



College-Ready Students, Student-Ready Colleges

*An Agenda for Improving Degree
Completion in Postsecondary Education*

Louis Soares
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About Progressive Growth



The Center for American Progress offers a fiscally responsible investment plan to:

- *Grow our economy* through the transformation to a low-carbon economy and leadership in innovation, technology, and science.
- *Recreate a ladder of economic mobility* so that Americans may make a better life for themselves and their families, and America may be a land with a thriving and expanding middle class prospering in the global economy.

An overview of the entire plan can be found in:

Progressive Growth

Transforming America's Economy through Clean Energy, Innovation, and Opportunity

By John Podesta, Sarah Rosen Wartell, and David Madland

Other reports detailing aspects of the challenges and recommendations in the *Progressive Growth* plan are:

Capturing the Energy Opportunity

Creating a Low-Carbon Economy

By John Podesta, Todd Stern, and Kit Batten

A National Innovation Agenda

Progressive Policies for Economic Growth and Opportunity through Science and Technology

By Tom Kalil and John Irons

Opportunity and Security for Working Americans***Creating the Conditions for Success in the Global Economy***

By Louis Soares, Andrew Jakabovics, and Tim Westrich (*forthcoming*)

Virtuous Circle***Strengthening Broad-Based Global Progress in Living Standards***

By Richard Samans and Jonathan Jacoby

Responsible Investment***A Budget and Fiscal Policy Plan for Progressive Growth***

By David Madland and John Irons

Other reports developing these and other new ideas will be published as part of the *Progressive Growth* series of economic policy proposals from the Center for American Progress. The first were: *Serving America: A National Service Agenda for the Next Decade*, by Shirley Sagawa, published in September 2007; *New Strategies for the Education of Working Adults*, by Brian Bosworth, published in December 2007; *Investing in Social Entrepreneurship and Fostering Social Innovation*, by Michele Jolin, published in December 2007; and *College-Ready Students, Student-Ready Colleges: An Agenda for Improving Degree Completion in Postsecondary Education*, by Louis Soares and Christopher Mazzeo, published in August 2008.

Executive summary

Success in today's knowledge and innovation economy depends on education and skills development beyond high school, generally via the completion of a postsecondary education credential. Postsecondary education is correlated with higher personal incomes, productivity increases, economic growth, and increased civic participation and quality of life. And in today's economy, an effective postsecondary education system is a national competitive advantage. Built on a foundation of student empowerment, adaptable colleges and universities, and enabling public policies, an effective postsecondary education system delivers quality, flexible learning experiences leading to credentials that are a foundation for personal growth and career success.

Yet despite the growing importance of postsecondary education to our economic well being, America is falling behind on this crucial public policy issue. While the proportion of individuals enrolling in college in the United States has grown since the 1970s, the proportion of students receiving diplomas has declined slightly during the same period.¹ Currently, fewer than 60 percent of students entering 4-year institutions earn bachelor's degrees and barely one-fourth of community college students complete any degree within six years of college entry.² According to the Organization of Economic Cooperation and Development, in 2005, the United States now ranks 10th in the college attainment of its 25- to 34-year-old population, down from 3rd in 1991.³ The OECD also notes that the United States now has the highest college dropout rate among developed countries.⁴

In addition to the stagnation in degree production, employers are reporting that postsecondary graduates are not ready, with the requisite skills, for their roles in a knowledge-intensive, innovation economy. Technology use and team-based service delivery and practices necessary for innovation are compressing work and learning, requiring that students develop applied skills faster and are able to learn continuously on the job. Employers report that over 40 percent of graduates don't have the necessary applied skills for success. The transition between work and learning is both an acute and ongoing challenge for today's students.

What is driving these poor results in higher education? In March 2008, the Center for American Progress held a forum on higher education to explore this question. CAP commissioned six papers to study persistence and success in postsecondary education and convened over 40 policy experts, academics, and government leaders to discuss solutions. This policy agenda is based on the paper findings and proceedings from the forum, CAP's proposed economic strategy for a new administration—the "Progressive Growth" series—and the extensive work of our education team on K-12 policy issues.

We believe America's higher education system has a readiness problem. Students are not ready for college, colleges are not ready for students, and public policy, long focused on making college more affordable, is not yet ready to take on the complex challenge of ensuring people successfully complete college degrees and transition into rewarding careers, as opposed to just getting in.

Students, whether because of a lack of academic preparation in high school; a lack of flexible financial tools to meet their education/work/life needs; or a lack of reliable information and support in making wise college decisions, are not ready for college, and wide disparities in readiness exist along racial, ethnic, and socioeconomic lines. In short, **as customers, America's students are not now ready to fully and successfully participate in and manage their postsecondary experience.**

America's colleges, in particular its public two- and four-year institutions, are being asked to educate a far more varied group of college goers. Students come to college with widely divergent experiences in secondary schools and are more mobile, older, and more likely to combine work and school than ever before, thus **reshaping the demand for postsecondary education with a drive for more customized experiences.** With funding decreases and regulations and systems designed to meet a different era's student needs, postsecondary institutions are not now student ready. **As suppliers, postsecondary institutions are not fully ready to deliver quality, flexible education that leads to college and career success.**

Lastly, while 40 years and billions of dollars of federal investment in making college more affordable via federal student financial assistance has helped millions of Americans, in particular 18- to 21-year-olds, gain access to college, federal policy has yet to focus sufficient attention **on whether those with access actually complete their degrees.**

To regain America's global leadership in postsecondary education, especially among young adults age 25 to 34, the Center for American Progress recommends that federal policy be enhanced with a stronger focus on postsecondary completion and student and college readiness.

- College-ready students are prepared learners and empowered customers with reliable information and support in high school and college and flexible financial assistance, able to design a college experience leading to degree completion and successful education-career transitions.
- Student-ready colleges are those with faculty ready to teach a diverse group of young adults, measure learning outcomes to improve performance, and adapt practices and organizational structures to ensure that all students succeed.

To improve student and college readiness and degree completion, federal leaders must first set a bold goal of increasing the number of young adults with a postsecondary credential to 50 percent in 20 years. Roughly, this means producing 220,000 more degrees than we currently do each year.

This ambitious goal will require us to rethink our business models for postsecondary, secondary, and adult education as well as workforce development. Broadening the pathways students use to get a degree and managing these systems and providers as a network, rather than a pipeline, are the keys to success.

This will require engaging leaders in at the federal, state, and local levels; businesses; unions; two-year and four-year institutions; and community-based organizations across jurisdictions with a focus on creating public value in the form of enhanced human capital.

We can achieve this goal by focusing on the following six readiness strategies:

College-ready student strategies

1. Invest in preparation for college in high school and beyond.
2. Provide more flexible and transparent financial assistance through the federal student aid system.
3. Help develop better and more widely available information about college quality.

Student-ready college strategies

1. Build capacity to help institutions change practices and develop new approaches to improving student success in college.
2. Create more seamless alignment across secondary and postsecondary education and with other systems.
3. Enhance accountability by measuring learning and success in schools and colleges.

Federal leadership

Congress has already shown leadership on increasing access to postsecondary education by passing the Higher Education Opportunity Act of 2008. Some policies included in this paper have been addressed by Congress, including increasing Pell Grants for our neediest students and making them more flexible; simplifying the federal financial aid process; improving K-12 teacher preparation; and enhancing TRIO and GEAR UP. These are all powerful steps in enhancing the effectiveness of our postsecondary system.

Last year's release of the U.S. Secretary of Education's Commission on the Future of Higher Education report, commonly known as the Spellings Commission, also demonstrated leadership by focusing federal policy dialogue on systemic issues in our postsecondary education system. The commission's report calls for dramatic changes to the current higher education system—such as standardized testing to measure student achievement, federal monitoring of college quality, revamping the financial aid system, and controlling the rising cost of tuition.

Changing the system to focus on degree completion through readiness is a long-term process that will most likely involve several cycles of existing legislation reauthorization as well as new legislation. Thus federal leadership, in support of degree completion through readiness, should be continued in a new administration. Given the importance of an effective postsecondary education system to economic competitiveness, the National Economic Council could take the lead by championing a cross-agency process in which the secretaries of labor, education, and commerce work to leverage resources across enabling legislation including the Higher Education Act, the No Child Left Behind Act, the Wagner-Peyser Act, and the Workforce Investment Act. Other programs such as the National Institute of Standards and Technology and the Fund for the Improvement of Postsecondary Education should further the strategies in this paper by investing in College-Ready Students and Student-Ready Colleges. The reauthorization of NCLB could provide a catalyst for moving parts of this long-term discussion forward.

Twenty-first century challenges call for new concepts of leadership. A decentralized supply chain for delivering postsecondary education should be managed using network management techniques. Federal leaders focused on optimizing the public value of human capital will leverage diverse stakeholders including state officials, postsecondary leaders, businesses, unions, and community-based organizations to help generate customer value in the form of customized learning experiences across institutions. This will require that federal policymakers enhance their traditional roles

as program funder and rulemaker with that of a network orchestrator.

Investing in college-ready students and student-ready colleges to increase degree completion is a long-term endeavor, requiring student empowerment and systems change. With this paper, CAP seeks to lay the initial foundations for policies that will empower students to design customized learning experiences and for universities to expand their capabilities to deliver these experiences.

The remainder of this paper makes a case for investing in student and college readiness; describes the nature of our aggressive goal; presents an alternative view of the changing shape of PSE demand; looks at current access policies in light of changing demand; proposes a network model for managing the postsecondary education system; recommends policies to facilitate degree completion given the new demand; and speaks to the fiscal and economic benefits of investing in postsecondary education.

The case for investment: individual, economic, and social benefits of enhancing postsecondary attainment

An effective postsecondary education system that connects young adults to quality education, provides flexible learning experiences, and helps them transition between work and learning is critical because it supports individual and national economic success as well as buttresses social well being and capital.

Benefits to young adults

As a young adult considers the decision of whether or not to invest in education, human capital theory suggests that they will measure the costs and benefits of the decision and make a rational choice. While education adds to quality of life, improves health outcomes, and empowers one's civic participation, a key factor in the decision to invest current time, effort, and money in postsecondary education is the potential for increased future earnings.

The wage data do show that in the past several years the advantages of college relative to high school attainment have leveled off. However, they remain substantial. The table below includes hourly wages by education from 1973 to 2005. Two observations are worth noting. First is the absolute difference between college and high school education. Notice that a college graduate earns almost twice (\$25) what a high school graduate earns (\$14). Second, while the ratio has leveled since the year 2000 the historical trend is still upward with the wage ratio of college to high school coming in at 1.74.⁵

In 2006, the average annual income for a high school degree was \$30,072; an associate's degree averaged \$39,846; and a bachelor's degree \$56,897. The income premium for postsecondary education ranged between \$9,000 and \$25,000.⁶

The benefits of education can be showcased further when we take into consideration other gains of employment such as health and retirement benefits. Research demonstrates that when we take into consideration other forms of compensation such as access to health insurance or retirement plans, or differences in job amenities, these accrue to the more highly educated.⁷

In addition to wage data, occupation projections support the individual decision to invest in postsecondary education. According to the Bureau of Labor Statistics, the U.S. economy will produce 15.6 million net new jobs between 2006 and 2016. Nearly half of those jobs will require postsecondary credentials. In fact, jobs requiring postsecond-

HOURLY WAGES BY EDUCATION IN 2005 DOLLARS

YEAR	HIGH SCHOOL	SOME COLLEGE	COLLEGE	ADVANCED DEGREE
1973	\$14.39	\$15.50	\$21.00	\$25.38
1980	13.92	15.08	19.86	24.14
1990	13.25	15.13	21.37	27.41
2000	13.94	15.85	24.35	30.79
2005	14.14	15.89	24.67	31.49

Source: State of Working America

any education will grow by 17 percent—nearly double the rate of 8.8 percent for jobs that do not require advanced education. Eighty percent of the 30 fastest-growing occupations—including allied health, computer-related, environmental science, and social and human services—will need a highly skilled and educated labor pool to draw from to remain competitive in a global market.

