

**Towards a Community College Research Agenda:
Summary of The National Community College Symposium
Washington, D.C., June 19, 2008**

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EXECUTIVE SUMMARY

As community colleges grow and change for the 21st Century, it is time to re-think both the way that they deliver their services and the policies that support their work. Following the U.S. Secretary of Education's Commission on the Future of Higher Education's 2006 report, the Office of Vocational and Adult Education (OVAE) in the U.S. Department of Education convened a National Community College Symposium on June 19, 2008. This report summarizes the day's proceedings and offers suggestions for "next steps." As a primary goal of the Symposium was to provide direction for future OVAE investments in research and policy, much of this report focuses on federal-level actions.

In the first decade of the 21st Century, driven by a changing economy and demographics, community colleges are facing a landscape that demands that they reconsider how they deliver services and address the needs of their students. The U.S. labor market is undergoing rapid transformation as it moves to a post-industrial economy. Community colleges must therefore find ways to better provide workforce preparation that is high-skilled and immediately relevant to labor market needs. At the same time, the composition of the student population in community colleges is increasingly made up of immigrant, low-income, socially-disadvantaged, or poorly prepared students; these students look to community colleges to provide them with academic preparation for the labor market and often, eventual transfer to four-year colleges.

The dual mission of the community college—to promote workforce preparation and baccalaureate transfer—creates institutional challenges. Colleges must help their students move from one level of schooling to another and find ways to make these routes smooth enough so that students do not fall away from the path at key switching points. Many colleges have begun to implement new programs in order to do this. Too little is known about these efforts, however. Thus, there is ample opportunity and need for research addressing questions of institutional innovation and student success.

The National Community College Symposium

The National Community College Symposium brought together experts in the field in order to identify promising practices and work toward the establishment of community college research agenda. OVAE's intent was to spur discussion of key community college initiatives for improving student transitions into, through, and from the community college in order to provide guidance for OVAE's future work. The Symposium was organized by Synergy Enterprises, Inc., with substantive assistance from the Community College Research Center (CCRC), Teachers College, Columbia University. Attendees were practitioners and researchers from around the country, selected for their expertise and breadth of experience in the community college sector. A video recording of the symposium proceedings can be accessed by going to www.communitycollegesymposium.net.

The day began with introductory remarks from OVAE's Deputy Assistant Secretary for Community Colleges, Pat Stanley. Following were three panels, each addressing a key element of the community college mission and landscape. Each panel included three

experts, consisting of a mix of researchers and practitioners and moderated by representatives from CCRC. The panelists were asked to address the following questions:

1. What is known about the element under discussion to improve transitions at community colleges? How do we know, and how confident are we in their impact?
2. What do we still need to know in order to improve the element under discussion? How could we go about acquiring this knowledge?

Session 1: Student Support Services

This panel focused on the ways that colleges are seeking to address students' myriad needs, including poor academic preparation, demanding personal and work lives, and low levels of self-confidence. John McKay (South Piedmont Community College, NC), emphasized that support services appearing to lead to success address students' needs "early and often," promote student engagement with the institution and with their peers, and complement one another's services. Dolores Perin (Teachers College, Columbia University) discussed the importance of ensuring that students' early transitions are not marred by low levels of basic academic skill, and that a variety of strategies, including learning communities and supplemental instruction, appear to promote such readiness. Christine McPhail (Morgan State University, MD) emphasized that given the diversity of community college students, support services cannot adhere to a "one size fits all" model, nor should they be isolated from classes.

During the group discussion, a number of student support strategies, including learning communities and student success courses, emerged as known successes. Others, such as a focus on soft skills and modifications to remedial education, are promising. The conversation indicated, however, that there is more that is unknown than is known when it comes to creating successful student supports. A number of possible research questions therefore emerged from the conversation. These include questions of effectiveness, cost, the relative benefit of various services, and ways to bring services to scale.

Two themes were expressed strongly and often throughout the conversation. First is the notion of *intrusive* supports offered early in students' educational careers. It is important to create services that actively engage students, seek them out, and encourage them to participate. Importantly, these services need to be offered early on so that students do not drift unassisted for very long. Secondly, participants repeatedly emphasized the need to *focus on soft skills*, not just academic skills. Community colleges need to recognize that students face many non-academic challenges and therefore should specifically tailor support activities to help students overcome these challenges.

Session 2: Career and Technical Education and Workforce Development

Career and technical education (CTE) and workforce development are integral features of community colleges. This panel focused on the ways that CTE and workforce education are changing in response to new labor market and educational demands. Diane Troyer (Lone Star College-Cy Fair, TX) discussed the ways that her college has organized technical programs to help CTE student transitions by creating multiple transition points,

each with different credentials. Keith Bird (Kentucky Community and Technical College System) described similar efforts within the state of Kentucky, including flexible delivery options, career counseling, and paid work-based learning. Jose Millan (California Community College System) emphasized the importance of paying attention to the regional economies that reside within a state, and tailoring community college workforce education to those economies.

Unlike the conversation surrounding student support services, participants identified few demonstrably successful CTE and workforce development strategies. They described many promising activities, such as the pathways mentioned by the panelists, but audience members and panelists alike indicated that there is little rigorous evidence supporting these activities. One issue that participants felt must be addressed prior to conducting research is how to define “success” for CTE programs. Many felt that merely acquiring a certificate or degree is an incomplete rubric for programs aimed at increasing employability.

Given that there is much we still need to know about effective CTE and workforce development in the community college, many research questions emerged from the conversation. They focused on outcomes (for program completers and non-completers), the influence of program reforms on students and institutions, and ways to measure skill development, among other things.

Three issues came through in the discussion. The first is the notion of a “pathway,” which is assumed to facilitate transitions by providing clear roadmaps to and through workforce programs. However, a definition of a “pathway” was unclear. Critical investigation of a popular and promising strategy is warranted. Second, participants were clear that the traditional “silos” between CTE and academics need to be broken down. Many participants felt that workforce preparation is still a secondary institutional mission, with CTE courses receiving less money and respect. There was much discussion of ways to overcome this. Finally, though the panelists implied that labor market demands are a key element in student success, the subsequent conversation did not pursue this issue. What role is there for local employers in the program development process?

Session 3: Institutional Innovations

To meet the changing landscape, community colleges are engaging in a range of activities to foster student success, many of which fundamentally alter the structure of community colleges. Walter Bumphus (University of Texas-Austin) highlighted three important innovations, all of which focus on promoting success, rather than merely assuring access. The second panelist, Linda Hagedorn (University of Florida), discussed the ways that student transcript data can be used to improve advising activities. Deborah Floyd (Florida Atlantic University) described the community college baccalaureate, an innovation that blurs institutional lines by permitting community colleges to offer four-year degrees.

