it may underestimate positive effects.

Another series of studies, conducted by Dr. Edward St. John of the University of Michigan, examines the Indiana 21st Century Scholars program. These suggest that early intervention can promote college access and persistence among low-income students. Compared with nonparticipants, participants in this state-sponsored program are more likely to: aspire to complete a bachelor's degree, apply for financial aid, and enroll in any postsecondary institutional segment, all within two years of high school graduation. Program participants are also more likely to persist from the first to second semesters of their first year in college.

A review of the literature suggests that improving college outcomes for low-income students requires addressing the following four areas: academic preparation and achievement, counseling and advising, family assistance, and financial resources. The literature consistently shows that academic preparation and achievement are important determinants of college enrollment, regardless of family income. Research suggests that most students do not receive adequate counseling at their schools. The GEAR UP report shows that one-on-one counseling services are not supplementing services students receive through their schools, but are addressing an important unmet need. Middle schools typically do not provide enough individual counseling. Research also shows that family assistance or involvement is important, but is less clear on the method of promoting effective involvement. Few early intervention programs provide financial assistance to students; nevertheless, research shows that high college costs and inadequate need-based grant aid restrict enrollment and persistence, even for academically-qualified low-income students.

This literature review indicates that successful early intervention programs can be characterized by five strategies: beginning early in the education pipeline, intervening comprehensively, adapting to build on the cultural strengths of participants, targeting populations that most need program services, and collaborating with multiple providers. Interventions that begin early recognize that enrollment and persistence are the results of processes that begin long before actual decisions are made. The Upward Bound study shows that participating individuals have higher rates of enrollment generally, higher rates of four-year college enrollment, and completion of more college credits. In terms of comprehensive intervention, the research demonstrates that multiple factors influence low-income student enrollment and persistence in college. By adapting and building on cultural strengths, the best programs recognize cultural integrity and the benefits of cultural difference. Targeting populations that most need services is critical because, as it is, only a small fraction of eligible students receive them. While research suggests the challenges of collaboration, it also indicates that collaboration provides a mechanism for leveraging resources, reducing

duplication of effort, maximizing the reach of services, ensuring a comprehensive array of services, and increasing the likelihood that students receive services across successive educational levels from middle school through college.

In order to utilize resources most effectively, the development of early intervention programs must be guided by research. While a small number of studies show the benefits of participating in early intervention programs, little is known about component and strategy effectiveness. At a minimum, programs should be documenting the characteristics of program services and tracking the duration and intensity of student participation. However, mandating this data collection increases program administrative costs, thereby reducing availability of resources for services. Therefore, research and evaluation should be a financially supported component of program design and implementation.

In conclusion, with the establishment of TRIO and GEAR UP, Congress has recognized that early intervention programs offer great promise for closing persistent gaps in college enrollment and degree attainment. However, at current levels of funding they serve less than ten percent of eligible students. As an important tool in attaining the goals of the HEA, legislative and financial support for these programs should be sustained, and research about them supported. And the effectiveness of these programs depends in part on the adequacy of need-based financial aid. Effective early intervention will increase demand for college by low-income students, so that demand should be sustained by adequate aid.

Dr. Tierney: Despite the need to do more research, school administrators are pushing for more action, not more study. In large urban high schools, the counselor to student ratio is 800 : 1, teachers are overloaded, parents are uninformed about college, and only ten percent of 12th grade students go on to college.

These administrators will act with or without additional research and information. For those constituencies that need to act on the problem of early intervention today, here are ten recommendations: begin talking about college in the 9th grade; create a college 101 course for 9th through 12th grade homerooms about college; create an additional ongoing course for writing and math that begins in the 9th grade and continues through graduation; keep discussions of college initiated in 9th and 10th grade focused on academics, not on financial aid; create peer groups with a college-going ethos for all out-of-school activities; create benchmarks and monitor for success, aiming for no less than a ten percent increase per year in college enrollment; recognize early intervention programs must work with the public schools and cannot stand alone; also recognize that improving college-going requires “high-touch” services; meet with all students during 12th grade about financial aid; create a summer bridge writing course; and create a culture of optimism and high expectations.

Dr. Vargas: Components of successful program design should be comprehensive, including guidance and counseling, parental involvement, and supplementary academic services. In terms of evaluating program effectiveness and success, metrics that indicate college access and success are paramount. These include the number of students who take a college preparatory curriculum and succeed in it. Students who are underrepresented in college are also underrepresented in this curriculum in high school.

My own dissertation research covered three early intervention programs in California, two of which were Upward Bound programs, and one that was modeled after the federal program, but state funded. These programs succeeded because they included program coordinators with strong formal and informal ties to college preparatory gatekeepers, such as teachers and administrators, and could involve the faculty with student support. Highly personalized conditions for learning were created; enduring connections among adult staff, students, and peers created an esprit de corps; and rigorous academic training that supplemented and often supplanted high school experience was provided.

According to research by Patricia Gándara of the University of California, Davis, even the best early intervention programs face long odds because students spend the vast majority of their time in underresourced, impersonal high schools that foster low expectations. Those low expectations are echoed at a state policy level, at which high school graduation requirements are not aligned with college entrance requirements.

As Dr. Perna noted earlier, personalized intervention programs are not of a sufficient scale to reach all those who need them. Given that, directions for program design and policymaking could include coupling model practices of intervention programs with college preparation courses in state policies, which would make college preparatory curriculum more broadly accessible. For example, the Indiana 21st Century Scholars Program components will be extended in part to all students due to the state's decision to require a college preparatory core curriculum for all students.

Scale is also an issue. One way to think about scale is to increase the supply of programs to meet demand. However, another method is to hardwire the best ideas from early intervention programs into the general middle and high school experiences. This might then look a lot like Early College High Schools (ECHS), which are designed to help students earn a high school diploma and up to two years of college credit simultaneously. ECHS and similar programs are located on college campuses, or bring college into high schools by giving students opportunities as they are academically ready. As programs help to secure access to financial aid, some ECHS programs eliminate some college expenses altogether by offering college courses at no cost to students and families. Federally funded Student Support Services do something similar by providing scaffolding for a personalized environment during the first two years of college. Federal and state policy could create demonstration programs by incorporating best practices into the redesign of urban high schools.

Session III: Lowering Work and Loan Burden

Presenting Author: Dr. Sandy Baum, Professor of Economics, Skidmore College.

Respondents: Dr. William E. Becker, Professor of Economics, Indiana University, and Mr. Thomas G. Mortenson, Higher Education Policy Analyst, Postsecondary Education OPPORTUNITY.

Dr. Baum: The available information does not indicate how much the prospect of loans and work prevent college enrollment; instead, it tells us about populations that do borrow and work. When examining enrollment gaps, one concern are the high-achieving, low-income students who are not enrolling in college. One reason this population is not going to college is inadequate grant aid.

In terms of the data on the impact of work and loans, there is more research on loans than on work. Work is a simpler story: among full-time students, approximately 30 percent are working at least 20 hours per week. Approximately 10 percent are working 35 hours per week. The available data on the relationship between work and persistence is hard to interpret, but it is clear that students who are working more than 20 hours per week may be more devoted to their job than their studies. Working more than 20 hours per week is detrimental to academic progress.

Turning to loans, the situation is much more complicated. Significant numbers of students borrow too much money, and many students do not attend college due to the fear of borrowing. Borrowing, however, is a reasonable investment, with a significant financial and social benefit. The average student graduating with a bachelor's degree is borrowing approximately \$20,000, which is fine for most students. The wrong approach to borrowing is to be concerned about borrowing in and of itself; directly after graduation, many students borrow as much or more money as the average loan burden to purchase a car, yet there is little concern about the price of automobiles.

The right approach is to identify the students who are borrowing too much, who are not in a position to carry debt burden, and whose educational opportunities are restricted because of the need to borrow excessively. For the most part, these are students from low-income families who have had negative experiences with credit, and who have difficulty repaying their loans. The most recent Nellie Mae student loan survey indicates that even if current earnings by borrowers in repayment are controlled for, along with the borrowed amount, those who were Pell recipients have much more difficulty repaying their loans. These are the individuals who have no other resources on which to fall back: parents who will help repay loans, pay housing costs upon college graduation, or pay for a car. These students are also more likely to be providing financial help to their families of origin.

A growing percentage of students are borrowing more than \$30,000, which is excessive. The answer is not to say that students need to borrow less; the fact is there aren't enough funds to ensure that all students could borrow less. Medical students have a median debt of over \$100,000, but most of them will be fine. The worry is that there are many low-income students who do not attend medical school at all due to the costs.

Another concern is student borrowing from private loan programs in addition to federal loan programs. The median total debt levels for students from private four-year colleges, and students from proprietary schools, are \$2,000 higher than the median federal debt levels. Private loans have less favorable terms than federal loans, and no subsidies. The provision of adequate federal loans for students is a concern.