It is clear that there remains a substantial advantage to attending postsecondary education—from vocational certificates to two- and four-year degrees—relative to ending education with a high school degree. A young adult would be making a sensible decision to invest in further education.

Economic benefits

Economic growth and productivity gains have been closely linked with education attainment by much of the economic development literature. Going forward, this connection is likely to grow more acute as technology-driven innovation becomes a key to competitive advantage for the United States.

Productivity and growth

Education in the 20th century has been a major contributor to productivity gains in the United States, and economic growth

has been tightly linked to increases in education attainment. A congressional Joint Economic Committee report in 2000 found several estimates of the effect of human capital gains on economic growth in the range of 10 to 25 percent.⁸ A more recent study concluded that the direct effect of educational advances accounted for about 22 percent of the 1.62 percent average annual increase in U.S. labor productivity from 1913 to 1996. That study and others also underscored the indirect contribution of educational advances in fueling innovation and the adoption of new technology.⁹

This national snapshot of the contribution of human capital to economic growth is further reinforced by data that demonstrates the benefits of education attainment to regions within the United States. Regions with above average numbers of college graduates experience faster growth and higher per capita incomes. Paul Gottlieb and Michael Fogerty of Case Western Reserve University's Center for Regional Economic Issues in Cleveland compared income and productivity growth in the period of 1980 to 1998 between metropolitan areas with the highest proportion of college graduates and those with the lowest proportion. The 10 regions with the most college graduates experienced per capita income growth of 1.8 percent annually during those years, while the 10 regions with the fewest college graduates saw an annual income growth of 0.8 percent.

Gottlieb and Fogerty also found that the impact of the growth differential is evident in the widening gap in per capita income between the two groups of regions. In 1980, the average per capita income in the most educated metropolitan areas was 12 percent above the U.S. average, while average per capita income in the least educated regions was 3 percent below the national average. By 1998, the most educated regions had average incomes 20 percent above the national average, while average incomes in the least educated regions had fallen to 12 percent below the national average. Moreover, the most educated regions enjoyed productivity growth of 0.5 percent per year, compared with growth of 0.1 percent for the least educated cities.¹⁰

A key finding of Gottlieb and Fogerty's work is that college-educated workforces are more adaptable to economic shocks and change, making a region more able to recover and move forward after disruptions.

Innovation

The historical impact of education on growth is magnified by innovation as a competitive necessity. Innovation—or the generation and application of new knowledge to developing new products, processes, and services that consumers and society find valuable—is a key driver of productivity and growth for the United States and most developed countries. Why? As increasing numbers of developing countries with low-cost production and technology-enabled access to global supply chains enter markets, businesses in developed countries, each in their own way, need to migrate their business models toward innovative work by “creating new markets, increas-

ing choice and value to customers and innovating on a global basis.”¹¹

The process of creating new markets involves solving complex challenges our economy and society face: clean energy production; security, health and well being for an aging population; and innovative technological supports for education. All of these provide ample opportunities for high-value products and services. Because of the complexity of these challenges, the nuanced mix of technical knowledge, business acumen, and creativity involved in a business competing on innovation is beyond many developing countries for now.

This complex mix of applied skills favors individuals with postsecondary education but not just research scientists and engineers, as one would expect. Ten years of research on “the way innovation happens demonstrates that the process is multi-disciplinary, collaborative and democratic.”¹² As it turns out, building a hydrogen car or a new online banking service or a new store layout requires scientists doing basic research; engineers applying that research to new hardware and software; frontline workers providing input about workflow and delivering value-added customer interactions; and even customers to provide feedback during development.

The economy is already creating jobs that are “innovation-enabled” for working Americans. These are jobs in which a new technology enables a blue-collar or service worker to leverage technology, expert thinking, and communication skills to add value for customers. Skilled auto technicians, for example, will see growth in employment opportunities above the national average through 2014. Usually, this job requires a postsecond-

ary vocational award. The median wage is \$33,800 but is already going as high as \$56,000. The higher wage earners combine knowledge of the latest diagnostic tools and automotive technology with expert thinking and communication skills to solve customer challenges.

On a broader scale, we are seeing firms develop new organizational models that promote incremental innovation from frontline employees. Sometimes called “high-performance workplaces,” these business models are spreading, putting upward pressure on the demand for educated workers, especially at the community college level. The concept is that an educated workforce at the point of production can contribute numerous “smaller innovations” and improvements that taken together add up.

The most powerful example of this point is the Toyota Production System. Toyota, as is well known, is the world’s most successful car company and in large measure its success is due to an accumulation of process improvements that originate on the shop floor. Recent observers likened the role of production workers to a “community of scientists.” This is because the employees are encouraged to identify both problem areas and possible process changes and then develop methods to systematically test their hypothesis about the impact of possible improvements. They work in teams with fellow employees and supervisors in moving this style of improvement forward. The consequence is an accumulation of good ideas that add up to very substantial efficiency gains.¹³

Forty percent of employers that implement these practices report an increase in skills requirements at the community

college level. The core practices of high-performance work have been expanding in the U.S. economy since the mid-1990s. A recent study shows adoption by 40 percent of firms.¹⁴

One last aspect of economic competitiveness and education in the 21st century is worth noting. The occupations and business models illustrated above require continuous learning, on the job and in formal settings. As such, work and learning are becoming parallel as opposed to sequential events.¹⁵ Furthermore, the timeframe for employees to apply new and synthesized knowledge is being compressed. Recent surveys of senior human resource managers indicate adaptability and applied skills such as critical thinking, IT application, teamwork, creativity, and diversity are the most likely to ensure workplace and business success in the coming years.¹⁶ The same surveys found an average of 40 percent of postsecondary graduates deficient in these skill areas.

Productivity growth, innovation, and new organizational forms that compress work and learning are all driving demand for skills associated with postsecondary credentials at all levels of the workplace. Business and postsecondary leaders need to bridge the gap between their two worlds to begin to make college credentials more employment ready and workplaces more learning friendly.

Social benefits

Returns to higher education for the United States do not only come in the form of increased incomes and productivity. Social returns on investment in higher education take different forms including increased civic activity and political

involvement, increased tax collections, and even better health outcomes. We elaborate on a few key items here to complete our argument as to the benefits of broader investment in higher education.

Data from the Bureau of Labor Statistics show that 45.6 percent of four-year college graduates participate in volunteer activities, compared to only 21.7 percent of high school graduates (34.1 percent for students with some college).¹⁷

Evidence is strong that participation in civic life varies by educational level. For example, one study found that 79 percent of persons aged 25 to 44 with a bachelor's degree voted in presidential elections compared to 67 percent of those with some college, 50 percent of high school graduates, and 27 percent of those with less than a high school education.¹⁸ Higher levels of educational attainment are also positively related to group membership, attitudes toward free speech, and newspaper readership.¹⁹

A recent study on the fiscal impacts of college attainment documents the positive effect higher education has on government tax revenues and personal incomes. In addition, the article explains that higher education tends to reduce the amount of Social Security, welfare, Medicare, Medicaid, and unemployment compensation payments.

College graduates generally pay much more in taxes than those not going to college. Government expenditures are also generally much less for college graduates than for those without a college education. Indeed, over an average lifetime, total government spending per college degree is negative. That is, direct savings

in post-college government expenditures are greater than government expenditures on higher education. In fact, the overall fiscal benefits are at least 7.5 times greater than the public investment in college education. Not only is the full cost of public investment in college students negative; it is negative 6.5 times over.²⁰

There also many social benefits that accrue directly to individuals. Consider the following:

*"People who graduate from college enjoy greater social status in the form of more prestigious jobs. First generation college graduates experience a particular enhancement in personal status as leaders within their families. In addition, the ability to change jobs or to readily move to a different location is related to educational attainment because college graduates tend to be able to save money at higher rates and can more easily find other employment when they are not happy with their work conditions."*²¹

*"Finally, an important correlation exists between educational level and health. At every income level and age group, people with bachelor's degrees report that they are healthier than those without."*²²

These social returns confirm the positive case for investment in public education. College graduates pay substantially more taxes and cause significantly less government spending than high school graduates without college. Thus, the full cost of creating universal higher education is much lower than the initial government outlay for it. In other words, the net fiscal cost of a universal higher education program is much less than its gross fiscal cost, and the appropriate notion of the full cost to American taxpayers is the net cost.

A bold goal provides a platform for systems change

Increasing the number of 25- to 34-year-olds with postsecondary credentials to 50 percent by increasing student and college readiness is a game-changing goal because it will require changes in cultural norms of college-going and postsecondary systems.

As baby boomers transition out of the workforce in the coming decades, America will be losing its most educated and most productive workers. Twenty-five to 34-year-old young adults, on the other hand, are just at the beginning of their productive years with a lifetime in which to both contribute new skills and continue learning to enhance productivity.

Further, to increase the number of credentialed 25- to 34-year-olds requires engaging a diverse group of young people toward the goal of postsecondary achievement. We must engage 16-year-old high school dropouts as well as 32-year-olds with some college but no degree and the continuum in between.

Fortunately, we have a large potential pool of graduates: approximately 48.8 million. (See table.)

POTENTIAL POOL OF GRADUATES	
AGE/EDUCATION GROUP	NUMBER
16- to 24-year-olds not enrolled in school, no high school diploma ²³	2.3 million
18- to 24-year-olds who are high school graduates with no college education	8.6 million
18- to 24-year-olds with a high school degree and some college	9.9 million
18- to 24-year-olds who have 11th grade education without a high school diploma or equivalent	3.8 million
25- to 34-year-olds who have a high school diploma, and some college	7.2 million
25- to 34-year-olds who are not high school grads with no college	5.6 million
25- to 34-year-olds who are high school grads with no college ²⁴	11.4 million
Total	48.8 million

Based on the OECD indicators, America currently ranks 10th among developed countries for populations ages 25 to 34 with postsecondary credentials with the breakdown as follows:

- 9 percent of the total population with the equivalent of an associate's degree or technical certificate
- 30 percent of the total population with the equivalent of a bachelor's degree
- For a total of **39 percent with postsecondary credential**

A back-of-the-envelope calculation can help us to understand the order of magnitude of the challenge. According to the 2000 census, there were roughly 40 million 25- to 34-year-olds in the population. At 39 percent, this is roughly 15.6 million degrees. Moving to 50 percent of the 25- to 34-year-old population would mean an increase to 20 million college degrees, with an additional 4.4 million degrees conferred.

Recent simulations regarding the college-high school wage differential suggest that even this significant a bump in degree production, over the long term, would not overwhelm the wage benefits of postsecondary attainment.²⁵

The systemic changes necessary to fully engage 16- to 34-year-olds in college-going and for postsecondary institutions to develop new organizational forms is a long-term proposition, so we set a modest goal of achieving the increase in 20 years. Moving from 15.6 million to 20 million degrees is an increase of 4.4 million. Over a 20-year period this means producing an additional 220,000 degrees per year. (Given that 2.7 million degrees were conferred in 2006 and that the rate of increase in recent years has been 3 percent, our goal of an additional 220,000 per year is a material bump in the number.)

Enhancing the readiness of these students and the colleges that serve them to ensure postsecondary success does double duty. Targeting postsecondary completion for all these young adults will make us rethink our mental model for college and the neat categories that we put students into to meet institutional needs. The resulting innovations will yield sustainable systems change.