The diversity of institutional innovations led the conversation to focus on the types of innovations currently used by colleges, rather than on the evidence base supporting these initiatives. Many programs and strategies were discussed, some with more enthusiasm than others. Participants agreed that the lack of evidence stems, in part, from challenges

in funding and staffing for institutional research. Many research questions were raised throughout the conversation, generally focused on efficacy. Which institutional innovations improve student transitions? What strategies change the culture and structure of the college, and how do they do so effectively?

Two themes emerged. First, there was strong sentiment that as they innovate, community colleges need to build a culture in which they use data and evidence to evaluate the impact of these changes. This requires attention to be paid to institutional research offices, which currently are drastically under-staffed and under-funded. Second, there were questions about the unintended consequences of institutional innovation, particularly when it comes to the community colleges' traditional role and mission. At their core, institutional innovations demand that we question the nature of public two-year institutions.

Concluding Observations

Ron Williams, Vice President of the College Board, led a final session in which he offered his thoughts on the day's proceedings. After summarizing and extending a number of points raised throughout the day, Dr. Williams raised an important issue that had gone unmentioned in earlier discussions. Community college students report strong feelings of satisfaction with their institutions in surveys. Colleges often take this as an indicator that they are successful. And yet, rates of drop out are remarkably high. This presents a conundrum. Students say they are happy, yet they are not achieving their goals. Colleges need to think about this contradiction. Why does satisfaction not translate into persistence and graduation?

Where do we go from here?

A primary purpose of the National Community College Symposium was to set an agenda for future work, and four broad areas of research emerged from the conversation.

1. *Investigate participation in college initiatives aimed at improving transitions.*
2. *Evaluate the results of community college programs aimed at improving transitions using rigorous methods.*
3. *Bring successful initiatives to scale and examine the best ways to do this.*
4. *Investigate the factors impeding student transitions.*

These four areas constitute a research agenda for community colleges. Many players will embark on activities addressing it; given the focus of the Symposium, this paper provides action suggestions for community colleges themselves and the federal government, particularly OVAE.

Community colleges can:

- Provide a strong foundation for researchers pursuing the agenda laid out above.
- Learn to conduct and use research effectively.
- Work directly with researchers in implementing the research outlined above.
- Look for and apply best practices while awaiting rigorous research findings.

As the federal government has resources, staff, and knowledge that individual institutions lack, OVAE and other federal entities can:

- Identify the promising practices already documented by gathering information on various initiatives and studies and placing them in an easily accessible format.
- Support institutional research efforts by providing funds for research activities and staff.
- Provide assistance in creating data sets suitable for analyzing community college outcomes.
- Conduct their own studies through the National Center for Education Statistics (NCES) and the National Center for Research on Career and Technical Education.

Finally, the federal government has an important role to play in promoting, refining, and expanding the research agenda. The National Community College Symposium set the stage for future research by identifying broad areas to be investigated. But the day's conversations raised questions that are not easily answered through research, as they are more philosophical in nature. The federal government can help answer these questions by working with college leaders to have a series of conversations confronting such questions, in order to think through the possible implications of significant institutional change.

Introduction

Community colleges are a key part of the American higher education system. As these century-old institutions grow and change for the 21st Century, it is time to re-think both the way that they deliver their services and the policies that support their work. In particular, rapidly changing demographics and economic realities mean that new opportunities and unprecedented challenges face these institutions as they pursue their mission to provide access to higher education for all Americans.

In 2006, the U.S. Secretary of Education's Commission on the Future of Higher Education addressed questions of access to higher education and its affordability and capacity to prepare students to compete in a global economy. The Commission's report highlighted the role that community colleges currently and should continue to play in "making that dream [of economic mobility] come true" for millions of Americans. As a follow-up to the Commission's work, as well as to a virtual summit in 2007 and a dialogue with rural community college leaders held in 2008 on pressing community college issues such as workforce development and serving adults and non-traditional students, the Office of Vocational and Adult Education (OVAE) in the U.S. Department of Education convened a National Community College Symposium in June 2008.

The purpose of the Symposium was to bring together practitioners, policy experts, and academics to discuss key community college initiatives for improving student transitions into, through, and from the community college in order to provide guidance for OVAE's future work. Discussion was focused on what is known, and what is not known, about promising practices; a particular focus was on what could be done to validate and refine promising practices and strategies for obtaining this information.

This report summarizes the day's proceedings and offers suggestions for "next steps." The purpose is not to merely report the conversation, but to draw out broad themes and areas for future work. In particular, this report seeks to develop a sense of where the field is and where it should be going in order to build upon the good work being done at so many of the nation's community colleges. As a primary goal of the Symposium was to provide direction for future OVAE investments in research and policy, much of this report focuses on federal-level actions.

The report is organized as follows. The remainder of the introduction describes the challenges facing community colleges, as well as the structure of the Symposium. The following three sections describe the three Symposium topics in detail by summarizing panelists' comments and drawing major themes from the subsequent discussion. The next section provides an overview of the day's concluding comments. The final section discusses next steps, particularly with regards to a research agenda.

Community colleges have become an integral part of the higher education landscape, providing convenient, low-cost, open-access career- and transfer-oriented education to millions of students. But in the first decade of the 21st Century, these institutions are increasingly facing a landscape that demands that they reconsider how they deliver

services and address the needs of their students. This new landscape is driven by two important trends: a changing economy and changing demographics.

As has been well-documented elsewhere, the U.S. labor market is undergoing rapid transformation as it moves to a post-industrial economy, as manufacturing and even service-sector jobs move overseas. Unlike in years past, a high school diploma is no longer a ticket to the middle class (Commission on the Skills of the American Workforce, 2007; Carnevale and Des Rochers, 2003). Instead, high-wage careers increasingly demand some sort of postsecondary credential. Moreover, the economic premium for obtaining a bachelor's degree is rising, leading more and more students to aspire to a four-year education. Community colleges have long sought to meld workforce and academic preparation, but these economic changes have increased the demand for these specific services.

Community colleges today must find ways to better provide workforce preparation that is high-skilled and immediately relevant to labor market needs. However, many students, even those in "terminal" workforce programs, seek to continue into a baccalaureate-granting program at some point, and so community colleges must also upgrade their programs to ensure that students are suitably prepared to easily transition into a four-year school if that is their choice.

At the same time, the composition of the student population in community colleges is shifting. Increasing numbers of these students come from immigrant, low-income, or socially-disadvantaged backgrounds. Mirroring the challenges faced by the secondary education sector, many students also enter community colleges with serious academic deficits. And, as a result of workers' understanding the educational demands of the new economy, an increasing number of community college students are older adults, who must balance work, family, and school.

