

BUILDING BRIDGES IN WISCONSIN:

Connecting Working Adults with College Credentials and Career Advancement

INTRODUCTION

In Wisconsin, as in the nation, an educated workforce is critical to economic competitiveness. However, despite our state's strong work ethic and high labor force participation rate, too many Wisconsinites lack the education necessary to land good jobs and fill employers' skill needs. More than one million working adults in Wisconsin have no credential beyond a high school diploma. A majority of these workers are stuck in low-wage jobs with few or no benefits, unable to make their way towards family-sustaining work.

To advance in the workplace and to support their families, these Wisconsinites need solid skills and associated postsecondary credentials. However, the paths that lead to further education and skills training can be winding and confusing, or even inaccessible. Complicating matters, for many workers the road to quality jobs is not just about acquiring the right technical skills; it's also about upgrading basic skills – for example, fundamental math, language, or computer skills – as well as mastering general workplace skills like communication, teamwork, and goal-setting.

Fortunately, leaders in Wisconsin are working in new and innovative ways to connect more working adults to postsecondary credentials and career advancement. Critically, their efforts include an emphasis on workers at the lower end of the educational spectrum – those caught in low-wage jobs who have at most a high school diploma, and who often lack basic literacy and workplace skills. For these individuals, the development of programs that provide basic skills concurrent with occupational skills can serve as crucial entry points to further learning and job advancement.

This report presents recent data and analysis on the educational and workforce challenges facing our state, and provides an overview of statewide efforts to meet this challenge by moving more working adults through the educational pipeline and towards family-sustaining careers. Specifically, it takes a closer look at various initiatives being pioneered at technical colleges across Wisconsin to help low-income adults access and succeed in postsecondary training. These approaches are called “bridges,” because they reach across the divide between basic skills instruction and college-level coursework, providing valuable on-ramps for lower-skilled students to work towards college credentials and meaningful careers. Although most of these pilots are in their initial phases, there is much to be learned already – in terms of best practices, barriers encountered, and policies to circumvent those barriers – that can help inform future work as these models spread across the state. We conclude with a list of statewide policy recommendations that can improve postsecondary transitions for Wisconsin's low-wage workers.

Wisconsin boasts a strong network of education and training programs designed to help our state's low-income adults obtain much-needed skills. As detailed in this report, our state stands out as a leader on many key adult education measures, including transitions to postsecondary education. Building upon our strengths, we can and we must do even better. The efforts and initiatives described in this report, spearheaded by our state's education and workforce leaders, suggest that we are well on our way to doing just that.

About COWS

The Center on Wisconsin Strategy (COWS) is a nonprofit, nonpartisan “think-and-do tank” dedicated to improving economic performance and living standards in the state of Wisconsin and nationally. Based at the University of Wisconsin-Madison, COWS works to promote “high road” strategies that support living wages, environmental sustainability, strong communities, and public accountability.
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WORKERS HELD BACK BY LOW EDUCATION LEVELS

Despite overall growth over the last generation in the educational attainment of Wisconsin's labor force, many working adults in our state are still hampered by low education levels. Forty percent of Wisconsin workers have had no formal schooling beyond a high school degree.¹ Low educational attainment combines with language barriers to prevent too many hard-working Wisconsinites from getting ahead in the workplace and moving out of poverty-wage jobs. Statewide data reveals the importance of educational attainment – particularly securing a two-year associate degree or higher – in terms of payoff in the labor market. For example, Wisconsin adults whose highest degree obtained is a two-year associate degree earn a median wage that is 17 percent higher than the median wage of Wisconsinites who did not pursue any education beyond a high school degree, and nearly 60 percent higher than that of those who didn't complete high school.²

As shown in Table 1, 1.4 million Wisconsin adults of prime working age (25 to 54) had no degree beyond high school and/or had limited English proficiency in 2007. Of the 1.3 million of these adults who worked, nearly 60 percent of them – approximately 700,000 workers – earned less than Wisconsin's 2007 median wage. These 700,000 low-wage working adults need further education and training to achieve higher pay, better job quality, and more secure attachments to the workforce and should be a primary target for our state's education and training efforts.

Why focus our education and training efforts on adults? Because tomorrow's workforce looks a lot like today's. Indeed, as cited in a recent report by the National Skills Coalition, more than two-thirds of workers projected to comprise Wisconsin's 2020 workforce were already working adults over the age of 20 in 2005 – beyond the traditional high school-to-college pipeline.³ Moreover, the 700,000 low-wage, low-skill adults currently in our workforce are equal in number to the next *ten* graduating high school classes in Wisconsin (Figure 1). In other words, although we must continue to focus efforts on improving high school graduation and college completion rates for our state's younger residents, improving education levels for Wisconsin's adults is equally imperative for our economic competitiveness.

Wisconsin's minority workers – many of whom fall into the ranks of Wisconsin's 700,000 low-income working adults with low education – could especially stand to benefit from state efforts to upgrade workers' education and skills. Minorities in Wisconsin have disproportionately low educational attainment. As shown in Table 2, which displays educational attainment in Wisconsin by race and ethnicity, 19 percent of African-Americans and 38 percent of Latinos never completed high school, compared to just 5 percent of whites. Minority adults in Wisconsin are also much less likely to have completed a two-year associate degree or higher, where the greatest payoff in the labor market occurs. This poses obvious equity concerns, and the challenge will only grow as our state's workforce becomes increasingly diverse.⁴

Table 1

WISCONSIN ADULTS WHO COULD USE HIGHER SKILLS AND BETTER WAGES

Total number of adults (ages 25-54) who have no two or four year college credential and/or speak English "not well" or "not at all"	1.4 million
Total number of adults who worked last year	1.3 million
Total number of those working adults with wages under \$10.11 per hour*	294,000
Total number of those working adults with wages between \$10.11 and \$15.11 per hour*	401,000
TOTAL TARGET POPULATION: working adults with low wages (less than \$15.11/hr.)	695,000

*\$10.11 is a poverty-level wage: workers who earn less than \$10.11 per hour cannot make enough money to keep a family of four out of poverty. \$15.11 is the median wage (2007 dollars).

Figure 1
WISCONSIN LOW-INCOME WORKING ADULTS WITHOUT A POSTSECONDARY CREDENTIAL VERSUS HIGH SCHOOL GRADUATING CLASSES



Sources: Wisconsin Department of Public Instruction, Total students expected to complete high school (based on 3-year average, 2006-2008); American Community Survey, 2007.

Table 2
EDUCATIONAL ATTAINMENT OF ADULTS AGES 25-54 BY RACE AND ETHNICITY, WISCONSIN, 2008

	<i>White</i>	<i>Black</i>	<i>Latino</i>
No high school diploma or equivalent	5.4	18.6	37.7
High school diploma/GED only	30.7	33.7	28.3
Some post secondary education (no degree)	23.1	25.6	17.8
Associate degree or higher	40.8	22.1	16.3

Source: Working Poor Families Project, data generated by Population Reference Bureau from American Community Survey, 2008.

Options for Students Needing Basic Skills Instruction

Adult Basic Education (ABE) Consists of core academics spanning K-12 for adults who are developing skills at the high school level or below. ABE encompasses curricula in “basic skills” – things like math concepts, reading and writing, and computer literacy – that are integral to a worker’s success in any job. ABE is primarily located in Wisconsin’s two-year technical college system.

English Language Learning (ELL) Provides courses in English communication for learners whose native or dominant language is not English.

Developmental Education Applies to instruction in secondary-school level academic subjects for individuals who need to strengthen foundation competencies in order to be admitted to a postsecondary program. In Wisconsin, ABE and Developmental have a close relationship and follow the same curriculum framework.

Remedial Education Applies to instruction in secondary-school level academic subjects for postsecondary program students whose deficiencies in foundation competencies were not extensive enough to deny them admission. Students in remedial education are not the focus of this report.

HARD TO GET IN, EASY TO FALL OUT

Understanding the ways in which Wisconsin’s education and training systems are currently set up to help individuals in need of basic skills – including opportunities for modifying this system to improve transitions and outcomes for low-income adults – hinges on a series of technical issues which we touch on throughout the remainder of this report. These details are important, but the reason we care about them is more important still: *The success of our economic future demands that we connect those struggling most in our labor force with education and training that elevates their skills, equips them with postsecondary credentials, and secures firm attachments to higher-wage, high-demand occupations in the state.*

Wisconsin’s system of technical colleges is a major gateway to postsecondary education for a diverse range of students. However, for many Wisconsin adults – particularly for those whose education

stopped at high school or who never completed high school in the first place – basic skills deficits can prevent them from moving directly into postsecondary training. These students, depending on their skill level, could benefit from enrolling in Adult Basic Education (ABE), English Language Learning (ELL), and/or Developmental coursework before enrolling in college-level credit. However, this prolongs the time it takes to complete a credential or degree (see above box for descriptions of ABE, ELL, Developmental, and Remedial education at Wisconsin technical colleges).

Unfortunately, most adults who could benefit from basic skills instruction never access it in the first place. As shown in Table 3, although over 310,000 Wisconsin adults do not have a high school degree or equivalent, fewer than 52,000 individuals enrolled in ABE services in the Wisconsin Technical College System (WTCS) and affiliated sites over the 2008-09 program year – representing just a fraction (16 percent) of the individuals who

could benefit from such programming. Moreover, despite nearly 120,000 working-aged adults reporting that they speak English less than very well, only 10,500 individuals (9 percent) enrolled in English Language Learning (ELL) courses.

Why don’t more working adults with limited education take advantage of basic skills opportunities? For many, it is a matter of time and money, or lack thereof; for others, it is a lack of information. For some it might involve feelings of shame, or a disconnect between the way they see themselves and the label of “basic skills student,” or a desire to avoid revisiting math or other subjects that were difficult in the past. For low-skilled adults whose ultimate goal is to achieve a postsecondary credential, the path to a degree or diploma can appear long and daunting, especially if they must first take a series of basic skills courses – courses that bear no college credit, add to time away from work and family responsibilities, and that may seem disconnected from their ultimate goal.

Table 3
WISCONSIN'S EDUCATION AND TRAINING GAP

	<i>Education and Training Pool</i>		<i>Number Served</i>
Number of adults (18-64) without a high school credential or equivalent	313,530	Number receiving Adult Basic Education services	51,615
Number of adults (18-64) who speak English less than very well	118,745	Number enrolled in English Language Learning courses	10,482

Sources: Working Poor Families Project, data generated by Population Reference Bureau from American Community Survey, 2008; Wisconsin Technical College System data, Client Reporting System, Fiscal Year 2009.

For those lower-skilled adults that do access basic instruction, the rate at which they transition to further postsecondary coursework is distressingly low. Nationally, U.S. Department of Education data reveal that only one-third of Adult Basic Education students whose stated goal is to enroll in postsecondary coursework go on to make this transition within a one-year period.⁵ Research on developmental education at the national level is similarly worrisome. Nearly 60 percent of community college students enroll in at least one developmental course at some point during their college career. However, less than half of students referred to developmental reading complete their full developmental sequence; the numbers are worse for math, with fewer than one-third of students completing their recommended sequence. Moreover, this national data reveals that less than one-quarter of community college students enrolling in developmental education complete a degree or certificate within eight years of college enrollment (compared to nearly 40 percent of community college students not enrolling in any developmental education course).⁶

Education experts from the Community College Research Center provide a compelling list of factors that help to explain these poor outcomes. They write,

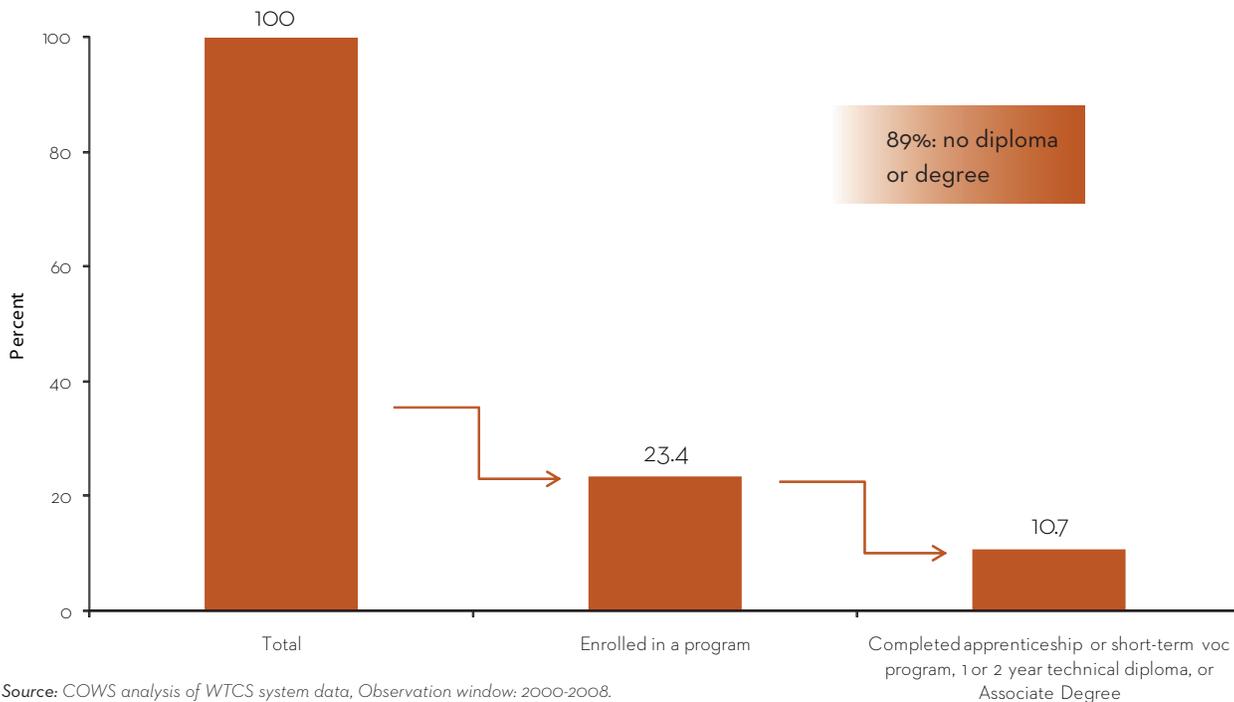
One reason that few students in adult basic skills programs advance successfully to college-level coursework is that such programs are typically not well-aligned with college-level offerings. Adult basic skills students often do not have access to counselors and other supports available to students in college programs. Moreover, many students in adult basic skills programs face the challenge of having to balance school and family while working one or more low-wage jobs.⁷

Compared to the nation, Wisconsin stands out as a leader on many key adult education measures, including transitions. For example, state and national data show that WTCS's rate of ABE/ELL students transitioning to postsecondary education was more than twice the national average.⁸ Despite our impressive national standing, however, there are still too many lower-skill students in the state that are not making the important transition to postsecondary education and degree or diploma attainment. For example, analysis of WTCS data reveals that only 11 percent of Adult Basic Education students who entered the technical college system in 2000 went on to complete an apprenticeship, short-term vocational program, one- or two- year technical diploma, or two-year associate degree by 2008 (see Figure 2 on next page).

Contrary to national findings, analysis of the same WTCS data show that students taking developmental coursework in Wisconsin are in fact *more* likely to eventually earn a degree or diploma compared to postsecondary students not taking developmental coursework. The relative success of these students suggests that developmental coursework may be a key foundation for students in reaching their postsecondary goals, and emphasizes again the importance of making this type of basic skills coursework more supportive and accessible for a wider range of students.