First, as Americans, we have a mental map of postsecondary education as four years with a bachelor's degree by 21. In fact, it surprises most Americans to learn that the average age of an undergraduate is 21 and it now takes an average of five years to complete a baccalaureate.

The image of a 21-year-old walking across an ivy-covered stage to accept her bachelor's degree is a powerful "mental map" followed by most American families. This mental map of the ideal journey through postsecondary education is a rite of passage in our middle-class identity. College completion leads to a career, a family, and settling down to a prosperous lifestyle. Nevermind the data that indicate that this experience is a small subset of actual college goers.

This mental map defines how individuals and families make college choices; what courses you take in high school; how guidance counselors provide advice; what and how colleges teach; and, of equal importance, the tools that public policy uses to promote the attainment of college credentials. In short, it circumscribes both the demand and supply of postsecondary education.

As an ideal, the vision works well, but in practice—as we will see from the data—it oversimplifies a very complex set of life realities and decisions faced by young adults and their families. Education after high school graduation has become a more diverse and complex experience than four years to a degree followed by a successful life. There is no one-size-fits-all approach to college completion.

To enhance the effectiveness of our postsecondary education system, as a people, we must create a new mental map of col-

lege that makes college an option for all young adults, not just 18-year-olds leaving high school.

While maintaining an ideal of successful postsecondary degree completion, we must expand our mental map to include:

- A continuum of credentials from occupational awards to bachelor's degrees
- A continuum of learners from high school dropouts who need to reconnect to education to degree earners combining school and work
- Fully engaging underserved populations (minorities and low income)

Second, this group taken as a whole crosses many neat institutional boundaries that our secondary, postsecondary, adult education, and workforce systems have traditionally used to define their

learners. Whether it be high school graduates versus out-of-school youth; full time versus part time; traditional versus non-traditional; education versus training; independent versus dependent; or credit taking versus non-credit taking; these categories mostly serve to fit students into antiquated curricular, program, and credit accumulation systems that meet institutional needs rather than help them succeed in college.

Students certainly don't see themselves as defined by these characteristics. Rather, students each in their own way are seeking postsecondary success. They are investing in college, given their life circumstances, to move onto a career and prosperous life. The way their choices are shaping demand for postsecondary education should be our guide for public policies that both make students more college-ready and colleges more student-ready.

How young adults are attending college: the changing demand for postsecondary education

Being college-ready is about being an empowered consumer and a prepared learner in a postsecondary system that can be confusing to navigate. When college was a four-year waystation for select youth making the transition to adulthood, helping students be college-ready was a much easier task. For young adults today, the norms governing when and at what pace a person attends and completes college are changing. In fact, according to the U.S. Department of Education, 73 percent of undergraduates in 1999-2000 were in some way non-traditional (a high school graduate that attends college immediately, is full-time, and is financially dependent on parents is considered traditional).

Traditional treatments of this changing demand, in postsecondary policy literature, emphasize either public policy failures or student deficiencies as causing the challenges that need to be corrected. We believe that a third perspective is needed to enhance the ability of policymakers to focus on college readiness and degree completion. The demand for postsecondary education is simply changing, moving to a more fluid form of college-going with longer, episodic participation, as well as more customized pathways to get on and stay on a path to degree completion.

Some of this change is being driven by traditional causes such as challenges faced by young adults with poor academic preparation in high schools, or even dropping out or longer-term inequalities in access among minorities and individuals with lower incomes. Still other aspects of the change arise from a lack of reliable information about college quality and costs for all potential college goers; difficult-to-understand information about and applications for financial aid; and finally, the demands of combining work and learning in a knowledge-driven economy.

We believe these changes are a key factor in the stagnation in degree completion because they are adding complexity to the college-going process. This complexity, combined with public policies targeting affordability and mostly 18-year-old recent high school graduates, has created a “readiness” problem. Even as students modify their college-going habits they are not informed or prepared to make the most of them. In fact, it is obvious to keen observers of higher education that currently far too many students are unaware “of what their paths through higher education look like, what levels of knowledge and skills will qualify them for degree awards, and what their degrees mean.”²⁶

To understand the complexity of changing demand it is necessary to take a look at how undergraduates are actually consuming postsecondary education. In the last 40 years, we saw increases in enrollment; stagnating growth in degree completion; increases in length of time to degree; growing disparity in attainment by socioeco-

conomic and minority status; an increase in the high school dropout rate; a decrease in academic preparation; more transferring; and more combining of work and employment.

Increase in enrollment

Since 1963, enrollment in postsecondary education has increased 800 percent (600 percent for two-year institutions and 200 percent for four-year institutions).²⁷

This increase took us from roughly 5 million students to 15 million students. Nearly 88 percent are in public institutions. Forty-two percent of these are in community colleges. The growth rate in community colleges is significant because two-year college students tend to have a tougher time getting to degree completion and these institutions tend to have fewer resources per student.²⁸

Of those enrolled and receiving Pell Grants, 66 percent attend public institutions (34 percent attend two-year and 32 percent attend four-year), 16 percent attend private nonprofits, and 19 percent attend private for-profit institutions.

The increase in enrollment is creating pressure on public institutions in particular. They are being asked to provide more service across the board to a more diverse population of learners, even as public resources to fund public postsecondary education have been decreasing (see next section).

To be student-ready, public policy strategies must help these colleges build capacity to innovate new teaching approaches, create seamless transitions across institutions and programs, and create new accountability for student outcomes.

Stagnation in degree completion and time to degree is on the rise

When high school graduates enter college they usually expect to earn a degree; relatively few intend to complete only a year or two. Yet within three years, more than one-third of students leave higher education without any credential.²⁹

Less than 60 percent of students entering four-year institutions earn bachelor's degrees. And barely one-fourth of community college students complete either an associate's degree or a bachelor's degree within six years of entry.³⁰

The length of time it takes students to finish degrees (time to degree) is also on the rise. Among students starting at four-year institutions, only 34 percent finish a bachelor's degree in four years. Sixty-four percent finish within six years, and 69 percent finish within 8.5 years. Similarly, students who begin their education in community colleges and complete postsecondary degrees take on average 41 months after entry to earn an associate's degree and 56 months to earn a bachelor's degree.³¹

Furthermore, there is great variability of persistence and completion rates by state. In only half of the states do more than 50 percent of first-year students at community colleges return for their second year.³² In 27 states, less than half of first-time, full-time college students complete a bachelor's degree within five years of graduating from high school. Similarly, in 24 states, less than half of first-time, full-time students complete a bachelor's degree within six years of enrolling in college.

Degree completion and time to degree are linked to many variables, including those listed below (socioeconomic status,

race, preparedness, etc.). In our view, the paradigm shift for public policy is to view each student's path as equally viable and provide tools for them to persist and incentives for postsecondary institutions to create new teaching and administrative policies to allow for customized education experiences.

Disparities in attainment by socioeconomic status and race and ethnicity continue

If we are to solve the postsecondary education readiness challenge and increase degree completion, minorities and people of lower income must be a focus for policy.

Current disparities in attainment persist so we must focus much of our attention on closing attainment gaps among minority students and those from low-income communities. Forty-two percent of whites ages 25 to 64 have an associate's degree or higher compared with 26 percent of African Americans and 18 percent of Hispanics.³³ And these rates are projected to worsen. Over the next two decades, that attainment gap will have a larger and larger impact on the workforce. By 2020, the proportion of whites in the workforce between the ages of 25 and 64 is expected to drop 19 percentage points, to 63 percent, down from its 1980 level of 82 percent. During the same period, the percentage of Hispanic residents aged 25 to 64 will almost triple from 6 percent to 17 percent, and the proportion of African Americans in the U.S. population will grow by almost a third.³⁴

Degree completion is a key factor in the attainment gap. While 72 percent of 1992 12th graders from the top socioeconomic status quintile earned a bach-

elor's degree or higher by 2000, only 16 percent of students from the bottom SES quintile achieved this level.³⁵

Similarly, lower percentages of African-American and Hispanic students earn any credentials compared to their white counterparts. For example, almost 50 percent of white students in the sample above completed bachelor's degrees or higher by 2000, while only 31 percent of African-American and 24 percent of Hispanic students attained the same.³⁶

The growth in two-year college enrollment plays a role in these disparities as well. Two-year college students are more likely to be of minority descent than four-year college students. Across the nation, black non-Hispanic and Hispanic students represent 14 and 15 percent, respectively, of enrollment at two-year colleges, compared to 12 and 8 percent of enrollment at four-year colleges.³⁷

Further, students who first attend two-year colleges are also substantially more likely to be from families of lower socioeconomic status compared to students who first attend four-year colleges, where SES is a combined measure of parents' income, education, and occupations.³⁸

These students are underserved as individuals and the institutions they attend are the most resource-strapped. The full suite of student-ready and college-ready policies should be leveraged to increase degree completion among these young adults.

College students are getting older, attending part time, and working more

No longer is undergraduate enrollment confined to the immediate post-high

school years, as more than 45 percent of undergraduates are over age 21 compared with the little more than 25 percent three decades ago.

The rise in two-year college enrollment is a factor, as students who enroll in community college tend to be older than four-year college students. Roughly half of two-year college students are ages 18 to 24, compared to more than 60 percent of four-year college students.

Another signpost of the advancing age of undergraduates is that the share of Pell Grant recipients who are over the age of 24 has risen steadily over the past three decades from about 30 percent in 1975 to about 58 percent in 2003-04.³⁹

More students are also attending part-time. Nearly 40 percent of postsecondary students now attend part-time. This is up from 28 percent in 1970.⁴⁰ The rise in community college attendance plays a role in this trend as well, as two-year college students are more likely to enroll part time than four-year college students, frequently to accommodate work schedules.⁴¹

In a related trend, more students are combining work and undergraduate learning. The proportion of full-time students under age 25 who are employed increased from about one-third in 1970 to about one-half in 2005. Eighteen percent worked 20 hours per week or less, 21 percent worked 20 to 34 hours and 9 percent worked 35 or more hours per week.⁴² Among those enrolled in education over the age of 24, nearly 70 percent are also employed, while the age of college students under the age of 24 also employed has increased markedly.⁴³

These trends are important for policymakers as degree completion and access

policies become considerably more difficult to be eligible for based on income requirements. For example, students at public two-year colleges who are enrolled full time are 42 percent more likely to receive grant aid than those who are enrolled part time.⁴⁴ The combination of work and learning is an opportunity to build stronger bridges to the employer community. Given the data indicating that employers find many students unprepared, this information could help inform curriculum and program design that will make for successful transitions between formal education work.

Students are more mobile

Data from national longitudinal studies indicate high levels of transfer among postsecondary institutions, with as many as two-thirds of all students who eventually earn baccalaureate degrees having attended two or more colleges or universities.⁴⁵ While the majority of these transitions are “traditional” transfers from two-year to four-year institutions, increasing numbers of “nontraditional” transfers are also occurring. These include four-year to four-year transfers and four-year to two-year transfers, primarily to acquire job skills.

There is also tremendous variability in transfer by type of student. Transfer rates can range from a low of 25 percent for all first-time community college students to a high of 52 percent for students who enroll in an academic major and take courses toward a bachelor’s degree.⁴⁶ This variability is reflective of the lack of a national data system that can track students across schools, gauging the extent of mobility. Such a system could provide data for directing entirely new policy areas in transfer.

The key public policy challenge here is that the United States lacks even a modest standard for course and credit equivalency, making it difficult for students to transfer between schools. While many states have been experimenting with articulation policies since the 1980s there is relatively little evidence regarding their effectiveness.

In many cases, students end up having to pay for similar education content more than once. This increase in mobility accentuates the need for more resources that assist students in managing their college-work transitions such as career, education, and financial counseling.

