

# CAREER PATHWAYS TOOLKIT

Six Key Elements for Success



Developed on behalf of the U.S. Department of Labor by Social Policy Research Associates

SEPTEMBER 2011

## ABOUT THIS TOOLKIT

This Toolkit was written by staff members of Social Policy Research Associates (SPR). The opinions expressed are those of the authors and not necessarily those of the Employment and Training Administration (ETA). This Toolkit was developed on behalf of the U.S. Department of Labor, Employment and Training Administration, under the Career Pathways Technical Assistance Initiative project (DOLU101A21499, BPA# DOLQ101A21449). Under this project, Social Policy Research Associates (SPR) provided technical assistance to eleven grantees of the Career Pathways Initiative to assist them with designing effective career pathway systems within their states, local areas, or tribal communities.

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# CAREER PATHWAYS TOOLKIT

## Six Key Elements for Success

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# INTRODUCTION

## INTRODUCTION: CAREER PATHWAYS—THE FUTURE OF WORKFORCE DEVELOPMENT

Improving the skills, knowledge, and credential attainment of American workers is an urgent priority. Labor market forecasts point to significant skills shortages looming in the future, despite high unemployment. If left unaddressed, these shortages could slow the process of economic recovery and reduce our competitiveness in the global economy.

Career pathway systems offer an effective approach to meeting these challenges. Through better alignment of education, training, and employment services among public agencies, they hold the promise of increasing the number of workers in the U.S. who gain the industry-recognized and academic credentials they need to work in the most in-demand occupations. Career pathway systems offer a more efficient and customer-centered approach to workforce development because they structure intentional connections among adult basic education, occupational training, and postsecondary education programs because they are designed to meet the needs of both adult learners and employers.<sup>1</sup>

There has been a close relationship between educating people and preparing them for the workforce throughout U.S. history. What has shifted recently, is that advanced education and training has become a requirement for many jobs and professional careers. This has led to shifts in the ways in which public agencies design workforce programs and collaborate with partners across systems. Informed by local labor market trends and designed to meet employer needs, career pathway programs are the most recent expression of efforts to meet demands of the workforce and industry through focused education and training.

Since the early 1990s, public educational institutions and workforce development agencies have been working closely to develop programs and cross-system efforts to educate students so that when they complete their programs they are ready for the workforce. Over the years, there has been a great deal of experimentation around supporting stronger connections between workforce development and education, to support

the needs of working learners and non-traditional students. National initiatives launched in the 1990s such as the *School-to-Work Act* and the *Workforce Investment Act (WIA)*, as well as philanthropic-focused efforts such as *Project QUEST*, encouraged collaboration among partners in the public, private, and non-profit sectors (including workforce training programs and all levels of public education) to strengthen connections between school and career development to support local economic growth.

What we have learned over the last two decades is that we need to do more with less – we need to figure out how to better align our systems so that we can move more people through education and training in order to meet workforce demands of the 21<sup>st</sup> century. While a primary motivator for this work grows out of economic necessity, we are learning that it makes sense to be more intentional about our system connections and that in doing so, we are often better able to meet the needs of *both* students and businesses.

As the economic landscape has changed over the last decade, it has become increasingly necessary to apply a career pathways approach to meeting the needs of lower-skilled populations. Evolving economic conditions have made re-employment scarce for the low-skilled and dislocated segments of the U.S. workforce, leaving them even further behind those with higher educational attainment, knowledge, and skills. In many communities, programs designed for low-skilled workers often do not provide ready access to college-level courses and training programs required by employers. Traditional Adult Basic Skills education (ABE) programs help individuals improve their basic skills and obtain GEDs, but may not provide occupationally focused education and training that equips individuals for the labor market. Similarly, remedial and developmental programs, intended to help students prepare for college-level math and English courses, may not adequately prepare students to succeed in technical or post-secondary training.<sup>2</sup>

Moreover, the structures of many programs are incompatible with the needs of low-skilled workers. Many programs are not particularly accessible to working adults, who are increasingly the people who need them the most, and their difficult-to-navi-

<sup>1</sup> For more information, see Washington State Board for Community and Technical Colleges' "Tipping Point" Research—*Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Longitudinal Student Tracking Study*. Also see Public/Private Ventures study, *Tuning In to Local Labor Markets: Findings From the Sectoral Employment Impact Study*.

<sup>2</sup> For more information about the changing economic conditions and the impact on the U.S. workforce, see Irwin Kirsch et al., *America's Perfect Storm: Three Forces Changing Our Nation's Future*. Princeton: Educational Testing Services, 2007.



gate systems make them intimidating. ABE and developmental education programs use a non-credit system that is more flexible and accommodating to the schedules of working students, but many colleges find it difficult to reconcile this system with their traditional model of set instruction hours for credit. As a result, students often find it difficult to make the transition from ABE and developmental programs to college.

Because the lowest-skilled American workers are not increasing their educational attainment at nearly the same rate as their higher-skilled counterparts, the United States can no longer claim to be the global leader in distributing the benefits of education across the workforce most equally. The Obama Administration has committed to regaining that status by 2020, setting the goal of having every American complete at least one year of postsecondary education. U.S. Secretary of Labor, