

A photograph of four people in a meeting. A woman with grey hair and glasses, wearing a red top, is on the left. A man with short brown hair, wearing a dark blue shirt, is in the center with his back to the camera. A woman with dark hair and glasses, wearing a denim jacket, is on the right. A woman with dark hair, wearing a light grey blazer, is on the far right, smiling, and is seated in a wheelchair. They are all gathered around a round wooden table. A laptop is open on the table. In the background, there is an orange wall and a whiteboard with handwritten notes.

A Review of Community College-Employer Partnerships and Initiatives: Expanding Opportunities for Job Seekers with Disabilities

By:
Maria Heidkamp and Thomas Hilliard
John J. Heldrich Center for Workforce Development
Rutgers, The State University of New Jersey

The Employer Assistance and Resource Network on Disability Inclusion (EARN) is a resource for employers seeking to recruit, hire, retain and advance qualified employees with disabilities. It is funded by the U.S. Department of Labor's Office of Disability Employment Policy under a cooperative agreement with The Viscardi Center. For more information, visit AskEARN.org.

Preparation of this item was fully funded by the United States Department of Labor, Office of Disability Employment Policy in the amount of \$9,241,750 (five year total grant amount) under Cooperative Agreement No. OD26451-14-75-4-36.

This document does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Table of Contents

ACKNOWLEDGMENTS	3
EXECUTIVE SUMMARY	3
Methodology	3
Findings	4
Increasing the Involvement of People with Disabilities in Community College-Employer Partnerships	6
INTRODUCTION	7
RESEARCH METHODOLOGY	7
THE MARKET-RESPONSIVE COMMUNITY COLLEGE: CHALLENGES AND OPPORTUNITIES	8
THE VALUE OF COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS	10
KEY DIMENSIONS OF COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS	10
EXAMPLES OF RECENT COMMUNITY COLLEGE-EMPLOYER INITIATIVES	12
Trade Adjustment Act Community College and Career Training Initiative	12
Skills for America's Future	14
Shifting Gears	14
Learn and Earn Partnerships	15
Courses to Employment	16
COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS: CASE STUDIES AND COMMON FEATURES	16
COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS FACILITATED BY A REGIONAL WORKFORCE INTERMEDIARY	16
Skills for Chicagoland's Future	17
The Workforce Intelligence Network for Southeast Michigan	18
Invista Performance Solutions	19
CORPORATE PARTNERSHIPS WITH MULTIPLE COMMUNITY COLLEGES	20
PG&E PowerPathway	20
SECTORAL PARTNERSHIPS ACROSS MULTIPLE COMMUNITY COLLEGES AND EMPLOYERS	22
National Information, Security, and Geospatial Technology Consortium	22
Illinois Network for Advanced Manufacturing: Earn and Learn Advanced Manufacturing Career Lattice Program	25
Automobile Manufacturing Technical Education Consortium	26
National STEM Consortium	28
INDIVIDUAL COMMUNITY COLLEGE-EMPLOYER PARTNERSHIP WITH DEEP EMPLOYER ENGAGEMENT	30
Louisville/UPS: Metropolitan College	30
CAREER PATHWAYS	31
Rogue Community College	31
COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS FACILITATED BY OTHER INTERMEDIARIES, INCLUDING COMMUNITY-BASED ORGANIZATIONS AND VOCATIONAL REHABILITATION	32
Nebraska Vocational Rehabilitation Certificate Programs	32
Coconino Community College and Goodwill of Northern Arizona	33
Jewish Vocational Services Healthcare Bridge Program	34
FINDINGS AND RECOMMENDATIONS	35
Six Primary Models of Community College-Employer Partnerships and Common Characteristics	35
Inclusion of People with Disabilities	37
Recommendations to Increase the Involvement of People with Disabilities in Community College-Employer Partnerships	38
BIBLIOGRAPHY	39

ACKNOWLEDGMENTS

The research presented in this report, *A Review of Community College-Employer Partnerships and Initiatives: Recommendations to Expand Opportunities for Job Seekers with Disabilities*, was produced under a contract with the Employment and Disability Institute at the ILR School at Cornell University and funded by a cooperative agreement with the U.S. Department of Labor, Office of Disability Employment Policy. The principal authors of this report were Maria Heidkamp and Tom Hilliard. Robb C. Sewell was the editor.

EXECUTIVE SUMMARY

In a competitive, global economy that increasingly requires job seekers to acquire at least some postsecondary education, the nation's 1,132 community colleges have come to be seen as the “backbone” of the public workforce system, providing uniquely valuable services to their students, local employers, and communities. They offer affordable preparation for transfer to four-year colleges and universities, occupationally focused degrees that require only two years of full-time study, training for certificates and certification, contract training for employers, and a large quantity of basic literacy and math instruction through adult education and developmental education courses. They also have a history of serving a diverse mix of students, including nontraditional students, working adults, and minority, low-income, and first-generation students (Van Noy, Heidkamp, & Kaltz, 2013); in addition, more than half (54 percent) of students with disabilities in postsecondary education are enrolled in community colleges (Raue & Lewis, 2011).

In the past several years, the community college sector has grown in stature and recognition. Early in his Administration, President Obama set a goal that by 2020, the United States would once again have the highest proportion of college graduates in the world, challenging all Americans to commit to at least one year of postsecondary education or training. The President has identified community colleges as an important player in meeting this goal, and has delivered numerous speeches at community colleges and promoted legislation to support their needs. Both the federal government and a number of philanthropic funders have underwritten significant initiatives to boost the effectiveness of community colleges, and a wave of research and policy analysis has resulted in important breakthroughs in understanding the economic and social dynamics of the institutions, their students, and their role in local labor markets. Underlying several of these efforts is the growing recognition of the vital importance of ensuring that community college training and education reflects the needs of employers in ways that enable students and job seekers to connect with and keep jobs.

This report reviews some of the recent federal, national, regional, and local efforts to nurture dedicated and deliberate community college partnerships with employers. It also considers whether people with disabilities have been included in ongoing community college-employer (CCE) partnership efforts and whether these types of partnerships have been incorporated into current disability employment initiatives.

Methodology

The research methodology included conducting a literature review and an environmental scan to identify examples of CCE partnership initiatives. The scan included a review of major federal government programs such as the Trade Adjustment Assistance Community College and Career Training grant program as well as several federal disability employment initiatives; several private-sector and foundation efforts; and examples of CCE partnerships supported by federal and state vocational rehabilitation programs. Key informant interviews were conducted with representatives from the U.S. Department of Labor, the National Governors Association, The Conference

Board, the Center for Energy Workforce Development, the American Association of Community Colleges, the Joyce Foundation, Corporate Voices for Working Families, the Aspen Institute, Corporation for a Skilled Workforce, and The Manufacturing Institute. Those interviewed were asked to identify specific examples that they believed demonstrated especially deep levels of employer engagement with community colleges.

Based on an analysis of information obtained through the research process, six types of CCE programs were identified, and a limited number of specific examples were selected to illustrate each type, again, with a particular emphasis on finding examples where there appeared to be deep employer involvement. There were other examples that were not included where community colleges and, employers or employer associations are participating in various initiatives, but where their level of engagement appears to be marginal. Researchers also interviewed representatives from a number of the specific CCE partnerships that were highlighted as innovative or promising.

Findings

Based on a review of recent efforts promoting the use of CCE partnerships, including whether these have included people with disabilities among the participants, key findings include:

- A number of significant federal, philanthropic, and private initiatives have been launched in recent years to promote better CCE engagement. The hope behind these efforts is that by developing strong partnerships with employers, community colleges can strengthen their market responsiveness and improve the employment outcomes of their students. Though many recent efforts appear promising, most are too recent to have outcome or evaluation data at this time.
- CCE partnerships take many different forms. This report identifies six primary types of partnerships, distinguished by sponsor and approach. For example, an employer may engage in a one-on-one partnership with a community college; develop a partnership in concert with non-employer partners such as a Workforce Investment Board, workforce intermediary, or community-based organization; or participate in an industry or consortium initiative. Based on this research, the primary models include:
 1. Community College-Employer Partnerships Facilitated by a Regional Workforce Intermediary
 2. Corporate Partnerships with Multiple Community Colleges
 3. Sectoral Partnerships Across Multiple Community Colleges and Employers
 4. Individual Community College-Employer Partnerships with Deep Employer Engagement
 5. Career Pathways
 6. Community College-Employer Partnerships Facilitated by Other Intermediaries, including Community-Based Organizations and Vocational Rehabilitation
- Whatever form the model takes, the CCE partnership efforts reviewed here appear to share several characteristics, which generally are to:
 - Establish mechanisms for efficiently identifying local employer and regional labor market needs, incorporating a reliance on both labor market data and direct input from employers.
 - Modify existing curricula or develop new courses with direct employer input to reflect the skills required for positions they need to or anticipate to fill. Input from employers is especially valued in high-tech programs of study since professional requirements in those fields change so rapidly.

- Associates degrees and certificates in applied sciences benefit from employer input to keep pace with technological and process innovations.
 - Share start-up and other costs to avoid duplication of efforts and include sharing the development of curricula across consortium partners especially where multiple colleges are involved.
 - Seek external funding sources from philanthropic sources, government, and employers. Establishing an employer partnership typically requires the development of new curricula, courses, and programs of study, and, in some cases, new assessments and certifications. Such efforts are labor and capital-intensive, and community colleges do not have ready access to internal resources to accomplish them.
 - Adapt and develop programs for nontraditional students, including working or job-seeking adults and dislocated workers. These populations often have limited time and financial resources and strong incentives to return to work or advance along a career pathway. Strategies that meet the needs of nontraditional students include prior learning assessments; accelerated and integrated learning; hands-on and experiential learning, including internships and work opportunities; and curricula broken into chunks and stackable credentials. It also includes wraparound supports and other strategies such as cohorts and learning communities designed to help students persist and succeed.
 - Track program outcomes and build in feedback from employers.
- None of the major federal or philanthropic community college initiatives reviewed here have actively targeted individuals with disabilities; a handful of isolated examples that included individuals with disabilities were found outside of the major initiatives.

However, in some cases, it was noted in interviews that among the participants in many of these initiatives are dislocated workers and older job seekers who may have age-related disabilities, undiagnosed learning or other “hidden” disabilities, or undisclosed disabilities. Because programs did not appear to be collecting data on whether potential participants had a disability, it is difficult to determine whether in fact there were individuals with disabilities participating.

- Several of the initiatives and models reviewed for this research included efforts to reach veterans as potential participants, but none specifically targeted veterans with disabilities.
- A review of several current U.S. Department of Labor-supported disability employment efforts, including the Disability Employment Initiative and the Add Us In grant program, found that promoting CCE partnerships was not the primary focus of current grants. In some cases, community colleges and employers or employer associations and chambers are participating in project consortia, and, as these consortia mature, there may be opportunities for increasing the emphasis on nurturing CCE partnerships that involve individuals with disabilities.¹

¹ For more information on Add Us In, see <http://www.dol.gov/odep/Addusin/>. For more information on DEI, see <http://www.dol.gov/odep/topics/DEI.htm>.

- There appear to be a few local examples involving vocational rehabilitation agencies providing resources to support CCE partnerships involving individuals with disabilities. Outreach to the U.S. Department of Education's Rehabilitation Services Administration (RSA) found that while many vocational rehabilitation agencies have partnerships with community colleges, RSA has not to date openly explored information on the relationships between these community colleges and employers. Outreach to the Council on State Administrators of Vocational Rehabilitation provided an example in which Nebraska Vocational Rehabilitation is supporting certificate programs tied to community college-business partnerships. (Iowa is looking into replicating this model.)
- Models emerging based on partnerships that are facilitated by intermediaries such as community-based organizations or vocational rehabilitation seem to offer good opportunities to involve and support participants with disabilities.

Increasing the Involvement of People with Disabilities in Community College-Employer Partnerships

As has been noted, almost none of the CCE partnership initiatives reviewed for this research intentionally include individuals with disabilities as participants, and almost none of the partnerships appear to be collecting data to determine whether in fact individuals with disabilities are among the participants. This is largely true regardless of whether the sponsor is the U.S. Department of Labor or other federal agency, a philanthropic foundation, a nonprofit organization, or an employer. Yet to keep up with the skill demands of the current labor market and to access jobs that require postsecondary certificates or degrees, job seekers and incumbent workers with disabilities have as great a need as individuals without disabilities to engage in the training and education that is being provided through these community college-employer partnerships.

