Blueprint for American Prosperity
Unleashing the Potential of a Metropolitan Nation

TRANSFORMING AMERICA'S COMMUNITY COLLEGES:

A FEDERAL POLICY PROPOSAL TO EXPAND OPPORTUNITY AND PROMOTE ECONOMIC PROSPERITY

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May 2009

Metropolitan Policy Program
at BROOKINGS

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EXECUTIVE SUMMARY

To renew America's status as the world's leader in college attainment, the federal government needs to transform America's community colleges and equip them for the 21st century. This long-overdue investment should establish national goals and a related performance measurement system; provide resources to drive college performance toward those goals; stimulate greater innovation in community college policies and practices to enhance the quality of sub-baccalaureate education; and support data systems to track student and institutional progress and performance.

America's Challenge

Over the last two centuries, the United States created an advantage over other countries by helping our citizens attain formal education, generating an able workforce and technological advancement. Yet U.S. higher educational attainment, long considered a ladder to economic and social success, has stalled, and now reinforces inequalities between rich and poor America. Community colleges represent an affordable, accessible route for a wide income spectrum of students to access well-paying, high-demand jobs, as well as further education. But low degree completion rates at these institutions raise serious challenges for public policy efforts to achieve robust, broad-based economic growth.

Limitations of Existing Federal Policy

Between 2000-2001 and 2005-2006 total enrollment in community colleges grew by 2.3 million students, more than in any other higher educational sector. The current economic downturn is spurring further increases. Yet community colleges receive less than one-third the level of direct federal government support as do public four-year colleges. This matters as economic research indicates that a relative decline in post-secondary funding diminishes degree completion. While all public colleges and universities rely on non-tuition revenue, community colleges depend disproportionately upon state and local governments, currently under severe budget pressure. Only the federal government has the capacity to raise expectations for community college performance and support the necessary investments to achieve those goals at a scale commensurate with the growing demands facing over 1,000 community colleges nationwide.

A New Federal Approach

The new administration and Congress should transform our community colleges into engines of opportunity and prosperity by targeting new investments to those colleges that succeed in helping their students succeed. To that end, the federal government should:

- ***Establish national postsecondary goals and create a performance measurement system*** to support the effective use of federal resources

- ***Double its current level of support in order to account for more than 10 percent of community colleges' budgets***, ultimately awarding three-quarters of these funds based on colleges' performance in meeting key goals around student credit, credential, and degree completion

- ***Stimulate instructional innovations and practices*** to increase the quality of community college education, by devoting half of the administration's proposed $2.5 billion state-federal partnership fund to improve and evaluate practices enhancing sub-baccalaureate education

- ***Support the improvement of student data systems*** necessary to measure and track college student outcomes, guide funding, improve accountability, and promote continuous improvement in educational quality

I. INTRODUCTION

High aspirations abound for post-secondary education in America. A diverse chorus of researchers, employers, philanthropies, state and local officials, and now the president himself, articulates the importance of raising national educational attainment for achieving broad-based economic growth and strengthening the middle class.

Community colleges will be critical to any such effort. These two-year public institutions are present in most every U.S. community, enrolling 45 percent of the nation's college student population, and even higher shares of students of color and those from lower-income backgrounds. The education and training they provide help to fill important labor market needs, including some in the economy's fastest-growing occupations. Additionally, students who earn degrees and certificates from community colleges enjoy significant earnings advantages over workers with a high school diploma alone.

Yet community colleges face considerable challenges toward improving educational achievement, as only one-third of their students earn a credential of any kind within six years of enrollment. Many factors—both individual and institutional—contribute to this underperformance. This paper argues that one such factor, often overlooked, is the relatively meager financial support that community colleges receive from the federal government. Four-year colleges receive more than three times as much per full-time student in federal support as do community colleges. Exploding college enrollments and rapidly shrinking state budgets during the current economic downturn threaten to exacerbate the resource gap.

This paper proposes a federal policy agenda to both provide needed support for the community college sector, and improve its performance in graduating students with meaningful credentials holding labor market value. After an initial section outlining evidence on economic and societal trends in higher educational attainment, the paper explores the importance of community colleges for increasing national prosperity, as well as the obstacles they face in making that contribution. The paper demonstrates that despite these national aspirations, the federal government currently plays a very limited role in ensuring their success. It concludes by summarizing a four-part federal policy agenda to significantly transform the potential of community colleges nationwide to help their students, and thus our society, achieve greater prosperity.

Policies to help build human capital, narrow disparities by race and income, and grow a more robust and diverse American middle class form a central concern of the *Blueprint for American Prosperity*, a multi-year initiative of the Brookings Institution Metropolitan Policy Program. Community colleges are among the most metropolitan of our nation's educational institutions, drawing most of their students from their local areas, and graduating those same students into the regional labor market. "Transforming America's Community Colleges" argues that the route to higher national educational attainment and economic advancement for all runs in part through these metropolitan institutions. By improving their ability to serve their students better, the federal government would enhance not just metropolitan performance, but generate greater prosperity for the nation as a whole.

II. Higher Education Has Increased in Value, But U.S. Attainment Has Stalled

1. Higher education is critical to national economic and social prosperity

The link between national educational attainment and national economic well-being has never been clearer. Throughout the 20th century, and into the21st, countries with higher rates of school enrollment have achieved higher levels of per capita income. Goldin and Katz demonstrate that the world's low-income countries and their people invest in enrolling their children in school to a far greater degree than did high-income countries of the past, in order to partake in a more globalized economy.[1] As former Labor Secretary Robert Reich points out, because capital no longer remains within the borders of the nation where it is accumulated, but moves to wherever it can gain the best return, a skilled, productive workforce is critical for attracting investment and achieving economic growth.[2]

President Barack Obama recently echoed the calls of numerous influential state and national organizations when he called for a new national goal, that, "by 2020, America will once again have the highest proportion of college graduates in the world." Obama called for a renewed focus on the potential of higher education to help the nation reclaim a more broad-based prosperity.[3] Not since the creation of the G.I. Bill has any president put such a public emphasis on helping more citizens not only access—but succeed—in earning college degrees.

The president's focus on post-secondary education reflects long-run changes in the economic value of higher education in America. While at the turn of the 20th century, most students did not finish high school and very few went to college, those who did earned considerably more than those who never entered or finished high school.[4] Over time, as high school graduation became more common, and high-paying, low-skill manufacturing jobs increased, the wage premium for high school graduates dropped.

At the same time, demand for higher-order skills continued to rise, making a college degree the new ticket to success. Most research in this area focuses on the economic value of four-year, bachelor's degrees. Between 1980 and 2000, the wage premium to a bachelor's degree over a high school diploma increased from 45 percent to roughly 80 percent.[5] As a result, college graduates now earn nearly $300,000 more than high school graduates over a lifetime (present discounted value, net of college costs).[6]

Beyond its importance to individual and national economic growth, improving educational attainment also lies at the core of America's identity as a meritocratic "land of opportunity." The human capital gained from a college education is the most valuable economic asset parents can give their children, bearing a remarkably strong relationship to their economic outcomes.[7] Research indicates that the economic benefits of a bachelor's degree are even greater for individuals from low-income families, nearly tripling the chances that they will reach the top 40 percent of the income distribution as adults.[8]

2. Non-baccalaureate higher education is an important, but often overlooked, contributor to inclusive growth

Many high-demand, well-paying jobs require a college credential, though not necessarily a four-year degree. According to Bureau of Labor Statistics projections, two-thirds of all new jobs created in the next decade will require at least some college experience. But 19 of the 30 occupations with the largest projected job growth over the next decade do not require a four-year degree. Instead, many of the "middle skill" fast-growing occupations, such as veterinary technologist, physical therapist assistant, dental hygienist, and environmental science and protection technician, require a two-year associate degree.[9] The impending retirement of large numbers of current workers from occupations such as auto repair, welding, and electrical power maintenance will further expand labor market opportunities for workers with post-secondary, sub-baccalaureate credentials and certificates.[10]

In accordance with these emerging demands, research has shown that the economic gains to a two-year community college education are particularly robust, partly because a two-year degree increases the number of hours its holder is employed.[11] Associate degree holders earn roughly 20 to 30 percent more than workers with a high school diploma only.[12] Recent evidence also demonstrates that earning a certificate—which in some cases takes no longer than a few months—can lead to substantial earnings gains, especially if the underlying coursework is in a high-demand, career-oriented field such as health care.[13]

Yet as a nation we often fail to recognize the importance of community colleges and associate degrees.[14] Even though their advantages relative to a high school diploma are clear from an empirical standpoint, access to four-year colleges and universities tends to dominate the economic and policy debate, to the detriment of meeting our future workforce needs.

3. Higher educational attainment has stalled in the United States

The value of post-secondary education has not escaped students' notice. The proportion of U.S. high school graduates going on to college has risen dramatically in recent decades. Yet the share of entering college students who finish degrees has stagnated. In 1972, just over half (53 percent) of all high school graduates went on to college and 39 percent of those students finished a bachelor's degree within eight years of high school graduation. Twenty years later, fully 81 percent of high school graduates attended college, but the proportion completing a bachelor's degree is just 42 percent.[15]

If a college degree brings so many advantages, and more students than ever are attending college, why aren't more students finishing degrees? For a significant part of the student population, the answer lies in a heavy and growing reliance on (and, as we argue below, an underinvestment in) the public two-year sector. Students at community colleges attain degrees at far lower rates than their counterparts at four-year colleges.[16] Only one in 10 students entering community college in 2002 completed an associate degree within three years.[17] Consequently, the proportion of the population attaining college access—and therefore "some college"—has increased much faster than the proportion of the population succeeding in earning college degrees.[18]

As a result of this flat-line trend in U.S. higher educational attainment, America has shed its status as the most highly-educated nation in the world. At least 10 developed nations have surpassed the U.S. in educational attainment. Moreover, the U.S. ranks in the middle of pack in terms of the cognitive skills of workers, which represent arguably the most critical component of human capital.[19] Economic research indicates that raising the cognitive skills of our students to the level of top-scoring nations in Asia would significantly increase our national income.[20]

III. Community Colleges Are Key to Improving Higher Educational Attainment, But Face Significant Challenges of Their Own

Today there are 1,045 community colleges in the United States serving 11.5 million students—roughly 45 percent of the overall college student population.[21] Widely recognized as the single most affordable and accessible entry way to higher education, most families can locate a local community college within easy driving distance of their homes.[22]

By virtue of their sheer magnitude alone, these colleges must play a key role in any systemic effort to improve higher educational attainment in the United

States. This makes it all the more crucial to understand their unique characteristics, and the challenges they face in making a meaningful contribution to the economic and social well-being of their students, and the nation as a whole.

1. Community colleges present enormous opportunities for meeting national educational and economic goals

Developed under differing circumstances and environments, community colleges are distinct from four-year colleges along a number of key dimensions. Cost and financing rank chief among the differences. In a time when private dollars increasingly influence the provision of education, more than 60 percent of two-year colleges are fully *public* institutions, compared with 25 percent of four-year colleges. Even while garnering fewer private resources, community colleges put relatively little burden on families, maintaining much lower tuition, an average of less than one-fourth that at four-year colleges ($2,338 versus $9,706).

Expanding opportunities to everyone, regardless of prior advantages or disadvantages, community colleges are open to all comers. They register far more students over the age of 30 than do their counterparts, and serve their customers whenever and wherever they are able to enroll. Working learners are welcomed—more than half of two-year college students are employed, compared with only 37 percent of four-year college students. And since prior academic success is not a prerequisite for admission, 61 percent of students at community colleges take at least one remedial course while in college, and 25 percent take two or more remedial courses. This means that community college faculty members often take on the hard but necessary task of meeting students where they are, and helping to move them to the next academic level.[23]

This open-door policy serves an essential function in a country where substantial numbers of poor and minority students leave high school unsuccessful at having attained a diploma, and even more often without having developed strong writing, reading, and math skills. For many of these students a community college is their only option for higher education—in other words, they make a choice to attend community college rather than no college at all. In 2004, 67 percent of Latino and 47 percent of black students attending college in this country were enrolled in a community college.[24]

If the nation is to meet President Obama's goal of regaining American leadership in college completion, colleges must be prepared to serve students from all walks of life. Community college students report a mix of practical considerations and personal enrichment as reasons why they enrolled in such institutions. When not restricted to offer a single reason for attending, 46 percent report enrolling for personal interest and 42 percent report seeking job skills. Roughly the same percentage indicates that they enrolled in a community college to earn an associate degree and 17 percent want a certificate. Over one-third of community college students reported that they enroll in order to transfer to a four-year college.[25]

As noted above, community colleges are key not just for meeting a national educational goal, but for meeting current and future workforce needs. Middle-skill jobs that require less than four years of post-secondary education will remain in high demand. Educational and occupational projections reflect future shortages of workers across the higher ed spectrum, including those with certificates and degrees.[26] Our ability to "catch up" will depend on whether we can improve the performance of community colleges.

Finally, community college education is increasingly important in critical sectors like manufacturing, which has accounted for much of the nation's productivity growth, and which remains the foundation of many metropolitan economies. To maintain the nation's competitive advantage in manufacturing, continued rapid productivity growth is essential. The skills obtained through community college education can contribute to that productivity growth. As the U.S. Department of Labor has noted, community colleges provide the types of formal training that are increasingly necessary for jobs in advanced manufacturing involving complex, high-tech equipment.[27]

2. Community colleges face particular financial challenges in helping their students to succeed

Confronted with high tuition costs, a weak economy, and increased competition for admission to four-year colleges, students today are more likely than at any other point in history to choose to attend community college. Annually, community college enrollment is increasing at over twice the rate of that at four-year colleges.[28] Between 2000-2001 and 2005-2006 alone, total enrollment at community colleges grew by 2.3 million students.[29] In many states, college campuses are bursting at the seams, and enrollments rise every year. In the last year enrollment in Missouri community colleges has increased by 6 percent, in Florida the figure is 7 percent, and at colleges in places as difference as Arkansas, California, and Maryland increases have reached 10 percent or more.[30] In some parts of the country, substantial numbers of students are leaving four-year colleges for community colleges—for example, rates of reverse transfer (four-year to two-year) in Cleveland, Ohio jumped 11 percent in the last year alone.[31]

Despite their popularity, community colleges do not demonstrate high rates of student success in the aggregate. After three years, close to 50 percent of first-time community college students leave postsecondary education without attaining a credential or transferring.[32] Naturally, this number decreases when degree completion is measured over a longer period of time or only among individuals with a stated early desire for a credential, but in the aggregate it represents a substantial loss of human capital and resources. Slightly more than one-third of community college students who began in 1995 completed a credential of any kind within six years of starting college (10 percent earn a certificate, another 10 percent earn a bachelor's degree, and the remainder earn an associate degree).[33] Another 20 percent were en route, or in limbo—still enrolled in college either at a two-year or four-year school, but not yet holding a degree.

Recent research suggests that part of the reason why degree attainment has not expanded along with enrollment in community colleges lies in the dilution of resources spent on students as enrollment increases.[34] The United States uses community colleges to accommodate a growing demand for college, yet provides those schools roughly half the resources and subsidies per student enjoyed by public four-year colleges and universities.[35] As explained in the next section, because the federal government contributes such a small proportion of those resources, community colleges depend heavily on financing from state and local governments. Yet they are too often losers in battles for scarce state resources. This problem is only likely to worsen in the coming years, as very tight state and local budgets, and the increased demand for schooling that will accompany a tepid job market, squeeze these institutions further.