As detailed in the following sections, state leaders in Wisconsin are working hard to make the path to a postsecondary credential more accessible and more attractive for working adults, developing innovative models to improve the success rate and the speed with which lower-skilled students transition to college-level coursework and attain degrees that lead to greater rewards in the workplace.

Figure 2
PERCENT OF ADULT BASIC EDUCATION STUDENTS AT WTCS WHO ENROLL IN PROGRAMS AND EARN DEGREES OR DIPLOMAS



Source: COWS analysis of WTCS system data, Observation window: 2000-2008.

BRIDGES AND PATHWAYS: IMPROVING POSTSECONDARY TRANSITIONS FOR LOWER-SKILLED ADULTS

Wisconsin has a strong network of education and training programs in place to help workers – be they high school non-completers, laid-off workers in need of re-training, or immigrants with limited English abilities – obtain requisite skills. Our state’s system of technical colleges, where students can access both basic skills as well as technical and academic instruction, is a valuable asset. Building on our strengths, we must develop new approaches that can help more Wisconsinites access these services, and that can improve the rate at which lower-skilled students make successful postsecondary transitions that lead to good jobs.

State leaders are working hard to do just that. Wisconsin’s RISE (Regional Industry Skills Education)⁹ initiative – a collaboration between the Wisconsin Technical College System and the Wisconsin Department of Workforce Development (DWD) and funded by the Joyce Foundation – is spearheading state efforts to create more flexible and accessible ways for adults to earn postsecondary credentials of value in the labor market. Central to state efforts to improve postsecondary outcomes for adults are *career pathways* and *bridges*, models of skills acquisition and training that are gaining momentum across the country. Although the precise definition of career pathways and bridges varies from state to state, the core concepts uniting these approaches are fairly consistent (see box on page 7).

RISE guidelines provide the following definitions for bridges and pathways in Wisconsin:¹⁰

“The **Career Pathway** is a new way of organizing college level occupational training as a sequence of certificates that leads adult learners in attainable steps toward better jobs and a degree or technical diploma. Each step improves the learner’s career and earning opportunities and provides a skill set needed by an industry or industry sector. Industry sectors that are appropriate for pathway development are those that need significant numbers of skilled workers, can provide good jobs, and contribute to the economic growth of the region.

A **Career Pathway Bridge** helps adults in need of basic skills or English Language Learning succeed in a career pathway. Bridges consist of courses that link basic skills development with occupational skills development and accelerate the transition from pre-college to college level work.”

Career Pathways and Bridges: Core Elements

Broadly defined, **Career Pathways** “provide a framework for weaving together adult education and English language services, job training, and other postsecondary occupational certificate and degree programs that are currently disconnected from each other, so that working adults can move up to better jobs and successively higher levels of postsecondary credentials over time, as they are able.”¹¹ As detailed by the Center for Law and Social Policy (CLASP), common elements of a career pathways approach include:

- *Strategic efforts at the state and regional levels to create and maintain pathway partnerships of employers, education and training providers, community-based organizations, and others in key business and industry occupational clusters.*
- *Multiple entry and exit points, with marketable postsecondary credentials at each step of the pathway. (Washington State likens career pathways to a subway system, where students can get on and off at any number of places, according to their needs.)*
- *Innovations in program content and delivery, such as contextualization of basic skills, flexible delivery and scheduling, and modularized degree programs.*
- *Support services (provided by community organizations, colleges, and others).*
- *Engagement of employers – in pathway development, worksite training, and financial support for worker learning – to address common regional workforce skill needs.¹²*

Bridges “are designed to prepare individuals without the requisite basic skills for postsecondary training leading to career-path employment and further learning in a specific industry or occupational sector.”¹³

As highlighted by a Workforce Strategy Center report, key features of bridges include:

- *Curriculum defined in terms of competencies needed to succeed in postsecondary training leading to career-path employment and further learning in a target field.*
- *Focus on the basics of communication, problem-solving, applied mathematics, technology applications, and technical fundamentals taught in the context of training for employment and further learning in the given field.*
- *Instruction emphasizing learning-by-doing through projects, simulations, labs, and internships.*
- *“Wrap-around” support services, including assessment and counseling, case management, child care, financial aid, job and college placement, and follow-up.*
- *Active cooperation between degree-credit and non-credit divisions within colleges and between colleges and outside partners such as community groups, social service agencies, and high schools to recruit students and provide needed supports.¹⁴*

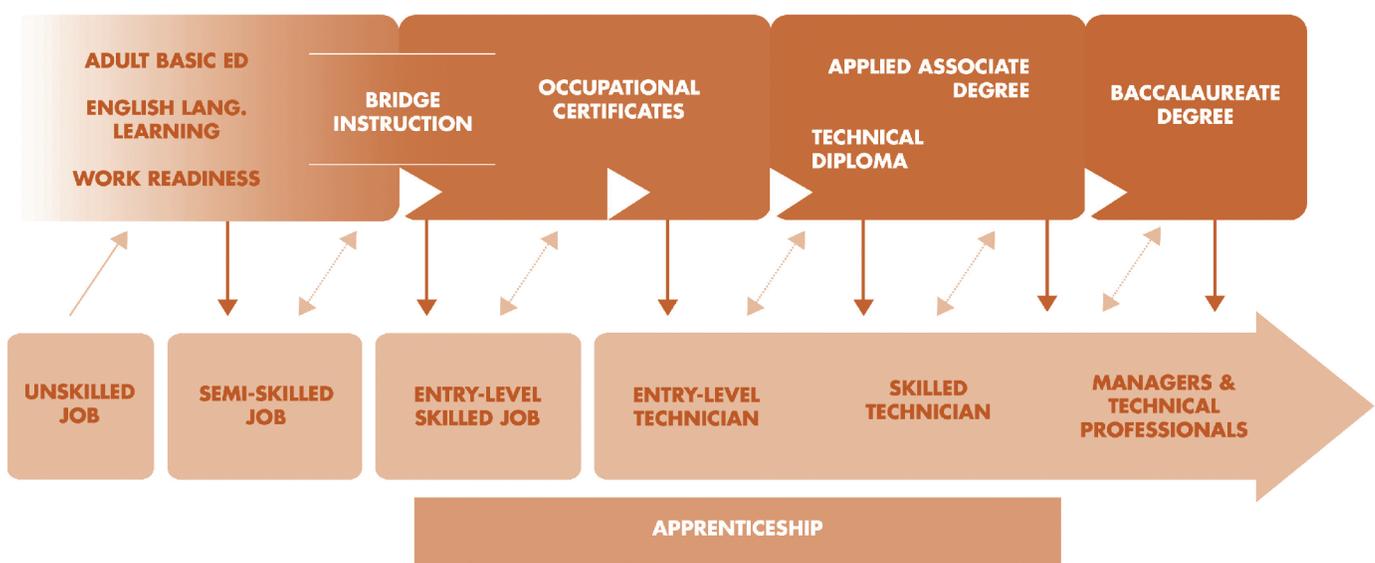
Washington’s Integrated Basic Education and Skills Training (I-BEST)

The I-BEST program combines adult basic education, including ELL instruction, with workforce training. I-BEST pioneered the very effective approach of pairing basic skills and occupational instructors to team-teach a course with a jointly designed syllabus. The ABE/ELL curriculum is tailored to the basic skills (including language skills) that will be needed to do the job for which the student is training. A 2005 study found that students enrolled in I-BEST were five times as likely to earn college credits and 15 times as likely to complete occupational training than non-enrolled ELL students over the same time period.¹⁶

The development of bridges in Wisconsin builds in part on multiple efforts being pioneered across the nation to improve postsecondary transitions and outcomes for lower-skilled individuals.¹⁵ Washington State’s I-BEST approach (see box) and its associated team-teaching model has been particularly instructive, and in 2008 Wisconsin’s adult education leaders received professional development from Washington colleagues associated with this approach. (Since that time, Wisconsin’s adult education leaders have reciprocated by sharing information on their emerging bridge innovations with their Washington counterparts.)