Different groups of students borrow differentially. Students who borrow and who obtain associate degrees from public two-year colleges graduate \$6,000 in debt. Students who borrow and obtain associate degrees from for-profit institutions graduate \$17,000 in debt.

Solutions to these problems include the obvious, lower tuition and higher grant aid. Neither of these is a simple problem to solve; however, one way to focus attention on these problems is to better target student aid. Low-income students are more price-sensitive than other students, yet, increasingly, we are targeting aid toward those who can afford to pay. In 2003, the federal government issued \$7 billion in educational tax credits and deductions, which is rapidly approaching federal appropriations for the Pell Grant of \$13 billion. Many students who are getting tax credits are not low-income, but they are struggling to pay for college; for example, in the second income quintile, the enrollment rate is actually lower than in the bottom quintile. The question is whether money should be taken from moderate-income students to give to low-income students.

In addition, multiple aid programs should be better coordinated, and the federal government should leverage aid from other sources. There will not be enough grant aid to go around without expansion of the LEAP program, which encourages states to target their aid more effectively. In addition to simplicity, consideration must be given to time to degree completion and the work burden students carry. Too frequently, analyses of work and loan burden focus on single academic years, but the effects are cumulative. Finally, states must appropriate enough funds to state colleges and universities in order to hold their tuitions in check.

Affordability is the critical issue, represented by the net price of college; low-income students will never be able to afford the net price without significant subsidies. The solution has to be increased subsidies for low- and moderate-income students, and the subsidies must be targeted properly. Loans and work are fine, they need not be eliminated, but the programs must be designed appropriately such that debt burdens are not excessive for certain populations.

Dr. Becker: In terms of the work/loan burden, research is needed that avoids sample selection biases. The current research suggests that it is sufficient to simply prepare students for college, or, that if parents are highly educated, children will go on to college. Changing the parents' education level is not a policy option, but providing financial aid is. Dr. Baum's review makes the point that policymakers need to look at those who are college-qualified, but failed to attend; however, research tracks the college-qualified who did attend.

Mr. Mortenson: Three issues in the debate have yet to be covered. The first is the changing demographics of the U.S., which is particularly relevant to postsecondary education. Each year there are more and more poor children entering the higher education pipeline. According to school lunch program data, in 1993, 37 percent of all U.S. school children received free or reduced price school lunches, which means they came from families with incomes below 185 percent of the federal poverty level. Today, 43 percent receive free or reduced price school lunch. Projecting 18 years into the future, a growing share of the population will need a lot of financial aid, particularly grants, to get the education and training they need to become productive citizens. As a corollary to this point, Western Interstate Commission for Higher Education (WICHE) projections of high school graduates show that the white, non-Latino population, the most affluent, is about to start shrinking, while all minority populations are growing.

The second point, a growing decrease in college affordability, is derived from the National Postsecondary Student Aid Studies (NPSAS). These data show that dependent, full-time undergraduates who complete a year at the same

institution have experienced a drop in median parental income over the last 14 years by approximately 2 percent. This is after controlling for inflation. The EFC, over the same period, has declined by 11 percent. At the same time, the cost of attendance has risen by 27 percent in real terms. Between 1990 and 1994, financial need for this population is up to \$5,300 annually, in real terms. Of that increase, about \$1,700 has been met with grants, \$1,600 has been met with increased loans, \$125 has been met with increased work study, and \$500 with other forms of aid, which usually means parent PLUS loans. The total increase in aid still leaves these students short by \$1,400.

Looking at the financial aid packages for these students, there are more financial aid sources available than there is financial need. If the EFC, the loans, and all other forms of financial aid, are added together, that total exceeds by \$2,000 what the average student needs to pay college attendance costs. The problem is that aid is unequally distributed. The poor don't have enough, and the affluent have far more than they need. In the bottom income quartile, unmet financial need is approximately \$5,500 in 2004. In the second quartile, unmet need is \$3,400. In fact, the entire bottom half of the income distribution scale has difficulty paying for college. When tuition at private schools is taken into account, students in the third quartile are probably having substantial financial need as well. In the bottom quartile, the student work/loan burden in 2004 averaged approximately \$8,600, up from approximately \$5,100 in constant dollars in 1990. In the second quartile, the work/loan burden is \$6,600, up from \$1,700.