Thus, the dual mission of the community college—to promote workforce preparation and baccalaureate transfer—creates institutional challenges. How can colleges meet the multiple and varied needs of their students and communities? How do colleges ensure that they remain open-access, while still ensuring high levels of instructional rigor and labor market relevance? How do colleges shift their activities to increased preparation without betraying their historical missions and position within the higher education sector?

Colleges have long struggled to meet these challenges. Yet the goal remains elusive as evidenced by low rates of student success as measured by current criteria. For example, sixty-one percent of recent high school graduates entering community college need at least one remedial course; remediation is associated with lower student outcomes (U.S. Department of Education, 2004). Only 35 percent of first-time students in community colleges earn some sort of credential within six years (CCRC analysis of NCES Beginning Postsecondary Students Longitudinal Study data). Half of those entering community colleges with the intention of transferring to a four-year institution do so within six years (U.S. Department of Education, 2003).

Ensuring that these low rates of student success are not perpetuated within the new economic and educational landscape means that colleges must pay particular attention to issues of transition. Given the demographic and labor market changes described above, student success can no longer be defined as merely the accrual of credits; rather, students must be prepared to earn college credit that counts toward degrees that are valued in the workplace. Institutions must help their students move from one level of schooling to another, for example from developmental or ESL courses into college-credit courses, or from associate degree programs into baccalaureate programs. This means that institutions need to find ways to channel students through clear pathways of classes, programs, and institutions. And community colleges must find ways to make these routes smooth enough so that students do not fall away from the path at key switching points. Though this may sound intuitive, in practice, it is difficult to make happen, given the many demands faced by community college students, and the complexity of the labor market they will some day enter.

Thus, many community colleges have begun to seek ways to help students move more expeditiously through an educational and career pathway in order to ensure their future success. These colleges are implementing new programs and working to ensure that all Americans have access to rigorous, relevant, and convenient postsecondary education. Too little is known about these efforts, however. It is not clear which initiatives are successful in increasing student access to certificates, degrees, and employment. Thus, there is ample opportunity and need for research addressing questions of institutional innovation and student success.

The National Community College Symposium

The National Community College Symposium brought together experts in the field in order to identify promising practices and work toward the establishment of community college research agenda. OVAE's intent was to spur discussion of the ways that colleges are meeting the challenges described above and the ways that research can inform reform efforts to help improve student success. By bringing together experts in both research and practice, the Symposium offered a chance for an exchange of ideas and the posing of important questions.

The Symposium was held on June 19, 2008, in Washington, DC. It was organized by Synergy Enterprises, Inc., with substantive assistance from the Community College Research Center (CCRC), Teachers College, Columbia University. Attendees were practitioners and researchers from around the country, selected for their expertise and breadth of experience in the community college sector. All participants, including international guests, were invited by the Deputy Assistant Secretary for Community Colleges, Pat Stanley.

The structure of the Symposium was crafted to encourage conversation and the exchange of ideas. The day was organized into three parts, each focusing on an aspect of the new

community college landscape. Particular attention was paid to the issue of transition, as this is a key component in ensuring student academic and labor market success.

The day began with introductory remarks from OVAE's Deputy Assistant Secretary for Community Colleges, Pat Stanley. Following were three panels, each addressing a key element of the community college mission and landscape: student support services; career and technical education/workforce development; and institutional innovations. Each panel included three experts, consisting of a mix of researchers and practitioners. The panels were moderated by representatives from CCRC. The panelists were asked to address the following questions:

What is known about the element under discussion to improve transitions at community colleges? How do we know, and how confident are we in their impact?

What do we still need to know in order to improve the element under discussion? How could we go about acquiring this knowledge?

Following brief remarks from the moderators and panelists, the audience was given opportunity to ask questions, engage in dialogue, and suggest areas for follow-up work. After the three panels, Ron Williams, Vice President of the College Board offered his thoughts on the content of the day's conversations. The Symposium ended with concluding remarks from Assistant Secretary Troy Justesen.

Session 1: Student Support Services

Student support services encompass many activities, all of which aim to improve classroom achievement by addressing the myriad needs—poor academic preparation, demanding personal and work lives, low levels of self-confidence—of many community college students. Such activities are increasingly important given the changing nature of community college student bodies. If students are to successfully complete college courses and transition into baccalaureate programs and the labor market, then community colleges need to find ways to support their academic and occupational endeavors, both in and out of the classroom.

This panel focused on the ways that colleges are seeking to address students' needs. Moderated by James Jacobs, Associate Director of CCRC, panelists were John McKay, President, South Piedmont Community College (NC); Christine McPhail, Professor and Coordinator of the Community College Leadership Program, Morgan State University (MD); and Dolores Perin, Professor, Teachers College, Columbia University (NY). The moderator began the conversation by noting that support services are entering the forefront of community college research and practice. Colleges are paying attention to ways that they can address student needs, but struggle to ensure consistency, find adequate funds, and bring successful services to scale.

John McKay emphasized the nature of support services that appear to lead to success. Such programs explicitly address the fact that many community college students have little experience with college life, little sense of vision for their futures, and competing

demands on their time. They do so by addressing students' needs "early and often," promoting student engagement with the institution and with their peers, and complementing one another's services.

Dolores Perin discussed early transitions, focusing on the development of basic skills and the transition from high school to college. She noted that without adequate skills, students cannot earn a degree, and so it is important to make sure that students enter college ready to do college-level work, or that they are quickly and effectively remediated so that they can earn college credits soon after matriculating into the institution. A variety of strategies appears to encourage such readiness, including counseling, learning communities, and supplemental instruction. Alignment between postsecondary education and the K-12 sector is also important, as we can predict college success based on students' fourth grade academic performance.

Christine McPhail emphasized that given the diversity of community college students, support services cannot adhere to a "one size fits all" model. Services must actively engage students while communicating clear guidelines. Moreover, services should not be isolated from classes; integrating academics and supports and encouraging collaboration between faculty and support staff will better help students be successful in college.

During the group discussion, a number of student support strategies emerged as known successes. Learning communities have been shown in rigorous studies to improve persistence. These initiatives vary somewhat from institutions to institution but generally group students in cohorts so that they take multiple classes together, allowing them to forge strong connections. Usually, these classes are also "linked" in some way such that the professors work together to connect content across the disciplines. Likewise, student success courses (sometimes called "orientation courses" or "college 101") that include advising elements and the promotion of soft skills (such as persistence and independence), appear to encourage student success according to large quantitative studies. Finally, new advising models, such as those with a more personalized style, appear promising.