The confluence of burgeoning enrollment and declining resources forces community colleges into untenable positions. A recent report indicates that during tough times, public two-year colleges are not spending dollars gained from tuition hikes on instructional expenses.[36] This is not surprising, since instructional costs do not tend to increase as rapidly as non-instructional costs (e.g. utilities, technology), and as colleges encounter declines in state support they must shift dollars in order to remain open.[37] But this shift comes at the expense of students. While the most heavily funded elite public universities have achieved increased completion rates and decreased time-to-degree for their students, crowded public two-year institutions have seen the trends move in an opposite direction.[38]

IV. THE FEDERAL GOVERNMENT DOES NOT SUPPORT COMMUNITY COLLEGES AT A LEVEL MATCHING THEIR IMPORTANCE TO NATIONAL GOALS

Immense challenges face American community colleges, even as in many ways the future of postsecondary education in this country rests with them. Concerns about their capacity and focus are well-known, yet both are measured under conditions of great duress. A lack of federal leadership contributes to that duress, and depresses the performance of community colleges well below their great promise.

1. Community colleges depend heavily on state and local revenues, contributing to poor and unequal outcomes

Community colleges rely on states and localities for the lion's share (nearly 60 percent nationally) of their revenues. Such dependence on state and local dollars makes colleges particularly susceptible to fluctuations in the economy and, thus, state and local budgets. Public higher education—and community colleges in particular—faces fierce competition for limited state resources. From 2003 to 2008, state budgets for all public services—Medicaid, transportation, corrections, public assistance, and other expenditures—grew at an average rate of nearly 6 percent, but growth in state support for higher education lagged 1.5 percentage points behind.[39]

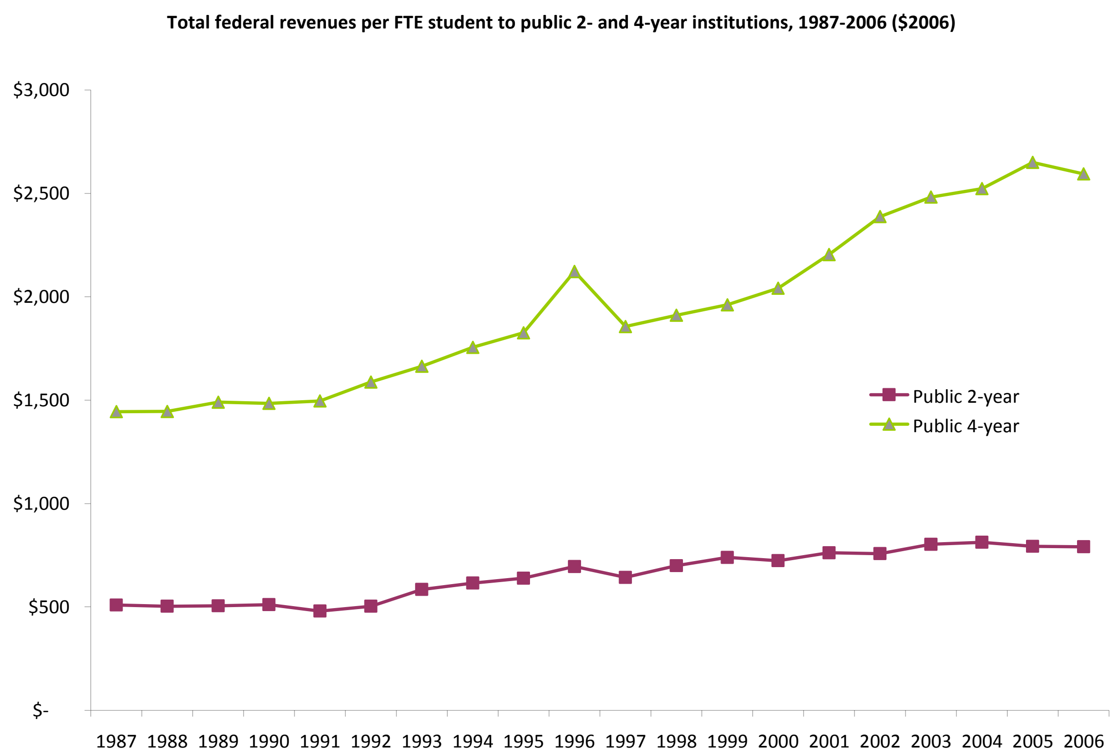
Changes in resources across public higher educational institutions are far from uniform, however. A recent report from the National Governors Association highlights the difficulty state policymakers and college administrators faced in budgeting for unexpected changes in enrollment or other demands over the past 30 years.[40] Between 2002 and 2005 state and local appropriations fell for all public universities, but because community colleges depend more heavily on these revenues, they took the hardest overall financial hit. On the revenue side, the average public community college lost roughly $500 per full-time equivalent (FTE) student. On the expenditure side, spending per student fell 5.9 percent among public community colleges, while it actually *increased* at public four-year universities by 2.9 percent.[41]

The current economic downturn is impacting community college revenues even more severely. A recent survey of state directors of community colleges found that more than half of the states expect community college budget reductions this fiscal year. These cuts are likely to be painful, with states such as New York, Virginia and California projecting funding declines of 10 percent or more this year. Meanwhile, the economic downturn has community colleges around the country bracing for enrollment increases in the coming years, resulting in further budget strains.[42]

The federal government plays a limited role in supporting community colleges. While the federal government provides $2 billion per year in appropriations, grants and contracts (not including Pell grants) to community colleges, public four-year institutions receive about 10 times as much in the aggregate. Enrollment differences alone do not account for this disparity: four-year colleges receive over 300 percent more in federal support per FTE student compared with community colleges, $2,600 vs. $790, respectively.[43] In total, federal funds (including financial aid) amount to only 15 percent of community college revenue.[44]

The federal government does invest in community colleges in other indirect ways. For instance, the American Reinvestment and Recovery Act (ARRA, or the stimulus bill) included $3 billion for Workforce Investment Act (WIA) programs, a portion of which will likely be administered through community colleges. But a community college education involves more than just short-term programs, which are generally WIA's focus. Getting students to a 13th or 14th year of college and a meaningful credential requires investments in areas beyond job training. Boosting federal support for community colleges would reduce their heavy reliance on local and state support, and more appropriately balance support between two- and four-year institutions. [45]

FIGURE 1.
The gap in federal support for two-year versus four-year colleges has grown wider over the past 20 years



Source: Delta Cost Project 20-year database (2009); Authors' calculations

Additional support from state and local sources fails to compensate for community colleges' relative lack of federal support. Community colleges typically receive between $6,500 and $6,800 per FTE annually from state and local sources, while public research universities receive approximately $15,000 per FTE annually, and other public colleges (granting baccalaureate and master's degrees) receive approximately $10,000 per FTE annually. Even public high schools receive more public support per student than community colleges. Inadequate funding shows up in the classroom: since the 1970s, the ratio of students to faculty has declined by almost 9 percent at the top public universities, but increased by 31 percent at community colleges.[46]

To date, the federal government has primarily supported community colleges by providing financial aid to students who enroll in those institutions. The College Board's Rethinking Student Aid panel rightly points out that community college students are allocated less financial aid, and that rules governing the distribution of aid (such as the requirement that students attend at least half-time) further limit its usefulness for those students.[47] The disproportionate benefits of financial aid accruing to four-year college students create even greater disparities between the sectors. Reforms in the area of financial aid for older students, parents, and those who cannot take multiple classes at a time are clearly needed. Adopting those reforms would enable more students to afford to attend college but would still leave community colleges well short of the resources they need to educate them effectively. Moreover, fixing financial aid will not create the incentives needed for colleges to improve student outcomes, nor diminish their vulnerabilities resulting from too-heavy dependence on state and local budgets.