For workers with low education levels, the development of bridges that integrate basic skills instruction with postsecondary and/or occupational coursework – and that accelerate the transition from non-credit to credit-bearing instruction – can serve as crucial access points to further learning and job advancement (see Figure 3). The following section provides a closer look at bridges being developed at technical colleges across Wisconsin to help low-income adults access and succeed in postsecondary training linked to good jobs.

Figure 3
WISCONSIN CAREER PATHWAYS, INCLUDING BRIDGE INSTRUCTION



Source: Regional Industry Skills Education (RISE).

A CLOSER LOOK AT WISCONSIN CAREER PATHWAY BRIDGES IN ACTION

This section provides more detail on various bridges that are up and running across Wisconsin. Although most of these bridge pilots are still in their initial phases, much stands to be learned already – in terms of best practices and challenges faced – that can inform future work as these models spread across the state. Table 4, while not comprehensive, provides summary information on a number of bridges being piloted at various Wisconsin technical college campuses. A number of additional bridges not represented in this chart are under development or are in progress.¹⁷ The case studies presented in this section provide additional detail about five bridges that have met with particular success (and some challenges) to date.

Table 4

A REPRESENTATIVE SELECTION OF CAREER PATHWAY BRIDGES AT WISCONSIN TECHNICAL COLLEGES

<i>Technical College</i>	<i>Title of Bridge</i>	<i>Description</i>	<i>Start Date</i>
Chippewa Valley	Welding Career Opportunities	<ul style="list-style-type: none"> 16-week, 9-credit certificate program in production MIG welding ABE integrated at 50 percent time: Basic Production MIG Welding, Math for Tech Trades Welding, Basic Blueprint Reading, and Fabrication Credits apply toward one-year welding diploma 	Spring 2009
Fox Valley	GOAL Pathways to Business Careers	<ul style="list-style-type: none"> Goal Oriented Adult Learning (GOAL) program in Contact Center and Business Management and Accounting Provides soft skills training and contextualized math and reading instruction At least one class in each GOAL “pre-college certificate” will ladder into the certificate programs and transfer into degree programs 	Spring 2010
Gateway, Milwaukee Area, Moraine Park, and Waukesha	Welding – A Bridging Project	<ul style="list-style-type: none"> Multi-district Basic Welding Certificate integrates technical welding with soft skills and basic skills instruction The first of three stackable certificates that ladder into the Welding Technical Diploma and Associate Degree 	Spring 2010
Gateway, Milwaukee Area, Moraine Park, and Waukesha	Industrial Maintenance Career Ladder	<ul style="list-style-type: none"> Pre-tech welding and pre-tech metal fabrication and welding module for ABE/ELL students bridges into two occupational, and “stackable”, Industrial Maintenance Assistant certificates The first certificate uses an integrated ABE/ELL and occupational team teaching model Transferable credits to Associate Degree and Technical Diploma at participating colleges 	Fall 2010
Lakeshore	Three Courses Closer to College	<ul style="list-style-type: none"> Contextualized pre-college bridge curriculum Two pre-trades courses – reading and math – combined with three-week Work Certified training program (soft skills) Focus on ABE student transition to career pathways in Industrial Maintenance, Machine Tool Operation, and Welding. Students who complete the bridge program would qualify for program admission without further assessment 	Fall 2009

Table 4 continued

<i>Technical College</i>	<i>Title of Bridge</i>	<i>Description</i>	<i>Start Date</i>
Madison College	Science/Math Developmental- Postsecondary Bridge	<ul style="list-style-type: none"> • General Chemistry paired with developmental courses Applied Math for Chemistry and Applied Reading for Chemistry; developmental courses are contextualized to support the Chemistry instruction • Designed for students seeking to complete the math and chemistry coursework needed for acceptance into science-based degree programs • Reduces remediation time for students 	Fall 2008
Moraine Park	ABE/ELL Artisan Baking	<ul style="list-style-type: none"> • Local business driven • Two weeks of “pre-instruction” are coupled with accelerated culinary classes in a 7-credit embedded certificate, Baking Essentials, with 3 credits of integrated ABE/ELL instruction • Credits ladder into the Artisan Baking Certificate or Moraine Park’s Culinary Arts Associate Degree program 	Spring 2009
Nicolet	IT Integrated Curriculum	<ul style="list-style-type: none"> • Integrates four 1-credit reading and math basic skills courses with redesigned Network Fundamentals and Project Management courses • Consolidates developmental/remedial requirements for short-term certificates laddering into IT Associate Degree programs 	Fall 2009
Northcentral	ELL/ Nursing Assistant Bridge	<ul style="list-style-type: none"> • Integrates 3 credits of ELL instruction into federally mandated nursing assistant (CNA) curriculum • Focus on Southeast Asian population • Students can pursue other certificates following CNA, or matriculate into Nursing sequence 	Fall 2009
Northeast WI	Rising in Northeast WI (manufacturing, welding, automotive)	<ul style="list-style-type: none"> • Three pre-program certificate programs: General Manufacturing, Welding, and Automotive • Equips learners with basic skills to secure entry-level jobs and pursue additional training/educational opportunities in postsecondary programs • Curricula integrate basic skills, ELL, and occupational skills identified to be successful in entry-level positions • Certificates represent articulated “chunks” of Associate Degree and Technical Diploma programs in these areas 	Spring 2009 (Welding); Fall 2009 (Automotive and General Manufacturing)
Western	Computer Numeric Control Skills Institute	<ul style="list-style-type: none"> • CNC Skills Institute delivers three 6-credit embedded certificates aligned with technical diploma and AA • 3 credits of ABE support integrated into first 6-credit ‘tier’ • Local business driven 	Fall 2009

Wisconsin Bridges: Case Studies

PRODUCTION MIG WELDING BRIDGE CHIPPEWA VALLEY TECHNICAL COLLEGE

Before the economic downturn that took hold in 2008, many firms in and around Neillsville, Wisconsin, were expanding their manufacturing capacities and seeking to employ individuals with MIG production welding skills – the most common type of welding used in manufacturing and production processes. Chippewa Valley Technical College (CVTC) has an outreach/satellite campus in Neillsville and stepped in to meet employer demand and provide targeted employment training for low-income and/or displaced workers.

Previously, training in production MIG welding was only available to students in single-credit night courses or as part of the full-time Welding diploma program. CVTC's Production MIG Welding certificate includes three credits of contextualized basic skills instruction and three technical skills courses: Production MIG Welding, Blueprint Reading and Fabrication, and Math for Welders. CVTC is the first institution in the region to offer certification in a particular welding process in just 16 weeks using a team-teaching framework. Should students seek additional training, the nine credits of the certificate apply directly to CVTC's Welding diploma program.

The first Production MIG Welding cohort was piloted at the Neillsville outreach campus in Spring 2009. Twelve students enrolled and successfully completed the program. Pre- and post-course testing results indicated that most students markedly improved their reading and math comprehension levels. Results for the Fall 2009 cohort were similar, with 11 of 12 students successfully earning their Production MIG Welding certificate. Two students have gone on to pursue further education at CVTC in the HVAC and Machine/Tool programs, while three students entered the college's Welding diploma program.