Other audience members put forth examples of support services that, while promising, are currently less substantiated with strong research. These included focusing on soft skills and using motivational techniques in order to help students learn how to learn and feel confident in their abilities to succeed. They also included a variety of modifications to remedial (also called developmental) education. Other promising practices include mentoring and coaching, as is provided through the Breaking Through initiative funded by the Mott Foundation and others.

The conversation indicated, however, that there is more that is unknown than is known when it comes to creating student supports that encourage successful transitions. First, most support activities are small-scale, and have not been rigorously evaluated. So while there is much suggestive evidence in their favor, this evidence is still at the formative stage.

The audience and panel members agreed that providing student supports means trying to change institutions and systems, not students. Rather than view the students as deficient, it is important to implement college structures that meet them where they are. This necessitates changing “business as usual” within the college. But, as was pointed out a number of times, it is still not clear what those changes should be. What student services make a difference? One audience member pointed out that we still “do not know what effective community colleges look like.” Moreover, we do not know how to take successful programs, like learning communities, to scale. And, we currently have little idea how cost-effective these programs might be.

A number of possible research questions therefore emerged from the conversation.

Among them:

- How are effective community college support services structured?
- How can community college support services address non-cognitive issues such as low self-efficacy?
- What are the costs of community college support services? Are some services more cost-effective than others?
- Are some services more effective than others? How do outcomes from different support activities compare, as opposed to just outcomes from one service compared to no support?
- How do we rigorously evaluate support services and bring those deemed successful to scale?

Two themes were expressed strongly and often throughout the conversation. First is the notion of *intrusive* supports offered *early* in students’ educational careers. Offering a smattering of services that students may or may not know about, or offering one-shot services that do not lead to long-term relationships between students and staff, do not appear to be effective. Instead, it is important to create services that actively engage students, seek them out, and encourage them to participate. Services should last over multiple sessions or activities, enabling students to truly engage with the support. Importantly, these services need to be offered early on, preferably starting the first week of school, so that students do not drift unassisted for very long.

Many participants in the Symposium noted the ways that successful services, such as learning communities or new forms of advising, reach out to students and “pull” them into the college. For example, some institutions now have advisors who follow-up with students personally as soon as they miss a class. Others have created advising systems that connect students to a “retention specialist” who helps with all facets of college life, from course scheduling to working out problems with faculty. By inserting themselves into students’ lives, rather than waiting for the students to come to them, these types of support services are able to “nip issues in the bud,” get students the assistance that is most meaningful to them in a timely manner, and ensure that they never stray far from the path toward a credential.

Secondly, participants repeatedly emphasized the need to *focus on soft skills*. They noted that many services and supports, including developmental education, focus purely on

improving students' academic skills. In doing so, they ignore the many reasons students are not successful, including low self-esteem, lack of time management and planning skills, or poor sociability. Effective support services should address these issues, as is done in student success courses and mentoring activities. Community colleges need to recognize that students face many non-academic challenges and therefore should specifically tailor support activities to help students overcome these challenges.

In sum, this session focused on the support services that community colleges can and should provide to help students transition into and through the college. Though colleges have offered such services for many years, they are now at the forefront of institutional improvement efforts and are attracting renewed attention. What is most effective is still unknown, and thus this is an area that is ripe for future research. For practitioners seeking to implement new types of services now, however, it appears that creating supports that are intrusive and attentive to the whole student are the ones that have the greatest chance at encouraging student success.

Session 2: Career and Technical Education and Workforce Development

Career and technical education (CTE) and workforce development are integral features of community colleges, linking students with the labor market. Historically, however, they have been seen as separate from the academic function of the college, with workforce preparation occurring in one “silo” and academic and transfer preparation occurring in another. Given the increasing educational demands of the labor market, such divisions are no longer appropriate. Students need to be prepared for technical positions, but also need high levels of academic skills and the option of obtaining a baccalaureate degree or beyond. Colleges now seek to ways to meld CTE and academics, and to enable students to transition between one type of program and the other.

This panel focused on the ways that CTE and workforce education are changing in response to new labor market and educational demands. Thomas Bailey, director of CCRC, moderated. Panelists included Diane Troyer, president of Lone Star College-Cy Fair (TX); Keith Bird, Chancellor of the Kentucky Community and Technical College System; and Jose Millan, Vice Chancellor, California Community College System. The moderator began by noting that today, we are increasingly concerned with the implications of shuttling some students, mainly poor students and those of color, into lower-level jobs. We are also concerned with ensuring that all students have access to both high-wage jobs and strong academic skills. Workers move in and out of education and in and out of the labor market, and CTE and workforce education must reflect these patterns. Institutions need to create “ladders” to help individuals successfully undertake the multiple educational and labor market transitions they will experience throughout their careers.

Diane Troyer discussed the ways that Lone Star College-Cy Fair has designed programs to help students transition from pre-college work to different occupational pathways. They have identified multiple transition points (entry to college, within college, out of college), with different certificates and degrees at each point. These pathways are targeted toward local labor market needs, such as the demand for teachers and emergency

services personnel. These pathways have enabled students to enter the labor force with a high degree of skill, thereby enabling individuals' success while meeting society's needs for trained professionals.

Keith Bird described the pathways being created within the Kentucky Community and Technical College system. In addition to creating pathways, the state is developing flexible delivery options, career counseling, and paid work-based learning. Importantly, these pathways aim to meet student needs across the life course, from high school students to retirees. They have found higher levels of retention and credential earning among students in career pathways.

Jose Millan emphasized the importance of paying attention to the regional economies that reside within a state, and tailoring community college workforce education to those economies. He also noted the diversity of students seeking to use the community college as a path to economic mobility—from high school students to former members of the military to parolees to incumbent workers in need of training. CTE at the community college must find ways to meet all of their needs, and thus must engage in a multiplicity of training methods.

Unlike the conversation surrounding student support services, participants identified few demonstrably successful CTE and workforce development strategies. They described many promising activities, such as the pathways mentioned by the panelists, but audience members and panelists alike indicated that there is little rigorous evidence supporting these activities. Some strategies are currently being evaluated, and some strategies have very promising outcomes but lack causal evaluations. Overall, though, the conversation among the audience and panelists for this portion of the Symposium focused on what we still do not know about effective workforce preparation programs and the challenges faced in determining what works in this area.

One issue that participants felt must be addressed is how to define “success” for CTE programs. Success is usually defined as acquiring a certificate or degree completion. But many felt that this is an incomplete rubric for programs aimed at increasing employability. If non-completers end up in high-skill, high-wage jobs, perhaps the program should also be deemed successful. Where do wages play into notions of success? What about hiring rates? Before outcomes research can be completed, it is important to figure out what outcomes are valued and should be pursued.