This discussion presumes that resources matter for efforts to improve higher educational attainment levels. While it is difficult to establish a clear causal relationship between institutional expenditures and degree outcomes, analyses indicate a positive relationship between the availability of resources per student and college degree attainment. When an increase in enrollment creates a "crowding" of students vying for scarce college resources, rates of degree completion tend to decline.[48] This is precisely the situation faced by American community colleges, which have seen increases in student demand unmatched by increases in public subsidies.[49]

Finally, the degree to which federal funding prioritizes four-year colleges over two-year colleges penalizes those serving the neediest students, conveys low expectations for their performance, and contributes to inequities in higher educational attainment.

2. Existing methods of funding community colleges fail to encourage better student and institutional performance

One might reasonably ask whether the federal government should expand financial support for a community college system that is delivering less-than-stellar results. As noted above, evidence indicates that problems of under-funding and under-performance at community colleges are related, suggesting that greater federal resources could help. But *how* (not just *how much*) funding is delivered to community colleges may also matter greatly in gearing those institutions and their students toward better outcomes.

To be sure, current funding levels cast community colleges and their students as “less than” rather than “different from” the nation’s four-year colleges and universities and their students, and may consequently create and reward low expectations for their performance.[50] At the same time, surveys of student engagement indicate that the best community colleges are performing at higher levels than some of the best four-year universities.[51]

Even more importantly, though, most state and local funding for community colleges is based on enrollment. This rewards colleges for getting students in the door, but not for making sure those students succeed. In theory, students would seek out colleges and programs where other students have had success in finishing degrees, transferring to four-year colleges, and getting job and those same colleges and programs would compete against one another attract students. In practice, students lack information about college performance, and competition is limited since most campuses serve a primarily local population (rather than a statewide or national population in the case of four-year colleges and universities). The method by which most community colleges are funded thus provides little incentive for institutions to focus on improving the quality of outcomes for their students.

Among the mix of federal dollars and programs dedicated to the community college sector, very little aims to improve institutional performance. In 2002, for example, the federal government provided $4.5 billion to community colleges through a mix of direct funding to institutions, categorical grants to states, and financial assistance grants to students.[52] This included:

- Direct funding of roughly $440 million, including $266 million that went to community colleges to support TRIO, a group of federal tutoring, support and counseling programs designed to increase retention, and graduation rates among disadvantaged students. However, the emphasis on performance is diminished by the heavy resource investment in programs and student services, regardless of outcomes.

- Another $631 million that came to colleges via three categorical grants: the Adult Education and Family Literacy Act State Grants ($141 million), the Secondary and Technical Education, State Basic Grants (commonly known as Perkins Grants, $382 million), and the Tech Prep Education Grants ($108 million), each of which are allocated via a funding formula

- The greatest source of federal dollars for community colleges in 2002 was $3.5 billion provided to their students under the federal Pell Grant program ($3.2 billion) and a set of smaller campus-based grant programs such as Federal Work-Study. These dollars may be critical for supporting student access to higher education, but their availability does not depend on institutional performance in promoting student success

Recently, the federal government has taken steps to direct new resources toward positive college outcomes, rather than inputs, by funding student supports directly through the federal student financial aid system. For example, the president's proposed FY 2010 budget includes $2.5 billion designated for state-federal partnerships designed to increase college completion. The goal of that innovation fund is to identify—through rigorous evaluation—practices that increase attainment and eventually bring them to scale.

Those proposed partnerships build on one of the ideas in the 2008 reauthorization of the Higher Education Act (HEA), which authorized a "Student Success Grants" pilot to provide supplemental funds to all students who receive federal Pell grants. The $1,500 success grants were designed to help two- and four-year colleges offset the costs of expanding and improving student services that can help students stay in school and complete their credentials. 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. Examples of services eligible for funding include such things as intensive advising and counseling, college and career success courses, learning communities, curriculum redesign, and child care and transportation assistance. The pilot is targeted to colleges and universities where at least 50 percent of first-year students are in need of some remedial coursework.[53] Congress however has yet to appropriate funds for the Success Grants pilot.[54]

The Success Grants and the proposed state-federal partnership represent promising efforts by the federal government to invest in successful outcomes. As we explain later in this paper, to fulfill their promise, it is imperative that new efforts be directed explicitly at community colleges and their students. Many states place a higher priority on meeting the needs and requests of their four-year colleges and universities, so without specific targeting public two-year colleges are unlikely to benefit from these new funds.

But as valuable as the proposed innovation fund may be, it alone will not help community colleges build the infrastructure and core operating capacity needed to significantly improve outcomes. Simply put, it will be difficult for community colleges to successfully demonstrate positive impacts (required by the partnerships) with new practices if they are implemented under disadvantageous conditions.

3. Student-focused approaches alone are insufficient for raising community college attainment rates

The myriad challenges faced by community college students are well-known. For example, many have encountered academic difficulties in earlier schooling and face competing demands on their time. It is therefore tempting to focus attention on student-directed incentives intended to alter individual behaviors. Many such efforts are afoot; one notable example is the performance-based scholarship program being studied by MDRC with support from the Bill and Melinda Gates Foundation. These programs aim to alter students' cost-benefit calculations, making college completion more attractive.

While such incentives may bring students to the table, by (for instance) helping them to spend more time on a college campus, sub-optimal completion rates will likely persist if colleges are simply ill-equipped to serve them. Increasing incentives for students without sufficiently resourcing colleges fails to recognize that educational attainment is a two-sided process, resulting from the actions of both students and educators.

We are seeing evidence of this now—the stimulus package increased financial aid for students, and community college enrollment is booming. But the colleges do not have sufficient classroom space or instructors to meet the demand, and as a result students cannot get into the classes or programs they desire. In Maine, for example, even before stimulus spending took effect, the community college system had seen enrollments go up by 20 percent, while at the same time a $2.9 million decline in state financing has led to widespread layoffs and hiring freezes.[55] Community colleges in other states are considering enrollment caps to deal with the budget squeeze, in a sharp departure from their open-door missions.[56] While the jury is still out on the effectiveness of student-directed incentives for increasing completion, they are likely a helpful, though not sufficient, ingredient for improving performance in the community college sector.

V. The Federal Government Must Invest to Transform Community College Expectations and Outcomes

There is increasing recognition among the American public that obtaining a college degree is important for a young person's chances to succeed in the world of work.[57] As a consequence, we imagine that President Obama's message—that the nation needs all of its future workers to gain a postsecondary education—resonates broadly.

For a variety of financial, academic, and personal reasons, millions of these future workers will attend community colleges. But despite their strong sense of mission to serve students well, community colleges currently have little incentive to focus on student success rather than inputs and process. As recognized by ambitious initiatives such as *Achieving the Dream,* a "culture of evidence" focused on student achievement—when coupled with capacity-building efforts to make success possible— can have a rapid and transformative impact.[58]

Absorbing the lessons of such initiatives, the federal government should exercise new leadership to significantly transform the potential of community colleges nationwide to help their students, and thus our society, achieve greater prosperity.

1. The federal government should develop a set of national postsecondary goals and an accompanying performance measurement system for community colleges

Given the administration's stated ambitions, the overarching goal of national higher education policy should be to effectively educate students seeking vocationally or academically-focused training and education at the postsecondary level. While colleges need to focus on the needs of their students, it is important that they also have clearly defined goals along these lines, with incentives to match. It is not uncommon for community college administrators to be mired in concerns about the wide array of their students' aspirations, rather than oriented toward realizing broader institutional goals.[59]

It is imperative that success be measured by progress—growth in learning that takes into account where students begin their college experience. Community colleges should help their students gain momentum toward course completion and credentials. A broad, comprehensive approach to measuring success is thus needed. Luckily, initiatives such as *Achieving the Dream* have laid the groundwork for just such an approach, which must be consistent with the multiple missions embraced by community colleges (see below). For example, some colleges will seek to serve older workers better, helping them to get a certificate in a new field. Other colleges will seek to increase the rate of associate degree completion among younger students. Judged against a broad array of factors, both types of institutions could be deemed successful, as long as they continued to also maintain current open admissions practices.