CVTC's Production MIG Welding Certificate benefitted from a high degree of employer involvement in its creation and implementation. Regional employers provided input to guide course content and core competencies to be covered by the curriculum. Area employers were very supportive of the program's integrated Adult Basic Education (ABE) component. The inclusion of ABE was one factor that differentiated this effort from other welding instruction in the region. OEM Fabricators, Inc., donated materials to outfit the lab for instruction and provided the company's head welder as a substitute teacher and presenter for the course. OEM's representative conducted mock job interviews with the students to expose them to hiring procedures and practices; his presence allowed students to see how their training would have practical applications beyond the classroom.

The pilot of the welding certificate program coincided with recession-induced plant closings and layoffs in the Neillsville area. None of the 23 students who have completed the program have secured gainful employment in their desired field, though many continue to work in jobs they held prior to instruction. Participating employers hope to start hiring qualified applicants as the economy improves. As of

“Students in [these] courses stay engaged and make faster progress than those in traditional courses because related information is contextualized and, as a result, more transparently applicable to their goals.”

Tim Stanton, ABE Instructor and Project Coordinator, Chippewa Valley Technical College

“We are drawing from a pool of displaced workers, low-income and low-skill. These students, while initially hesitant about returning to school – reading, testing, taking notes – quickly buy into the added academic support that team teaching affords them. They gain confidence in their ability to succeed in college courses.”

Amanda Hediger, ABE Instructor, Chippewa Valley Technical College

March 2010, OEM Fabricators, Inc., is in the process of calling back laid-off employees and screening new applicants. There are also indications that new industry, and hence new job opportunities, may come soon to Neillsville.

CVTC is one of several institutions taking a novel approach to training in the field of welding. For example, Moraine Park, Milwaukee Area, Waukesha County, and Gateway Technical Colleges are collaborating to produce a multi-district welding bridge program, using an integrated ABE/ELL (English Language Learning) and occupational team-teaching model that leads to a certificate that will apply directly to other programs at each participating college. Northeast Wisconsin Technical College has developed an English Language Learning/Welding certificate program to equip learners with the basic skills necessary to secure an entry-level job and pursue additional training and educational opportunities.

SCIENCE/MATH DEVELOPMENTAL-POSTSECONDARY BRIDGE MADISON AREA TECHNICAL COLLEGE

“I hope it [the Science/Math Bridge] continues. It was a really, really good idea. It’s another way to get more people through that certainly would make good candidates for a program, but that would need just a little extra [help], or a different style.”

Leslie C. Metz, Science/Math Bridge Student, Spring 2009 cohort

“My usual experience without this level of support is that students who have marginal math and/or reading skills often do not succeed in Chemistry and they end up dropping. So, here I have a class of students, many of whom without this, I think would not have succeeded. And they did.”

Bill Huntsman, Chemistry instructor, Madison College

The Madison area is a hot spot of growth for biotechnology and laboratory-based industries. In 2006, Madison Area Technical College (Madison College) was awarded a \$1.9 million Community Based Job Training Grant (CBJTG) from the Department of Labor to develop career pathways to prepare workers to advance in these increasingly important fields.

As a critical part of this pathway, Madison College developed a Science/Math Bridge in order to increase opportunities for lower-skill individuals to access – and to succeed in – the college’s science-based postsecondary programs. The Science/Math Bridge pairs together General Chemistry with a developmental mathematics course and a technical reading course specifically designed to support learning of Chemistry content. All three courses are taught in a single semester, reducing students’ remediation time. The Chemistry, Reading, and Math instructors meet before and throughout the semester, to check in regarding student progress and course alignment.

The bridge is designed for students who are seeking to complete the math and chemistry coursework needed for acceptance into science-based associate degree programs (for example, Veterinary Tech, Clinical Lab Tech, Biotech, and Nursing), but who may lack the necessary math and/or literacy skills. Traditionally, students are unable to take General Chemistry until they have completed a sequence of developmental math courses – a path that can take some students up to three semesters – or have reached a set cut-off score on a math assessment test.

The Science/Math Bridge incorporates various innovative elements to help improve postsecondary transitions and outcomes for lower-skilled individuals. The bridge: 1) applies basic math and reading skills within the context of Chemistry, 2) accelerates remediation time, 3) blends credit and non-credit coursework, and 4) follows a “learning community” model in which a cohort of students takes a series of connected classes together and works towards a common goal.

The first cohort of the Science/Math Bridge was piloted in Fall 2008, followed by two additional cohorts in Spring and Fall 2009. Outcomes for the first three cohorts of students are extremely promising. All students markedly improved their math and reading competencies over the course of the semester, as measured by assessment tests delivered before and after the bridge. Developing better math and reading skills will help these students succeed in their future postsecondary coursework at Madison College. Moreover, 27 out of the 28 students who completed the bridge passed Chemistry. This is noteworthy considering that without this bridge, none of these students had scored high enough on their math assessment tests to have been eligible to enroll in General Chemistry, and it underscores the promise of alternate approaches to basic skills remediation.

The Science/Math Bridge at Madison College is a promising, innovative model that can provide more developmental students with opportunities for postsecondary success. By reducing remediation time and teaching developmental content within the context of Chemistry, it more closely connects students with their future occupational goals, and allows them to get there more quickly. The bridge has been so successful that it was expanded from one to two sections for Spring 2010. Given the promising results of the Science/Math Bridge to date, key faculty and administrators are considering what is needed to institutionalize the bridge within Madison College so that it can be sustained once grant funding ends in January 2011.

ARTISAN BAKING/CULINARY BRIDGE MORAINE PARK TECHNICAL COLLEGE

The idea for developing an Artisan Baking Bridge at Moraine Park Technical College (MPTC) sprouted from discussions with an area employer, Festival Foods, who expressed interest in culinary training for its incumbent employees. Partnering with Festival Foods, and later with other local grocery stores, bakeries, and restaurants, Moraine Park created the Baking Essentials Certificate, a 10-credit, one-semester program to serve a variety of student populations – from dislocated workers of area factories, to English Language Learners and Adult Basic Education students, to incumbent workers looking to expand their skills as in the case of Festival Foods employees.

The Baking Essentials Certificate blends occupational and basic skills education. The occupational courses of Baking, Artisan Breads, and Cakes, Tortes, and Desserts are taught concurrently with three corresponding one-credit Basic Education classes that focus on math skills, reading comprehension, safety, measurements, and study skills. The program also includes a mandatory, two-week basic skills pre-course for enrolled students to refresh essential skills. All of the seven postsecondary credits earned in the Baking Essentials Certificate can be applied towards Moraine Park's year-long Artisan Baking Certificate (13 credits) as well as MPTC's Culinary Arts Associate Degree program.

“The Artisan Baking Bridge was a win-win for the students who completed the program, the businesses who were able to hire skilled bakers, and for Moraine Park. It certainly is a format we will replicate in other programs.”

Dr. Gayle Hytrek, President, Moraine Park Technical College

“This approach is a great ‘on-ramp’ onto career pathways for dislocated workers, and we will work in partnership with other occupational areas to expand this successful model.”

Sandra Huenink, Dean of Adult Basic Education, Moraine Park Technical College

Non-traditional recruitment procedures, extensive employer participation, and the integration of basic and occupational skills instruction have strongly contributed to the program's success to date. Rather than rely on standardized testing, Moraine Park evaluated potential students based on their initiative and commitment to pursue further education, and on their work and life experiences. Moreover, MPTC collaborated with Festival Foods to interview program applicants as part of the admission process. Festival Foods was so impressed by the applicants that it hired two individuals prior to their admission and completion of the Baking Essentials Certificate; they also sponsored four individuals for the program, covering tuition and fees.

Students completing the initial pilot of the Baking Essentials Certificate indicated that the integration of basic skills instruction was indispensable; given that the basic skills instructor was also new to baking, she often asked questions about the technical curriculum, thereby encouraging students to do the same. The students valued very highly the presence of both instructors (basic skills and occupational) in the lab. The occupational instructor related that he gained new teaching techniques for use in all of his courses, and a greater awareness of cultural bias in assessments.