The high school dropout rate and the lack of academic preparation

High school dropout rates and a lack of academic preparation on the part of high school students also impact the United States' ability to produce more degrees. Thirty percent of young people—and 50 percent of minority youth—leave our public schools without a high school diploma.⁴⁷ This fact alone decreases the supply of those seeking to go to college. There is a range of estimates on the number of these disconnected youth—those out of school, out of work, and in other high-risk situations. A recent Government Accountability Office report estimates there are between 2.3 to 5.2 million disconnected youth between the ages of 16 and 24, depending on definition and methodology. In 2004, the National Center for Education Statistics estimated that there were 3.8 million youth between the ages of 16 and 24 who were not enrolled in school and were without a high school diploma. NCES statistics show that on average, just under a half million youth dropped out of grades 9 to 12 each year.

One of the most important factors affecting the success of American college students is the quality of their elementary and secondary education. Academic preparation is strongly related to the likelihood of postsecondary degree completion: Students who complete rigorous high school coursework, especially in math, science, and foreign language, are much more likely to earn a college diploma. Yet, of students who receive a high school diploma, only half are academically prepared for postsecondary education.⁴⁸

For these students, remedial education is often an essential component of the path to a degree, and yet most students who enter remediation never earn a degree. Fully 28 percent of entering freshmen attending degree-granting institutions nationwide in 2000 enrolled in at least one remedial course, including 42 percent of freshmen at community colleges and 20 percent of freshmen at public four-year institutions. Notably, one national study found that only 49 percent of students who took remedial coursework went on to complete a B.A., compared to 70 percent of students who required no remediation.⁴⁹

Further, access to the types of rigorous courses that prepare students for college is unevenly distributed. For example, low-income students are less likely to be enrolled in a college preparation track (28 percent) than are medium- and high-income students (49 percent and 65 percent respectively).⁵⁰ Similarly, African-American and Latino students are less likely to be enrolled in such a track (28 and 23 percent respectively) than white non-Latinos (34 percent).⁵¹

Better academic preparation for those still in school and re-engagement of high school dropouts is a challenge for

public policy that requires work within and across multiple systems including secondary, postsecondary, workforce development, and adult education. While secondary institutions and others need to better prepare students, it will also be necessary to enhance the capabilities of PS institutions to remediate in real-time.

Policy and research is required in areas ranging from ensuring rigorous course quality; designing more effective high schools; establishing college and work readiness standards; building alternative pathways for high school dropouts to move from non-credit to for-credit programs; aligning funding streams and program requirements from different systems; and creating new data management and analysis tools to measure system performance and student success.

Beyond the traditional demand curve for postsecondary education

As in the case of high school dropouts, a dynamic economy is causing more of those working to tap public-sector programs to enhance their education and skills. Millions of young people and working adults, including out-of-school youth, pursue alternative pathways to postsecondary education. Yet federal policies that target postsecondary education and training for working adults and out-of-school youth generally fall under labor or social services legislation such as the Workforce Investment Act, including Title II (i.e. Adult and Family literacy) and the Trade Assistance Act and Food Stamps Education and Training.⁵²

These federal resources and other programs geared toward working adults add up to about \$3.6 billion annually,⁵³ yet they rarely are used explicitly to help working adults enroll in colleges and universities with the purpose of earning a postsecondary credential.

Further, beyond government programs there are millions of workers who are members of unions that pursue education opportunities gained through collective bargaining. In some cases these learners are well connected to postsecondary education, but in others they are not. There is a latent demand of empowered customers.

This challenge is an extension of the one raised by student mobility. These students need colleges that are aligned across all these programs and funding streams to help them select the right college experience, and demonstrate competence to gain credit and move credits easily to ensure that they persist to completion.

A final note on empowering students with information about college-going and career choices: Inherent in a more diverse set of students who are pursuing alternative pathways to postsecondary success is the need for good information about education quality, adaptability, and student outcomes. Though this discussion is fraught with many challenges, we must pursue transparent measures of school performance that students can use to leverage personal and public resources to find the best postsecondary providers.

Federal financial aid tools: current policies and their challenges

Historically, federal financial aid and access policies have played an important role in empowering students with resources to attend college. These policies have tended to focus on the traditional age of 18- to 21-year-old students.

An older, more mobile, working and learning student has significant unmet financial need. According to the Institute for Higher Education Policy, among working poor adults—40 percent of whom were between the ages of 25 and 34—those enrolled in college faced more than \$4,000 in unmet need after accounting for all forms of financial aid.⁵⁴ Further, these students need more education, career, and financial counseling to help them manage a complex postsecondary experience. They need more flexible financial tools and enhanced counseling services that allow them to customize and manage their learning experiences, which will require leveraging public funds to get the most return on their investment.

Of the federal higher education financial aid policies anchored in the Higher Education Act of 1965, including student loans and grants, the Pell Grant has the most demonstrated ability to impact enrollment and persistence. The successful outreach programs TRIO and GEAR UP provide models for how to deliver career/education counseling. In addition, more recent additions through the tax code, including the Lifetime Learning Tax Credit and Hope Scholarship, can be improved to be made more flexible to student needs.

Before exploring these two policy areas we make the general observation that application for federal financial aid using the Federal Application for Student Aid must be simplified. Also, eligibility requirements, in terms of number of credits and program lengths, should be redesigned to accommodate more episodic college-going and alternative pathways to postsecondary completion. This will open up federal financial tools to more young adults.

Making college more affordable through financial aid programs does impact both enrollment and persistence in college, while the type of aid matters as well, with grant aid being the most effective. The consensus view of the relationship between college price and enrollment has been that a \$1,000 change in college costs is associated with about a 5 percent difference in college enrollment rates.⁵⁵ A later review of research on financial aid and enrollment found that enrollment is more sensitive to grant aid than loans or work study; in fact, lower-income, African-American, and community college students were particularly sensitive to changes in tuition and aid.⁵⁶

Research has also looked at the impact of aid on persistence and completion. Research has shown that aid recipients in general persist equal to or better than non-recipients.⁵⁷ The Pell Grant has been shown to reduce dropout, and students who receive Pell Grants persist as well or better than other low- or middle-income students despite being more likely to exhibit research-based persistence factors.⁵⁸ The research also suggests that grant financial aid awarded for reasons other than need is less likely to benefit lower-income students and racial and ethnic minorities.

Further, there is very little research that documents the effectiveness of loans on college going and student success; moreover, tax credits and college savings plans are less effective than grant financial aid,⁵⁹ and a recent review from the National Center for Post Secondary Research concludes that federal access policies should “focus on grant programs rather than less effective and more complicated forms of aid, such as student loans and tax credits.”⁶⁰

Of the Higher Education Act “access” policies, research demonstrates that the Pell Grant is among the most successful in affecting enrollment and persistence. But given changing demand for postsecondary education, does it meet the needs of contemporary students?

The Pell Grant

Since 1972, \$150 billion in Pell Grants has contributed significantly to the expansion of educational attainment in the United States.⁶¹ In 2005-06, \$12 billion in Pell Grants was distributed to low-income students.⁶² While attainment

gains associated with the Pell Grant are excellent, the beneficiaries have generally been traditional age students.

As we have seen, however, college-going is changing. While working young adults have been receiving Pell Grants, there continue to be disparities. These disparities are rooted in a lack of alignment between the growing diversity in college-going and the rules governing the Pell Grants. Working adults enroll in community colleges and four-year colleges and universities—but they primarily attend part-time. In addition, millions of adults pursue non-traditional pathways, such as continuing education and extension programs, contract education and online courses, satellite campuses, and for-profit or proprietary institutions.⁶³

One key area of non-alignment is the Federal Needs Analysis process. This statutory formula determines the ability to pay for college and the expected family contribution, and thus the amount of federal aid for which a student is eligible. It treats income and assets of dependent students more favorably than independent students. Independent students are expected to contribute a larger share of their gross earnings than the parents of a dependent student—at least 30 percent of gross income.⁶⁴ This heavier burden on working adults to attend full time no doubt explains part of the reason why so many attend part time.

There are also other areas of non-alignment that are related to part-time postsecondary education participation. The Pell Grant formula for counting direct expenses is more restricted for less than half-time students; institutional discretion in assessing “satisfactory progress” toward completion in granting Pell Grants can

negatively affect part-time, highly mobile young adults. And length-of-time requirements for education programs fundable with Pell Grants also limit their use to more traditional semester-long programs as opposed to shorter-term, flexible education programs that make sense for students combining work and education.⁶⁵

These disparities are reflected in the relative amounts of grants received by the more than 5 million low-income students who received a Pell Grant in 2004-05. Almost 60 percent of these students were independent undergraduates; however, the average total grant aid awarded to working adults was \$2,900 in 2003-04 compared with \$5,200 for traditional-age students.⁶⁶

A final note regarding Pell Grants, especially given their relative effect: They have been getting smaller over time. For example, in 1977-78, the maximum Pell Grant covered 99 percent of the tuition, fees, and on-campus room and board at public two-year institutions and 77 percent at public four-year institutions; today the Pell Grant covers 62 percent and 36 percent of the total price, respectively.⁶⁷

We need to both enhance the Pell Grant and make it more flexible to meet the needs of college goers who are on more customized pathways.

The Lifetime Learning Tax Credit and the Hope Scholarship

In 2005, parents and students were granted about \$4.5 billion in Hope and Lifetime Learning tax credits. Tax credits have emerged in the last decade to be a growing part of student financial aid. The LLTC and HOPE were designed with

broader eligibility parameters to target middle-class Americans. However, early research shows no evidence that the LLTC and HOPE are increasing enrollment.⁶⁸ (In other words, the individuals who are taking advantage of the credit would have gone to college anyway.) We believe that with some changes to target the LLTC and HOPE to needy students they could become an effective, flexible financial tool to assist in degree completion.

The Hope Scholarship credits may be used only for a student's first two years in postsecondary education; the LLTC is available for unlimited years to those taking classes beyond their first two years of college. Both credits are available only for eligible expenses of students attending accredited institutions of postsecondary learning approved for participation under the Higher Education Act by the U.S. Department of Education.

Currently, the Hope scholarship provides a credit equal to 100 percent of the first \$1,000 plus 50 percent of the next \$1,000 for a maximum credit of \$1,500. Students must be enrolled at least half time—which is six credit hours per semester and typically requires two classes—and pursuing a degree or other recognized credential to be eligible.

The LLTC does not require at least half-time enrollment or the pursuit of an educational credential in order to be eligible. This, in theory, provides more flexibility for students combining work and learning. It allows students to take fewer credits and also expands the available courses to those that provide remedial skills such as adult basic education and English-language training. But the LLTC still requires this to take place at federally approved postsecondary institutions.

Neither the Hope credit nor the LLTC is currently refundable; they simply reduce the amount of taxes filers owe.

We suggest increasing the LLTC and Hope and making them refundable as ways to make them more flexible financial tools.

Academic preparation programs—TRIO and GEAR UP

Both TRIO and GEAR UP are grant programs designed to assist traditional students from disadvantaged backgrounds transition successfully from middle and secondary education to postsecondary education. The federal government provides competitive grants to partnerships of schools, postsecondary institutions, businesses, and community organizations.

While programs are implemented through diverse partnerships around the country, they do include common features such as: counseling (academic, financial, and career), tutoring services, mentoring, parental involvement, assistance with college and financial aid applications, high-quality instruction, and financial incentives.

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 post-baccalaureate programs. Two-thirds of students served in TRIO must be from families earning less than \$28,000 where neither parent graduated

from college. The program serves approximately 900,000 students annually.