A performance measurement system would help policymakers, institutions, and students stay focused, and to ensure that we make the most efficient and effective use of scarce resources. To be clear: greater budgetary transparency and clearly articulated student outcomes can help increase attainment, but these steps are not intended to introduce a *No Child Left Behind* approach. Instead, reporting results in this way could shine much needed light on what our community colleges are achieving, and avoid misguided sanctions or perverse incentives. While the detailed design of a performance measurement system lies beyond the scope of this paper, and depends on the national goals established, future analysis should be devoted to establishing a discrete and meaningful set of factors against which community colleges can be evaluated.

Box 1. Washington State Student Achievement Initiative

A handful of states are reconsidering their approach to financing colleges and universities to focus on student outcomes. One idea receiving increased attention involves altering current state financing formulas to emphasize outcomes such as course completion. The idea is to give more institutions an incentive to pay attention to how they help students achieve academic success.

In 2004 the Washington State Higher Education Coordinating Board articulated incentive funding as a goal and developed a set of proposals to restructure the financing system for all colleges in the state, including community colleges. Subsequently, the state developed a Student Achievement Initiative to motivate community colleges to improve student outcomes by rewarding them for progress to key "momentum points" toward a degree or credential. Under the plan, colleges receive credits for incentive dollars for up to six momentum points, including when students earn their first 15 and first 30 college credits, earn their first five credits of college-level math, pass a pre-college writing or math course, make significant gains in certain basic skills tests, and earn a degree or complete a certificate. Colleges are also eligible for incentive funds for those students who advance through adult basic education and English as a Second Language classes and become college-ready.

The state is currently piloting the program and expects to award its first incentive dollars at the conclusion of the 2008-2009 academic year. Currently, $500,000 has been budgeted for the incentive rewards, though the state hopes to increase that amount in the near term.

Sources: Christopher Mazzeo, Brandon Roberts, Christopher Spence, and Julie Strawn, "Working Together: Aligning State Systems and Policies for Individual and Regional Prosperity" (Brooklyn, NY: Workforce Strategy Center, 2006); State Board of Community and Technical Colleges, State of Washington "Student Achievement Initiative." Fact Sheet (no date); George Boggs and Marlene Seltzer, "What to Measure and Reward at Community Colleges." Inside Higher Education, February 25th, 2008.

2. To drive community college performance toward national goals, the federal government should provide new resources

Establishing goals and measuring progress are vital steps for improving attainment levels in the public two-year sector. But new resources will be needed to help financially strapped institutions to deliver on those goals. Moreover, the federal government currently lacks the requisite "skin in the game" to demand more out of the sector. Only a substantial direct investment can initiate the changes required.

Significant new resources will be required to achieve transformative change among community colleges. On the heels of the president's call for universal higher education, now is the time to commit those resources. To that end, the federal government should *double* its current level of direct support for community colleges in order to account for 12 percent of their budgets. As current direct federal spending is $2 billion, this would imply spending another $2 billion, bringing the total federal expenditures on community colleges (not including student subsidies) to just over $4 billion. This is a needed but modest commitment, in light of the fact that the federal government spends $60 billion per year on K-12 education and over $20 billion per year on public four-year universities.[60]

As described below, the federal government should allocate this new funding largely based on institutional performance. States like Washington have begun to take this approach with a portion of their community college funding (see Box 1), and any commitment of serious new resources at the national level should follow a similar model.

Moreover, by undertaking this effort the federal government would help to expand upon investments by the philanthropic sector over the last five to ten years. For instance, the Bill and Melinda Gates Foundation recently awarded $32 million to community colleges to help them improve educational outcomes for lower-income young adults and the foundation plans to spend close to a half-billion dollars on similar efforts over the next four years. The Lumina Foundation for Education has invested extensively in community colleges since 2004 through its *Achieving the Dream* Initiative, in which they partner with other foundations to support 82 institutions in 15 states. *Achieving the Dream* has provided nearly $100 million to the community college sector to date.

What exactly would community colleges do with these new resources? They could be directed to several key areas of need:

- Campus infrastructure. Community colleges are experiencing a tidal wave of enrollment whose only precedent was the massive expansion that took place when most of these schools were first created in the 1960s. Between 1960 and 1970, the fraction of college freshmen attending community college nearly doubled—from 21 percent to 40 percent—and public subsidies for both capital projects and educational expenditures were plentiful.[61] Overall, since 1960 student enrollment at community colleges has increased more than 700 percent, a greater increase than in any other sector of higher education.[62] From a campus infrastructure standpoint, however, colleges are simply not equipped to respond. Since 1974, the net number of new community colleges has been just 149, a growth rate of only 17 percent. Over the same period, the number of public four-year colleges increased 20 percent, and the number of private four-year colleges and universities increased 49 percent, though both experienced lower rates of enrollment growth than did community colleges.[63]

Some argue that enrollment increases at community colleges do not imply the need for new physical infrastructure, because students are only part-time, or because they can be accommodated via online/distance-learning courses. While community college students tend to enroll part-time, most part-time students require space in which to learn, and most would benefit from investments in new classrooms and new or renovated spaces that can house counselors, advisors, peer tutors and other in-person supports for learning.

The proposed $7 billion designated for higher education facilities was omitted in final negotiations over the stimulus package in February 2009.[64] While some colleges and universities may ultimately find the resources they need from their governors, community colleges stand little chance of garnering those resources. Lacking vocal advocates, powerful roles in state governance structures, and often cast solely as job-training providers, the two-year sector is often the loser in battles waged over scarce resources, especially when competing with flagship universities.

- Technology. Even when community colleges find the space to house their students, they often lack the kind of technology needed to educate them effectively and efficiently. Additional federal resources could be used to equip facilities with up-to-date technology, designed to meet the needs of older adults as well as younger students, with attractive features that promote learning and opportunities for students to work together outside of class.

  "Smart" classrooms are being created at four-year colleges across the country, while community colleges report having to defer maintenance on their existing buildings, having insufficient lab space for science and computer courses, and being challenged to find enough classrooms in which to teach students.[65] We cannot educate the workforce of the future in classrooms and buildings that resemble the overgrown high schools of the past. The call for enhanced distance learning, or online opportunities, has not been accompanied by financial investments to make those innovations possible. And investments in distance learning complement the others we have proposed in physical infrastructure because both have something very important in common—they allow us to make better use of information technology. Web-based learning, for example, is useful for distance learning as well as more advanced classroom teaching, but only if classrooms are designed with this in mind. Our 1950s-era community college infrastructure simply will not do in the 21st century, even though the vast majority of education will continue to take place in classroom settings.

- Faculty. Topping the list of concerns among community college administrators is a severe shortage of faculty in the nursing, allied health, and STEM fields.[66] The fields they teach are in very high demand—which is, of course, part of the reason community colleges deserve more support—but thereby make it that much more difficult to attract and retain qualified faculty. These individuals have plenty of other job opportunities and, with what community college instruction pays, teaching amount to little more than a form of charity.

Shortages in such specialized fields are not new, but compounding the problem for community colleges is that two-thirds of their faculty members are between the ages of 45 and 64.[67] So while hiring younger and, more importantly, less expensive faculty may be an attractive option, the pool of qualified applicants with these specific in-demand skills may be quite small.

Given the limited resources available for instructional costs, it is no surprise that community colleges rely very heavily on part-time adjunct lecturers who often teach multiple courses at multiple colleges and receive low wages and no benefits. Nearly two-thirds of community college faculty are part-timers, compared to less than one-fourth of faculty at public four-year institutions.[68] Compared to professors at four-year institutions, whose salaries include pay for time spent on activities other than teaching, community college professors have little incentive to invest in their own professional development or spend scarce time learning new technologies required to effectively use "smart" classrooms. And like professors elsewhere, community college faculty need resources for planning and curriculum development, and for regular meetings to discuss teaching, refine lessons, and assess performance. Additional federal resources could help augment the supply and quality of community college instruction in these high-demand fields.