The following recommendation is made for ways in which stakeholders can promote the inclusion of people with disabilities in current and future CCE partnership initiatives and projects:

- In keeping with diversity inclusion plans they may already have in place, employers and community colleges engaged in local partnerships could consider strategies to expand outreach to job seekers and students with disabilities as part of their program recruitment efforts. The Job Accommodation Network (JAN, available at <http://askjan.org>) and the Employer Assistance and Resource Network (EARN, <http://askearn.org>) can provide resources to assist with these efforts.

INTRODUCTION

In a competitive, global economy that increasingly requires job seekers to acquire at least some postsecondary education, the nation's 1,132 community colleges have come to be seen as the “backbone” of the public workforce system, providing uniquely valuable services to their students, local employers, and communities. They offer affordable preparation for transfer to four-year colleges and universities, occupationally focused degrees that require only two years of full-time study, training for certificates and certification, contract training for employers, and a large quantity of basic literacy and math instruction through adult education and developmental education courses. They also have a history of serving a diverse mix of students, including nontraditional students, working adults, and minority, low-income, and first-generation students (Van Noy, Heidkamp, & Kaltz, 2013); more than half (54 percent) of student with disabilities in postsecondary education are enrolled in community colleges (Raue & Lewis, 2011).

In the past several years, the community college sector has grown in stature and recognition. Early in his Administration, President Obama set a goal that by 2020, the United States would once again have the highest proportion of college graduates in the world, challenging all Americans to commit to at least one year of postsecondary education or training. The President has identified community colleges as important players in meeting this goal, and has delivered numerous speeches at community colleges and promoted legislation to support their needs. Both the federal government and a number of philanthropies have underwritten significant initiatives to boost the effectiveness of community colleges, and a wave of research and policy analysis has resulted in important breakthroughs in understanding the economic and social dynamics of the institutions, their students, and their role in local labor markets.

Underlying several of these efforts is the growing recognition of the vital importance of ensuring that community college training and education reflect the needs of employers and enable students and job seekers to connect with and keep jobs. By partnering more closely with employers, community colleges can help ensure that they are preparing workers with education and training that is directly relevant to job openings. Some of the emerging models of community college-employer (CCE) collaborations have begun to be broadly referred to as “learn and earn”—or programs of study that align courses to lead to specific jobs (Marcus, 2012). This report focuses primarily on examples where conscious and deliberate efforts are nurturing CCE partnerships through which community colleges can strengthen their market responsiveness and improve the employment outcomes of their students. The highlighted examples were recommended by expert observers who believe they demonstrate especially deep levels of partnership between community colleges and employers. This report also reviews the extent to which individuals with disabilities have been included as participants in these partnership efforts.

RESEARCH METHODOLOGY

This report focuses on a review of some of the recent federal, national, and local efforts to nurture dedicated and deliberate community college partnerships with employers. It also considers whether people with disabilities have been included in ongoing CCE partnership efforts and whether these types of partnerships have been incorporated into several current disability-employment initiatives. The report makes several recommendations on how to expand the opportunities for people with disabilities in CCE partnerships.

The key research questions addressed were:

- What are the primary concepts associated with CCE engagement?
- What are examples of national and regional initiatives that seek to foster engagement between community colleges and employers, or between community colleges and the labor market?
- What local CCE partnerships typify the primary strategies in use?
- What role do people with disabilities play in CCE initiatives? What strategies might be effective in widening inclusion of people with disabilities in CCE initiatives?

The methodology used to answer these questions included conducting a literature review and an environmental scan to identify examples of CCE partnership initiatives and models that align community college education and training activities with federal, state, regional, and local workforce and economic development efforts, and to promote greater access to demand-driven training and certification, including efforts that encourage the inclusion of individuals with disabilities. The scan included a review of:

- Efforts of the federal government such as the Trade Adjustment Assistance Community College and Career Training grant program;
- Private-sector and philanthropic efforts such as the Joyce Foundation's Shifting Gears and the Aspen Institute's Skills for America's Future;
- Examples of CCE partnerships tied to ongoing disability employment efforts of the U.S. Department of Labor, in particular tied to the Disability Employment Initiative or the Add Us In grant program; and
- Examples of CCE partnerships tied to federal and state vocational rehabilitation efforts.

Key informant interviews were conducted with representatives from the U.S. Department of Labor, the National Governors' Association, The Conference Board, the Center for Energy Workforce Development, the American Association of Community Colleges, the Joyce Foundation, Corporate Voices for Working Families, the Aspen Institute, Corporation for a Skilled Workforce, and The Manufacturing Institute. Heldrich Center researchers also interviewed representatives from a number of the specific CCE partnerships that were highlighted as innovative or promising.

The findings of the environmental scan were analyzed to identify characteristics of demand-driven, CCE partnership models and sector and industry-cluster approaches, and to determine if people with disabilities were part of these efforts.

This report summarizes the research findings and provides recommendations for how demand-driven community college initiatives and efforts could be structured and funded to be inclusive and tap into the talents of people with disabilities. It also provides information about how to engage employers in promoting the hiring, recruitment, and retention of people with disabilities.

THE MARKET-RESPONSIVE COMMUNITY COLLEGE: CHALLENGES AND OPPORTUNITIES

The heightened attention to community colleges has focused interest not only on the opportunities they offer, but also on the challenges they face, including high dropout rates and inadequate funding (Century Foundation Task Force, 2013). One particularly complex set of challenges is around the issue of market responsiveness. As

community-focused public institutions, a hallmark of community colleges is that they seek to be responsive to their local labor market. A market-responsive community college has been described as having the following traits (MacAllum, Yoder, & Poliakoff, 2004):

- Leadership committed to the goal of making the college market-responsive;
- Internal response mechanisms that influence campus organizational structure and culture;
- Conscious and deliberate efforts to nurture business and other partnerships; and
- Thoughtful and strategic approaches to building stronger connections to the local economy.

However, studies have found broad skepticism among employers about the higher education system's market responsiveness in general. In a McKinsey survey, for example, while nearly three-quarters (72 percent) of education providers believed that new college graduates were prepared for entry-level employment positions, only 42 percent of employers agreed with them (Mourshed, Farrell, & Barton, 2012).

One challenge community colleges face in their relationship to employers is that some employers view their graduates negatively, especially in labor markets with a high proportion of Bachelors' degree holders. For instance, almost half (46 percent) of hiring managers in the Seattle information technology field felt that an Associate's degree signified a lack of academic ability, initiative, or skill (Van Noy & Jacobs, 2012). This negative image results in part from one of the most vital characteristics of community colleges—their open access mission. Community colleges do not screen out applicants, and employers may therefore view community college graduates as less desirable than graduates from a four-year selective college or university. Due to personal lack of familiarity, employers—who themselves may have attended four-year institutions—often draw unfavorable conclusions about community college graduates or overlook them entirely: as one community college expert recently noted, “Few CEOs—or, for that matter, policymakers—went to community colleges, or send their kids there” (Marcus, 2012).

A further challenge was described by a community college president as the “communication breakdown between colleges, employers and job seekers” (Dembicki, 2013). For example, what companies mean when they say they need “entry-level workers” may vary significantly, with some seeking a degree and strong soft skills, and others wanting industry certification and a certain amount of work experience. Likewise, individual job seekers are frequently confused about what education and training they need to get certain jobs. A desire to bridge this communication breakdown has provided at least part of the impetus for developing partnerships and mechanisms for ongoing dialogue between community colleges and employers, which are designed to help community colleges have a better understanding of how to meet specific employer needs and how to translate these needs to help job seekers and other students.

An increasing number of companies are seeking to partner with community colleges because of difficulty in identifying and hiring employees with needed competencies. In 2010, at a time when the nation's unemployment rate was still well over 8 percent, more than half of American employers reported difficulty filling positions because of a lack of suitable skills (Rampell, 2012). In another national survey, more than half of employers (53 percent) said that their company faced a major challenge in recruiting non-managerial employees with the skills, training, and education their company needed (Bridgeland, Milano, & Rosenblum, 2011). Two-thirds of manufacturing firms reported having either a moderate or severe shortage of qualified workers; almost half of the surveyed companies reported a severe shortage of production workers, which remains an important occupation for middle-skill adults (Morrison et al., 2012).

THE VALUE OF COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS

The value of a CCE partnership for employers has been described as: enhancement of productivity and competitiveness by investing in the human capital of their workforce, recruitment and retention of good entry-level workers, upgrading the skills of current workers, and the mediation of deficiencies in high-skill occupations (Martinson, 2010). The value for community colleges may seem evident, but a college that receives public funding based on enrollment may not have a material incentive in strengthening its connection to the labor market. For community colleges, the value added may be in meeting college completion goals, developing and validating curricula, receiving in-kind donations of equipment and materials, increasing revenues, and providing public and employer-related visibility (Corporate Voices for Working Families, 2012b).

As community colleges and employers seek collaborative relationships, a wide variety of public and private entities have stepped forward to support them. The result has been a surge in CCE partnerships, as well as the emergence of diverse partnership models. This report seeks to identify the key models for CCE partnerships, developing a general taxonomy and considering the key choices that both partners must make. In addition, the report surveys the landscape of initiatives supporting such partnerships, and finally examines the question of how they can better include people with disabilities.

KEY DIMENSIONS OF COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS

In a CCE partnership, the partners consciously structure a relationship in which the institution offers programs of study to meet employer skill requirements, and the employer provides input on courses, curricula, and/or programs of study to ensure that this happens. The employer may contribute in other ways as well, such as providing equipment and facilities for training or offering internships to students. The programs of study are designed to meet employer demand; if hiring stops, the college stops offering that program of study. The employer supports the partnership in one or more ways, although the nature of that support will vary from one partnership to another. Generally, the community college offers programs of study for students seeking employment through the partnership. A key area of tension in program design may be the inclusion of low-skilled or disadvantaged adults in the program, since employers have limited incentives to serve them (Martinson, 2010).

The environmental scan found variation across at least three key dimensions of CCE partnerships: depth and type of employer engagement, sponsor structure, and credentials obtained.

Employer engagement: Employers engage in curriculum development with varying degrees of intensity (Office of Vocational and Adult Education, 2012a). At the low end, employers serve on advisory boards and offer general advice on workforce issues and local labor market needs. At the mid-range, employers partner with colleges to design training for immediate workforce needs and/or contribute to industry-led efforts to prepare students for jobs. At the high end, employers and colleges work together to analyze workforce needs and, develop curricula and training to meet those needs. The continuum may also be described as running from simple, one-dimensional relationships to more complex multi-dimensional relationships (Corporate Voices for Working Families, 2012b).

Table 1. Key Strategies Used in Community College-Employer Partnerships

Accelerated and Competency-based Learning	The ability to speed up skills acquisition through concentrated, time-shortened delivery of curricula that move working learners to credentials based on industry-confirmed competency requirements.
Bridge Program	Bridge programs are designed to help adults with limited basic academic or English language skills prepare for postsecondary education and training as part of a career pathway. Bridge programs help students acquire academic, employability, and technical skills through contextualized instruction, career development, and support services.
Integrated Basic Education and Skills Training	A strategy developed by the Washington State Board for Community and Technical Colleges that pairs basic skills instructors and technical faculty to jointly design and teach basic skills (including English as a Second Language) and college-level occupational skills simultaneously to help students move through school faster.
Stackable Credentials	Aligning industry-recognized credentials with a clearly defined program of study provides employees the ability to earn college credits toward the attainment of an academic degree while learning specific technical skills important to their future careers. By providing greater career navigation supports, employers can promote a stronger link from postsecondary credentials earned to career advancement.
Prior Learning Assessments	Support for the process of attaining academic credit for prior learning, training, or experience gained outside of a classroom.
Career Navigation	Career advising and counseling that links academic achievement to defined career pathways and talent-management strategies.
Career Pathways	A sequence of education and training services that enable students, often while they are working, to advance over time to successively higher levels of education and employment in a given industry or occupational sector, including multiple entry and exit points.
Occupational Analysis	A process of defining the nature and scope of an occupational area or job, including the required competencies, tasks, knowledge, skills, tools, equipment, and behavior required to perform the job.