Two TRIO programs that bear particular mention are Employment Opportunity Centers and Student Support Services. SSS operates at 930 colleges and universities nationally. In addition, more than 130 Educational Opportunity Centers provide counseling, academic advising, college orientation, and referrals to other human services providers for more than 200,000 adults seeking to improve their postsecondary education and skills.⁶⁹

GEAR UP (Gaining Early Awareness And Resources for Undergraduate Preparation) provides six-year grants to states and partnerships to provide services at high-poverty middle and high schools to prepare students to transition successfully to postsecondary education. GEAR UP grantees serve an entire cohort of students beginning no later than the seventh grade and follow the cohort through high school. GEAR UP promotes individualized academic and social support to students, parental involvement, educational excellence, school reform, and student participation in rigorous courses. It also provides college information to students and parents. GEAR UP funds are also used to provide college scholarships to low-income students.

Research indicates that both programs positively affect college-going. Research suggests that students who participate in federal TRIO programs are more likely to make academic progress in high school, earn a high school diploma, apply for college and financial aid, and get admitted to a college or university.⁷⁰ Research on GEAR UP in Austin, TX found equal or higher college application and enrollment rates of participating students.⁷¹ Another

study indicated that pervasive GEAR UP college awareness activities for students and parents are effectively changing students' college plans.⁷²

Although these federal access policies are targeted to students making the transition from secondary to postsecondary, their programming is suggestive of

exactly the types of education/career/financial support young adults need to be empowered learners.

We believe TRIO and GEARUP, in particular the SSS and EOC centers, should be expanded to serve young adults with comprehensive education/career management services.

Manage postsecondary institutions as a network, not a pipeline

A common enough metaphor for the diverse body of education institutions in the United States, from K-12 to college, is the concept of an education “pipeline.” This industrial-era framework does not correctly represent the decentralized (authority, financing, mission) nature of our education system, especially not higher education. To facilitate the development of student-ready colleges, federal policymakers must manage the postsecondary system as a network.

There are over 4,800 institutions offering two- and four-year degree programs in the United States. “Managing” this decentralized network to produce more college degrees requires 21st-century management concepts and skills focused on network orchestration, not just program funding, and rulemaking on the part of public policymakers.

To better understand this decentralized system we must explore its size, composition, and governance, and provide an overview of public policy initiatives.

Size, composition, and funding of postsecondary education suppliers

According to the National Center for Education Statistics, there were 4,829 two- and four-year colleges in 2006.⁷³ Of these institutions, 36.9 percent are public, 35.3 percent are private not-for-profit, and 26.8 percent are private for-profit. A majority (nearly two-thirds) of public institutions and private for-profit institutions are two-year schools while the vast majority (88 percent) of private not-for-profit institutions are four-year schools. Of the 14.9 million undergraduate students attending these institutions, 11.7 million attend public institutions, 2.4 million attend private not-for-profit institutions, and 0.8 million attend private for-profit institutions.

Public two-year and four-year institutions are funded, along with tuition and fees, by state legislatures. These funds are an effective subsidy to students, decreasing the cost of education. Public institutions continue to post tuition levels well below the level charged by private institutions, with tuition at four-year public institutions about 25 percent below the level charged by private institutions and tuition at two-year public institutions about 10.5 percent of the private level.⁷⁴

But there is variability in funding. For example, state and local appropriations account for nearly 60 percent of revenues at community colleges while making up less than 30 percent of revenues at public flagship universities.⁷⁵ Also, state appropriations as a

share of total educational expenditures at all public colleges and universities fell from 78 percent to 45 percent between 1974 and 2000.⁷⁶

Further, it is likely that the era of low tuition in all sectors of public higher education is likely coming to an end. In the past two years, public four-year institutions have posted tuition increases of 13 percent and 10 percent, above even the rate of private institutions⁷⁷ Rising costs including investments in technology, faculty salaries, and substantial fluctuations in state resources are driving these increases.

Governance

This diverse group of postsecondary education providers is regulated in a decentralized fashion. Each individual state sets up its own public higher education system and provides regulation and oversight for the non-profit and for-profit higher education sectors. They establish and implement rules governing the creation of private non-profit and for-profit universities, and specify the minimum requirements that all institutions operating in the state must meet in order to grant academic degrees.

Quality control is maintained largely through a voluntary accreditation system, whereby privately run accrediting agencies review the qualifications of member institutions. Though it is possible to forego accreditation, the Higher Education Act stipulates that an institution must be accredited by one of 61 nationally recognized accrediting agencies designated by the U.S. Department of Education to be eligible for Title IV federal financial aid programs.⁷⁸

Network model

Even this high-level view of postsecondary institution composition, governance, and funding demonstrates a decentralized supply-side market for education opportunities. Yet most policymakers, federal and state, currently use a “pipeline” model to describe this system. The “pipeline” metaphor is flawed for two overriding reasons. The first is because it posits a linear input-output model that asserts controls over a supply chain that does not exist. The federal and state, public and private, non-profit and for-profit distinctions among stakeholders create a market that belies a top-down, hierarchical output approach.

The second is that the model is not flexible enough to deal with the realities of the current way that students are consuming education. The pipeline approach inherently tries to fit individual students into the current business models for delivering postsecondary education, never questioning if these are the best approaches. This is seen most clearly in policy discussions regarding non-traditional students—out-of-school youth, working adults, etc.—in which we develop elaborate mechanisms to “connect” these “individuals with barriers” to the traditional models of postsecondary education. Given the changing shape of demand for postsecondary education, these individuals are rather miner’s canaries indicating that new business models are necessary.

One broader note regarding postsecondary education is relevant. Postsecondary education is a service business. Most economists and business management thinkers agree that we are only in the initial stages of understanding how best to manage productivity and growth in

service businesses as such discussion of effectiveness, quality, student outcomes, and return on investment are appropriate. Given the level of public investment in the postsecondary education market on both demand and supply and the national economic imperative for enhancing human capital it is sensible that public policymakers should be key stakeholders in driving an effectiveness discussion.

To foster postsecondary system effectiveness and innovation, CAP has adopted a “network” model that views the different public authorities and private institutions as a group of stakeholders interacting in self-adaptive and autonomous ways to deliver postsecondary education opportunities. The “network” model respects the diversity of the options available to Americans to pursue postsecondary education, allows for upstream and downstream connectivity among stakeholders, and suggests a new role for federal public policymakers in support of public value, namely network orchestration.

Network orchestration is an emerging management discipline that has evolved as information technology has made it possible to leverage many suppliers to deliver goods, services, and customer value. Boeing, for example, manufactures its jets in 19 countries with 400 suppliers using process software, communication technology, and new work organization to manage team-based production.

In the public sector, the Golden Gate National Recreation Area is managed by the National Park Service using a network of partners, concessionaires, contractors, cooperative associations, and volunteers to carry out park maintenance and services. This supply network makes up 82 percent of the GGNRA workforce.

Another example is Wisconsin Works, the successful welfare reform initiative. The Wisconsin Department of Children and Families manages a network of 48 agencies with a focus on helping families achieve economic self-sufficiency but letting suppliers use a competitive fee structure and rigorous performance criteria.⁷⁹ Each agency leverages its unique strengths and community ties to deliver customer value to families accessing self-sufficiency services.

In public-sector network approaches, the orchestrator focuses on delivery of a high-level public value. In the case of postsecondary education, the public value is based on a hybrid of economic and education goals and seeks a postsecondary education system that delivers quality and flexible learning experiences leading to credentials that are a foundation for career success.

Given this public value, the key is for federal policymakers to enhance their role as a top-down program funder and rulemaker, leveraging their national leadership, funding, and authority to orchestrate a networked supply chain of education suppliers to deliver value for students. Within the network orchestrator framework, federal funding opportunities, regulation, and legislation are designed to optimize the ability of the student to customize learning experiences. A successful network orchestrator will focus on the following tasks in the postsecondary system:

- Assure effective product delivery based on student requirements
- Integrate and align network value chain around student needs across institutional boundaries

- Co-manage the network in tandem with postsecondary suppliers⁸⁰

As network orchestrators, federal policy-makers would focus legislation, regulation, and funding at ensuring these tasks are executed. Understanding student needs, empowering students to make the best-fit choices, and ensuring the network of suppliers works efficiently so that search and transaction costs of moving across the network are minimized become the keys to optimizing customer value.

Based on these twin foci of customer and public value, the network orchestrator embraces a new concept of government, one not of programs and agencies but

of goals and networks.⁸¹ This allows the orchestrator to transcend the boundaries of federal, state, and local government, the public and private sectors, and business and educational institutions to find the best ways to optimize the network.

Student-ready colleges are a network of institutions that are focused on delivering postsecondary education services across boundaries, programs, and funding streams. Helping more colleges be student ready will increase degree completion. Using network management tools, a new administration can renew leadership on enhancing the effectiveness of our postsecondary system.

Enhancing student and college readiness: A role for federal policy

To grow to 50 percent the number of young adults with postsecondary credentials will require students, secondary schools, and higher-education institutions to succeed in ways they never have succeeded before. This challenge will require leadership on the part of federal policymakers to enhance traditional access policies, (as Congress has already begun to do in the Higher Education Opportunity Act of 2008 by increasing Pell Grants for our neediest students and making them more flexible); simplify the Federal Financial Aid process; improve K-12 teacher preparation; enhance TRIO and GEAR UP; and develop a new strategic focus on degree completion. Students and educational institutions both need investment to be ready to perform at the levels that will yield an effective postsecondary education system.

The issue of performance in the postsecondary marketplace was raised by the Spellings Commission report in 2007, which began a national dialogue on accountability and performance for student outcomes. We hope to build on the spirit of its focus on accountability and quality but also respect the strengths of our decentralized system for delivering postsecondary education to evolve a new vision for federal policy capable of accomplishing our game-changing goal of 50 percent of young adults with postsecondary credentials by 2028. We need to put postsecondary effectiveness firmly at the center of our economic strategy by having the National Economic Council champion a cross-agency process in which the Secretaries of Labor, Education, and Commerce work to leverage resources across enabling legislation, including the Higher Education Act, No Child Left Behind Act, Wagner-Peyser Act, and Workforce Investment Act. They would also leverage other programs such as National Institute of Standards and Technology and the Fund for the Improvement of Postsecondary Education to further the strategies that invest in student and college readiness. This vision and leadership will demand significant investments that build the readiness of students, and the schools they attend, in each of the following six areas.⁸²

College-ready student strategies

1. Invest in preparation for college in high school and beyond.
2. Provide more flexible and transparent financial assistance through the federal student aid system.
3. Help develop better and more widely available information about college quality.

Student-ready college strategies

1. Build capacity to help institutions change practices and develop new approaches to improving student success in college.
2. Create more seamless alignment across secondary and postsecondary education and with other systems.
3. Enhance accountability by measuring learning and success in schools and colleges.

College-ready student strategies

Invest in preparation for college in high school and beyond

To improve college outcomes, we must first improve the readiness of all potential students for college. To do so, federal policy can help schools and school districts to better prepare students with the academic skills necessary for college success. Federal policy can also help build the guidance, counseling, and support structures that assist students in making smart decisions about high school course-taking, the college search and application process and financial aid. Lastly, the federal government can assist communities, colleges, and others to improve the academic preparation of high school dropouts, young adults who have been out of school for a significant period of time, and those currently enrolled in college.

To strengthen academic preparation and college readiness in high school, federal policymakers should provide—through the No Child Left Behind Act or other means—incentive funding for states, school districts, and/or local communities to pilot innovative academic and college readiness activities focused on traditionally underserved students.⁸³ These funds could support a range of activities, including:

- a. Collaborative planning between K-12 and postsecondary education providers locally to better align secondary and postsecondary curriculum, expectations, and standards
- b. Professional development for teachers, counselors, and school leaders in postsecondary education-focused programming and in building a college-going culture within a school
- c. College and career planning courses to assist students in the college preparation and application process
- d. Hiring and training new counselors or coaches who specialize in the college-going process
- e. Developing data systems to track student transitions from high school through college.