What might this new level of investment look like at the average community college? As a simple thought experiment, assume the $2 billion in new federal funds is split equally among all community colleges, which in turn decide to split the monies equally between capital projects and instructional enhancements. Under this scenario, the average community college could receive an additional $1 million for badly needed infrastructure improvements. Although not enough on its own, this injection of federal funds, combined with existing capital funds, could be sufficient to "green light" the construction or renovation of high-tech classrooms. In terms of instruction, an extra $3,800 per FTE faculty member would be made available as either an incentive to current instructors for improving student performance or as an inducement to make teaching at a community college more attractive to those who would have otherwise sought employment at a four-year college. Again, these are merely a few of the possibilities. Given the added performance incentives proposed here, it would be reasonable to give community colleges discretion in using these resources in ways best suited to their specific needs and goals.

New resources of the magnitude envisioned here should explicitly promote greater success for students. Indeed, the funding we are recommending be provided directly to community colleges is on par with the proposed investment in state-federal partnerships to increase college completion (discussed earlier). Again, the two are complementary, not redundant efforts—and in fact we believe the second cannot succeed without the first. To that end, the federal government should allocate these resources over time based on community colleges' meeting key goals and metrics defined for the performance measurement system recommended above. A phased deployment, however, would be needed to put institutions on a level playing field:

- In the program's first year, all new funds could be based on enrollment, with community colleges enrolling low-income and minority populations receiving greater resources, and a weighting scheme used so that schools with large proportions of part-time students are not disadvantaged[69]

- Beginning in year two, half of new funds would be based on enrollment, with the other half distributed based on colleges' performance. Over time, funding would shift to a 25 percent enrollment/75 percent performance allocation

Because they vary widely in the types of students they serve and the level of state and local government support they receive, colleges would not be required to advance performance in all targeted areas, but could instead be rewarded for making progress in any or all of these areas. Community colleges generally should be given latitude to use these resources in ways that best meet the needs of their own students. Colleges that continue current practices would have their funding increased, with the expectation that the new resources would eventually enhance their performance. Institutions that are successful in demonstrating improved performance could see much larger increases in funding, amounting to as much as a doubling of their direct federal support.

To ensure that money is used wisely, and does not simply supplant state and local support, matching funds and maintenance of effort could be required. For example, the federal government might contribute 75 percent of the total costs of new programs and projects while the economy is still struggling, and reduce this percentage when state and local governments get back on their feet. Additional weighting could be provided to states that contributed reforms of their own, such as altering funding schemes for community colleges to emphasize student outcomes, and requiring performance-based accountability for state funds.[70]

3. The federal government should stimulate the adoption of innovative policies and practices that improve the quality of community college education

A new federal resources-for-performance program will not succeed if it merely leads to an increase in meaningless credentialing. Setting expectations for sub-baccalaureate outcomes and equipping community colleges with the resources needed to achieve those outcomes should stimulate a revitalized focus on student learning. This includes both the forms of general and specialized learning needed to perform specific jobs, and the kinds of skills that all citizens need to be responsible and productive members of their communities, and that colleges are best positioned to provide. Community college should not only provide a second chance to students who were unsuccessful in high school, but also provide a convenient and affordable opportunity for students to continue and expand upon what is taught in secondary school.

In this respect, community colleges need resources to develop, implement, and assess a range of practices and policies to support student success. The disadvantaged youth and adults many colleges serve often have had negative prior experiences with formal schooling, and have skill levels well below what is needed to complete high school and be prepared for postsecondary education. Colleges have to find effective ways to teach these students, keep them in school, and accelerate their learning. This in turn requires an intensive commitment of human resources and high levels of expertise among college faculty and staff. The knowledge base around effective curriculum and teaching, and advising and support practices for community colleges is still limited. Federal dollars could play an important role in supplementing the resources for colleges and states to develop innovative approaches, implement them at scale, and conduct rigorous research on their effectiveness. The increase in compensation for community college faculty that we discussed earlier could also help as it would provide them with greater incentives to invest in their teaching skills and lesson planning.

As suggested above, investments in teaching practice and the professional development of college faculty to better serve students is one area where new federal dollars can make a significant difference in improving student learning. Research on the implementation of K-12 education reforms shows that faculty development is crucial in successfully improving the quality of instruction, and that such professional development takes extensive time and resources. The most effective professional development is conducted at the school site, involves extensive collaboration among teaching faculty, focuses on specific problems of practice, and is sustained for a sufficient period of time to impact both teaching and student learning. Faculty need significant time and resources for planning and curriculum development and for regular meetings to discuss teaching refine lessons and assess performance. Unfortunately, at many community colleges the most common forms of professional development are the kinds of one-time workshops that research shows are ineffective. This stems in part from a lack of resources for faculty development: in many states funds for college faculty development are limited or have declined in recent years.[71]

Community colleges currently have few resources to support innovative practices or to fund the developmental costs for curriculum or supporting faculty training in new and innovative teaching approaches. While there are some competitive grant programs that support innovation in higher education, such as the Fund for the Improvement of Postsecondary Education (FIPSE), these grants have historically been small in size and scope and rarely used strategically. In fiscal year 2002, for example, $22 million was provided for new or renewal FIPSE grants, of which community colleges were awarded roughly $7 to $8 million. FIPSE budget allocations have risen dramatically in recent years as Congressional representatives have used the program to funnel earmark grants to colleges and universities in local districts. In 2008, for example, roughly $100 million dollars was added to the FIPSE budget in the Omnibus appropriations bill for various earmarks. [72]

The Obama administration's proposal to support state partnerships that increase college success for lower-income students is an important step forward. The program should, however, provide explicit recognition of the critical role community colleges must play in enhancing higher educational success for this group. To help build additional capacity for that success in the two-year sector, the federal government should designate half of the dollars spent on the $2.5 billion state-federal partnership fund for innovative efforts to improve *sub-baccalaureate* education. Such an effort will require proactive partnerships with developers in the field, philanthropic organizations, and state and local policy makers. Given that the current knowledge base of how to improve community college success is relatively weak, rigorous evaluations of all programs and practices funded through the partnership should be required.

Examples of the types of innovations that might be developed, scaled up, and evaluated include:

- programmatic innovations such as learning communities
- implementation of new curricula that integrate occupational and academic content
- research-based student services such as academic support centers and other models that can provide counseling and advising at scale
- approaches that dramatically improve student learning and accelerate progress in developmental education
- system-wide efforts to develop assessment and placement policies that are supportive of student success

In all cases, innovations must be shown to be research-based in conception, have their impact assessed rigorously, and be shared widely with other colleges and college systems if deemed effective (see Box 2 for an overview of research in this area). A key to making such an innovation fund work effectively is to ensure that federal dollars support practices that can endure after the initial infusion of these dollars disappears. One strategy to ensure sustainability would be to limit funding to activities that create tangible tools (new curricula), develop significant capacity among community colleges (intensive, focused professional development) or create permanent new structures locally or state-wide (reorganized college departments, services and programs, policy reforms). A second strategy is to use federal dollars to leverage broader resource commitments and/or policy changes at the state level. A third strategy is to collaborate with philanthropists and other local community college funders. For example, foundation dollars might be used to implement and test new innovations and practices while federal supports would focus on assessing effectiveness and helping scale-up and institutionalize particularly promising approaches or interventions.