Participants noted that a conversation around the appropriate definition of “success” is also important when it comes to addressing accountability. How do you hold institutions responsible for skill development, rather than for credential granting? What is it appropriate to ask of institutions, and where do employer partners come into the equation?

Evaluating outcomes for workforce preparation programs is challenging because the data required span multiple educational institutions as well as the labor market. One audience

member noted that this is a role for governments, particularly state governments. State data systems can help connect data across school and workforce records.

Given the sense that there is much we still need to know about effective CTE and workforce development in the community college, many research questions emerged from the conversation. Among them:

- What happens to participants, both completers and non-completers? What types of jobs do they get and wages do they earn?
- What is the influence of various structural reforms, including pathways and modular training, on student outcomes? Which types of students participate in these reforms?
- Do these reforms lead to institutional change?
- What is the role of credentials versus skills in determining success? How do we measure skill development?
- How do CTE programs meet the needs of a diverse student body that includes both new labor market entrants and retirees?

Three issues, aside from those surrounding evaluation and accountability, came through strongly in the discussion. The first is the notion of a “pathway.” All of the panelists, and many of the audience participants, discussed with enthusiasm the creation of pathways through CTE programs. These pathways are assumed to facilitate transitions by providing clear roadmaps to and through workforce programs, with intermediary credentials along the way. However, a definition of a “pathway” was unclear. Moreover, it is not evident that all pathways are implemented in the same way or have the same outcome. For example, some pathways mentioned by participants included support services, while others did not. What defines a workforce education pathway? And do they lead to outcomes positive enough to justify the intense enthusiasm? Participants did not probe deeply into the underlying assumptions of these pathways, nor did they seek to inquire into their efficacy. Such critical investigation of a popular and promising strategy is warranted.

Second, participants were clear that the traditional “silos” between CTE and academics need to be broken down. They noted some strategies for doing this, such as including CTE in learning communities or working with high schools on articulation. But these strategies need to be brought to scale, and there was little evidence presented that such reforms permeate institutions at large to create systemic change. Similarly, participants discussed the ways that workforce preparation must meet the need of myriad types of students and job seekers, and noted strategies targeted at specific groups of students (such as technology-based delivery for young people and accelerated programs for incumbent workers). But it might be worth exploring if some strategies can meet the needs of multiple types of students in order to create economies of scale. What is the balance between individualization and standardization, and between academic and vocational skills, that most encourages student success?

Participants strongly felt that breaking down silos also meant that basic skills should be infused in all classes. Academic skills should be the mission of faculty in all departments. Similarly, workforce preparation and job placement needs to be the mission of the entire

institution, such that all students are supported in their labor market endeavors. Many participants felt that workforce preparation is still a secondary institutional mission, with CTE courses receiving less money and respect. To improve workforce preparation, institutions need to end the separation of these sectors and value both academics and CTE equally.

Finally, the three panelists discussed the ways that their programs were driven by labor market demands. This, they implied, is a key factor in student success. But the subsequent conversation did not pursue this issue, instead bracketing the role of employers in developing community college CTE programs. It makes sense to question how we are to expect community colleges, at their core educational institutions, to read economic tea leaves and predict which labor market sectors will need future workers. What role is there for local employers in the program development process? What role for state and federal governments? And how do colleges ensure that programs that meet today's economic needs are flexible enough to meet labor market demands in ten or twenty years? These questions were not addressed.

Session 3: Institutional Innovations

To meet the changing landscape, community colleges are engaging in a range of activities to foster student success. Some of these are quite radical, fundamentally altering the way that curriculum is delivered or the ways that students progress through the educational pipeline. The final panel focused on these innovations.

Melinda Mechur Karp, Senior Research Associate at CCRC, moderated the panel. Walter Bumphus, Chair of the Community College Leadership Program, University of Texas, Austin; Linda Serra Hagedorn, Professor, University of Florida; and Deborah Floyd, Professor, Florida Atlantic University participated. The moderator began the conversation by noting that institutional innovations demand careful evaluation in order to discover which innovations are worth replicating.

Walter Bumphus highlighted three important innovations currently underway around the country. College Connections is a Texas program designed to encourage high school graduates' enrollment in higher education. This has led to strong connections between colleges and local high schools. Achieving the Dream is a research-based initiative seeking to enhance colleges' capacity to use data to improve student outcomes. Finally, many colleges are modifying their student services to address the needs of working adults, particularly African-American males. The themes weaving together all of these innovations are a focus on promoting success, rather than merely assuring access, and the blurring of boundaries between traditional institutional silos.

Linda Hagedorn discussed the ways that student transcript data can be used to predict the likelihood of transfer to a four-year institution. She specifically explained the way the transfer calculator she and her colleagues designed can be used in advising students and helping them understand the consequences of their choices. This calculator helps articulate to students what gatekeeper courses they need to take and pass in order to succeed.

Deborah Floyd described the community college baccalaureate, an innovation that blurs institutional lines by permitting community colleges to offer four-year degrees. There are many models of the community college baccalaureate, but all encourage access to a variety of postsecondary credentials. They promote smooth transitions and are designed to help students attain a credential that is highly valued in the labor market.

The diversity of institutional innovations led the conversation to focus on the types of innovations currently used by colleges, rather than on the evidence base supporting these initiatives. Many programs and strategies were discussed, some with more enthusiasm than others. Participants agreed that the lack of evidence stems, in part, from challenges in funding and staffing for institutional research.

Many research questions were raised throughout the conversation. These questions generally focused on efficacy. Which institutional innovations improve student transitions? What strategies change the culture and structure of the college, and how do they do so effectively? In addition, questions focused on:

- What do students know about the process of transition? How do institutional innovations improve their knowledge and decision making?
- Does the community college baccalaureate improve student attainment of a four-year degree?
- Do alignment efforts, such as dual credit programs in which high school students take college courses, improve student readiness for college?
- Who participates in various innovative programs? Who does *not* participate? What are the implications of these participation patterns?
- Which innovations do not improve student outcomes, despite their promise?

A number of themes emerged from the conversation. First, there was strong sentiment that as they innovate, community colleges need to build a culture in which they use data and evidence to evaluate the impact of these changes. They need to be self-critical in order to determine what works and what does not. However, this requires attention to be paid to institutional research offices, which currently are drastically under-staffed and under-funded. There is much potential in using a data-driven approach to decision making, and colleges believe in the importance of using this technique, but they often lack the time, staff, and funds to do so.

Second, there were questions about the unintended consequences of institutional innovation, particularly when it comes to the community colleges' traditional role and mission. Do some of these initiatives undermine the open door? How do colleges balance access with high standards? What does it mean if careful analysis and use of data result in some students being told that they are unlikely to transfer to a four-year institution?