Federal policymakers can also enhance student readiness for college by integrating various financial aid, outreach, awareness, and preparation resources into an “early commitment program” that informs eligible students about the various programs and benefits and communicates this package of financial and support services to students as early as fifth grade. Students would retain eligibility as long as they stayed in school and earned good grades.⁸⁴

The federal government also needs to find ways to strengthen preparation for out-of-school students and those already enrolled in college. To do so, policymakers should take steps through the Higher Education Act or other means to:

- a. Invest in the demonstration and study of innovative models of first-year instruction at colleges, including learning communities, student learning support centers, and other promising approaches
- b. Fund the development and study of innovative practices that build bridges between remedial education and for-credit courses, including credit accumulation and academic-career advising
- c. Require states to report on the enrollment and progression of their students in remedial education
- d. Expand federal access programs to provide outreach, awareness, and preparation supports to include career, education, and financial counseling for young adults designing customized education experiences
- e. Ensure that programs targeting adult education and worker training, such as those funded by Departments of Education, Labor, and Health and Human Services are focused on helping clients access and succeed in postsecondary education⁸⁵

Provide more flexible and transparent financial assistance through the federal student aid system

As noted above, the federal student aid system is needlessly complicated, mak-

ing it difficult for students and parents to determine the true cost of college in an easy or timely way. Federal aid is also oriented around the idea of the traditional student entering college immediately after high school and is thus less responsive to the needs of part-time students, adults returning to college, and those with more fluid patterns of enrollment who will undertake more customized postsecondary education experiences. Finally, federal student assistance is not sufficiently focused on ensuring students earn credentials once enrolled in college.

To provide easy-to-understand and flexible student assistance, Congress and the U.S. Department of Education should work together to make a number of changes to the federal student aid formula and calculations, including changes that:

- a. Simplify the process of applying for financial aid by adopting a simpler and shorter FAFSA form
- b. Develop a demonstration program, along the lines proposed within the recently reauthorized HEA, to further simplify federal aid via earlier aid determinations and/or sharing of basic financial information among the U.S. Department of Education and the Internal Revenue Service
- c. Align federal, state, and institutional financial aid awards and make this information available to students earlier by launching a revised version of the Student Total Education Package
- d. Exclude income from student work from the calculation for distributing financial aid for students who are combining work and education⁸⁶

Federal policy makers should also make the following changes to the Pell Grant program to better support student success and to reflect the diversity of learners now pursuing postsecondary education, including changes that:

- a. Increase the maximum Pell Grant for all students to help keep up with the rising cost of college and ensure that low-income youth can stay in school continuously
- b. Equalize Pell eligibility rules so working adults and traditional-age students with similar financial circumstances can receive comparable Pell Grants
- c. Allow Pell Grant recipients to receive that grant during the summer months, and make aid available to less-than-half-time students
- d. Allow individuals who lack high school credentials to prove their readiness for college and qualify for federal financial aid by successfully completing six credits in lieu of taking an “ability to benefit” test
- e. Increase the maximum Pell Grant for the lowest-income students—those with a negative expected family contribution—to receive additional Pell Grant funds for each negative dollar of calculated expected family contribution up to a maximum of \$750⁸⁷

Finally, federal policymakers must refocus the current Lifetime Learning Tax Credit and Hope Scholarship programs to better serve the needs of lower-income young adults. This can be accomplished by modifying:

- a. The Lifetime Learning Tax Credit to pay for up to 50 percent of the first

\$10,000 of education expenses. Also the definition of allowable expense should be expanded to include indirect expenses: books, supplies, equipment, transportation, child care, and others as currently defined by the U.S. Department of Education in Title IV

- b. The Hope Scholarship to pay 100 percent of the first \$1,000 and 50 percent of the next \$2,000 in education expenses
- c. Both programs so they are fully refundable for young adults at lower incomes who would not otherwise incur the tax liability now needed to take advantage of the credit⁸⁸

Help develop better and more widely available information about college quality

Being an empowered student customer means having ready access to high-quality and easily digestible information on a range of quality measures, including rates of degree completion, learning assessment outcomes, faculty and program effectiveness, and costs. Yet there is much debate but little consensus about what kinds of higher education quality measures to develop and how to provide students and parents easy access to this type of information.

CAP recommends that the Fund for Innovation in Postsecondary Education, or FIPSE, partner with the National Institute for Standards and Technology, or NIST, with extensive quality experience through the Malcolm Baldrige Quality Program, to fund demonstration projects and invest in research to develop and disseminate a consensus set of college-quality measures that can be used by consumers and poten-

tially adopted as standards by states and local accrediting agencies.

The FIPSE-NIST partnership could invest in a range of demonstrations and research projects, including those that:

Use National Survey of Student Engagement and College Learning Assessment data, among other sources, to develop an overall college quality measure

Explore and test current institutional models for measuring teacher quality at colleges and universities through value-added mechanisms

Explore and test models for providing students with performance and organizational effectiveness indicators such as: degree completion rates, transfer success, academic/career counseling performance, transition to employment success, success with part-time students and the less academically prepared, and program and cost-effectiveness

Demonstrate ways to include quality information as part of a local or state accreditation process

Use technology solutions to provide quality and performance information to students in a user-friendly way.

Student-ready college strategies

Build capacity to help institutions change practices and develop new approaches to improving student success in college

As we suggest above, federal investment is needed to build institutional capacity at two- and four-year colleges, especially those that serve large numbers of disadvantaged students. Such a capacity-building effort should focus on developing, testing, and disseminating high-quality instructional practices that promote student learning. Capacity-building strategies are also needed to help colleges develop and sustain high-quality support services, especially those implemented in tandem with instructional reforms. Lastly, federal investments in capacity must be designed to ensure scale of implementation at participating colleges and be used to leverage other public and private investments and changes in local and state policy.

There are several mechanisms through which the federal government can promote changes in instruction and student supports. Promising reforms can be promoted through a competitive discretionary grant program designed to build college capacity. Competitive grants can be used to help resource-poor colleges implement:

- Effective instructional reforms such as learning communities, first-year cohort-based programs and similar models
- College-wide reforms that build student supports directly into key college functions like assessment, placement, and classroom instruction
- New pedagogical and curricula frameworks targeting academically less prepared and out-of-school youth such as contextual learning, modularized curriculum, and intensive instruction
- New course delivery approaches that meet the needs of students combining work and learning such as flexible scheduling and technology-enhanced learning
- Partnerships with employers and/or community-based organizations that integrate school, work, and community service
- Academic advising approaches that provide students with the tools to design their own customized postsecondary programs

The key to making these capacity-building grants effective is to ensure that federal dollars are spent supporting college practices that endure after the initial infusion of these dollars disappears and can be easily shared with other schools if proven effective. One strategy to ensure sustainability and sharing of practices is to limit funding to activities that create tangible tools (new curricula), develop significant capacity among needy colleges (intensive, focused professional development) or create permanent new structures locally (reorganized college departments, services, and programs). Another is to require funding matches from states, local communities, or philanthropic partners and clear sustainability plans as a condition of providing federal dollars. A third strategy is to use federal dollars to leverage broader policy changes at the state or local level.⁸⁹

An alternative approach to building college capacity is by funding student success programming directly through the federal student financial aid system. One promising approach in this vein is a recent legislative proposal developed by the Center for Law and Social Policy. The proposal would provide for supplemental “Student Success” grants to all students who receive federal Pell Grants. The success grants are designed to offset the costs to the college of providing the kinds of program innovation and student services that research suggests will help students stay in school and complete their credentials. In their proposal—which is part of the current HEA reauthorization bill—the success grant would be initially set at \$1,500 and available to all Pell grant recipients. The colleges these students attend would then decide on the mix of curriculum and program innovations and student services to be funded with the grants. As a condition

of receiving these funds, colleges would be required to assign a student success coordinator to each student who will work with them to develop and maintain a coursework and graduation plan.⁹⁰

Create more seamless alignment across secondary and postsecondary education and with other systems

Fewer and fewer college students follow the “traditional” path to the bachelor’s degree, entering a four-year institution immediately after high school and completing the degree within four years at that institution.⁹¹ Instead, many students take a range of different paths to college. Some, for example, begin college classes in high school via dual enrollment programs that allow students to earn college credit and reduce the length of time needed to earn a degree. Others begin their education in four-year colleges and universities and then move to other institutions in pursuit of a degree. Another group, around 40 percent of undergraduates nationally, begin postsecondary education in community colleges, with most of these students aspiring to eventually transfer to a four-year institution. Finally, another group of young adults enroll in adult education classes or workforce training programs and aspire, or might aspire, to a college credential or degree.

The diversity of student experiences suggests that states, institutions, and systems should work together regularly and easily to help move students quickly and seamlessly across different colleges and levels of education. Yet this is quite challenging in practice as most states lack consistent regulations around dual enrollment, transfer, or articulation, and institutions

vary greatly in how they count coursework from other sources. Moreover, diverse policy systems such as adult education, workforce training, out-of-school youth programming, and postsecondary education rarely collaborate to help students make effective transitions.

To improve alignment, federal policy-makers will need to make legislative and administrative changes that promote integration within the Elementary and Secondary Education Act, the Workforce Investment Act, the Adult Education and Family Literacy Act, the Carl D. Perkins Career and Technical Education Act, and the Higher Education Act. Specifically, federal policy changes should be undertaken to do the following:

- Organize a Commission on Transfer, Articulation, and Credit Accumulation to produce a blueprint of common definitions of transfer and mandate data collection to provide a foundation for better alignment across states and institutions.
- Provide incentives for institutions to simplify the transfer process, improve transfer rates, and encourage articulation agreements and portability of credits.
- Provide incentives for states and institutions to develop dual enrollment policies that ensure collaboration among high schools, community colleges, and four-year institutions.
- Refocus adult education and workforce training programs to promote transitions to postsecondary education and training and pathways from low-wage to high-skilled jobs.
- Require states to be more explicit about how coordination and articulation will

occur across systems to align structures, supports, and services to support degree completion of all young adults.

Enhance accountability by measuring learning and success in schools and colleges

With greater federal investment in colleges and universities to promote readiness must come accountability for results. Currently, there is little accountability for student outcomes—let alone student learning—within federal higher education policy. The good news is that colleges and universities are responding to calls for accountability with efforts to assess and improve student learning. A newly released report by the Association of American Colleges and Universities and the Council for Higher Education Accreditation, for example, calls for all institutions to develop “ambitious, specific, and clearly stated goals for student learning” as well as to “gather evidence about how well students in various programs are achieving learning goals.”⁹² As suggested above, there is also growing consensus about the skills and habits of mind students should learn in college, and a range of assessments for measuring these, including the National Study of Student Learning and the Collegiate Learning Assessment.

What is crucial is that the federal government plays an active role in further catalyzing these efforts. On assessment, **the federal government can begin by requiring that all higher-education institutions implement learning assessment mechanisms and report student progress.** This should be done for all students as well as disaggregated for traditionally disadvantaged groups. Moreover, as Goldrick-Rab and

Roksa (2008) argue, **the federal government should focus on evaluating performance through a value-added framework that assesses gains in student knowledge over time.** Assessment mechanisms lacking a value-added approach may instead encourage institutions to deny access to those students who are less likely to perform well.