The promise of Moraine Park's Baking Essentials Certificate is best illustrated by its initial outcomes. Of the 12 students who enrolled in the program in Spring 2009, 11 successfully completed the technical content and basic education courses. Seven of the 11 completers improved their basic skills by at least one functioning level as designated by the National Reporting System. Of the 11 students who completed the course, nine have found at least part-time employment and have secured wage gains with their certificate. In addition, several Baking Essential Certificate students continue to utilize the Student Success Center at the college in pursuit of their GED/HSED, while other students have continued to take postsecondary and/or basic education courses at MPTC. Results for the Fall 2009 and Spring 2010 cohorts have been similarly promising.

ENGLISH LANGUAGE LEARNING/CERTIFIED NURSING ASSISTANT (ELL/CNA) BRIDGE NORTHCENTRAL TECHNICAL COLLEGE

Just as colleges strive to attract and retain students that represent the diversity of their district, health care organizations strive to develop a culturally competent workforce that represents the diversity of the community. However, these goals may be difficult to achieve. This problem is reflected at Northcentral Technical College (NTC), which provides training for the next generation of health care workers in the region. For example, the Southeast Asian population represents over 10 percent of Wausau's inhabitants, yet fewer than 3 percent of the more than 330 students enrolled in NTC's 2007-2008 Nursing Associate Degree program were of Southeast Asian descent.

The Certified Nursing Assistant (CNA) program is considered the "first rung" of the health career pathway. However, to date very few of NTC's Southeast Asian English Language Learning students have been able to successfully step onto this rung. Over the last two years, nearly 40 percent of Southeast Asian students enrolled in the program have either failed or withdrawn, and almost none have returned for a second try. Next steps along the health care pathway are subsequently beyond their reach.

Employers' desire for a more culturally representative workforce, combined with NTC's desire to increase the success rate of Southeast Asian students, led to the development of NTC's ELL/CNA Bridge program. The ELL/CNA project bridges the cultural and language gap, giving learners the necessary skills and confidence to move forward with greater success in the future. The ELL/CNA Bridge provides English language instruction that is directly relevant to the CNA program, in addition to covering federally-mandated health curriculum. Formulated with the Southeast Asian community in mind, the program involves two components: the contextualized ELL/CNA course delivers 140 hours of instruction over ten weeks, team-taught by an ELL instructor and a CNA instructor; ELL for CNA, which entails an extra 36 hours of instruction delivered concurrently by the ELL instructor, provides additional English language instruction plus skills like test-taking techniques or communication strategies designed to help students succeed in postsecondary education and the workplace.

While students can choose to stop their postsecondary education at CNA certification, NTC has formulated an extensive health career pathway which students can move along from the ELL/CNA Bridge Program entry point. As students move forward, they can choose from a variety of rungs on the health occupations pathway that do not require acceptance into the nursing program. CNA instruction and subsequent stops along NTC's career pathway create a solid foundation from which students can advance towards Registered Nurse should they choose to continue their studies. Whatever path each individual student chooses to take, the ELL/CNA Bridge is a valuable starting point, setting the stage for English language learner success as students benefit from increased language and college success skills.

NTC's Fall 2009 pilot of the ELL/CNA Bridge was a success. Seven students were enrolled, and all passed the program (including, notably, two students who had previously failed the traditional CNA program). One student was concurrently enrolled in General Anatomy and Physiology in which she earned an A-; she attributed this success to her ability to transfer the skills and strategies she learned in the ELL/CNA program. To date, all of the students except one have passed the state CNA exam, and two are working toward admittance into the nursing program.

The need for a more culturally diverse health care workforce is not limited to north-central Wisconsin. In response to this need, both Waukesha County Technical College and Madison College have curricula that support ELL success by offering a course prior to or concurrent with CNA. NTC's ELL/CNA Bridge project builds on these curricula, but is different in that the contextualized instruction at NTC is delivered through team teaching. Milwaukee Area and Moraine Park technical colleges are among those also implementing the NTC model.

CNC SKILLS INSTITUTE WESTERN TECHNICAL COLLEGE

Key manufacturing employers in western Wisconsin have reported increasing need for workers that are skilled in computer numeric control (CNC) operation, setup, and programming. Despite this clear demand, Western has had difficulty attracting individuals to participate in CNC instruction. Until recently, Western only provided structured, one- and two-year technical diploma programs in this field. Unfortunately, these diplomas are out of reach for many individuals who could stand to benefit from such training. For example, La Crosse's large Hmong community has been mostly relegated to low-wage employment, due in part to language and cultural barriers as well as a lack of high school credentials.

In an effort to increase awareness of opportunities in CNC/Machine Tool occupations and to provide manufacturing skills to more English language learners, Western offered one-credit Basic Machining Skills classes to Hmong participants in 2007 and 2008. These classes were team-taught by a CNC/Machine Tool instructor and a Hmong interpreter who was a Machine Tool program graduate. The experience was positive for the participants and the instructors, laying a foundation for continued collaboration and learning between Instructional Support Services and Western's CNC/Machine Tool department.

“The students were competent and performed at a level that was, at times, above and beyond what was expected of a student. Both the instructor and the students seemed to blend in with the staff, and their presence was a benefit to all here at Marywood.”

Colleen M. Hruska, Marywood Convalescent Center (clinical site for Northcentral's ELL/CNA students)

“We are true believers in this model. CNA and ELL faculty share their knowledge with students in a way that they can understand. Faculty and employers offering clinical sites have noticed the difference. Our students are more confident in their abilities. With this collaborative approach, we have seen 100 percent of our ELL/CNA students successfully complete the program. Because of this success, we are very interested in expanding this model along the health career pathway.”

Deb Stencil, Associate Dean of Nursing, Northcentral Technical College

“The team-taught CNC operator certificate has not only benefitted students by giving access to training for those who might not have had it before, but it has also benefitted our staff by building new relationships between occupational faculty and basic skills faculty.”

Chad Dull, Dean of Instructional Support Services, Western Technical College

“It is rewarding to know that we are providing highly demanded skills to top-notch dislocated workers during this economic downturn. Each week, I receive job postings from around the state requesting applicants with the skills we are teaching. The greatest reward is hearing that our skills institute graduates have been hired as a result of the training they received at Western!”

Pat Brice, CNC/Machine Tool Technologies Instructor, Western Technical College

Building on this experience, Western developed the CNC Skills Institute in 2009 to help meet area employer demand as well as the needs of lower-skilled learners. Although it was designed with the region’s Hmong population in mind, Western discovered in the current economic downturn that the Institute provided a good option for many non-Hmong dislocated and underemployed workers, as well as incumbent workers. Two of the students who enrolled in the pilot Bridge in Summer 2009 were incumbent workers sent by their employer.

The CNC Skills Institute comprises three tiers of instruction along a career pathway: CNC Operator, CNC Set-Up, and CNC Programming. Each tier (a package of six one-credit courses) can stand alone as individual certificate courses of study, tier into higher levels of study, or be transferred into a one-year CNC/Machine Tool Operation technical diploma.

The first certificate level, which prepares participants for careers as CNC machine operators, provides foundational skills for many other manufacturing occupations in addition to machining. Western designed its CNC Skills Institute to integrate Adult Basic Education (ABE) into the delivery of the first tier’s technical training. This design was based on extensive input from area employers regarding skills deficiencies in math and print reading for both incumbent and new workers. Manufacturing Math and Blueprint Reading are team-taught by an ABE instructor and a core technical CNC program instructor. In addition to the integration of basic skills instruction into key components of the curricula, Western has included the use of video training and computer simulations in the first and second tiers of the CNC Skills Institute to aid English Language Learning (ELL) students with visual conceptualization.