At their core, institutional innovations demand that we question the nature of public two-year institutions. What does it mean to be a community college? If institutions innovate too far, do they cease to be a community college? What defines this type of school, and how do we modify its activities to improve student success without changing the underlying goals, missions, and functions? Participants were unable to answer these

questions in the time allotted, of course. But the conversation raised these important questions, and demands that leaders in the field engage with them in the future.

Concluding Observations

Ron Williams, Vice President of the College Board, led a final session in which he offered his thoughts on the day's proceedings. He started by reminding the group of the context within which community colleges now exist. Our economy is competing with many more countries due to globalization, and so we will depend more and more on having a highly-trained workforce. At the same time, our population is changing, as we shift toward a majority-minority demographic. He poignantly noted that "The people our education system has failed—Hispanics and blacks—are the very ones who now dominate our system." It is incumbent upon us to ensure that all members of our society are served by our educational institutions, and community colleges have an important role to play in this.

To better serve the changing population, Dr. Williams urged more attention be paid to the specific needs of particular student groups. If students from certain backgrounds learn differently than others, this should be taken into account. Colleges should find ways to address these differences in order to improve student success. Of course, research in this area is needed first. Do such differences exist?

The issue of "pipeline creation" was discussed throughout the day, particularly in regards to stopping leaks and keeping students moving. But the metaphor may not be perfectly apt, as a pipe suggests a straight line and many students travel in and out of education and the workforce. How can we keep their transitions smooth as they shift sectors multiple times? Moreover, how do we end the bifurcation between baccalaureate and workplace transfers?

Dr. Williams noted that the day's conversation did not pay much explicit attention to general education. It discussed remedial education and workforce preparation, but where do the liberal arts fit in? What is the role of community colleges in providing a liberal education? And do community colleges do this well?

Evaluation is of course necessary. Are students in innovative programs different from other students? Figuring out appropriate comparison groups for evaluations is very important and challenging. Researchers need to be clear as to who are in various programs, who are not, and recognize the ramifications of these differences. Practitioners also need to be cognizant of them when implementing programs.

Finally, Dr. Williams raised an important point that had gone unmentioned in earlier discussions. Community college students report strong feelings of satisfaction with their institutions. Most surveys show that students are pleased with their experiences. Colleges often take this as an indicator that they are successful.

And yet, rates of drop out are remarkably high. This presents quite a conundrum. Students say they are happy, yet they are not achieving their goals. Colleges need to think

about this contradiction. Why are students satisfied? What do colleges do well, from their perspective? And, most importantly, why does satisfaction not translate into persistence and graduation? It would appear that students do not view the colleges as erecting barriers to their success, as their satisfaction indicates that they do not “blame” the college for their failure to graduate. What do they perceive to be the causes? How can community colleges be more responsive to these challenges?

Where do we go from here?

As stated in the introduction, the purpose of the National Community College Symposium was to discuss what is known and not known about transitions to and through the community college, in order to set an agenda for future work. As noted throughout this report, a number of research questions were raised during the day. Moreover, there appeared to be a sense that there is much innovation occurring in community colleges, but we still have remarkably little rigorous evidence as to which initiatives are effective in improving student outcomes in a new economic and demographic environment.

Clearly, more research needs to be done on the ways that community colleges can promote student learning and credential attainment. When it comes to next steps leading from the Symposium, then, the creation and implementation of a research agenda is an obvious result. Four broad areas of research emerged from the conversation.

1. Investigate participation in college initiatives aimed at improving transitions.

Symposium participants noted that it is often unclear who takes part in various initiatives. Systematically gathering and analyzing data on a given program is an important first step in expanding our knowledge of community college programs, and can help us understand their efficacy in improving student transitions. Moreover, it is important to establish that these initiatives are working with the students most in need of them, rather than with an already advantaged population.

2. Evaluate the results of community college programs aimed at improving transitions.

Many promising programs regarding student support, workforce development, and institutional change were mentioned over the course of the day. But with few exceptions, rigorous evaluations of these programs do not exist. There are often small-scale, poorly controlled quantitative studies or anecdotal evidence of success, but rigorous studies using experimental or quasi-experimental methods are needed in order to determine whether or not these programs “work.”

Researchers need to conduct studies using experimental and control group designs and appropriate statistical methods in order to establish the efficacy of various initiatives, and to move our knowledge from anecdote to evidence. In addition, it is important to investigate not just the impact of programs as compared to no treatment, but to compare one program with another in order to establish if some programs are more effective than others. So, for example, researchers need to establish that students in learning communities have better outcomes than those who have a traditional community college experience. But they should also examine whether students in learning communities have better outcomes than students in other initiatives, such as intensive advising.

There are so many programs and innovations in community colleges that evaluating them all is probably impossible. But it would be possible to generate a list of promising practices that could form the basis for rigorous investigation. This is a role that the federal government could play—serving as a clearinghouse of promising practices with regards to which programs are likely to yield positive results.

3. Bring successful initiatives to scale

How do institutions enlarge promising programs? A number of participants expressed concern that many programs, particularly those aimed at improving outcomes for disadvantaged students, were “boutiques,” serving a small number of students without substantially changing outcomes for the student population at large. Colleges struggle with finding ways to expand programs beyond a select few, in terms of finding enough staff and adequate funds.

Research should therefore investigate the ways that some programs have successfully been brought to scale. What types of staff and funding are necessary to grow programs? What barriers exist and what strategies do institutions use to overcome those barriers? Such research should also examine whether trade-offs are made in terms of quality or implementation when small scale programs are expanded.

An additional area of investigation is cost-effectiveness. Does it make sense to grow all programs? Do their outcomes justify their costs? Some initiatives may be equally effective, but one may be less costly than the other. It is important to determine if there are ways to maintain cost efficiency or find economies of scale when expanding initiatives focusing on student success. Investigations into these questions are particularly important in times of fiscal trouble, such as the current economic downturn.

4. What factors impede student transitions?

Participants in the Symposium noted that we still do not truly understand all the factors that make some students unsuccessful in college. Much has been made of the personal characteristics of students who have difficulty completing college, such as low self-efficacy or poor time management skills. But participants were also clear that institutional factors are an important piece of the puzzle, and that it is institutions, as well as students, who need to change. It is important to determine what institutional features contribute to low levels of student success in order to change those features.

A fourth area for future research, then, is to interrogate the structure of community colleges in order to better understand the ways that they (often inadvertently) impede successful student transitions. What contributes to poor student outcomes? Is it the pedagogies used in community college classrooms, low levels of financial aid, poor advising, or a combination of these and other factors? Research must tease out these influences in order to help practitioners know what they need to change.