The third point is that, if it is true that financial need influences college enrollment behavior, the gaps in the financial aid packages above should be reflected in changes in enrollment data. The Pell Grant recipient data shows that, in the 1970s, when the Pell Grant program was better funded than today, about 60 percent of recipients were enrolled at four-year public or private colleges, down to 45 percent today and dropping rapidly. Pell Grant recipients are increasingly concentrated in two-year colleges and proprietary schools, the schools they can afford. The same kind of data is found in the current population survey. Low-income students have, over the last 35 years, made extraordinary gains in high school graduation and college continuation rates; that is, this low-income population is trying. Baccalaureate completion rates, however, have collapsed to half of what they were in 1980. In the 1970s, there were clear gains in baccalaureate completion rates. NPSAS data between 1990 and 2004 shows pronounced shifts in institutional segmentation across student family income levels. There is a migration of high income students from private four-year colleges to public universities, and a migration of low-income students from public universities to community colleges.

Session IV: Ensuring Persistence and Degree Completion

Presenting Author: Dr. John B. Lee, President, JBL Associates, Inc.

Respondents: Dr. David W. Breneman, Dean, Curry School of Education, University of Virginia; Ms. Colleen T. O'Brien, Director, The Pell Institute for the Study of Opportunity in Higher Education; and Dr. Edward P. St. John, Professor of Higher Education, University of Michigan.

Dr. Lee: The arc of the conversation about persistence has changed from the 1960s and 1970s around access and civil rights—that is, about who gets into college—to the current discussion about who gets out—that is, accountability and graduation rates. However, in terms of institutional segments and persistence, there are still equity implications. Low-income students who do enroll move more slowly through the system and are less likely to graduate. They are also borrowing more, and the benefits of college financing as an investment in future earnings is reduced for those who drop out. For example, 41 percent of low-income students entering a four-year college graduate within five years, compared to 66 percent of high-income students.

According to 1992 NELS data, among minimally-qualified high school graduates who enrolled in college within two years of graduation, there is a 20 percent variance between low- and high-income groups. The probability of degree attainment, however, also shows a more significant gap by income. When compared to all students entered in the NELS database, the students who left college without attaining a degree left with ten or fewer credits and tended to be disproportionately low-income. Low-income students are more likely to drop out earlier in the process, and, if they do complete, are more likely to attain a certificate or associate's degree. High-income students generally attain a bachelor's degree.

Among students who left school with at least 60 credits, but no degree or certificate, the highest income groups have approximately the same share as the very lowest income groups, both relatively small percentages. Statistical modeling of dropouts is successful with first year dropouts. As those models are used in subsequent years, however, they explain less and less. Those students who drop out later in their career are doing so for reasons that do not fit the first year dropout models. This may be due to the fact that many of the lowest income students have already left. So, income has a big effect on who gets a degree, which degree is pursued, and whether or not the degree is attained.

The more diverse the incoming college population is, the more important persistence becomes. JBL Associates is currently working on the Achieving the Dream project, funded by the Lumina Foundation, which tracks 54 community colleges across the nation in order to develop persistence strategies. Completion rates are abysmal in most of these cases. The project goal is to try to think differently at the institutional level.

Talking about persistence and attainment rates is both a research and a political conversation. Institutional graduation rates have become a metric standard, which does not please community colleges. Clifford Adelman's argument is that student mobility data, which shows dropouts, stopouts, and transfers, indicates that system graduation rates should be considered, not institutional graduation rates. However, there is currently no way to track students through systems. Most of the research looks at persistence, usually semester-to-semester, or year-to-year. More people feel comfortable with that as a research issue, but the political discussion is about who gets a degree, which is related to equity. Institutional graduation rates have been stable at 55 percent for a long time, but system graduation rates are at 63 percent. This is fine from a political perspective, but from a research perspective, the problem is that attainment is wrapped up with affordability, academic preparation, and income.

The research discussion is divided into two groups: those who say persistence and degree attainment is relative to academic preparation, whereas those who say it must be relative to other factors since so many are prepared for college but do not enroll. Both issues have been raised at this symposium, and both must be addressed. They can be simultaneously addressed through the application of expected value theory.

Expected value theory says that if an individual has a 50/50 chance to win \$100, he or she shouldn't bet more than \$50 because rewards should be equal to or greater than what is put at risk. This is applicable to the decisions students make about college enrollment. Persistence has to do with how people resolve expected value theory relative to their education. In other words, how people choose to hedge their bets can be a risk estimation model for predicting student outcomes.