Outcomes from the initial pilot of the CNC Skills Institute (Tier 1, CNC Operation) held in Summer 2009 show great promise. Of the 13 students who participated, nine students successfully completed the course and received their certificate (two of the four students who left the program did so because they became employed in the field). All graduates of the first cohort took the Manufacturing Skills Standards Council (MSSC) Safety test and passed. Two of the graduates of CNC Operation enrolled in technical diploma programs at Western, and three others are interested in continuing their education in CNC/Machine Tool Technology, either by continuing with the next tier of the Skills Institute or by enrolling in a diploma program.

Because there was so much interest in the CNC Operation course, particularly from dislocated workers in the area (11 of 13 participants in Summer 2009 were dislocated workers), but not enough space or equipment, Western Technical College offered the course again in Fall 2009, and began the first iteration of Tier 2 (CNC Set-Up) in Spring 2010. Twelve new students successfully completed the CNC Operation course in Fall 2009, and all 12 of these students have continued their education by enrolling in CNC Set Up in Spring 2010.

EARLY LESSONS LEARNED

While the majority of Wisconsin's bridge projects are in their initial phases, faculty and administrators have learned a great deal already that will improve efforts moving forward. Their experiences to date have included both pleasant surprises and unexpected challenges. The response to the challenges will be especially important as more bridges develop and expand across the state.

Best Practices

- **Integrating curriculum benefits students.** Students reported benefitting from the contextualization of basic skills within college-level coursework. Developing skills that could be directly and immediately applied to technical concepts helped reinforce and accelerate the learning process.
- **Instructors enjoy collaborating across divisions.** Although some were hesitant or skeptical at first, most instructors involved in bridge development and implementation enjoyed collaborating with instructors from different parts of the college. Mutual learning occurred as instructors witnessed similar material being delivered from a different angle. Students also remarked on the benefits of having instructors from both ABE and occupational divisions, learning similar content from differing perspectives.
- **Professional development enriches faculty experience and performance.** Adult education faculty and administrators from many colleges had the opportunity to participate in professional development with colleagues from Washington involved in that state's I-BEST program. These types of professional development opportunities enhance faculty performance and help to foster enthusiasm for innovative models.
- **Alternative ways of placing students can be effective.** For Moraine Park's Artisan Baking Bridge, for example, rather than rely on standardized testing, potential students were evaluated based on their initiative and commitment to pursue further education, and on their work and life experiences.

Challenges

- **Collaboration across basic/developmental education and postsecondary occupational divisions takes time.** Key to successful cross-divisional collaboration is equal commitment by all divisions involved, open communication, and clear delineation of responsibilities and ownership. With the Madison College Science/Math Bridge, for example, establishing weekly meetings for the team of instructors and sharing syllabi and exams was key to ensuring alignment of curriculum.
- **Economic fluctuations can thwart the best-laid plans.** Even with strong employer engagement and contributions (such as in the case of Chippewa Valley's Welding Bridge), economic shocks like the current recession can derail employment opportunities for students who successfully complete a bridge. Offering bridge programs to lower-skilled incumbent workers, with the intention of allowing these workers to move to higher and better-paying jobs within their current occupations, is one way to improve employment outcomes despite a rapidly changing economic climate.
- **Funding is always in short supply.** Many of the bridges currently in operation across Wisconsin are being funded either by a limited amount of competitive state dollars, RISE initiative dollars, or other grant funds (e.g., the bridge projects at Madison College and Western receive funding from a Department of Labor Community Based Job Training Grant). Although discretionary state funds have been committed to develop more bridge-type programming (e.g., Skills Jump Start grants, see next section), colleges interested in long-term sustainability of their bridges must explore new ways to use existing pots of money.
- **Personnel turnover disrupts progress.** As with any pilot, high personnel turnover presents challenges to program development and sustainability.

Key Factors for Sustaining Bridges at Technical Colleges

- **Cultivate top-level support.** Sustainability and scaling up of bridges depends on support from top-level leadership (college Presidents, Deans, etc.) who champion these programs internally and with outside stakeholders.
- **Cultivate instructional leadership.** Adequate time and resources must be dedicated to program staff for effective instructional leadership and professional development.
- **Reallocate funds.** Financial pressures and lack of discretionary funds are persistent problems. Finding new ways to use existing pots of money is crucial for sustainability.
- **Track and measure outcomes.** To document what works (and what doesn't), college-level data should be supplemented with interviews and survey data. Providing evidence of long-term program impact is critical.
- **Keep business engaged.** Encourage employer support of career pathways and bridges; cultivate cooperative business involvement in meeting skill and training needs.

Administrative Policies at WTCS to Support Bridges

- **Incorporate bridge principles into funding guidelines.** WTCS hopes to continue amending state grant guidelines to require an explicit focus on bridges for adult education funding in the state, as well as to emphasize the role of bridges and other transition efforts in local adult education plans.
- **Measure bridge enrollments and effectiveness.** Bridges are a significant innovation for opening up access to college for lower-skilled adults. Measuring bridge activity in terms of enrollments and success in helping workers make the transition to earning college credits will provide essential feedback for continuing to improve the design and implementation of bridges. It also will provide information that can help demonstrate the wisdom of new resources to support bridges.
- **Re-think standardized assessment.** Assessment tests provide a standardized method for colleges to place students according to their skill-level. However, they are not always a perfect indicator of a student's chances for success. In particular, students who test just above or below a "cut-off" score for admittance to a postsecondary program could do quite well in college-level courses if provided extra supports.

STATE POLICIES TO STRENGTHEN AND BRING TO SCALE POSTSECONDARY TRANSITIONS IN WISCONSIN

Wisconsin has been recognized as a national leader in its efforts to improve postsecondary transitions for low-income working adults.¹⁸ As stated earlier, our state has a strong network of education and training programs in place to help a broad spectrum of adult workers. Wisconsin's technical college system is a particular strength, and the bridges being piloted at its campuses across the state show tremendous promise.

While we should take pride in our leadership on these efforts, much hard work remains. We must ensure that more Wisconsinites can access these important education and training services, and we must improve the rate at which lower-skilled students make successful postsecondary transitions that lead to good jobs. The following policy recommendations can help strengthen and bring to scale successful postsecondary transitions in the state.

- **Increase investment in adult basic education.**

We cannot build pathways to good jobs for low-skilled adults without more investment in this crucial first rung. Wisconsin spends far less than many other states on adult basic education annually. As a result, the number of adults we serve through ABE programs, and the amount we spend per pupil, are relatively low. In 2006, state ABE expenditures were just \$25 per eligible adult¹⁹ – less than the national average (\$66 per eligible adult) and considerably less than some of our neighbors in the Midwest. For example, both Minnesota and Michigan allocate more than \$150 in state funds per eligible adult on ABE services.²⁰

- **Emphasize access to education and training.**

More flexible. Working adults, many of them parents, must fit school in between work and family. When these non-traditional students are also low-income, other barriers to education may exist – transportation limitations, multiple jobs, and out-of-reach child care expenses. More flexibility in the way technical colleges deliver instruction, and more and better support services targeted toward these students, can help ease this crunch.

More affordable. Improving access to education and training for working adults also means making it more affordable. Wisconsin's major financial aid programs are designed to benefit students who attend our colleges and universities at least half time, but for many working adults, carrying this load is simply impossible. Creating options for less-than-half-time students and those pursuing short-term and/or non-degree courses will help low-income working adults access and complete valuable training and programs at our technical colleges. One of these options – the provision of Opportunity Grants of up to \$1,000 annually to train low-wage, non-traditional students as part of the state's 2008 Grow Wisconsin plan – is a positive step towards reaching those most in need. More and dedicated (i.e., non-discretionary) state funding should be aimed at lowering costs for low-income adults seeking education.