These four areas constitute a research agenda for community colleges. Embarking on high-quality research activities addressing this agenda is challenging, however. The

following action suggestions focus on two important players, community colleges themselves and the federal government, particularly OVAE. Other entities such as state governments and research and advocacy organizations also have important parts to play in moving the agenda forward, but given the focus of the Symposium, this summary emphasizes the role for colleges and OVAE.

Community colleges can:

- *Provide a strong foundation for researchers* pursuing the research agenda laid out above. They can do this by carefully documenting their institutional reform efforts and the expected outcomes of these efforts. This will provide a trail of evidence that will help researchers understand how programs work, why they might be effective, and how they might be brought to scale. Such documentation will also help other colleges seeking to replicate successful programs.
- *Learn to conduct and use research effectively.* This is similar to the notion of engaging in data-driven reform currently supported by some foundations. Colleges can work with the information they already have to interrogate their own practices and develop an evidence base on which to make institutional change.
- *Work directly with researchers* in implementing the research outlined above. By helping clarify research questions, they can refine the agenda set out at the Symposium and make it more relevant to their activities. This will ensure that the findings are applicable to those doing the hard work at the institutional level.
- *Look for and apply best practices* while awaiting rigorous research findings. Though the evidence is thinner than we would like, there are programs that have been carefully evaluated and show promise. In order to improve outcomes for students now, colleges should use such research to inform their own initiatives.

Support from OVAE and other federal entities is essential in implementing the research agenda, as the federal government has resources, staff, and knowledge that individual institutions lack. In particular, OVAE can:

- *Identify the promising practices already documented* by gathering information on various initiatives and studies and placing them in an easily accessible format. This could take the form of a What Works Clearinghouse-type project for community colleges. Providing colleges with an easy way to learn about the best attempts to improve student transitions and success will help them effectively modify their practices to meet student needs, and help guide institutional actions while colleges wait for the outcomes of more rigorous studies. This type of activity could also take the form of a series of meetings of experts, in which practitioners could learn from one another.
- *Support institutional research efforts* by providing funds for research activities and staff, in order to help minimize the burden on colleges seeking to use data more frequently and effectively. The federal government can also provide targeted funds

for research projects addressing student participation in and outcomes from institutional initiatives aimed at improving transitions.

- *Provide assistance in creating data sets suitable for analyzing community college outcomes.* Such datasets need to include data on students' academic achievement prior and subsequent to enrolling in college, as well as information on their labor market participation. Many states are beginning to set up such data systems; federal support could speed the process. Federal support can come in the form of additional funds for data system development, regulatory action requiring such data systems, or technical assistance to states in the process of setting up such data systems
- *Conduct their own studies* through the National Center for Education Statistics (NCES) and the National Center for Research on Career and Technical Education. The federal government has its own research capacity, and should use it to address the agenda set forward at the Symposium.

Finally, the federal government has an important role to play in promoting, refining, and expanding the research agenda. The National Community College Symposium set the stage for future research by identifying broad areas to be investigated. But the day's conversations raised questions that are not easily answered through research, as they are more philosophical in nature. These include fundamental questions of what defines a community college and what the mission of community colleges can and should be in this new century. The federal government can help answer these questions as well by working with college leaders to have a series of conversations confronting such questions, in order to think through the possible implications of significant institutional change.

WORKS CITED

Carnevale, A., and Des Rochers, D. (2003). *Standards for what? The economic roots of K16 reform*. Princeton, NJ: Educational Testing Service.

Commission on the Skills of the American Workforce. (2007). *Tough Choices, Tough Times*. Washington, DC: National Center on Education and the Economy.

US Department of Education. (2003). *Condition of education*. Washington, DC: Author.

US Department of Education. (2004). *Condition of education*. Washington, DC: Author.

US Department of Education. (2006). *A test of leadership: Charting the future of US higher education*. Washington, DC: Author.

Appendix A

Further Reading and Information

A number of successful and promising initiatives were discussed throughout the day. Below are some of them, arranged according to session.

Session 1: Student Support Services

North Carolina Programs for improving student college awareness

- Online Registration: http://www.cfnc.org/onlineapps/info_onlineapps.jsp
- Learn and Earn Early College High Schools:
<http://www.nclearnandearn.gov/learnEarnHighschools.htm>

Know How 2 Go: Multimedia campaign encouraging secondary school students to prepare for college.

- <http://www.knowhow2go.org/>

LifeMap at Valencia Community College: Helps students implement career and educational goals using a developmental advising approach.

- <http://www.valenciacc.edu/lifemap/>
- LifeMap Handbook: <http://www.valenciacc.edu/pdf/studenthandbook.pdf>
- Valencia Community College Contact Information:
 - P.O. Box 3028
Orlando, Florida 32802-3028
407-299-5000

Federal TRIO programs

- <http://www.ed.gov/about/offices/list/ope/trio/index.html>

Evidence supporting the effectiveness of intrusive advising for minority students

- Escobedo, G. (2007). A Retention/Persistence Intervention Model: Improving Success Across Cultures. *Journal of Developmental Education*, 31 (1), 12-14, 16-17, 37.

Breaking Through: A multi-year demonstration project promoting and enhancing the efforts of community college to help low-literacy adults prepare for and succeed in occupational and technical degree programs.

- <http://www.breakingthroughcc.org/>

WorkKeys: Job Skills Assessment System

- <http://www.act.org/workkeys/>

Evidence supporting the effectiveness of learning communities

- Kingsboro Community College and MDRC study on Learning Communities:
<http://www.mdrc.org/publications/473/overview.html>

- National Center for Postsecondary Research on Learning Communities:
<http://www.postsecondaryresearch.org/index.html?Id=Research&Info=Learning+Communities>

Session 2: CTE and Workforce Development

CCTI: College and Career Transitions Initiative

- <http://www.league.org/league/projects/ccti/purpose.html>

Kentucky Programs supporting college access and workforce development

- KCTCS Career Pathways: <http://www.kctcs.edu/student/careerpathways/>
- Discover College: <http://www.octc.kctcs.edu/discover/>
- KY Learning Depot: <http://www.kylearningdepot.org/>

Civic Ventures Encore Project

- <http://www.civicventures.org/communitycolleges/>

Whodoyouwant2b: Website to help students make course-taking decisions in high school and college that will lead to a career.