Partner structure: Community colleges may interact with employers and other partners in various contexts. The four main partnership types are curricular alignment and articulation, academic and social support, professional development, and resource sharing. CCE partnerships often include other entities as well, such as community-based organizations, Workforce Investment Boards, chambers of commerce, or labor unions (deCastro and Karp, 2009).

Credentials obtained: The credentials obtained in programs of study designed through CCE partnerships vary significantly. In some cases, the program of study may not result in a credential at all, but simply passing or failing a preparatory course.

The program of study may result in a certificate developed by the institution, in an industry-designated certification, or in an Associate's degree. In some cases, credits earned through a certificate or certification may count toward an Associate's degree (Austin, Mellow, Rosin, & Seltzer, 2012).

EXAMPLES OF RECENT COMMUNITY COLLEGE-EMPLOYER INITIATIVES

A CCE initiative seeks to foster engagement between community colleges and employers, or between community colleges and industry sectors. CCE initiatives provide a variety of resources, including funding of course development and curricular materials, brokering relationships between potential partners, technical support, and peer-to-peer learning. Some initiatives enter the CCE space from the community college side, having identified a need to emphasize market responsiveness among institutions of public higher education. Others enter from the employer side, having identified a need for applicants with appropriate skills mix, particularly in industries with large numbers of workers nearing retirement age.

A scan of CCE initiatives found several organizing principles, of which the most common was geographic: supporting CCE partnerships nationally, within a given state or multi-state region, or within a given labor market. CCE initiatives may also organize to support partnerships in a given industry sector, such as health care or information technology. A brief overview of several significant initiatives follows.

Trade Adjustment Act Community College and Career Training Initiative

The Trade Adjustment Act Community College and Career Training (TAACCCT) program is the largest national initiative supporting community college innovation and the development of CCE partnerships. In 2010, Congress enacted the TAACCCT program as part of the Health Care and Education Reconciliation Act, allocating \$2 billion over four years to fund the initiative. The goals of TAACCCT are threefold:

1. Increase attainment of certifications, certificates, diplomas, and other industry-recognized credentials to better prepare Trade Adjustment Assistance (TAA)-eligible workers² and other adults for high-wage, high-skill employment or reemployment in growth-industry sectors;
2. Introduce innovative and effective methods for curriculum development and delivery that address specific industry needs and lead to improved learning outcomes and retention rates for TAA-eligible workers and other adults; and
3. Demonstrate for TAA-eligible workers, in particular, improved employment outcomes as a result of the funded program (Employment and Training Administration, 2011a).

² Trade Adjustment Assistance (TAA)-eligible workers are defined by the U.S. Department of Labor as, "trade-affected workers who have lost their jobs as a result of increased imports or shifts in production out of the United States." For more information, see: <http://www.doleta.gov/tradeact/benefits.cfm#2>.

The legislation specified that grants would be disbursed to community colleges in a competitive process, but that institutions in each state and territory would be guaranteed at least 0.5 percent of the total budget each year. In 2011, individual community colleges were eligible for grants up to \$5 million, and consortia of institutions could obtain grants up to \$20 million. (These amounts were reduced in 2012.) Because the program was developed as an amendment to the TAA Act, grant applicants that serve students affected by international trade are favored in the bidding process, but there are no eligibility restrictions on students. (The solicitation for the third round of TAACCCT grants includes information noting that programs should improve the community college's ability to serve a "diverse population of workers eligible for training under the TAA for Workers program, as well as a broad range of other adults such as women or minorities who may be underrepresented in high-demand fields." The solicitation also notes that, "Veterans receive first priority of services with TAA-eligible workers receiving second priority."³) The U.S. Department of Labor, Employment and Training Administration (ETA), developed the structure for TAACCCT and solicits a new round of grants each year. ETA awarded 47 grants in 2011 and another 54 grants in 2012 (27 to consortia totaling more than \$359 million and 27 to individual institutions totaling \$78 million) plus grants of \$2.5 million each to individual institutions in the remaining 25 states and territories. The terms of the solicitation encourage grants that support market-responsive proposals.

The five core elements of TAACCCT grants and their relevance to CCE partnerships are as follows:

1. **Evidence-based design:** Applicants must base their program design on a level of evidence appropriate to the project proposed.
2. **Stacked and latticed credentials:** Applicants must incorporate the development of certifications, certificates, and diplomas, all of which can be stacked as students' progress along them to build a portfolio of credentials that can serve students well regardless of whether they ultimately complete a full degree program. Applicants are advised to "work closely with industry associations and employers who will review programs of study and identify clusters of courses that could be considered for valued credentials" (ETA, 2011a).
3. **Online and technology-enabled learning:** Applicants should explore technology-intensive programs, including courses conducted online, in a hybrid online-traditional setting, or inclusive of technology in some other fashion.
4. **Transferability and articulation:** Applicants must incorporate credit transferability and articulation into their program design, which means they must include strategies to strengthen the ability of students to transfer from non-credit to credit-bearing courses (for courses funded by TAACCCT grants) and may include conversion from noncredit programs to academic credit. By strengthening the transferability and articulation of academic credit, the goal is to create career pathways for participants to further their education. According to the Round 3 solicitation, applicants must work with other two-year colleges and four year institutions in their state to confirm transferability and articulation agreements for TAACCCT funded courses.
5. **Strategic alignment:** Applicants must strategically align programs with at least three types of key stakeholders: employers and industry, the public workforce system, and educational institutions and other organizations.

3 <http://www.grants.gov/web/grants/search-grants.html?keywords=taaccct>

Core element #5 is of particular interest for CCE partnerships. ETA states that the applicant must involve at least one employer for each targeted industry in the program, and this employer “must be actively engaged in identifying the necessary skills and competencies for the program(s), and who will assist with curriculum development and program design” Furthermore, “the Department is most interested in applicants that collaborate with multiple employers and/or other organizations representing an industry sector... to ensure that program participants will be prepared with the skills needed in the applicant’s region” (ETA, 2011a).

The TAACCCT grants have yielded some extremely promising CCE partnerships, among them the National Information, Security, and Geospatial Technology Consortium (described below).

Skills for America’s Future

In October 2010, the Obama Administration convened a diverse group of leaders in business, labor, higher education, and philanthropy to announce a new initiative titled, Skills for America’s Future. The purpose of this employer-led initiative is to foster partnerships between employers and community colleges. Skills for America’s Future is sponsored by the Aspen Institute’s Economic Opportunities Program.

Leveraging its advisory board of major employers, Skills for America’s Future helps to create or expand CCE partnerships. They point to partnerships between more than 50 employers and 200 community colleges since 2010 as evidence of effectiveness.⁴

However, Skills for America’s Future is modifying its strategies. Employers reported finding the broader landscape of education and skills training to be confusing, with a wide assortment of training providers and resources and no organized method for accessing them. Skills for America’s Future is now working to develop a set of regional business-oriented workforce intermediaries to assist employers in obtaining training of both applicants and current employees. The first such intermediary, Skills for Chicagoland’s Future (described later), converted to the new model in September 2012.

For more information on Skills for America’s Future, see: aspeninstitute.org/policy-work/economic-opportunities/skills-for-americas-future

Shifting Gears

Shifting Gears was a multi-state regional initiative supported by the Chicago-based Joyce Foundation from 2007 to 2011. The premise of Shifting Gears was that Midwestern states needed to significantly increase the education and skill levels of low-skilled adults to enable them to succeed in the 21st century economy, but their efforts were being held back by ineffective education and skills’ development systems.

The Joyce Foundation invested about \$8 million in grants to six states, of which four—Illinois, Indiana, Minnesota, and Wisconsin—fully adopted Shifting Gears’ systems-change agenda. The underlying strategy behind Shifting Gears was to align state policy and priorities across adult basic education, workforce development, and community and technical college systems to improve adult transitions to postsecondary education. State agency officials worked collaboratively to devise programs that would meet the needs of low-skilled adults (Roberts & Price, 2012). The key state programs were:

⁴ For a list of participating employers and a map showing their geographic distribution, see: <http://www.aspeninstitute.org/policywork/economic-opportunities/skills-americas-future/employer-partners>

- **Illinois:** Adult basic education bridge that integrates and connects basic academic skills with postsecondary occupational education.
- **Indiana:** WorkINdiana, a career pathway strategy that provides adult basic education students with access to targeted pre-postsecondary occupational training. Students obtain certifications that crosswalk to college credit at Ivy Tech, Indiana's statewide community college.
- **Minnesota:** FastTRAC, a career pathways initiative extending from adult basic education into postsecondary education, concluding with co-teaching of integrated adult and occupational courses at the college level.
- **Wisconsin:** Regional Industry Skills Education, a career pathway and bridges program that integrates and connects basic academic skills and technical college occupation instruction for adult basic education participants.

A qualitative analysis of Shifting Gears conducted by external evaluators found that the four states that succeeded in implementing innovative strategies were able to do so because they focused their efforts on a specific innovative strategy. This focus helped their cross-agency teams (including workforce development, community and technical college systems, and adult education) reach consensus and garner the support needed to adopt new state-level policies to enable local institutions and providers to implement the selected strategies. Progress in the two other states that were part of the original group essentially stalled in part because of difficulty in clearing these hurdles. However, the four Joyce Foundation-supported states have continued to support their innovative strategies since the conclusion of Shifting Gears.

For more information on Shifting Gears, see joycefdn.org/shifting-gears/

Learn and Earn Partnerships

Corporate Voices for Working Families, a nonprofit business membership organization, sponsors Learn and Earn Partnerships, which are defined as alliances between companies and organizations of higher learning that award accredited postsecondary credentials. Many Learn and Earn Partnerships are CCE partnerships, although employers may also collaborate with other higher education providers or establish their own. According to Corporate Voices, a Learn and Earn Partnership blends workplace relevance, on-the-job training, and more formalized education to help students gain skills and competencies required in today's workforce.

The Learn and Earn Partnerships initiative springs from a report co-authored by Corporate Voices for Working Families, The Conference Board, the Society for Human Resource Management, and the Partnership for 21st Century Skills (2006), which highlighted the gap between skills needed by employers and what they were getting from applicants and new hires. Corporate Voices has since taken as its mission the encouragement and technical support for the development of Learn and Earn Partnerships around the United States. A more recent report from Corporate Voices for Working Families (2012a) profiles 22 such partnerships, of which more than half include community colleges.

For more information on Learn and Earn Partnerships, see: corporatevoices.wordpress.com/category/work-force-readiness/learn-and-earn-talent-development-programs/

Courses to Employment

The Courses to Employment initiative (C2E) was a three-year demonstration project implemented by the Aspen Institute's Workforce Strategies Initiative and funded by the Charles Stewart Mott Foundation. From 2007 to 2010, C2E financially supported six partnerships of colleges and workforce-oriented nonprofit organizations. Each partnership provided a range of academic and non-academic supports to disadvantaged students. The partnerships also sought to develop industry strategies that focused on meeting business needs and assisting students to enter and succeed in their local labor market (Conway, Blair, & Helmer, 2012). They did this by targeting specific industries or clusters of occupations and by providing the students with labor market navigation services. The partnerships were:

- Seattle, WA: Automobile Career Pathways Project
- Austin, TX: Capital IDEA and Austin Community College
- Chicago, IL: Carreras en Salud
- Fairfax County, VA: Training Futures Program
- Los Angeles, CA: Logistics/Transportation Academy
- Flint, MI: Flint Healthcare Career Pathways Project

A participant outcome study found that the C2E collaborations were effective for serving low-income adults in community colleges. The study reported high percentages of participants completing programs, and most graduates finding employment post-training and earning higher wages than prior to training (Conway, Blair, & Helmer, 2012).