- **Support innovations that improve transitions.**

Wisconsin's career pathways and bridges efforts mark an important statewide focus on successful student transitions. Moving forward, we should continue to support innovative programming that 1) minimizes the time necessary to prepare students for college courses, 2) blurs the division between "basic skills student" and "college-ready student," and 3) teaches fundamental skills within the context of occupational or technical skills. The Skills Jump Start Pilot Training Grants, part of the 2008 Grow Wisconsin plan and the Regional Industry Skills Education (RISE) initiative, are helping to support the state's technical colleges in their development of innovative approaches that are accelerated, blended, and contextualized. More and dedicated (i.e., non-discretionary) state funding should be aimed at supporting these types of successful student transitions.

- **Measure outcomes for success.**

Tracking transition rates of low-income adults to and through postsecondary education and the workforce, including employment outcomes and wages, are crucial to setting goals and evaluating success. Wisconsin can set goals and measure performance outcomes, including employment outcomes, using the wealth of data available through the technical college system and other state system data.

- **Connect to employer demand and regional needs.**

The system change required to move career pathways and bridges forward in the state must be informed by employer-driven demand for specific skills in targeted growth industries. Wisconsin's Industry Partnerships, part of a \$6 million worker training package administered by the Department of Workforce Development, focus on the regional workforce needs of emerging and high-demand industry sectors. Together, industry partnerships and career pathways and bridges are the foundation of stronger opportunity and a stronger economy in Wisconsin.

Prosperity in Wisconsin rests on the foundation provided by our competitive firms, strong workforce, and the systems that help build the skills workers need for tomorrow's jobs. In the future, as baby boomers retire, building the skills of our working adults will become even more critical. The innovative bridges described in this report provide a clear route to connecting more working adults with valuable postsecondary credentials and occupational skills, which will help build the prosperity of Wisconsin's economic future. Diverse leaders – public and private, labor and management, workforce boards and technical colleges, community groups and elected officials – should embrace these models, and support and extend them to working adults throughout the state.

ENDNOTES

1. Working Poor Families Project, data generated by Population Reference Bureau from American Community Survey, 2008.
2. *The State of Working Wisconsin*, 2008 (p. 27). Center on Wisconsin Strategy. 2008. www.cows.org/pdf/rp-soww-08.pdf
3. *Wisconsin's Forgotten Middle Skill Jobs: Meeting the Demands of a 21st Century Economy*. National Skills Coalition (formerly The Workforce Alliance). October 2009. www.cows.org/pdf/rp-forgottenjobs.pdf
4. *Skilled Workers, Quality Jobs: Meeting the Needs of Wisconsin's Workers and Businesses*. Center on Wisconsin Strategy. 2008. www.cows.org/pdf/rp-skilledworkersqualityjobs.pdf
5. *Adult Education Annual Report to Congress*. U.S. Department of Education. 2007. www.nrsweb.org/reports/congress_report.aspx
6. Bailey, Thomas. *Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College* (CCRC Working Paper No. 14). Community College Research Center, Teachers College, Columbia University. 2008. (Citing National Education Longitudinal Study data)
7. Jenkins, D., Zeidenberg, M., & Kienzl, G. *Educational outcomes of I-BEST, Washington State Community and Technical College System's Integrated Basic Education and Skills Training Program: Findings from a multivariate analysis*. Community College Research Center, Teachers College, Columbia University. 2009.
8. *AEFL National Reporting System Annual Report Card*. Wisconsin Technical College System. 2005. www.systematic.wtcsystem.edu/reports/AdultEd/AEFL2005/AEFL.xls; *Adult Education Annual Report to Congress*. U.S. Department of Education. 2007. www.nrsweb.org/reports/congress_report.aspx. The NRS transition measure is based on students who have set a goal of making the transition to postsecondary study.
9. RISE is funded by the Joyce Foundation's Shifting Gears Initiative (www.shifting-gears.org). For more information on RISE, see www.risepartnership.org.
10. See www.risepartnership.org for RISE guidelines and definitions. RISE efforts are guided by five operational elements: industry engagement, career pathway design, career pathway bridge design, pathway support for lifelong learning, and systems and partnerships.
11. *Shifting Gears: Systemic Change to Advance Workers and the Economy in the Midwest*. Center on Law and Social Policy (CLASP). May 2010. www.clasp.org
12. Ibid.
13. Jenkins, Davis. *Bridge Program Planning Guide*. Workforce Strategy Center. 2004. www.iwitts.com/html/083jenkins.pdf
14. Ibid.
15. For example, see: Jenkins, D., Zeidenberg, M., & Kienzl, G. *Educational outcomes of I-BEST, Washington State Community and Technical College System's Integrated Basic Education and Skills Training Program: Findings from a multivariate analysis*. Community College Research Center, Teachers College, Columbia University. 2009; Mazzeo, C., Rab, S., & Alssid, J. *Building Bridges to College and Careers: Contextualized Basic Skills Programs at Community Colleges*. Workforce Strategy Center. 2003; *Promising Practices for Transitioning Students from Adult Education to Postsecondary Education*. Center for Student Success/ RP Group and the Academic Senate for California Community Colleges. 2009; Bailey, Thomas. *Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College* (CCRC Working Paper No. 14). Community College Research Center, Columbia University, Teachers College. 2008; Bragg, D.D. & Barnett, E. *Lessons Learned from Breaking Through*. Office of Community College Research and Leadership, University of Illinois Urbana-Champaign. 2009.

16. *I-BEST: A Program Integrating Adult Education and Workforce Training* (Research Report #05-2). Washington State Board for Community and Technical Colleges. December 2005.
17. For more information, contact Mark Johnson, Education Director, Adult Secondary and Developmental Education, Wisconsin Technical College System, mark.johnson@wtcsystem.edu.
18. Stephens, Rosanna Perry. *Charting a Path: An Exploration of the Statewide Career Pathway Efforts in Arkansas, Kentucky, Oregon, Washington and Wisconsin*. Seattle Jobs Initiative. May 2009. www.seattlejobsinitiative.com/policy/publications/documents/09May26_SJI_PolicyBrochure_in-housecopy.pdf; *Shifting Gears: Systemic Change to Advance Workers and the Economy in the Midwest*. Center on Law and Social Policy (CLASP). May 2010. www.clasp.org
19. “Eligible adult” defined here as adults without a high school degree.
20. Working Poor Families Project, data generated by Population Reference Bureau from American Community Survey, 2007; and U.S. Dept. of Education, Office of Adult and Vocational Education (OVAE).

Acknowledgements

The authors thank Laura Dresser and Sarah White of COWS, and Marla Gamoran of Madison Area Technical College, whose comments improved earlier drafts of this report. Thanks also to Kari Dickinson, Matias Cociña, and Ayca Zayim at COWS for research and production assistance. We received helpful suggestions and information that greatly strengthened this report from our valued partners at the Wisconsin Technical College System, namely Jayson Chung, Kathleen Cullen, Mark Johnson, and Willa Panzer. Last but not least, we are grateful to the following individuals from Wisconsin’s technical college campuses who provided detailed information on career pathways and bridge innovations being pioneered across the state: Mona Lee Antonelli, Marcia Arndt, James Begotka, Patricia Brice, Collette Busse, Jody Conner, Chad Dull, Rick Foral, Amanda Hediger, Sandra Huenink, Marie Martin, Carol May, Patricia Mayer, Barbara Nordberg, Bethany O’Day, Raj Pathare, Schauna Rasmussen, Lynn Retzak, Virginia Sattler, and Tim Stanton.

COWS produced this report with support from the Working Poor Families Project (WFPF), a national initiative launched in 2002 to strengthen state policies to better prepare America’s working families for a more secure economic future. WFPF is managed by Brandon Roberts & Associates and supported by the Annie E. Casey, Ford, Joyce, and Mott Foundations. More information on the project can be found online at: www.workingpoorfamilies.org.