Real accountability for learning and results will also require new forms of collaboration among schools and colleges and among states and the federal government. A key starting point is for the federal government to find a way with states and local communities to **create a real-time data system for tracking student outcomes across the high school and college years.** Such a system could be federally run, or state-based. What is key is that **any such data system should emphasize the measurement of student outcomes pertaining to the high school and college experience.** Right now, the focus of federal accountability and data collection is on schools and institutions, which leads to ambiguity for responsibility and blame deflection in both sectors. Moreover, it leads to a focus on the transition between institutions (high school to college) rather than getting students all the way to a degree. By focusing measurement on student outcomes across the K-16 continuum, the federal government can play a constructive role in breaking down divisions between schools and colleges and encouraging collaboration locally to improve outcomes for students.

More practically, such a system must contain a number of key student-level data elements. These should at minimum include:

- Basic student demographic information
- School attendance, enrollment, graduation, and dropout data
- High school and college transcript information, including information on courses completed, grades, and credentials earned.⁹³

Such a tracking system will also need to link student educational records between high schools and higher-education institutions. For these and other reasons, a comprehensive student data system is controversial among privacy advocates, higher-education institutions and others who fear too strong a federal role in higher education. Current language in the Higher Education Act, for example, prohibits the U.S. Department of Education from constructing and managing a national student unit record database. Therefore, absent the immediate creation of a student-unit record system we need an alternative strategy for moving forward. One approach is to build on the recent grant program developed by the Institute for Education Sciences to help states to experiment with statewide unit record systems.

While learning assessments and student data systems are usually thought of exclusively as accountability tools, we feel they are equally crucial for policymakers and practitioners at all levels of government to pinpoint performance problems, allocate resources and interventions, and track success and improvement over time. Even if the political challenges to learning assessment and student tracking systems are overcome, such tools will be useless unless they also improve the capabilities of local actors to address the performance problems at all levels.

Public revenue growth and productivity gains trump costs of increasing postsecondary attainment

The primary purpose of this paper was to take a first step toward shaping a more efficient postsecondary education system as a key platform for building a long-term vision of a national human capital strategy which results in individual success and national economic competitiveness. Given this purpose, the proper way to think about the question of increasing the number of individuals with postsecondary credentials is to ask whether, and by how much, a college education enhances an individual's productivity on a job and then ask whether the cost of providing that college education is justified by that productivity bump.⁹⁴

In future papers, we will delve deeper into the programmatic costs of the recommendations suggested above. Here we take a look at the benefits, in the aggregate, by providing evidence of the positive impact on government revenue of enhancing postsecondary education as well as a common-sense calculation of productivity gains, as reflected in the college-high school wage differential, as compared to the costs of increasing college attainment.

Government revenues and postsecondary attainment

As noted above, college graduates generally pay much more in taxes than those not going to college. Government expenditures are also generally much less for college graduates than for those without a college education. Indeed, over an average lifetime, total government spending per college degree is negative. That is, direct savings in post-college government expenditures are greater than government expenditures on higher education. In fact, the overall fiscal benefits are at least 7.5 times greater than the public investment in college education. Not only is the full cost of public investment in college students negative, it is negative 6.5 times over.⁹⁵

In fact, "Each four-year-equivalent degree (the weighted average of associate's, bachelor's, master's, professional, and doctorate degrees, with associate's and master's degrees counting as two-year degrees) creates the following direct fiscal consequences over an average lifetime:

- State income taxes increase by about \$52,500
- Local property taxes increase by \$38,000
- State and local sales taxes increase by more than \$27,000
- Federal income taxes increase by \$238,000.

- Various forms of public assistance decrease by more than \$10,000
- Medicaid benefits decrease by almost \$21,000
- Medicare benefits decrease by \$9,500
- Social Security benefits decrease by \$9,000
- Unemployment compensation decreases by more than \$1,500
- Worker's compensation decreases by \$1,500.
- Spending on corrections decreases by more than \$21,000

The lion's share of the fiscal benefits from college attainment accrues to the federal government. Of the estimated total direct fiscal benefits of \$556,000 per degree, 72.5 percent goes to the federal government. The vast majority of the investment cost, however, accrues at the state level, with the federal government providing only about 19 percent of the total public support for higher education. Nonetheless, the net fiscal effect per college degree is still positive for individual states. The average net fiscal effect for individual states is, conservatively, almost \$82,000 per four-year-equivalent degree. The average annual fiscal rate of return to states is calculated to be 3.1 percent.⁹⁶

On balance public investment postsecondary education is far from revenue neutral; over the long term, it is a revenue enhancer.

Productivity gains vs. college costs

First, to reinforce our earlier comments on the connection between productivity, income, and growth, one recent study found that among metropolitan areas with fewer than 10 percent of adults hold-

ing college degrees the economic growth rate between 1980 and 2000 was 13 percent, whereas in areas where at least 25 percent of adults held college degrees the growth rate was 45 percent. The authors conclude that increased college attainment is directly related to higher levels of productivity because a college educated workforce is better able to respond to economic downturns and unexpected opportunities provided by changes in technology.⁹⁷ Moreover, recall from Fogarty and Gottlieb, cited earlier, that the most educated regions enjoyed income growth and productivity far above those with lower educational attainment.

To begin our common-sense calculation we make one assumption:⁹⁸ that the college-high school wage differential reflects a wage premium employers, at the margin, are willing to pay for enhanced productivity, on the part of workers with postsecondary credentials. We would expect that as the number of workers with postsecondary credentials expands, supply increases, and the wage differential would decrease. So let's use a doubling of postsecondary attainment as a starting point for our calculation. With this differential in hand, we can calculate the lifetime gain, appropriately discounted to present values, of a college relative to high school degree. Finally, we can compare this benefit to the cost of providing college education and ask if the benefit exceeds the cost.

Let us assume that the college enrollment expanded so sharply that the college-high school wage differential, currently .77, was halved to .35, a fall that implies that about more than half of the workforce (not just the younger cohorts) suddenly obtained a college degree.⁹⁹

This would in turn imply an annual earnings differential of \$10,275 assuming the wage rates in Table I and full-time, full-year work. Discounted over a 40-year lifetime of working, this implies a total earning gain of \$185,125 if the discount rate is 5 percent, and \$139,113 if the discount rate is 7.5 percent. If we assume that the differential falls to

.45 instead of .35 then the figures are \$243,000 and \$183,000 respectively.

All of these estimates appear to be above the cost of even an enhanced federal role in funding postsecondary completion. Over the long term, productivity gains outweigh the costs of increasing postsecondary education.

Conclusion

America's ranking of 10th among developed countries for college attainment among 25- to 34-year-olds is a sobering statistic. While this paper provides evidence for our own degree completion challenges, it is also the case that the rest of the world is simply catching up, both in terms of its investments in postsecondary capacity and infrastructure and in its rates of degree completion and attainment. Both factors should serve as a clarion call for renewed federal leadership on improving degree completion rates by making students more college-ready and colleges more student-ready.

As college-going is becoming a more complex endeavor with a diversity of learners, with various pathways to attainment and combinations of work and learning, public policy needs to enhance its traditional role of making college more affordable by making the market for postsecondary education more effective. This will require investing in students to make them empowered customers and prepared learners so that they can design education experiences that meet their work/life/learning needs, and investing in colleges to help them develop new curricula, programs, accountability, and performance measurement systems to meet the needs of these students.

Student and college readiness are complementary goals, yet moving the operation of our postsecondary marketplace toward these ends will not be easy. CAP has posed a bold goal of increasing the number of 25- to 34-year-olds with college credentials to 50 percent (currently 39 percent) in 20 years to catalyze the cross-agency, cross-sector thinking and collaboration that can make this possible.

Federal leadership can lead the way by using network management tools and seeking customer value in quality education and the public value of an innovation-ready workforce.

Endnotes

- 1 Sara Goldrick-Rab and Josipa Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion" (Washington: Center for American Progress, 2008).
- 2 Berkner, L., He, S., & Cataldi, E. *Descriptive Summary of 1995-1996 Beginning Postsecondary Students: Six Years Later* (NCES 2003-151). (Washington, D.C.: U.S. Department of Education, 2003).
- 3 Organization for Economic Cooperation and Development, "Education at a Glance 2007" (2007).
- 4 Organization for Economic Cooperation and Development, "Education at a Glance 2007" (2007).
- 5 Economic Policy Institute, "The State of Working America 2006/2007" (2007).
- 6 US Census Bureau, "Historical Income Tables – People," 2006, available at <http://www.census.gov/hhes/www/income/histinc/p18.html>.
- 7 F. McIntosh and Cecelia Elena Rouse, "The Other College: Retention and Completion Rates among Two-Year College Students" (Washington: Center for American Progress, 2008).
- 8 Joint Economic Committee, *Investment in Education: Private and Public Returns* (Congressional Information Service, 2000).
- 9 J. Bradford DeLong, Claudia Goldin, and Lawrence F. Katz, "Sustaining U.S. Economic Growth." In Henry J. Aaron, James M. Lindsay, and Pietro S. Nivola, eds., *Agenda for the Nation* (Washington: Brookings Institution Press, 2003).
- 10 Paul Gottlieb and Michael Fogerty, "Educational Attainment and Metropolitan Growth," *Economic Development Quarterly* 17 (4) (2003): 325-336.
- 11 U.S. Council on Competitiveness, "Measuring Regional Innovation" (Council on Competitiveness, 2006).
- 12 Ibid.
- 13 Steven Spear and Kent Bowen, "Decoding the DNA of the Toyota Production System," *Harvard Business Review* 77 (5) (1999): 96–106.
- 14 Paul Osterman, "Work Organization in an Era of Restructuring: Trends in Diffusion and Impacts on Employee Welfare," *Industrial and Labor Relations Review* 53 (2) (2000): 179–196.
- 15 Shoshana Zuboff and James Maxmin, *The Support Economy: Why Corporations Are Failing Individuals and The Next Episode of Capitalism* (New York: Viking Adult, 2002).
- 16 Society for Human Resource Management, "Workforce Readiness and the New Essential Skills" (2008).
- 17 Michael J. Rizzo, "The Public Interest in Higher Education." Working Paper 55 (Cornell Higher Education Research Institute, 2004).
- 18 Institute for Higher Education Policy, "Reaping the Benefits: Defining the Public and Private Value of Going to College" (1998).
- 19 T.S. Dee, "Are There Civic Returns to Education?" *Journal of Public Economics* 88 (9-10) (2004): 1697–1720.
- 20 Philip A. Trostel, "The Fiscal Impacts of College Attainment." Working Paper 012 (Wisconsin Center for the Advancement of Postsecondary Education, 2007).
- 21 A. Williams and W.S. Swail, "Is More Better? The Impact of Postsecondary Education on the Economic and Social Well-Being of American Society" (Stafford, VA: Educational Policy Institute, 2005).
- 22 Sandy Baum and Kathleen Payea, "Education Pays 2004" (New York: The College Board, 2004).
- 23 Low estimate from Government Accountability Office, *Disconnected Youth: Federal Action Could Address Some of the Challenges Faced by Local Programs That Reconnect Youth to Education and Employment*, GAO-08-313, Report to the Chairman, Committee on Education and Labor, House of Representatives (February 2008). There is overlap with other groups given the estimate.
- 24 US Census Bureau, "Current Population Survey, Educational Attainment" (2007)
- 25 Autor, Murnane, and Levy, Simulation 2007 as cited in Paul Osterman, "College for All: The Labor Market for College Educated Workers" (Washington: Center for American Progress, 2008).
- 26 Clifford Adelman, "The Bologna Club: What U.S. Higher Education Can Learn from a Decade of European Reconstruction" (Washington: Institute for Higher Education Policy, 2008).
- 27 Institute for Education Statistics, *Digest of Education Statistics 2007* (Department of Education, 2007).