For more information on Courses to Employment, see: aspenwsi.org/resource/c2e/

COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS: CASE STUDIES AND COMMON FEATURES

CCE partnerships have diversified in many directions. However, this report identifies six primary types of CCE partnerships, distinguished by sponsor and approach. These include:

1. Community College-Employer Partnerships Facilitated by a Regional Workforce Intermediary
2. Corporate Partnerships with Multiple Community Colleges
3. Sectoral Partnerships Across Multiple Community Colleges and Employers
4. Individual Community College-Employer Partnership with Deep Employer Engagement
5. Career Pathways
6. Community College-Employer Partnerships Facilitated by Other Intermediaries, including Community-Based Organizations and Vocational Rehabilitation

COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS FACILITATED BY A REGIONAL WORKFORCE INTERMEDIARY

Regional workforce intermediaries are designed to improve the economies of their defined region by helping to identify and respond to employer training and hiring needs. They are often nonprofit organizations established to help improve their region's economy by helping match employers, job seekers, and education and training institutions. They provide a single point of entry or hub for employers to help streamline the process of identifying training providers, which often, though not exclusively, includes partnering with community colleges. They help

coordinate resources to support customized and other needed training, recruitment, and other employer services. In some cases, they also play a role in providing labor market information and fostering cluster and sector strategies.

Skills for Chicagoland's Future

When Skills for America's Future, an initiative of the Aspen Institute, decided to change strategies from directly brokering CCE partnerships to developing a new regional model, it turned to Chicago Career Tech (CCT). CCT was founded in 2009 as a public-private partnership that provided technology and healthcare career pathways for unemployed residents of Chicago. Existing workforce training organizations and community colleges lacked strong employer ties. They used market research and job developers to connect training programs to employer needs, but still faced a substantial amount of guesswork in determining whether their graduates would meet the needs of employers and obtain employment in their area of study. The goal of Chicago Career Tech, re-launched in September 2012 as Skills for Chicagoland's Future (SCF), was to become an intermediary between the business community and providers of workforce education and training, including community colleges. SCF is supported by the City of Chicago, Cook County, the State of Illinois, and a mix of private and corporate foundations.

How Skills for Chicagoland's Future Works

SCF views itself as a business intermediary for employers in the Chicagoland region. A number of top executives at Chicago-based companies serve on the board, including top executives at United Airlines, McDonalds, and JPMorgan Chase. As a result, SCF brings an unusual degree of access to top-level corporate managers. SCF staff meet with hiring and human resource managers to identify positions that it could assist in filling, and then collaborate with the employer to identify skills needed. As an intermediary, SCF does not provide training directly, nor does it specifically favor community colleges. Instead, SCF determines the most appropriate provider and reaches out to that provider to structure the necessary training. SCF funds the training, on condition that the employer agrees to hire the students upon successful course completion. SCF refers to this program a "train-to-hire" model.

SCF's budget is comprised of roughly one-third corporate and philanthropic contributions, one-third Chicago tax-levy dollars, and one-third federal Workforce Investment Act (WIA) Title I funding allocated to SCF through the City of Chicago. Normally, WIA Title I restricts the use of training funds to vouchers, which clients take to the provider of their choice. This process would be incompatible with the SCF model. However, cohort training of the kind sponsored by SCF is permissible for customized and on-the-job training carried out directly for employers.

Outcomes and Objectives

SCF is a new organization implementing a model that has not been tried before. In 2013, SCF projects a \$3.2 million operating budget and client volume between 1,700 to 2,000 unemployed workers (Bergen, 2012). By 2015, SCF plans to place 5,000 to 6,000 people annually. Key outcome measures tracked include retention and employer satisfaction. More broadly, SCF seeks to serve unemployed adults who have experienced difficulty reentering the workforce.

For more information on Skills for Chicagoland's Future, see: skillsforchicagolandsfuture.com/

The Workforce Intelligence Network for Southeast Michigan

The Workforce Intelligence Network (WIN) was established in late 2011 with a \$1.5 million, three-year grant from the New Economic Initiative for Southeast Michigan, a multi-foundation effort to help the region transition to an innovation-based economy.⁵ WIN is a collaborative made up of eight community colleges, seven workforce boards, and other economic development partners working together to foster a comprehensive workforce development system for the region. WIN grew out of two years of planning to determine how community colleges in Southeast Michigan, along with the Michigan Works agencies,⁶ could collaborate more strategically and systemically, especially when serving large regional employers. The planners recognized that many large employers can have a headquarters in one location and employees across the region, resulting in multiple community colleges offering assistance. At the same time, the planners had a sense that colleges were not paying enough attention to the needs of small employers. WIN was designed to ensure a single entry point of contact for large employers, and a mechanism to help smaller employers have their needs aggregated and addressed.

WIN's partner colleges include:

- Macomb Community College
- Monroe County Community College
- Mott Community College
- Oakland Community College
- Schoolcraft College
- St. Clair County Community College
- Washtenaw Community College
- Wayne County Community College District

WIN's partner Michigan Works! Agencies include:

- Career Alliance
- Detroit Employment Solutions Corporation
- Livingston County Michigan Works!
- Macomb/St. Clair Michigan Works!
- Oakland County Michigan Works!
- Southeast Michigan Community Alliance
- Washtenaw County Michigan Works

⁵ Foundations include: Community Foundation for Southeast Michigan, Max M. and Marjorie S. Fisher Foundation, Ford Foundation, Hudson-Webber Foundation, W.K. Kellogg Foundation, John S. and James L. Knight Foundation, The Kresge Foundation, McGregor Fund, Charles Stewart Mott Foundation, Skillman Foundation

⁶ Michigan's workforce system is made up of 25 regional Michigan Works! Agencies, which are administered by workforce investment boards and oversee the state's One Stop Career Centers.

How WIN Works

WIN strives to use real-time labor market data and analysis of online job postings to help colleges have a better understanding of the direction of and skills needed in the regional economy. This strategy helps the colleges create targeted new programs that are responsive to employer needs. The participating community colleges and Michigan Works agencies have signed Memoranda of Understanding to collaborate around the use of real-time labor market data. WIN has also been instrumental in launching three cluster strategies in the region— in advanced manufacturing, information technology, and health care—and in coordinating data, resources, and community college training partnerships to support the employers in these clusters. WIN has coordinated community college training for a single employer and a particular college, as well as for many more complex cases. For example, WIN coordinated training for an employer that needed specialized welders for the defense industry, ultimately involving three colleges working together across district boundaries to provide relevant curricula and funding. WIN also helped identify candidates to participate in a pilot training to meet the needs of five Detroit firms seeking individuals with .Net, JavaScript, and other programming language skills.

Outcomes and Objectives

WIN, which relies on colleges to deliver the actual training services, tracks various outcome metrics reflecting employer engagement, numbers of referrals, and reach of communication and data activities. A report noted that WIN served more than a dozen employers through direct intervention and partner referrals, and numerous trainings were organized meeting specific employer needs, including recruiting appropriate candidates. Many employers participated in information technology, health care, and advanced manufacturing regional cluster activities organized by WIN. WIN is also striving to improve data and better coordinate consistent business services activities across regional economic developers, workforce developers, and community colleges. For more information on the Workforce Intelligence Network, see: <http://win-semich.org/>

Invista Performance Solutions

When the Washington State legislature began to look for ways to make the community college system more efficient, five northwest colleges decided they would demonstrate an ability to collaborate by consolidating the functions associated with providing services and customized training to businesses. Invista Performance Solutions was established in July 2011 with the mission of being a single point of contact that provides relevant training and consulting services to companies on behalf of the five partner colleges—Tacoma Community College, Bates Technical College, Clover Park Technical College, Pierce College Puyallup, and Piece College Fort Steilacoom—which have since eliminated these functions from their individual colleges.

How Invista Performance Solutions Works

Invista Performance Solutions works with employers to identify the technical skills needed and to find the best customized training available. Training could occur at one of the partner colleges' technical training labs or elsewhere, and can be for credit or not for credit depending on the project. The vast majority of Invista's training is conducted for clients who want highly customized programs. Clients have come from all industries. In one example, Goodwill Industries contacted Invista to coordinate the training for warehouse workers at several remote locations across Washington State for the state's growing logistics and warehousing sector. (Regional employers include Amazon and Nordstrom, among others.) Invista and Goodwill Industries received a \$1.9 million grant from the U.S. Department of Labor to support their training partnership. Invista worked with Goodwill staff to establish three training sites and then partnered with local colleges to deliver a 12-credit General Warehouse Clerk certificate program, a work readiness credential, a customer service credential, a forklift certification, and a

Certified Logistics Associate credential. More than 60 percent of the more than 850 participants were employed within 90 days of completing the program, and 20 percent of program graduates continued their education at a Washington State college or university. Roughly a quarter of participants (211) were individuals with disabilities. The program incorporated a range of supports to help students complete their coursework, including after-class study groups, tutoring, and learning labs. Invista reports that more than 29 businesses provided internships for program completers, and 90 percent of those companies have hired at least one program graduate each.

Outcomes and Objectives

In addition to the outcomes for individual projects (such as the Goodwill warehousing and logistics training), Invista Performance Solutions tracks both client and participant satisfaction with training, as well as client retention rate, which is currently 98 percent since the organization was formed.

For more information on Invista Performance Solutions, see: invistaperforms.org/Pages/Welcome.aspx

CORPORATE PARTNERSHIPS WITH MULTIPLE COMMUNITY COLLEGES

In this example, PG&E, a California utility company, took the lead in solving its skilled-worker pipeline problem by establishing a public-private partnership with multiple community colleges, workforce boards, unions, and industry employers. Through the partnership, the company provides technical input for curricula to ensure its relevance, trains trainers, donates equipment for training, and arranges student field experiences.

PG&E PowerPathway

Utilities companies are often considered to be on the cutting edge of workforce training innovation. As sole producers of energy within their boundaries, they are positioned to gain the benefit of training provided to prospective and current employees. They have an older workforce, which drives a stronger interest in preparing a new generation of workers, and they have a trade association, the Center on Energy Workforce Development, that has prepared competency models and career pathway frameworks that simplify the task of developing partnerships with community colleges and workforce providers.

One frequently cited model is Pacific Gas and Electric's (PG&E's) PowerPathway, a training partnership with multiple community colleges throughout California.⁷ This program, which started in 2008, trains workers for a variety of skilled positions at the company, including utility lineman, cable splicer, utility welder, and others. Based on the anticipated retirements of its aging workers, the company projects that 46 percent of its skilled energy and utility technician workforce will need to be replaced by 2015. Training and apprenticeship can take years—for example, up to seven years for a utility lineman—lending urgency to its hiring process.

In addition, PowerPathway addresses a dilemma faced by PG&E's hiring managers. They receive thousands of applications for every job posting, and while many applicants bring the needed credentials, those credentials alone do not guarantee an effective employee. For example, an applicant with a certificate in welding may have learned to weld flat surfaces in a factory, but may not feel comfortable welding pipes in confined spaces underground. The PowerPathway program provides field experience intended to reassure hiring managers of the suitability of job candidates.

⁷ Participating colleges include Modesto Junior College, Fresno City College, Laney College (Oakland), San Joaquin Delta College (Stockton), the Workforce Institute in partnership with the San Jose/Evergreen Community College District (San Jose), the Los Rios Community College District, Contra Costa College (San Pablo) in partnership with Diablo Valley College (Pleasant Hill) and Los Medanos College (Pittsburg), Skyline College (San Bruno), and the Kern Community College District (Bakersfield).

How PG&E PowerPathway Works

Through the PowerPathway program, PG&E collaborates with community colleges and Workforce Investment Boards to develop career pathways, training, and curricula for certifications relevant to the needs of the company and the utility industry. PG&E's involvement may include designing curricula, running train-the-trainer programs, co-delivering classroom instruction, managing the programs, donating equipment, and arranging student field visits.

Signature courses prepare students for entry and apprentice-level courses and are timed for new PG&E job postings. The local Workforce Investment Board screens and interviews applicants using the WorkKeys software program and phone interviews, typically culling more than 2,000 applicants to select roughly two dozen students through this rigorous prescreening. Prospective students must meet a minimum standard of literacy and numeracy, as well as possess personality traits appropriate to the PG&E workforce. The descriptions for several of the PowerPathway Signature courses note that PowerPathway has teamed up with regional workforce boards to help those in under-served communities, including women, youth and military veterans, prepare for these utility and energy industry jobs.

Examples of 2013 Signature Courses include:

- Intro to Energy and Utilities Careers for Women
- Bridge to Utility Worker
- Bridge to Utility Worker for Veterans
- Bridge to Pre-Apprentice Lineman
- Welding for Veterans
- Entry to Gas Operations

Students report to the community college for sessions that run all day, five days a week, for four to eight weeks. The courses may lead to a certificate as well as credit toward an Associate's degree. Students are aware that completing PG&E signature courses is no guarantee of a job at PG&E.