Box 2: Evidence on Community College Innovation

The research base on effective community college innovations, practices, and policies to increase student achievement is small, albeit growing rapidly. One positive by-product of an innovation fund tied to research is that it would produce much more rigorous evaluation of what works in community college policy/practice. The following (non-exhaustive) list highlights existing high-quality research studies and summaries of each of the practices noted in the bullets above:

Learning communities

- Susan Scrivener and others, "A Good Start: Two-Year Effects of a Freshmen Learning Community Program at Kingsborough Community College" (New York: MDRC, 2008)

- Derek Price, "Learning Communities and Student Success in Postsecondary Education: A Background Paper" (New York: MDRC, 2005)

- Vincent Tinto, "Classrooms as Communities: Exploring the Educational Character of Student Persistence." *The Journal of Higher Education* 68 (6)(1997): 599–623

Curriculum integration

- Dolores Perin, "Academic-Occupational Integration as a Reform Strategy for the Community College: Classroom Perspectives." *Teachers College Record* 103 (2001): 303–35

- James R. Stone, III and others, "Building Academic Skills in Context: Testing the Value of Enhanced Math Learning in Career and Technical Education"

(Minneapolis, MN: University of Minnesota National Research Center for Career and Technical Education, 2005)

Student services and other academic supports

- Norton Grubb, "'Like, what do I do now?' The dilemmas of guidance counseling." In Thomas Bailey & Vanessa Smith Morest, eds., *Defending the Community College Equity Agenda* (Johns Hopkins University Press, 2006)
- Rogéair Purnell and Susan Blank, "Support Success: Services That May Help Low-Income Students Succeed in Community College (New York: MDRC, 2004)
- Susan Scrivener, Colleen Sommo, and Herbert Collado, *Getting Back on Track: Effects of a Community College Program for Probationary Students* (New York: MDRC, 2009)

Developmental education

- Henry Levin & Juan Carlos Calcagno, "Remediation in the Community College." *Community College Review* 35(2008): 181–207
- Eric P. Bettinger and Bridget Terry Long, "Remediation at the community college: Student participation and outcomes." *New Directions for Community Colleges* 129 (Spring): 17–26

Assessment and placement policies

- Nancy Shulock and Colleen Moore, "Rules of The Game: How State Policy Creates Barriers to Degree Completion and Impedes Student Success in the California Community Colleges" (Sacramento: California Institute for Higher Education Leadership & Policy, 2007)
- Chancellor's Office of the California Community Colleges, *Effective Practices for Promoting the Transition of High School Students to College: A Review of Literature with Implications for California Community College Practitioners* (Sacramento: Chancellor's Office of the California Community Colleges, 2009).

4. The federal government should support the improvement of student-level data systems to track community college performance

The only way to operationalize real accountability, and to track progress and improvement, is for the federal government to work with states and local communities to create a real-time data system for tracking individual student outcomes at community colleges, throughout the education system, and into the labor market. Any such system must contain a number of key student-level data elements, including basic demographics, school attendance, enrollment, graduation and dropout data, and high school and college transcript information, including information on courses completed, grades and credentials earned.[73] Ideally, the system would also link to state employment data, so that institutions could be assessed on their success in helping graduates obtain good-paying jobs in fields related to their degrees.

Currently, most states do not have the ability to track these student outcomes.[74] According to a 2008 survey by the Data Quality Campaign, only 28 states report having the ability to link data systems for PK-12 and postsecondary education, and even fewer can link these with labor market data.[75]

Fortunately, a few leading-edge states have made headway in creating comprehensive data systems. One such state is Florida**.** The Florida K-20 Education Data Warehouse includes data on all students in public K-12, college, university, and career and technical students. Florida's Data Warehouse also captures outcomes for students who transition from one system to another, and it can measure student employment and earnings outcomes by connecting to the state's wage record files.[76] Florida's system, along with a few others (e.g. Washington, Arkansas) can serve as a model for other states to adapt.[77]

More will now have the opportunity, resources, and incentives to do so. ARRA (the federal stimulus package) included $250 million in funding for statewide education longitudinal data systems, as well as requirements that states make assurances that they are building such systems in order to access fiscal stabilization funds from the Department of Education. These steps are critical, for without the ability to evaluate outcomes based on hard data, student and institutional progress and performance cannot be measured.

VI. CONCLUSION

President Obama's call to action on higher education acknowledges a hard truth: As a nation we have lost our more than century-long advantage in postsecondary educational attainment and are at risk of falling farther behind. Stagnating educational achievement threatens our nation's ability to meet critical workforce needs, ensure rising standards of living for future generations, and close the racial and economic gaps that for too long have marred our economy and democracy.

The appropriate national focus on the problem suggests that it is time to expand the federal role in higher education, and act aggressively to make sure that American workers are the best trained to compete in the global marketplace, and best prepared to fulfill their responsibilities as citizens.

The road to improved higher educational attainment does not run only through the traditional four-year sector, however. The nation's community college system, long sidelined in funding and policy debates, needs a prominent seat at the table. Community colleges are training workers in high-paying, high-demand jobs, and serve groups that are too often left off the path to the middle class. They can also provide a necessary bridge to even higher levels of education, often for first-generation college students.

The community college sector's current track record on student success leaves much to be desired. And this breeds natural skepticism about whether devoting more money and effort to the system is worthwhile, even if one acknowledges the evidence linking resource levels and performance.

In response, this paper proposes an agenda that addresses the related issues of resource and performance simultaneously, and head-on. It recommends seeding a transformative change for America's community colleges—the beginning of a first-ever performance measurement system, and a doubling of federal funding designed to assist those institutions that prove themselves capable of meeting more ambitious goals around student success. It further calls for new resources to be devoted to experimenting with innovative and scalable programs to help improve productivity in the community college sector.

Without the type of commitment outlined here, we risk sidelining not only community colleges but large segments of our economy and population. This investment agenda —designed to take greatest advantage of the system's potential and strengths—can help put our nation back on the path to economic prosperity as the current economic crisis subsides. While a transformative agenda for any education system is inherently challenging, we believe the timing is right and a strategic shift in incentives and resources will pay future dividends.[78]

College success counts more than ever. Properly executed, the agenda described here will increase the nation's human capital, improve our collective economic competitiveness, and support a more informed and engaged citizenry that can pass on greater opportunities to future generations.

NOTES

[1] Claudia Goldin and Lawrence F. Katz, *The Race Between Education and Technology* (Cambridge, MA: Belknap Press of Harvard University, 2008).

[2] Robert B. Reich, "Obamanomics Isn't About Big Government." *Wall Street Journal*, March 28, 2009: A11.

[3] Remarks of President Barack Obama—Address to Joint Session of Congress, February 24, 2009, online at **www.whitehouse.gov** [accessed April 2009].

[4] Goldin and Katz, *The Race Between Education and Technology*.

[5] Lisa Barrow and Cecilia E. Rouse, "Does College Still Pay?" *Economists' Voice* 2(4)(2005): article 3.

[6] Ibid.

[7] Ron Haskins, "Education and Economic Mobility." In Julia B. Isaacs, Isabel V. Sawhill, and Ron Haskins, eds., *Getting Ahead or Losing Ground: Economic Mobility in America* (Washington: Brookings Institution, 2008). "[The effects of education] are powerful enough to boost the income of adult children from relatively poor families not only well past the income achieved by their parents but also past the income achieved by many of their peers with more advantaged family backgrounds who did not obtain equivalent education" (p. 101).

[8] Ibid.

[9] Bureau of Labor Statistics. *Occupational Outlook Handbook, 2008-09 edition*.

[10] Debra van Opstal, "Thrive. The Skills Imperative" (Washington: Council on Competitiveness, 2008).

[11] David Marcotte, Thomas Bailey, Carey Borkoski, and Gregory Kienzl, "The Returns to Education at Community Colleges: Evidence from the National Education Longitudinal Survey." *Education Evaluation and Policy Analysis* 27(2): 157-75.

[12] W. Norton Grubb, "Learning and Earning in the Middle, Part I: National Studies of Pre-baccalaureate Education." *Economics of Education Review* 21(4)(2002): 299-321.

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[14] Harry Holzer and Robert Lerman, "The Future of Middle-Skill Jobs" (Washington: Brookings Institution, 2009).