- 28 Sarah E. Turner, "Going to College and Finishing College: Explaining Different Educational Outcomes." In Caroline M. Hoxby, ed., *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It* (Cambridge, MA: National Bureau of Economic Research, 2007).
- 29 L. Berkner and others, *Persistence and Attainment of 2003–04 Beginning Postsecondary Students: After Three Years* (Department of Education, 2007), p. 9, table 1.
- 30 Sara Goldrick-Rab and Josipa Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion" (Washington: Center for American Progress, 2008).
- 31 Gary Hoachlander, Anna C. Sikora, Laura Horn, *Community College Students: Goals, Academic Preparation, and Outcomes* (Department of Education, 2003).
- 32 National Center for Public Policy in Higher Education, "Measuring Up 2002" (2002).
- 33 The National Center for Higher Education Management Systems and Jobs for the Future, "Adding it Up: State Challenges for Increasing College Access and Success" (2007).
- 34 Brian Bosworth, "Lifelong Learning: New Strategies for the Education of Working Adults" (Washington: Center for American Progress, 2008).
- 35 Sara Goldrick-Rab and Josipa Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion" (Washington: Center for American Progress, 2008).
- 36 Clifford Adelman, Bruce Daniel, and Ilona Berkovits, *Postsecondary Attainment, Attendance, Curriculum, and Performance*. (Washington: Department of Education, 2003).
- 37 Institute of Education Sciences, *Digest of Education Statistics 2007*.
- 38 Goldrick-Rab and Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion."
- 39 Maria D. Fitzpatrick and Sarah E. Turner, "Blurring the Boundary: Changes in Collegiate Participation and the Transition to Adulthood." In Sheldon Danziger and Cecelia Rouse, eds., *The Price of Independence: The Economics of Early Adulthood Initiatives* (New York: Russell Sage Foundation, 2007).
- 40 National Center for Education Statistics, *Condition of Education 2008*.
- 41 Institute of Education Sciences, *Digest of Education Statistics 2007*.
- 42 College Board, "Trends in Student Aid 2007" (2007).
- 43 Maria D. Fitzpatrick and Sarah E. Turner, "Blurring the Boundary: Changes in Collegiate Participation and the Transition to Adulthood."
- 44 IES, *Digest of Education Statistics 2007*.
- 45 Clifford Adelman, *The Toolbox Revisited: Paths to Degree Completion from High School Through College* (U.S. Department of Education, 2006).
- 46 E.M. Bradburn, D.G. Hurst, and S. Peng, *Community College Transfer Rates to 4-Year Institutions Using Alternative Definitions of Transfer* (Department of Education, 2001). See also S.L. Spicer and W.B. Armstrong, "Transfer: The Elusive Denominator." In T. Rifkin, ed., *Transfer and articulation: Improving policies to meet new needs. New directions for community colleges*, No. 96 (San Francisco: Jossey-Bass Publishers, 1996).
- 47 Gary Orfield and others, "Losing Our Future: How Minority Youths are Being Left Behind by the Graduation Rate Crisis" (Cambridge, MA: The Civil Rights Project at Harvard University, 2004).
- 48 Jay P. Greene and Marcus A. Winters, "Public High School Graduation and College Readiness Rates: 1991-2002." Education Working Paper 8 (The Manhattan Institute, 2005).
- 49 Robin Chait and Andrea Venezia, "Improving Academic Preparation for College – What works, What Do We Still Need to Know, and How Can State and Federal Policy Help?" (Washington: Center for American Progress, 2008).
- 50 Kathy Reeves Bracco and Michael W. Kirst, "Bridging the Great Divide: How the K-12 Postsecondary Education Split Hurts Students, and What Can Be Done About It," in Michael W. Kirst and Andrea Venezia, eds., *From High School to College: Improving Opportunities for Success in Postsecondary Education* (San Francisco: Jossey-Bass Publishers, 2004).
- 51 Ibid.
- 52 For more information, see Bosworth, "Lifelong Learning: New Strategies for the Education of Working Adults."
- 53 The Workforce Alliance, "Washington Update February 2008" (2008).
- 54 C. McSwain and R. Davis, "College Access for the Working Poor: Overcoming Burdens to Succeed in Higher Education" (Washington: The Institute for Higher Education Policy, 2007).
- 55 Leslie and Brinkman, "Student Price Response in Higher Education," *Journal of Higher Education* (58) (1987): 181-204.
- 56 Heller, "Student Price Response in Higher Education: An Update of Leslie and Brinkman," *Journal of Higher Education* 68 (6) (1997): 624-659.
- 57 St. John, "The Impact of Aid Packages on Educational Choices: High Tuition-High Loan and Educational Opportunity," *Journal of Student Financial Aid* 31 (2) (2001).
- 58 Bettinger, "How Financial Aid Affects Persistence." Working Paper 10242 (National Bureau for Economic Research, 2004); also see Wei and Horn, *Persistence and Attainment of Beginning Students with Pell Grants* (Department of Education, 2002).
- 59 B.T. Long, "What is Known about the Impact of Financial Aid? Implications for Policy." Working Paper (National Center for Postsecondary Research, 2008).

- 60 Ibid.
- 61 College Board, "Trends in Student Aid" (2006). Derek V. Price and Angela Bell, "Federal Access Policies and Higher Education for Working Adults." 2008. F. McIntosh and Cecelia Elena Rouse, "The Other College: Retention and Completion Rates among Two-Year College Students" (Washington: Center for American Progress, 2008). Though there is evidence that grants can significantly improve college attendance and educational attainment, research on the impact of the federal Pell Grant program on college attainment outcomes is mixed. For a discussion of these issues see: Long, Bridget Terry. 2007. "The Contributions of Economists to the Study of College Access and Success." *Teachers College Record*, 109(10).
- 62 Ibid.
- 63 Pusser and others, "Returning to Learning: Adults' Success in College is Key to America's Future" (Indianapolis, Indiana: Lumina Foundation for Education, 2007).
- 64 Derek V. Price and Angela Bell, "Federal Access Policies and Higher Education for Working Adults." 2008.
- 65 Brian Bosworth, "Lifelong Learning: New Strategies for the Education of Working Adults." 2007.
- 66 L. Berkner and others, "2003-04 National Postsecondary Student Aid Study: Undergraduate Financial Aid Estimates for 2003-04 by Type of Institution" (Department of Education, Institute of Education Sciences, 2005).
- 67 B.J. Cook and J.E. King, "2007 Status Report on the Pell Grant Program" (Washington: American Council on Education, 2007).
- 68 B.T. Long, "What is Known About the Impact of Financial Aid? Implications for Policy." National Center for Postsecondary Research, Working Paper (August 2008).
- 69 See The Council for Opportunity in Education website at <http://www.coenet.us>.
- 70 Mathematica Policy Research, Inc., "A Study of the Effect of the Talent Search Program on Secondary and Postsecondary Outcomes in Florida, Indiana, and Texas: Final Report from Phase II of the National Evaluation" (Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service, 2006).
- 71 Cabrera and others, "Increasing the College Preparedness of At-Risk Students," *Journal of Latinos and Education* 5 (2) (2006); Austin Independent School District, "GEAR UP Austin: Impacting Lives Project" (2005-2006).
- 72 Deil-Amen and others, "Reawakening the Dream Deferred: Can Comprehensive Intervention Programs Increase College Awareness Among At-Risk Students?" (GEAR UP, 2005) available at <http://www.gearupdata.org/GearUpResearch.cfm> (last accessed 1/8/08).
- 73 IES, *Digest of Education Statistics 2007*.
- 74 College Board, "Trends in College Pricing 2005" (2005).
- 75 John Bound and Sarah Turner, "Cohort crowding: How resources affect collegiate attainment," *Journal of Public Economics* (2006). In Press, Corrected Proof, available at <http://www.sciencedirect.com/science/article/B6V76-4M33VVH-1/2/c3824aa-84b4ae19b95650f72090d11ff>
- 76 Michael Rizzo, "State Preferences for Higher Education Spending." In Ronald G. Ehrenberg, ed., *What's Happening to Public Higher Education* (Westport, CT: Praeger, 2006) p. 3-35.
- 77 College Board, 2005. Trends in college pricing, Washington, D.C.
- 78 Government Accountability Office, "Higher Education: Including Public, Nonprofit, and For-Profit Institutions in a Single Definition Is Unlikely to Immediately Affect Federal Spending, but Long-term Effects Are Unclear" (July 2005).
- 79 Stephen Goldsmith and William D. Eggers, *Governing By Network: The New Shape of the Public Sector* (Brookings Institution Press, 2004).
- 80 Adapted from Remo Hacki and Julian Lighton, "The Future of the Networked Organization," *McKinsey Quarterly*, Fall 2001.
- 81 Goldsmith and Eggers, *Governing By Network: The New Shape of the Public Sector*.
- 82 Some policies noted below are articulated in papers to be released at later events.
- 83 Linda Harris and Evelyn Ganzglass, "Creating postsecondary pathways to good jobs for young high school dropouts: the possibilities and the challenges," (Center for American Progress, 2008); Robin Chait and Andrea Venezia, "Improving Academic Preparation for College—What Works, What Do We Still Need to Know, and How Can State and Federal Policy Help?" (Center for American Progress, 2008).
- 84 Derek V. Price and Angela Bell, "Federal Access Policies and Higher Education for Working Adults" (Center for American Progress, 2008).
- 85 For more details on these recommendations, see CAP papers by Price/Bell, Goldrick-Rab/Roksa, Venezia/Chait and Ganzglass/Duke.
- 86 Price and Bell, "Federal Access Policies and Higher Education for Working Adults."
- 87 Price and Bell, "Federal Access Policies and Higher Education for Working Adults;" Goldrick-Rab and Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion;" and Harris and Ganzglass, "Creating postsecondary pathways to good jobs for young high school dropouts: the possibilities and the challenges."
- 88 Brian Bosworth, *New Strategies for the Education of Working Adults*, 2008.
- 89 Christopher Mazzeo, Sara-Goldrick-Rab, and Gregory Kienzl, "Smart Cities, Smarter Policies: Supporting Metropolitan Economies by Building Urban Community College Success," (Washington, D.C.: Brookings Institution: Metropolitan Policy Program, Blueprint for American Prosperity Paper, forthcoming).

- 90 Amy-Ellen Duke, "A Strong Step for Students House Higher Education Bill Promotes Innovation and Student Success" (Center for Law and Social Policy, February 2008).
- 91 Goldrick-Rab and Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion."
- 92 Association of American Colleges and Universities and Council for Higher Education Accreditation, "New Leadership for Student Learning and Accountability: A Statement of Principles, Commitments to Action" (Washington D.C.: AAC&U and CHEA, 2008).
- 93 For more on the essential elements of a student tracking systems see the work of the Data Quality Campaign (http://www.dataqualitycampaign.org/survey_results/elements.cfm)
- 94 Paul Osterman, "College for All: The Labor Market for College Educated Workers" (Washington: Center for American Progress, 2008).
- 95 Philip Trostel, "Fiscal Impact of College Attainment" (University of Maine, 2004).
- 96 Trostel, "Fiscal Impact of College Attainment."
- 97 Edward Glaeser and Albert Saiz, "The Rise of the Skilled City," NBER Working Paper No. 10191. (Cambridge, MA: National Bureau of Economic Research, 2003).
- 98 Adapted from Paul Osterman, "College for All: The Labor Market for College Educated Workers."
- 99 A recent simulation (Autor, Murnane, Levy, 2007) asked what would happen to the college/high school differential if the fraction of the workforce (the entire workforce, not just the young cohorts) with a college degree was suddenly increased to 50 percent and if the relative demand for college workers increased that the historical rate that obtained between 1940 and 1970 (a rate that is more modest than the 1970-2000 increase). The assumption about college attainment is highly ambitious and an unrealistic objective but the simulation suggested that if this happened in the year 2020 the differential would stand at .46 instead of the current.

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