PowerPathway staff work closely with community college faculty and PG&E hiring managers to design curricula. A key component is direct field experience. In a welding course, the students will go underground and weld pipes. In a lineman course, students will spend much of the day at the top of a 40-foot pole installing and repairing equipment. In addition, faculty train students in soft skills, particularly those needed to present themselves favorably to job interviewers.

In addition to the PG&E Signature courses, Affinity courses are also designed by community colleges in partnership with PowerPathway. While they provide skills specific to the needs of PG&E and other utilities, PG&E does not take the same level of ownership. Applicants are not screened, course start dates are not timed to specific openings, and PG&E does not actively seek to prepare graduates for openings. However, the PowerPathway staff believe that the Affinity courses give graduates an advantage in seeking employment in the utilities sector and related employers. Examples of Affinity courses include:

- Advanced Welding / Gas Transmission Pipe Welding
- Integrated Energy Solutions Certificate
- Electrical Power Systems Certificate

An example of one of the Affinity courses, the Advanced Welding /Gas Transmission Pipe Welding course at Laney College in Oakland, CA, is designed for working welders and advanced welding students who want to expand their skills by adding pipe welding. The description also notes that pipe welders are in high demand in California and are expected to be for the next five years, and that the course can help prepare students for passing entrance exams at public utility companies such as PG&E.

Outcomes and Objectives

PG&E has stated that it finds the program to be highly successful in meeting its need for skilled employees. Staffing for PG&E's PowerPathway program has risen from 2 to 13 people in 5 years as the program has grown. Graduates of the program have a 72 percent hire rate, and those hired have a 6-month retention rate of 98 percent. Seven out of ten graduates progress to apprenticeships or higher job classifications within one year of hire. Since PowerPathway started in 2008, the company trained more than 340 students as of the end of 2012; more than half were military veterans. The company is planning to expand PowerPathway to train 250 students in 2013. PowerPathway has been highlighted as a "model of success" by Skills for America's Future.

For more information on PowerPathway, see: pge.com/about/careers/powerpathway/

SECTORAL PARTNERSHIPS ACROSS MULTIPLE COMMUNITY COLLEGES AND EMPLOYERS

Sectoral partnerships involving multiple community colleges and employers are emerging as a means to address industry-wide workforce concerns nationally, statewide, or across multiple regions. They are striving to develop consistency in terms of portable, industry-recognized certificates, credentials, and career pathways. They are incorporating platforms to help students progress, including bridge programs, credits for prior learning, accelerated learning, stackable credentials, and opportunities for internships and hands-on—or virtual hands-on—learning. They are sharing curricula and organizing mechanisms for validating and keeping curricula current.

National Information, Security, and Geospatial Technology Consortium

The National Information, Security, and Geospatial Technology Consortium (NISGTC) is a national consortium of seven community colleges funded by TAACCCT to develop career pathways in the information technology (IT) field, in collaboration with employers and strategic partners. (See Table 2.) Among the employers participating in NISGTC are Microsoft Corporation, HP, Cisco, Dell, and IBM. Participating strategic partners include the New England Center for Homeless Veterans, the Massachusetts High Technology Council, the National ABLE Network, and a range of state and local workforce development actors such as Texas Workforce Commission, Arizona Workforce Connection, Maricopa County Workforce Development Board, and the Salt Lake Department of Workforce Services.

The consortium focuses on four IT specialties: programming, network and data communications systems, geospatial technologies, and cyber security. The need for an IT consortium is based on key characteristics of the IT field, notably high demand and rapid change. Graduates of IT programs are in high demand throughout the economy, not only among IT employers per se, but in almost every economic sector. Projections for future demand suggest continued employability for IT graduates. However, the field also changes rapidly, making it difficult for employers to find job applicants with up-to-date and relevant skills. Community colleges seek to train graduates for IT positions, but are not funded or equipped to update or develop new courses, train students for the most industry-relevant certificates, or provide meaningful professional development to faculty at the swift pace that the IT sector demands.

In response to the TAACCCT solicitation for grant applications, Collin College reached out to other community colleges that are National Science Foundation Advanced Technological Education Centers. These institutions are designated by the National Science Foundation to provide technician education in key technological specialty areas. The consortium obtained a TAACCCT grant in 2011.

How NISGTC Works

The consortium consists of seven community colleges, each of which serves as a lead or co-lead on one of the four IT specialties. In each specialty, the colleges develop career pathways consisting of three to six certificates that stack toward an Associate's degree. The instruction leading to attainment of certificates and degrees also prepares students to pass third-party certifications valued by employers. In this way, students can obtain a series of marketable credentials, each of which is credit-worthy for an Associate's degree. Along the way, students participate in internships, virtual laboratories, and other academic support systems.

Table 2. NISGTC Colleges and Specialties

NISGTC College	NSF ATE Center/Strength	Location
Collin College	The Convergence Technology Center (CTC), a Regional Center/Networking and Data Communications	Collin County, TX
Bellevue College	Former NSF ATE Center/ Programming and Mobile Applications	Bellevue, WA
Bunker Hill Community College	The Boston-area Advanced Technological Education Connections (BATEC), a Regional Center	Boston, MA
Del Mar College	The National GeoTech Center/ Programming and Mobile Applications	Corpus Christi, TX
Moraine Valley Community College	The Center for Systems Security and Information Assurance (CSSIA), a National Resource Center/ Cybersecurity	Palos Hills, IL (Greater Chicago)
Rio Salado	On-line with National course delivery expertise	Tempe, AZ
Salt Lake Community College	Geospatial Technologies	Salt Lake City, UT

The employer role in NISGTC is expressed primarily through the National Industry Leadership Board, which convenes quarterly. The board was established to serve as a forum for IT industry interaction with consortium members. The board's role resembles that of a Board of Directors more than that of a standard employer advisory board, in that consortium members turn to them for review of the actual courses and programs of study and generally follow their guidance.

The employers who serve on the board participate in a multi-stage sequence:

- Board members complete assessments of knowledge, skills, and abilities needed for employment in each specialty area;
- Lead faculty cross-reference the knowledge, skills, and abilities identified with their curricula, and adapt the curricula to close gaps where they may not be training students for current and projected employer needs;
- Board members rank third-party certifications by the extent to which their companies value the certifications;
- Lead faculty incorporate those certifications into the career pathways and ensure that the curricula leading to the certifications also includes the competencies identified by board members; and
- On an annual basis, consortium leaders submit new courses to the board for review. Board members also provide feedback on aspects of curricula and course design that may need updating.

The consortium supports its students in other ways as well. The colleges have set up “virtual labs” where students can practice their skills in a distance-learning format. Students in the consortium have access to career advisors who assist them in planning their career pathways, and to mobile phone technology that provides job alerts and opportunities for early course feedback. Finally, Rio Salado College, one of the consortium partners, posts model courses and templates online so that the publicly funded work products of the consortium will be available to non-consortium members (as required by TAACCCT).

Objectives and Outcomes

The primary objectives of the consortium are to meet IT industry needs for an educated and prepared workforce, and to help trade-affected and other low-skilled workers, women, minorities, and both traditional and nontraditional students to secure employment with family sustaining wages in the IT industry. More concretely, the consortium aims to establish career pathways in each of the four IT specialties that the member colleges will be able to sustain after the TAACCCT grant concludes.

The federal TAACCCT grant calls for grantees to track a number of measures relevant to the outcomes of the national TAACCCT grant program. The key data outcome measure being followed by Consortium members is earnings after graduation, as measured by Unemployment Insurance wage matching data. However, consortium leadership rely more on the feedback they receive from employers on graduates trained through the program. The NISGTC model appears to be a promising one. The TAACCCT grants have seeded a number of multi-state sectoral CCE partnership initiatives, and NISGTC may be one such partnership that leads to genuine systems change between its partners.

For more information on NISGTC, see: nisgtc.org/

Illinois Network for Advanced Manufacturing: Earn and Learn Advanced Manufacturing Career Lattice Program

The Illinois Network for Advanced Manufacturing (INAM) is a consortium of 21 colleges and more than 100 employers working to develop “Earn and Learn” pathways that include stackable, portable certificates in advanced manufacturing as well as opportunities for internships and employment as part of the program.⁸ Building on an advanced manufacturing program launched by William Rainey Harper College, the project’s leader, the consortium received a \$12.9 million Round 2 TAACCCT grant.

According to the consortium’s proposal, the Illinois Manufacturers Association reports a need for 30,000 advanced manufacturing employees in the next five years, many for positions that will need postsecondary education. The proposal notes both educational and noneducational barriers that the target populations (including TAA/Trade and Globalization Adjustment Assistance-eligible, veterans, incumbent workers, and unemployed individuals) face. For example, 31 percent of Illinois’ TAA-eligible population has math skills below the ninth-grade level, and 21 percent of the population has below ninth-grade reading levels. In terms of non-educational barriers, the proposal cites inconvenient class schedules, limited points of entry, lack of defined pathways, and lack of credit for prior learning. INAM plans to address these academic and non-academic challenges through a combination of strategies, including online learning, bridge programs, accelerated programming, skills training, and transition and job search support.

How INAM Works

Under the INAM model, member colleges collaborate with workforce boards and veterans’ associations on intake assessments and individualized educational and career plans. The members are using the prior learning assessment tools developed by the Council on Adult and Experiential Learning to recognize academic, work, and life experiences and to enable individuals to enter programs at the most advanced “on ramp” possible. For those who need it, technical bridge programs, developed with employer member input, are available, integrating basic skills and career readiness instruction through accelerated courses. The National Career Readiness Certificate, which is recognized by the National Association of Manufacturers as a baseline advanced manufacturing credential, is available. The Earn and Learn Program then promotes the Manufacturing Skills Standards Council’s Certified Production Technician credential, which is available in mechatronics, precision machining, industrial maintenance, welding, and green manufacturing.

INAM incorporates a range of academic supports such as learning communities, tutoring, mentoring, and academic success workshops. The one-semester Certified Production Technician certificate is followed by a paid internship at one of the companies participating in INAM, which allows the students to apply their new skills immediately (as well as to determine if they are on the right pathway). From there, individuals can return to the community colleges for various certificates, and A.A. and B.A. degree sequences. (The B.A. is available through an arrangement with a four-year university that is offering the degree on the campus of Harper College through a hybrid program.)

⁸ Participating colleges include: College of Lake County, College of DuPage, Daley-City Colleges of Chicago, Danville Area Community College, Elgin Community College, Harper College, Illinois Eastern Community College, Illinois Valley Community College, John Wood Community College, Joliet Junior College, Kankakee Community College, Kishwaukee College, Lincoln Land Community College, McHenry County College, Oakton Community College, Prairie State College, Richland Community College, South Suburban College, Southwestern Illinois College, Triton College, Waubesa Community College

Objectives and Outcomes

Employer involvement is at the core of INAM, both in terms of employers contributing to and ensuring curricula are relevant, and in their agreeing to offer paid internships and on-the-job training, which are critical components of the model. Employers are also providing mentoring, equipment, and facilities, as well as assisting with training. Representatives from Harper College emphasize the importance of the college's presidential leadership in encouraging this deep level of employer engagement. Though the program is too new to have many outcomes, 70 companies participating in the initiative have provided 105 internships as of April 2013. Some of the employers have hired program participants directly from their internships, in some cases agreeing to pay for them to continue their education as employees.

For additional information, see: goforward.harpercollege.edu/

Automobile Manufacturing Technical Education Consortium

The Automotive Manufacturing Technical Education Collaborative (AMTEC) is a partnership of community and technical colleges and automotive companies that seek to better prepare highly skilled technicians and manufacturing engineers for work in automobile manufacturing and technology. As of 2013, the Automotive Manufacturing Technical Education Collaborative (AMTEC) represented the collaboration of 35 community colleges and 34 auto-related plants in 12 states (Parker, 2013). (See <http://www.autoworkforce.org/our-partners/amtec-partners/> for a list of AMTEC partners.)