[15] John Bound, Michael Loveheim, and Sarah E. Turner, "Understanding the Decrease in College Completion Rates and the Increased Time to the Baccalaureate." University of Michigan Population Studies Center Research Report 07-626 (2007).

[16] Between the 1970s and 1990s rates of four-year degree completion for community college students dropped from 23 percent to 17 percent. John Bound, Michael Loveheim, and Sarah E. Turner, "Understanding the Decrease in College Completion Rates and the Increased Time to the Baccalaureate." University of Michigan Population Studies Center Research Report 07-626 (2007).

[17] U.S. Department of Education, National Center for Education Statistics, 2003-04 Beginning Postsecondary Students Longitudinal Study, First Follow-up (BPS:04/06).

[18] Sara Goldrick-Rab and Josipa Roksa, "A Federal Agenda for Promoting Student Success and Degree Completion" (Washington: Center for American Progress, 2008).

[19] Goldin and Katz, *The Race Between Education and Technology*.

[20] Eric A. Hanushek and Ludger Woessman, "The Role of Education Quality for Economic Growth." *Journal of Economic Literature* 46(3)(2008): 607–68.

[21] Stephen Provasnik and Michael Planty, (2008). *Community Colleges: Special Supplement to The Condition of Education 2008* (NCES 2008-033). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

[22] Notably, of the 50 largest cities in the United States, Washington, D.C. is the only one to lack its own community college. However, the city is in the planning stages to create one. Brooke DeRenzis, Martha Ross, and Alice Rivlin, "Envisioning Opportunity: Three Options for a Community College in Washington, DC." (Washington: Brookings Institution, 2008).

[23] U.S. Department of Education (2008). *Digest of Education Statistics* (NCES 2008-022). Washington, DC: National Center for Education Statistics, Institute of Education Sciences.

Molly F. McIntosh and Cecilia Elena Rouse, The Other College: Retention and Completion Rates Among Two-Year College Students. (Washington DC, Center for American Progress, 2009).

[24] Melissa Roderick, Jenny Nagaoka and Vanessa Coca, "College Readiness for All: The Challenge for Urban High Schools." Submitted to *The Future of Children*.

[25] Laura Horn and Stephanie Nevill, *Profile of Undergraduates in U.S. Postsecondary Education Institutions: 2003–04, With a Special Analysis of Community College Students*. NCES 2006–184 (U.S. Department of Education, 2006).

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[29] David E. Hardy, Steven Katsinas, and V. Barbara Bush, "Tidal Wave II, Community Colleges, and Student Financial Aid." *Enrollment Management Journal* 1(1)(2007): 23-48.

[30] Steven Bushong, "Community college enrollments are up, but institutions struggle to pay for them." *The Chronicle of Higher Education* 55(20)(January 23, 2009): A24; Lawrence Biemiller, "Bursting at the seams." *The Chronicle of Higher Education* 55(29)(March 27, 2009): B11.

[31] David Moltz, "The New Reverse Transfer." *Inside Higher Education.* February 18, 2009.

[32] Stephen Provasnik and Michael Planty, (2008). *Community Colleges: Special Supplement to The Condition of Education 2008* (NCES 2008-033). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

[33] Juan Carlos Calcagno and others, "Is Student-Right-To-Know All You Should Know? An Analysis of Community College Graduation Rates." *Research in Higher Education* 47(5)(2006): 491–519.

[34] Bound, Loveheim, and Turner, "Understanding the Decrease in College Completion Rates and the Increased Time to the Baccalaureate;" John Bound and Sarah Turner, "Cohort Crowding: How Resources Affect College Attainment." *Journal of Public Economics* 91(2007): 877–899.

[35] Paul Courant, Michael McPherson, and Alexandra Resch, "The Public Role in Higher Education." *National Tax Journal* 59 (2)(2006): 291–318.

[36] Delta Cost Project, *Trends in College Spending: Where Does the Money Come From? Where Does It Go?* Washington: Delta Project on Postsecondary Education Costs, Productivity, and Accountability (2009).

[37] See Charles Clotfelter and others, *Economic Challenges in Higher Education* (University of Chicago, 1991).

[38] Bound, Loveheim, and Turner, "Understanding the Decrease in College Completion Rates and the Increased Time to the Baccalaureate."

[39] National Governors Association, (2007). Higher Education Accountability for Student Learning. NGA Center for Best Practices Issue Brief: Washington, DC; Grapevine, 2008, Table 4, **www.grapevine.ilstu.edu/tables/index.htm** [accessed April 2009].

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[41] Delta Cost Project, *Trends in College Spending*; Brian Burnsed, "Community Colleges Get Squeezed." *Business Week*, January 15, 2009.

[42] Burnsed, "Community Colleges Get Squeezed;" Paul Bradley, "Squeezed: As Enrollment Surges, Funding Shrinks." *Community College Week*, November 30, 2008.

[43] Digest of Education Statistics (2007), Table 184 (based on 2005 data). The federal government commits $5.6 billion in total to community colleges; two-thirds of which ($3.7 billion) takes the form of aid to students, mainly Pell grants, and the remainder ($1.9 billion) as grants and appropriations to institutions. We are concerned primarily with the latter.

[44] Percent of operating revenues from federal grants and contracts. Digest of Education Statistics (2007), Table 338.

[45] Ibid.

[46] Bound, Loveheim, and Turner, "Understanding the Decrease in College Completion Rates and the Increased Time to the Baccalaureate."

[47] The report can be viewed here: **http://professionals.collegeboard.com/profdownload/rethinking-stu-aid-fulfilling-commitment-recommendations.pdf**

[48] Bound and Turner, "Cohort Crowding: How Resources Affect College Attainment."

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[50] Peter Appleborne, "Not Just Another Dorm." *The New York Times*, Education Life, p. 16-17, January 4, 2009.

[51] Kevin Carey, "America's Best Community Colleges." *Washington Monthly*, June 2007.

[52] U.S. Department of Education. Community Colleges: Federal Resources supporting Local Opportunities. Unpublished Paper (Washington DC, 2003) Note that the $4.5 billion figure does not include another $1.5 billion in federal loan guarantees and subsidies to students who attend a community college. Also note that these 2002 figures are used because of unavailability of more recent data. The figures presented earlier in the paper (on total aid to community colleges and the portion coming in the form of student aid) are from 2005.

[53] Amy Ellen Duke-Benfield and Julie Strawn, "Congress Expands Student Aid and Supports Innovation in Student Success, Basic Skills, and Workforce Partnerships" (Washington: Center on Law and Social Policy, 2008).

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[64] Note that states may use a small portion of the $54 billion dollar State Fiscal Stabilization Fund in ARRA for renovation and modernization of school, including higher educational, facilities. It is not clear whether, in fact, states will devote those resources to such purposes. Mark Muro and others, "Metro Potential in ARRA: An Early Assessment of the American Recovery and Reinvestment Act" (Washington: Brookings Institution, 2009).

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[78] Notably, many Americans express support for these investments. A recent Politico/Allstate poll found that a majority of those polled think that "a major government commitment to provide more funding to community colleges" would be an effective or very effective way to improve U.S. economic conditions. Allstate/Politico Survey, December 2008, online at **www.politico.com/static/PPM104_090107_politicoallstatepoll.html** [accessed April 2009].

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Acknowledgments
The authors thank the many individuals who commented on earlier drafts of this paper, including Cliff Adelman, Tom Brock, Kevin Carey, Anthony Carnevale, Kristin Conklin, Stephen Crawford, Bob Giloth, Norton Grubb, Josh Jarrett, Richard Kazis, Tom McKeon, Mark Muro, Sarah Rahman, and Jeff Strohl, as well as participants in a scoping discussion held at the Brookings Institution in September 2007. The views expressed in this paper are those of the authors and do not necessarily reflect those of the reviewers.