Students who go through a traditional high school curriculum have a variety of indicators about their likelihood to succeed in college: grades, college application tests, and type of curriculum. Students must then consider college costs, both opportunity cost or loss of income, and direct cost or net cash needed. If a student's indicators of his or her probability to succeed in college are low, the potential rewards of an education will be discounted. Thus, the student will be unwilling to invest as much as another student who has better indicators. The low ability students might hedge their bets in such a way that would reduce their chances of success, by postponing college entrance, attending college part-time, attending full-time while working, living at home, or attending a community college. The question is whether that is a realistic bet on the part of the student, or whether the student simply has inadequate information, an unrealistic assessment of obstacles, or a lack of understanding about outcomes.

Dr. St. John has been working on a similar idea with his research on financial nexus, and is approaching a similar idea in terms of social/class differences. However, expected value theory allows an ability to correlate the academic/financial relationship in college enrollment decisions. If academic indicators can be addressed, and the student is encouraged to believe he or she is going to succeed, then that student will be willing to make a bigger financial investment in college. If college costs are simultaneously reduced, that student is much more likely to attend full-time at a residential college, which institutional segment offers the greatest chance for degree attainment.

Access can be discussed as a zero-to-one compensation. At zero are those who never think about college enrollment. Some people think about it, but choose not to go, which is a classic approach/avoidance conflict. The late applicants,

then, are a marker for dropping out. Another way to look at it is that inadequate financing forces students to make bets that are less than optimal for their potential success. This includes various factors in student integration, such as being on campus, spending time with peers, and others that affect persistence.

A review of the literature on aid packages, including research conducted by Dr. Heller, shows that Pell Grants have a positive effect on the persistence of low-income students. Work-study can be a powerful tool because it allows students to be engaged on campus, which increases persistence, but not many students receive it. Student aid makes a difference and has a positive effect on persistence, but it is not the sole factor. If expected value theory is applied, borrowing might be seen as a kind of student confidence in a successful outcome, but that is not always the case. Need-based grants are neutral, bringing at-risk students to the same level of success as those without comparable risk factors, which is a positive effect in the end.

In the Achieving the Dream project, a review of 62,000 community college students shows that, of the 2002 cohort, 63 to 64 percent are still enrolled two years later. This cohort includes everyone who entered the school, regardless of enrollment type or status. Pell Grant recipients in this population persist at the same rate as the general population, despite the fact that they have negative indicators in terms of persistence, such as having low grade point averages and credit accumulations and being more likely to receive remediation.

In conclusion, it would be helpful to re-conceptualize the division between academic and financial decisions, and see them as related. If expected value theory is accurate, if a student's sense of risk is greater at the beginning of education, then perhaps grants should be front-loaded such that by the time a student is a junior he or she has a sense of risk reduction and is willing to assume more of the burden of college costs. But the highest need students are attending institutions with the fewest resources, which does not reduce a student's sense of risk, and, thereby, affects persistence. At-risk students, in terms of aid policy, are more likely to succeed if they receive grants and participate in work-study, or simply hold a campus job. If learning becomes a social event, persistence is also enhanced.

Dr. Breneman: In the 1970s, financing was considered the main issue with student aid, and economists were the primary researchers. Today, research focuses much more on anthropologic aspects of student college-going culture. In the 1970s, access and choice were the key words; now persistence and degree attainment are key words. Dr. Lee's argument that academic preparation and financing are integrally connected is a strong one.

The following categories, from the National Center for Public Policy and Higher Education's *Measuring Up* reports, are significant: preparation, participation, affordability, persistence, and external benefits to society. From 1992 to 2002, there is clear evidence that, within the category of preparation, students have improved in most states. Participation, with exceptions here and there, remained flat. Affordability has declined significantly.

Among the most striking recent reports are the 50 state education pipeline charts from the National Center on Higher Education Management Systems (NCHEMS), which focuses on persistence and retention by following 100 9th graders, determining how many graduate from high school, how many enter college, how many persist from year-to-year, and how many graduate from college within six years. The report has had a powerful effect on the policy community because the data is not encouraging. Close to 30 percent of these students never complete high school.

The controversial notion of the student unit record system is important; without something analogous to that, there will be no method of tracking students, especially as they move from school to school. While that is not included in HEA reauthorization, perhaps the idea will be revisited.

Expected value theory was argued about a decade ago in terms of the Pell Grant program. The argument was that with the Pell Grant program's funding flat-lined, it should be front-loaded into the first two years of college because a student uncertain of their academic ability would be less likely to go to college if they needed to borrow too much early on.