The inspiration for AMTEC grew out of a 2004 conference in which community and technical college leaders identified a set of shortcomings in the automotive industry and developed a collaborative strategy for addressing them. The industry's key need was to develop common processes to train technicians and engineers efficiently. As summarized by a Toyota executive who helped to shape AMTEC's formation, Toyota employs multi-skilled maintenance technicians at all of its 14 plants, as do its competitors (Office of Vocational and Adult Education, 2012b). Those technicians need a foundation of fundamental skills that include basic electricity, mechanical systems, and fluid power. Most of the skills required to work at Toyota or other automotive employers are not unique or proprietary, and the collaborators realized that they could streamline the training process by centralizing development of skills requirements, methods, and assessments.

The National Science Foundation (NSF) played a key role in nurturing AMTEC. Once the companies and colleges agreed to work together collaboratively, they applied for and received a NSF planning grant. The Kentucky Community and Technical College System became the fiscal agent and lead partner, and hosted a 2005 conference that launched the AMTEC partnership. The group of partners then obtained a two-year grant, and in 2009 AMTEC became a "National Center for Excellence in Advanced Automotive Manufacturing."

How AMTEC Works

The AMTEC partnership consists of core and project staff directed by a strategy board comprised of four company executives (from Ford, Nissan, Toyota, and BMW) and the United Auto Workers International Union. The board has developed four primary goals that drive AMTEC's priorities:

- 1) Create business/industry partnerships in delivering core technical education that meet the high-priority needs of automotive manufacturers and suppliers; 2) Increase secondary to postsecondary transition and from postsecondary to employment to meet industry needs; 3) Implement a collaborative support system to sustain and replicate the AMTEC model; and 4) Create and sustain the program with assessments, credentialing, and continuous improvement (Office of Vocational and Adult Education, 2012b).

The cornerstone of the AMTEC enterprise was a comprehensive occupational analysis of the skills and competencies needed by skilled workers at the Toyota plant in Georgetown, Kentucky. They conducted a process called DACUM (Develop a Curriculum) to provide a methodical and extremely detailed inventory of the actual work done for a specific job, broken down into its component tasks (Lamos et al., 2010). The DACUM results led to a curriculum of 12 courses comprised of 63 modules that included only tasks and skills common to all industry partners. The courses could be structured to lead to an Associate of Applied Science degree, short-term certificates, or incumbent worker training (Office of Vocational and Adult Education, 2012b).

Each individual module teaches a specific skill or knowledge area in three to eight weeks. Each course is comprised of at least three modules. Students can test out of a module and get credit for prior knowledge, accelerating their time to completion. Some modules are offered online or in a hybrid online/face-to-face setting. After completing courses, students take third-party assessments designed by AMTEC, such as the AMTEC General Maintenance Mechatronics Assessment, to verify that they have learned the material. Course completion leads to credentials, which, in turn, fit into occupational career pathways.

Employers play a dominant role in the AMTEC partnership. AMTEC is designed to meet their need for a common training process, and employers shape each course and module. Employers pay dues to finance AMTEC, a funding structure that will become more important when the NSF grant expires. They also provide internships and hire AMTEC graduates to work in their plants. AMTEC maintains employer engagement through biannual academies that bring together company and college representatives along with other stakeholders and experts.

Objectives and Outcomes

As required by all NSF ATE centers, AMTEC is evaluated annually by the National Visiting Committee, a group of stakeholders who assess the progress being made in implementing the AMTEC model and issue recommendations for the coming year. “The NVC continues to be impressed with AMTEC’s strategic planning, the overarching structure that has been put in place and many of the accomplishments and progress towards meeting and exceeding their defined goals,” states the 2011 report (AMTEC, 2011).⁹ In addition, AMTEC has commissioned an evaluation by the Community College Research Center. That evaluation is still in progress.

The next step for AMTEC is to expand beyond the automotive sector. In 2012, Henry Ford Community College in Michigan received a \$15 million TAACCCT grant on behalf of AMTEC member colleges, several colleges outside the collaborative, and 14 regional or state Workforce Investment Boards.¹⁰ The Multi-State Advanced Manufacturing Consortium seeks to transform manufacturing education and establish a model for program transformation applicable to many industries, including process-based and aerospace/precision manufacturers (Employment and Training Administration, 2011b).

For additional information, see: autoworkforce.org/

⁹ For more on the NVC, see: http://autoworkforce.org/About_Us/Committees.aspx

¹⁰ For a list of Multi-State Advanced Manufacturing Consortium partners, see: <http://webapps.dol.gov/DOLGrantData/GrantInformation.aspx?appid=15399>

High Growth Field	Colleges
Composite Materials Technology	Clover Park Technical College, Lakewood, WA Cuyahoga Community College, Cleveland, OH Roane State Community College, Knoxville, TN South Seattle Community College, Seattle, WA
Cyber Technology	Anne Arundel Community College, Arnold, MD Cuyahoga Community College, Cleveland, OH Florida State College at Jacksonville, Jacksonville, FL Ivy Tech Community College, Fort Wayne, IN Northwest Arkansas Community College, Bentonville, AR
Environmental Technology	College of Lake County, Abbott Park, IL Florida State College at Jacksonville, Jacksonville, FL Northwest Arkansas Community College, Bentonville, AR Ivy Tech Community College, Fort Wayne, IN
Electric Vehicle Technology	College of Lake County, Abbott Park, IL Florida State College at Jacksonville, Jacksonville, FL Northwest Arkansas Community College, Bentonville, AR Ivy Tech Community College, Fort Wayne, IN
Mechatronics	Anne Arundel Community College, Arnold, MD College of Lake County, Grayslake, IL Cuyahoga Community College, Cleveland, OH Florida State College at Jacksonville, Jacksonville, FL Ivy Tech Community College, Northwest IN Ivy Tech Community College, North Central IN Roane State Community College, Knoxville, TN

National STEM Consortium

The National STEM Consortium (NSC) is an alliance of 10 community colleges in 9 states that, with support from a \$20 million TAACCCT grant, is developing an array of portable, 1-year certificate programs in response to regional industry needs in 5 high-growth fields:

- Composite Materials
- Cyber Technology
- Electric Vehicle Technology
- Environmental Technology
- Mechatronics

NSC's proposal points to industry concerns regarding a shortage of mid-skill workers with STEM skills, attributing these shortages to several factors, including low completion rates, especially for time-constrained adults who may need remedial coursework. The NSC proposal references the economic, family, academic, and other limitations many displaced workers face when considering retraining, noting that traditional pathways to credentials are not working for them.

It notes that many community colleges have short-term STEM programs that are more appropriate for incumbent workers seeking new skills, but are not a useful platform to prepare new entrants for STEM careers. At the same time, it can be difficult for individual community colleges on their own to develop new programs in these quickly evolving fields. Thus, NSC proposes to work together to "bridge the STEM skills gap" by connecting displaced workers and others to industry by offering them occupational training through accelerated, highly structured pathways that support completion.

How NSC Works

To develop the programs, NSC has organized itself into technical teams comprised of representatives from the colleges that will be offering a particular certificate program. For example, six colleges are working to develop the mechatronics program, a multi-disciplinary program that combines elements of mechanical engineering, electronics, pneumatics, and computer science. During the course development phase, the individual technical teams are using employers as subject-matter experts, and employers will review the final content. Employers are also contributing many industry-specific examples to use for the STEM bridge course, such as an example based on a chemical spill at a factory, and a cyber help desk scenario based on air communications. In addition, employers are also tasked with providing data on workforce needs, helping provide instructors, promoting the training programs, providing internships or other learning opportunities, and hiring qualified graduates as positions are available. Participating employers include Ford Motor Company, Oak Ridge National Laboratory, Alcoa Power and Propulsion, and Boeing. A national advisory board with employer, college, and workforce agency representatives met (virtually) in May 2013.

NSC is building its programs around several key educational strategies:

- A STEM readiness course that embeds competency development into the technical curriculum, integrating basic skills, computer skills, job readiness training, and workforce skills contextualized for STEM pathways. The STEM readiness course will be consistent for all five programs.
- A "Fast Track" component that provides an accelerated pathway into the newly designed STEM programs. This component will provide students with the intensive, upfront development of the math, reading/writing, computer, and critical thinking skills that students need for the technically demanding STEM pathways programs.
- Compressed schedules to help students complete and move into jobs faster.
- Cohort enrollment to help small groups of students complete their learning together.

Objectives and Outcomes

NSC proposes to serve 1,506 individuals who are either TAA-affected, unemployed, or underemployed during the grant period. In spring 2012, a small cohort of 24 students started a composites program at South Seattle Community College; 21 students completed the program. The NSC proposal plans were for programs to launch in January 2013; currently 189 students have started year-long programs. The three main cohorts are planned for spring, summer, and fall 2013.

During the grant period (through September 30, 2014), NSC programs will be offered at the National STEM Consortium colleges. However, after the grant concludes, all colleges in the United States will be able to access and utilize the NSC course materials, which will be available as an Open Educational Resource (OER) with a Creative Commons attribution license. (This is true for all TAACCCT grantees.)

For additional information, see: national-stem.org/

INDIVIDUAL COMMUNITY COLLEGEEMPLOYER PARTNERSHIP WITH DEEP EMPLOYER ENGAGEMENT

The following example involves one employer—UPS in Louisville, Kentucky—that launched an educational partnership with a local community college, a state university, and the Commonwealth of Kentucky to address turnover and staffing problems for the company's overnight workers.

Louisville/UPS: Metropolitan College

During the mid-1990s, UPS faced serious workforce disruption at its Next Day Air operation in Louisville, Kentucky. Annual turnover among part-time overnight employees rose above 70 percent, with an average tenure of approximately eight weeks (Bozell & Goldberg, 2012). The high turnover raised a red flag about plans to develop an airport hub in Louisville, since the company would be faced with training an additional 6,000 employees. To meet the challenge, UPS collaborated with the University of Louisville, Jefferson Community and Technical College, the city of Louisville, and the Commonwealth of Kentucky to found a new educational partnership called Metropolitan College. This joint education-workforceeconomic development initiative launched in 1997, and its success enabled UPS to go forward with its expansion plans in the Louisville metro region.

How Metropolitan College Works

A student accepted into Metropolitan College obtains a part-time job of 15 to 18 hours per week on the UPS Next Day Air night shift. The student does not pay tuition or book costs for coursework passed with a C or better. UPS pays half the tuition costs and reimburses students for the full cost of textbooks. The other half of tuition expenses are covered by the Commonwealth of Kentucky.

In addition, students receive academic achievement bonuses: \$350 to \$500 for completing a semester, \$600 for reaching various credit hour milestones, and another payment upon graduation. UPS pays these bonuses. Metropolitan College's career center, Connecting Resources, Education, and Workforce (CREW), operates in partnership with Kentuckiana Works, the local Workforce Investment Board. CREW provides career exploration, planning, and placement services to Metropolitan College students and to the general public.

Outcomes and Objectives

As of fall 2012, 3,912 students have participated in Metropolitan College and earned a credential. The credentials earned include 1,327 certificates, 1,237 Associate's degrees, 1,914 Bachelor's degrees, and 256 advanced degrees (Aspen Institute, 2013). According to the 2009 Graduation Plan Survey, 74 percent said they could not have afforded college in the absence of Metropolitan College (Corporate Voices for Working Families, 2012a). Metropolitan College has been highlighted as a "model of success" by Skills for America's Future.

UPS has stabilized its workforce, the company's primary objective. Annual turnover for its part-time night shift has fallen from 70 percent to 20 percent, and job tenure has risen from 8 weeks to almost 2 years (Bozell & Goldberg, 2012).

As part of a commitment to Skills for America's Future, UPS has recently created a Workforce Advisory Board Initiative in which participating employers will guide education institutions in establishing career pathways that equip students with the skills for in-demand fields. Employers will commit to interviewing graduates of Metropolitan College program who go through these pathways (Aspen Institute, 2013). For additional information, see: metro-college.com/

CAREER PATHWAYS

Career pathways in a given industry sector are designed to offer sequences of demand-driven educational and training opportunities—often provided by community colleges—that allow individuals to move up to higher levels of employment or education over time. They generally offer multiple entry points to accommodate a range of participants, including out-of-school youth, dislocated workers, and adults with low basic skills. They also include robust academic and non-academic support services. Employers are typically involved in designing pathways and often participate on advisory committees.