- <http://www.whodouwant2b.com/>

Transportation and Logistics Institute: California initiative promoting careers in transportation and logistics industry

- <http://www.catli.org/>

New Media Consortium – Horizons Report

- <http://www.nmc.org/horizon/>

National Science Foundation – Advanced Technological Education:

- <http://www.atecenters.org/index.html>
- http://www.nsf.gov/news/news_summ.jsp?cntn_id=108192
- www.nsf.gov/ate

Session 3: Institutional Innovations

College Connection at Austin CC: <http://www.austincc.edu/isd/>

- Statewide: <http://www.austincc.edu/newsroom/index.php/2007/10/16/college-connection-goes-statewide/>

Jossey-Bass New Directions series, highlighting many innovations in community colleges

- <http://www3.interscience.wiley.com/journal/86011359/home>

Achieving the Dream

- <http://www.achievingthedream.org>

Appendix B Symposium Attendees

Dr. Corinne Alfeld	Academy for Educational Development
Dr. Sharon Anderson	MPR Associates
Dr. Arthur Anthonisen	Orange County Community College
Mr. John Asbury	American Council on Education
Dr. Thomas Bailey	Community College Research Center, Teachers College, Columbia University
Dr. Stephen Baldwin	Synergy Enterprises, Inc.
Dr. Mohamed Barkaoui	Université, Morocco
Dr. Suzanne Beal	Frederick Community College
Mr. Larbi Bellarbi	Teachers' Training College for Vocational Education
Dr. Margarita Benitez	The Education Trust
Mr. Michael Benjamin	FCCLA
Mr. Lars Bentsen	CIRIUS, Denmark
Mr. David Bergeron	U.S. Department of Education
Dr. Dennis Berry	U.S. Department of Education
Dr. Keith Bird	Kentucky Community and Technical College System
Dr. David Boesel	Synergy Enterprises, Inc.
Dr. Gene Bottoms	Southern Regional Education Board
Dr. Karl Boughan	Prince George's Community College
Mr. Paul Bradley	Community College Week
Ms. Janet Bray	Association for Career and Technical Education
Mr. Tom Brock	MDRC
Mr. Noah Brown	Association of Community College Trustees
Ms. Sarita Brown	Excelencia in Education
Mr. Paul Bucci	Academy for Educational Development
Dr. Walter Bumphus	The University of Texas at Austin
Dr. Christine Capacci-Carneal	USAID
Dr. Samuel Cargile	Lumina Foundation for Education
Ms. Carol Coy	Synergy Enterprises, Inc.
Ms. Astrid Dahl	EUC Sjaelland Technical College, Denmark
Dr. Ray Davis	U.S. Department of Education
Mr. Matthew Dembicki	American Association of Community Colleges
Ms. Angela Desrochers	U.S. Department of Education
Dr. Sandra Dunnington	Prince George's Community College
Dr. Paul Elsner	Maricopa Community Colleges
Dr. Angie Falconetti	U.S. Department of Education
Mr. Haji Faqir Mohamed	Minister of Manpower, Oman
Dr. Deborah Floyd	Florida Atlantic University
Dr. Janice Friedel	Iowa Department of Education

Dr. Ellen Frishberg	JBL Associates
Ms. Emily Froimson	Jack Kent Cooke Foundation
Mr. Domenic Giandomenico	NASDCTEc
Mr. Peter Grant Jordan	LaGuardia Community College
Mr. Malcolm Grothe	South Seattle Community College
Dr. Linda Hagedorn	Iowa State University & University of Florida
Ms. Gisela Harkin	U.S. Department of Education
Mr. John Hayton	Embassy of Australia
Mr. Gregory Henschel	U.S. Department of Education
Dr. Ricardo Hernandez	U.S. Department of Education
Ms. Ellen Hewett	National College Transition Network
Dr. Peggy Hines	The Education Trust's National Center for Transforming School Counseling
Dr. Hortense Hinton	Northern Virginia Community College
Ms. Ellen Holland	U.S. Department of Education
Mr. Adam Honeysett	U.S. Department of Education
Dr. Kathy Hughes	Community College Research Center, Teachers College, Columbia University
Mr. Kent Hughes	Woodrow Wilson International Center
Dr. Ann Imlah Schneider	Consultant
Mr. Pervais Iqbal	Federal Ministry of Education, Pakistan
Dr. James Jacobs	Community College Research Center, Teachers College, Columbia University
Ms. Julia Johnson	Synergy Enterprises, Inc.
Dr. Christine Johnson McPhail	Morgan State University
Dr. Peter Joyce	Cisco Systems, Inc.
Dr. Troy Justesen	U.S. Department of Education
Ms. Cheryl Keenan	U.S. Department of Education
Dr. Gregory Kienzl	University of Illinois
Dr. Donna Kinerney	Montgomery College
Mr. John Lee	JBL Associates
Ms. C. Deanna Lewis	Home Builders Institute
Ms. Lydia Logan	U.S. Chamber of Commerce
Mr. Stephen Long	Saint Louis Community College
Mr. John Martin	U.S. Department of Education
Mr. Nadr Matter	Minister of Higher Education, Egypt
Dr. John McKay	South Piedmont Community College
Dr. James McKenney	American Association of Community Colleges
Mr. John McManus	Synergy Enterprises, Inc.
Dr. Melinda Mechur Karp	Community College Research Center, Teachers College, Columbia University
Dr. Sam Michalowski	LaGuardia Community College
Dr. Jose Millan	California Community Colleges
Dr. Sharon Miller	U.S. Department of Education
Mr. Rumzi Mohammad Saleem	Vocational Training Corporation, Jordan
Mr. Suheil Na'ouri	Learning Resources Center, Jordan

Dr. Jean Ness	Institute on Community Integration
Mr. Jay Noell	Office of Planning, Evaluation and Policy, USED
Mr. Daniel Obst	Institute for International Education
Mr. Roland Osterlund	Ministry of Education, Denmark
Mr. Jeff Papke	FFA
Dr. Dolores Perin	Teachers College, Columbia University
Mr. Kent Phillippe	American Association of Community Colleges
Mr. Neil Ridley	Center for Law and Social Policy
Dr. Nancy Ritze	Bronx Community College
Dr. Gerhard Salinger	National Science Foundation
Ms. Libby Sander	The Chronicle of Higher Education
Dr. Barbara Saperstone	Northern Virginia Community College
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Dr. Susan Sclafani	Chartwell Education Group
Ms. Priyanka Sharma	National College Transition Network
Mr. Sean Sharp	Synergy Enterprises, Inc.
Dr. Vanessa Smith Morest	Norwalk Community College
Dr. Kathy Snead	Servicemembers Opportunity College
Ms. Grace Solares	U.S. Department of Education
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Dr. James Stone	National Research Center for Career and Technical Education
Dr. Watson Scott Swail	Education Policy Institute
Ms. Judith Taylor	Jobs for the Future
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Dr. Ann Walkup	D.C. Public Schools
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