William Bowen and colleagues make a strong case for a socioeconomic status (SES) type of affirmative action, which does not supplant traditional affirmative action. Their research shows that many highly-qualified students from first-

generation and low-income families are not receiving admissions help. The University of Virginia (UVA) and other institutions are taking steps to try to correct that. UVA has developed Access UVA, which provides a tuition-free education to anyone admissible to UVA who comes from a family with income at or below 200 percent of the poverty level. Even with such a generous offer and extensive media publicity, the program is not attracting tremendous numbers of applicants. Cultural barriers seem to be impacting these types of programs.

Ms. O'Brien: It is striking that the community needs to make some of the same arguments about financial aid that were made 40 years ago when the HEA was established. In terms of retention, original arguments focused on blaming the student. Now the discussion has evolved to focus on the responsibility that we have to help students succeed and a realization that a one-size-fits-all model will not work.

One factor to take into consideration with retention is determining what types of environments at an institution help low-income students, particularly Pell Grant recipients, do well. A lesson learned is that it isn't necessary to raise standards to raise graduation rates; there are plenty of well-qualified low-income students available. Dr. Long's comment about the institution's role in adding value to a student education is well-taken. More should be done to recognize the 'value-added' role played by institutions, recognizing the contributions that institutions make when they start with students who are more difficult to educate.

Successful retention efforts involve the entire institution, from the president to the custodians. Faculty are the key to retention, and faculty have been slow to realize this. Many faculty still make the argument that if they only had better students, they could make more progress. However, you fight the retention war with the students you have, not with the students you might wish to have. Quality interaction with faculty, not just teaching assistants, is important. Advising is also important, but underfunded at every step of the education pipeline.

Changing how developmental education and remedial classes are conceptualized is also significant. Students who have been admitted to an institution based on their potential, not actual performance levels need to have remedial work incorporated into the body of their curriculum. This is a method of investing time in them. If these students do poorly in remedial courses, they will not thrive in their other coursework and are at risk of leaving the institution. These courses should be handled in such a way that students and faculty do not look down upon them. Programs like Student Support Services are also critical to encouraging first-generation, low-income college students.

Measuring the retention of low-income students is difficult for many reasons. One is that institutions do not have to report such statistics. Another is that many attendance patterns students follow are the very behaviors that put them at risk: enrolling part-time, working while enrolled, etc.

Finally, socioeconomic affirmative action, as referenced by Dr. Breneman, might lead to some public policy solutions. The partnership between students and institutions engendered by that type of admissions assistance is the very thing needed in terms of retention support. Federal leveraging of state solutions might also work. Reinforcing and rewarding the commitment of low-income students is also important; even if these students attend only part-time, and stop out frequently, for many that is a form of persistence. Reviewing the part-time aid issues and the student work penalty would be policy solutions to that issue, if the solutions are marketed as increasing retention. On the institutional side, it is important to refrain from punishing institutions that are taking in a lot of low-income students and attempting value-added education.

Dr. St. John: Three problems that the emerging research and initial conversation are uncovering are as follows. The first is the omitted variable problem, and is relative to Dr. Becker's presentation. Historically, economists have left preparation out of their equations, and that may have led to biased estimates on price response. Now educationists have inserted some other variables that may have led to biased estimates of the effects of preparation, especially given that economics influences education. We need a more balanced approach in our research.

The second problem is a selection of variables problem, or the "blind eye" problem. The simplest example is the relationship between income and parental education. Variables that operate in tandem are often separated in

research models, leading to a lack of understanding or discounting of their original relationship. Again, balance is necessary.

The third is a selection bias problem, which Dr. Lee's presentation explicated very well. There are variable findings of the effects of student aid on persistence. Economists are trying to adjust for this by placing need analysis and merit variables in a simultaneous equation, and then estimating the facts of aid. The integration research suffers from the same selection problem. The biggest predictors of whether students can integrate socially and academically are whether they have the time, whether they work, etc.

Recommendations to the Advisory Committee include the following. First, the Committee is on the right track with its inquiries into persistence and attainment. The Committee should think more seriously about the data that has already been collected, and also about the new freshman databases that are coming online next year. The relationship of work to opportunity is the key research area. Second, while the Committee is trying to understand the financial barriers to opportunity, it must continue this conversation with policymakers and researchers. The best evidence of the impact of the Committee's work came from Senator Reed's presentation, which noted that the Committee's work was used as a blueprint for reauthorization.

Advisory Committee on Student Financial Assistance

80 F Street NW
Suite 413
Washington DC 20202
202-219-2099 / acsfa@ed.gov
www.ed.gov/acsfa