Rogue Community College

Oregon has developed a statewide strategy for connecting students to career opportunities called career pathways. In a career pathways system, students alternate between educational experiences leading to credentials in an economic sector and employment. For most working-class and low-income adults, staying in college full time for four years or even two years is not an option. Career pathways programs enable them to obtain market-recognized credentials, work for a while, and then return for education leading to a credential that will boost their income. The Oregon Pathways Initiative has structured a system for each institution of public higher education to work within a career pathways framework.

How the Program Works

At Rogue Community College, students earn a Certificate of Career Pathways Completion that is relevant to their field of interest. In the field of automotive technology, students can earn a certificate as an automotive specialist, work as an automotive service technician or mechanic, earn an Associate's degree in automotive technology, work as a service department manager or industrial and recreational equipment mechanic, obtain a Bachelor's degree in automotive engineering technology, and work as a mechanical or industrial engineer.

COMMUNITY COLLEGE-EMPLOYER PARTNERSHIPS FACILITATED BY OTHER INTERMEDIARIES, INCLUDING COMMUNITY-BASED ORGANIZATIONS AND VOCATIONAL REHABILITATION

In the following examples, either a community-based organization or a state vocational rehabilitation (VR) system has served as the catalyst for partnerships involving local employers and community colleges. Two of the examples have involved people with disabilities as program participants, and the third example has focused on high-risk youth.

Nebraska Vocational Rehabilitation Certificate Programs

Nebraska Vocational Rehabilitation has established several business-driven partnerships with local community colleges and businesses within a targeted occupation. The partnerships are designed to offer short-term training and internships that meet local business needs and help provide employment opportunities to individuals with disabilities. There are currently 10 certificate programs working with Nebraska community colleges— three in welding, two in automotive mechanics, and one each in daycare, manufacturing, HVAC, electrical skills, and plumbing, with two more in development, including one focused on a mid-level positions in health care. To date, individuals with a range of disabilities—ADHD, bipolar disorder, borderline personality disorder, substance abuse, and learning disabilities—have participated.

How the Nebraska Vocational Rehabilitation Certificate Program Works

The programs have involved three community college systems: Central Community College (Grand Island campus, Columbus campus), Southeast Community College (Lincoln campus), Metropolitan Community College (Omaha campus); a program with Northeast Community College (Norfolk campus) is in development.

The targeted occupation is determined by the teams in each local area based on labor market data and their own experience with the needs of their business community. VR staff meets with the local community college to discuss whether the necessary skills can be taught in a relatively short period of time. They make arrangements with local businesses that agree to mentor students through part-time work and classroom experience. The mentoring generally consists of businesses providing a job tour and shadow opportunities and/or an On the Job Evaluation/ Training (OJE/OJT). The mentoring opportunities range in duration from once during the training to weekly visits. The businesses work with VR and the community college to develop curricula that provide the necessary skills and knowledge to meet worker qualifications. Nebraska VR has found that these employer-driven programs lend themselves to being taught in a very hand-on way, which meets many of their clients' needs and accommodations. Nebraska VR has also noted that the content for the colleges' programs is the same or similar to current college programs, but the delivery is different and reflects the needs of participants. The amount of support from disability student support services at the colleges has varied from training site to training site. Some sites have offered additional study or testing time, for example. Since many of these programs are strictly for a VR cohort of students, the instructors understand their clients' needs and make very natural accommodations.

Students are recruited through job fairs, student/parent nights at schools, and through VR staff contacts. When students apply for the program, they are assessed by VR to determine if they meet the basic skills requirements, and are then interviewed by a group comprised of representatives of each of the partners.

Class size and duration vary based on the program. Class size is typically 10 to 12 students. Some classes are as short as 8-10 weeks while other programs are a full two semesters, ranging anywhere from 0 to 17 credit hours. Classes typically run five half-days a week for five weeks (nine credit hours). Students spend the rest of the day

working at one of the partnering businesses. If the client is completing an on-the-job evaluation (OJE) then they are paid by VR for a limited time, usually less than three weeks and no more than 90 hours total. If the client is completing an on-the-job training (OJT), then they are paid by the employer, and VR reimburses the employer. Many of the participants are hired by the employer with no OJE/OJT.

At the end of the training, students receive a completion certificate. To date, some 60 to 70 percent of program completers have been hired by the businesses where they worked. Those who are not hired continue to work with placement staff; some have decided to go on to college.

Nebraska VR is continuing to improve the program based on feedback from businesses and students, increasing the focus on soft skills, and spending less time in the classroom and more time in hands-on learning. VR has also added a background screening of participants prior to placing them on site with employers.

Outcomes and Objectives

In 2012, 32 students went through the program, and 27 were successfully employed (or 84 percent). In 2013, 59 students are in the program to date.

For additional information, see: vr.ne.gov/index.html

Coconino Community College and Goodwill of Northern Arizona

With funding from the Lumina Foundation, the American Association of Community Colleges (AACC) and Goodwill Industries International, Inc. have partnered since 2009 on the Community College Career Collaborative (C4), the goal of which is to develop effective partnerships between community colleges and Goodwill agencies to increase the number of low-income adults who receive community college degrees or certificates. Currently across the country there are:

- 68 Goodwill members that have C4 partnerships with 108 community colleges
- 9,235 students who have enrolled in programs under these C4 partnerships
- 7,648 students who have completed coursework and earned credentials

These C4 partnerships are based on a commitment to leverage resources, including space, equipment, staff, curricula, and wraparound services; to work together to engage businesses in program design, oversight, provision of internships, and employment opportunities; and to utilize and share data on performance, credentials, and labor market trends.

Goodwill Industries International does not have data on how many of the C4 program participants have disabilities, but did identify a partnership underway between Coconino Community College and Goodwill of Northern Arizona as one where individuals with disabilities were among the participants.

How the Program Works

One partnership between Coconino Community College and Goodwill of Northern Arizona has resulted in a variety of efforts, including ones that involve individuals with developmental and other disabilities, as well as others working with the prisoner reentry population. In one example, the community college and the Goodwill agency have teamed with Safeway in a project to train courtesy clerks. Working with the Flagstaff Unified School District and several other agencies, they have created a replica of a Safeway store that is used to provide hands-on job training

for people with disabilities and other challenges to employment. As part of the program, participants receive training on work readiness, life skills, and soft skills at the ‘mini-Safeway’ located at Goodwill through a course developed by Coconino Community College and taught by Goodwill workforce professionals, who when teaching soft skills are on the College payroll.

In another example, having identified a need for entry-level manufacturing employees, Goodwill and the community college have developed a program to train Goodwill participants through a 40-hour program at the college that enables individuals to earn an Entry Level Manufacturing Certificate. Local manufacturing employers (including Nestle-Purina Pet Care Co., Joy Cone Inc., Prent Thermoform, Novakenetics, and W.L. Gore) have agreed to prioritize the hiring of these individuals, some of whom then go on to achieve the Manufacturing Skills Standards Council-level certificates at the college. These programs use strategies such as prior learning assessments and Integrated Basic Education and Skills Training, or simultaneously enrolling participants in adult basic education and occupational training.

Objectives and Outcomes

As of April 2013, at the Flagstaff Safeway training center, 25 participants have been trained, 92 percent have completed the program, and 11 have been hired by Safeway.

For additional information, see: goodwill-na.org/

Jewish Vocational Services Healthcare Bridge Program

Jewish Vocational Services (JVS), a nonprofit provider of a range of workforce and other services in San Francisco, CA, has partnered with the City College of San Francisco and a number of employers (including St. Luke’s

Hospital, University of California, San Francisco, Mission Neighborhood Health Center, On Lok, and other San Francisco Clinic Consortium members) to provide opportunities and career exposure for low-income youth (including foster youth) in the high-demand health care field.

How the Program Works

The JVS Youth Healthcare Bridge is a one-year program that offers high-risk youth (ages 17 to 21 with a high school diploma or GED) contextualized basic skills and pre-employment training, provided by the City College of San Francisco, followed by a subsidized internship in one of several local health care facilities. The program is designed so that the classroom training combined with work experience will improve academic success of the participants. The curriculum provides training in listening, speaking, and writing—contextualized for the health care sector—as well as basic math, English, and critical thinking skills. The students receive credits and get an overview of health care careers and medical terminology. During their internships, which can last from 100 to 200 hours and are subsidized by the program, the participants are paid minimum wage. In addition to local employers, other partners in design and delivery of the program include the San Francisco Unified School District staff, child welfare workers, counselors, mental health providers, and probation officers. Foster youth are a key target population for the program.

Objectives and Outcomes

The JVS Healthcare Bridge program can help students prepare for a range of health care positions, with tracks for Community Health Worker, Certified Nursing Assistant, Personal Caregiver/Home Health Aide, Phlebotomy, Medical Administrative Assistant, Pharmacy Technician, Emergency Medical Technician, and Medical Assistant. However, the

goal is primarily to help high-risk students have a supportive bridge to additional training steps, not necessarily to get them immediately into permanent jobs. Currently, the program is serving 35 youth per year.

Since the Healthcare Bridge program began in September 2010, 80 youth have completed the program, and 21 participants went on to take additional courses at CCSF.

For additional information, see: jvs.org/

FINDINGS AND RECOMMENDATIONS

Based on this review of recent efforts promoting the use of CCE partnerships, including whether they have included people with disabilities among the participants, key findings include:

Six Primary Models of Community College-Employer Partnerships and Common Characteristics

- A number of significant federal, philanthropic, and private initiatives have been launched in recent years to promote better CCE engagement. The hope behind these efforts is that by developing strong partnerships with employers, community colleges can strengthen their market responsiveness and improve the employment outcomes of their students. Though many recent efforts appear promising, most are too recent to have outcome or evaluation data at this time.
- CCE partnerships take many different forms. This research identified and provided examples of six primary types of partnerships, distinguished by sponsor and approach:
 1. CCE Partnerships Facilitated by a Regional Workforce Intermediary
 2. Corporate Partnerships with Multiple Community Colleges
 3. Sectoral Partnerships Across Multiple Community Colleges and Employers
 4. Individual CCE Partnership with Deep Employer Engagement
 5. Career Pathways
 6. CCE Partnerships Facilitated by Other Intermediaries, including Communitybased Organizations and Vocational Rehabilitation

Table 4. Examples of Community College-Employer Partnership Models

Model	Examples	Employer Engagement	Partner Structure	Credential Obtained
CCE Partnership Facilitated By a Regional Workforce Intermediary	<ul style="list-style-type: none"> • Skills for Chicagoland's Future • WIN • Invista 	Partners with intermediary; provide input for curricula and on industry trends; hire trainees	Workforce intermediary; partners with workforce boards, colleges	Training organized by intermediary may result in certificate or credential but some customized training may not
Corporate Partnerships with Multiple Community Colleges	<ul style="list-style-type: none"> • PG&E PowerPathway 	Partners with colleges to develop curricula, crafts soft skills training, funds instruction and student screening	Single employer, multiple colleges, America Job Centers (formerly One-Stop Career Centers)	Certificates stackable to Associate's degrees
Sectoral Partnerships Across Multiple Community Colleges and Employers	<ul style="list-style-type: none"> • NISGTC • INAM • AMTEC • National STEM Consortium 	Employer boards, identify best credentials, review course designs, may provide plant and equipment; internships	Sector-based consortia with multiple community colleges and employer partners	Industry-recognized certificates and certifications stackable to Associate's (and higher) degrees
Individual CCE Partnership with Deep Employer Engagement	<ul style="list-style-type: none"> • Louisville/UPS: Metropolitan College 	Provides financial support (tuition, books; academic achievement bonuses) for employees	Individual employer with community college, state university, economic and workforce development partners	Certificates stackable to Associate's (and higher) degrees
Career Pathways	<ul style="list-style-type: none"> • Rogue Community College 	Advisory committee overseeing course selection and design	Multiple employers, single community college	Certificate of career pathway completion, stacks to Associate's degrees
CCE Partnerships Facilitated by Other Intermediaries	<ul style="list-style-type: none"> • Nebraska Vocational Rehabilitation Certificate Program • Coconino Community College and Goodwill • Jewish Vocational Services Healthcare Bridge Program 	Employers provide internship, mentoring, hands-on training opportunities	Intermediary (nonprofit or vocational rehabilitation) with one or more employers	Training may result in completion of certificate or credits

Whatever form the model takes, the CCE partnership efforts reviewed here appear to share several characteristics. They generally strive to:

- Establish mechanisms for efficiently identifying local employer and regional labor market needs, including incorporating a reliance on both labor market data and direct input from employers.
- Modify existing curricula or develop new courses with direct employer input to reflect the skills employers are seeking for positions they need to fill or anticipate filling. Input from employers is especially prized in high-tech programs of study since professional requirements in those fields change so rapidly. Associate's degrees and certificates in applied sciences benefit from employer input to keep pace with technological and process innovations.
- Share start-up and other costs to avoid duplication of efforts, including sharing the development of curricula across consortium partners, especially where multiple colleges are involved.
- Seek external funding sources from philanthropic funders, government, and employers. Establishing an employer partnership typically requires the development of new curricula, courses, and programs of study, and, in some cases, new assessments and certifications. Such efforts are labor and capital-intensive, and community colleges do not have ready access to internal resources to accomplish them.
- Adapt and develop programs for nontraditional students, notably working or job-seeking adults and dislocated workers. These populations have limited time and financial resources and strong incentives to return to work or advance along a career pathway. Strategies that meet the needs of nontraditional students include prior learning assessments; accelerated and integrated learning; hands-on and experiential learning, including internship and work opportunities; and curricula broken into chunks and stackable credentials. It also includes wraparound supports and other strategies such as cohorts and learning communities designed to help students persist and succeed.
- Track program outcomes and build in feedback from employers.

Inclusion of People with Disabilities

- None of the major federal or philanthropic initiatives reviewed here have actively targeted individuals with disabilities; a handful of isolated examples that included individuals with disabilities were found outside of the major initiatives. However, in some cases, it was noted in interviews that among the participants in these various initiatives are dislocated workers and older job seekers who may have age-related disabilities, undiagnosed learning or other "hidden" disabilities, or undisclosed disabilities. Though not targeted to individuals with disabilities, participants in some of the AACC-Goodwill C4 regional efforts have included individuals with disabilities.
- Several of the initiatives and models reviewed for this research included efforts to reach veterans as potential participants, but none specifically targeted veterans with disabilities.
- A review of several current U.S. Department of Labor-supported disability employment initiatives, including the Disability Employment Initiative and the Add Us In grant program, found that promoting CCE partnerships was not the primary focus of current grants. In some cases, community colleges and employers or employer associations and chambers are participating in project consortia, and, as these consortia mature, there may be opportunities for increasing the emphasis on nurturing CCE partnerships that involve individuals with disabilities.

- Though VR does provide support for individuals with disabilities to attend community college, few examples were seen involving vocational rehabilitation providing resources to support CCE partnerships involving individuals with disabilities. Outreach to the U.S. Department of Education's Rehabilitation Services Administration (RSA) found that while many vocational rehabilitation agencies have partnerships with community colleges, RSA has not to date openly explored information on the relationships between these community colleges and employers. Outreach to the Council on State Administrators of Vocational Rehabilitation turned up an example in which Nebraska Vocational Rehabilitation is supporting certificate programs tied to community college-business partnerships; Iowa is looking into replicating this model.
- Models emerging based on partnerships that are facilitated by intermediaries such as communitybased organizations or vocational rehabilitation seem to offer good opportunities to involve and support participants with disabilities.

Recommendations to Increase the Involvement of People with Disabilities in Community College Employer Partnerships

As has been noted, almost none of the CCE partnership initiatives reviewed for this research intentionally included individuals with disabilities as participants, and almost none of the partnerships appear to be collecting data to determine whether in fact individuals with disabilities are among the participants. This is largely true regardless of whether the sponsor is the U.S. Department of Labor or other federal agency, a philanthropic foundation, a nonprofit organization, or an employer. Yet to keep up with the skill demands of the current labor market and to access jobs that require postsecondary certificates or degrees, job seekers and incumbent workers with disabilities have as great a need as individuals without disabilities to engage in the training and education that is being provided through these community college-employer partnerships.

The following recommendation is made for ways in which ODEP and other stakeholders can promote the inclusion of people with disabilities in current and future CCE partnership initiatives and projects:

- In keeping with diversity inclusion plans they may already have in place, employers and community colleges engaged in local partnerships could consider strategies to expand outreach to job seekers and students with disabilities as part of their program recruitment efforts. The Job Accommodation Network (JAN, available at <http://askjan.org>) and the Employer Assistance and Resource Network (EARN, <http://askearn.org>) can provide resources to assist with these efforts.

Though there is clearly growing interest in encouraging CCE partnerships as a means of making community college education and training more relevant to the needs of employers and improving outcomes for students and job seekers, many of the examples discussed in this report, while promising, are too new to have generated many outcomes or to have been formally evaluated; only time will tell if they are genuinely successful. Nevertheless, as it is clear that postsecondary education is increasingly important to labor market success, it makes sense to seek opportunities to ensure CCE partnerships are inclusive of job seekers with disabilities.

BIBLIOGRAPHY

- Aspen Institute. (2013). *UPS Metropolitan College and Workforce Advisory Board Initiative, factsheet*. Retrieved June 3, 2013 from: <http://bit.ly/11dOeil>.
- Austin, J., Mellow, G., Rosin, M., & Seltzer, M. (2012). *Portable, Stackable Credentials: A New Education Model for Industry-Specific Career Pathways*. New York: McGrawHill Research Foundation.
- Automotive Manufacturing Technical Education Collaborative (2011). *National Visiting Committee Report for Year 2*. Versailles, KY: Author.
- Bergen, K. (2012). *Chicago, Cook County Create Skills for Chicagoland's Future Jobs Program*, Chicago Tribune. Retrieved May 12, 2013.
- Bird, K. (2012). *Employer Engagement: Current and Future Trends*, Presentation to Arkansas Association of Two-Year Colleges.
- Bozell, M., & Goldberg, M. (2009). *Employers, Low-Income Young Adults, and Postsecondary Credentials: A Practical Typology for Business, Education, and Community Leaders*. New York: Workforce Strategy Center.
- Bridgeland, J., Milano, J., & Rosenblum, E. (2011). *Across the Great Divide: Perspectives of CEOs and College Presidents on America's Higher Education and Skills Gap*. Washington DC: Corporate Voices for Working Families.
- Century Foundation Task Force on Preventing Community Colleges from Becoming Separate and Unequal. (2013). *Bridging the Higher Education Divide: Strengthening Community Colleges and Restoring the American Dream*. New York: Century Foundation Press.
- Clagett, M., & Uhalde, R. (2012). *The Promise of Career Pathways Systems Change*. Boston: Jobs for the Future.
- Collins, B. (2012). *Trade Adjustment Act Community College and Career Training Grants*. Washington, DC: Congressional Research Service.
- Conway, M., Blair, A., & Helmer, M. (2012). *Courses to Employment: Partnering to Create Paths to Education and Careers*. Washington DC: The Aspen Institute.
- Corporate Voices for Working Families. (2012a). *A Talent Development Solution: Exploring Business Drivers and Returns in Learn and Earn Partnerships*. Washington, DC: Author.
- Corporate Voices for Working Families. (2012b). *Business and Community College Partnerships: A Blueprint*. Washington, DC: Author.
- Corporate Voices for Working Families, The Conference Board, the Society for Human Resource Management, and the Partnership for 21st Century Skills. (2006). *Are They Really Ready to Work?*
- Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce. Washington, DC: Corporate Voices for Working Families.
- deCastro, B., & Karp, M. (2009). *A Typology of Community College-Based Partnership Activities*. Washington DC: Office of Vocational and Adult Education, U.S. Department of Education.
- Dembicki, M. (2013). *Shoring up the gap between workers, available jobs*. Community College Times. Retrieved from: <http://www.communitycollegetimes.com/Pages/WorkforceDevelopment/Shoring-up-the-gap-between-workers-availablejobs.aspx>
- Employment and Training Administration, U.S. Department of Labor. (2011a). *Notice of Availability of Funds and Solicitation for Grant Applications for Trade Adjustment Assistance Community College and Career Training Grants Program, SGA/ DFA PY 11-08*. Washington, DC: Author.

- Employment and Training Administration, U.S. Department of Labor. (2011b). TAACCCT Grantee Summary Round Two. Washington, DC: Author.*
- Ganzglass, E., Bird, K., & Prince, H. (2011). Giving Credit Where Credit is Due: Creating a Competency-Based Qualifications Framework for Postsecondary Education and Training. Washington, DC: CLASP.*
- Holzer, H., & Nightingale, D. (2009). Strong Students, Strong Workers: Models for Student Success Through Workforce Development and Community College Partnerships. Washington, DC: Center for American Progress.*
- Lamos, E., Simon, M., Waits, M., Fulton, B., & Bird, K. (2010). A Sharper Focus on Technical Workers: How to Educate and Train for the Global Economy. Washington DC: National Governors Association Center for Best Practices.*
- MacAllum, K., Yoder, K., & Poliakoff, A. (2004). The 21stCentury Community College: A Strategic Guide to Maximizing Labor Market Responsiveness, Volume 1: Unleashing the Power of the Community College. Washington, D.C.: Office of Vocational and Adult Education, U.S. Department of Education.*
- ManpowerGroup. (2013). ManpowerGroup 2012 Talent Shortage Survey Research Results. New York: Author.*
- Marcus, J. (2012). Pressed to bridge the skills gap, colleges and corporations try to get along. Hechinger Report. New York: Teachers College, Columbia University. Retrieved February 27, 2013 from: http://hechingerreport.org/content/pressed-to-bridge-the-skills-gap-colleges-and-corporations-try-to-get-along_9944/.*
- Martinson, K. (2010). Partnering with Employers to Promote Job Advancement for Low-Skill Individuals. Washington, DC: National Institute for Literacy.*
- Morrison, T., Maciejewski, B., Giffi, C., DeRocco, E., McNelly, J., & Carrick, G. (2012). Boiling Point: The Skills Gap in Manufacturing. Washington, DC: Deloitte and The Manufacturing Institute.*
- Mourshed, M., Farrell, D., & Barton, D. (2012). Education to Employment: Designing a System that Works. New York: McKinsey Center for Government.*
- Office of Vocational and Adult Education, U.S. Department of Education. (2012a). Integrating Industry-Driven Competencies in Education and Training Through Employer Engagement. Washington, DC: Author.*
- Office of Vocational and Adult Education, U.S. Department of Education. (2012b). Community Colleges and Employer Partnerships (webinar transcript). Washington, DC: Author.*
- Parker, A. (2011). AMTEC Curriculum, Certification & Assessments. Presentation at the Career Pathways Academy, San Antonio, TX.*
- Parker, A. (2013). Testimony of Dr. Annette Parker before the Subcommittee on Commerce, Manufacturing and Trade, U.S. House of Representatives.*
- Pleasants, R. (2011). Building Integrated Pathways to Sustainable Careers: An Introduction to the Accelerating Opportunity Initiative. Boston: Jobs for the Future.*
- Rampell, C. (2012). The case of the missing skills. The New York Times.*
- Raue, K., & Lewis, L. (2011). Students with Disabilities at Degree-Granting Postsecondary Institutions. Washington, DC: National Center for Education Statistics, U.S. Department of Education.*
- Roberts, B., & Price, D. (2012). Strengthening State Systems for Adult Learners: An Evaluation of the First Five Years of Shifting Gears. Chicago: The Joyce Foundation.*
- Soares, L. (2010). The Power of the Education-Industry Partnership. Washington, DC: Center for American Progress.*

Symonds, W., Schwartz, R., & Ferguson, R. (2011). Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century. Boston: Harvard Graduate School of Education.

Van Noy, M., Heidkamp, M., & Kaltz, C. (2013). How are Community Colleges Serving the Needs of Older Students with Disabilities. New Brunswick, NJ: John J. Heldrich Center for Workforce Development, Rutgers University.

Van Noy, M., & Jacobs, J. (2012). Employer Perceptions of Associate Degrees in Local Labor Markets: A Case Study of the Employment of Information Technology Technicians in Detroit and Seattle. New York: Community College Research Center, Teachers College, Columbia University.

Whitmore, J. (2011). A demand-driven system. Trustee Quarterly.

Woolsey, L. & Groves, G. (2012). State Sector Strategies Coming of Age: Implications for State Workforce Policymakers, Washington DC: National Governors Association Center for Best Practices.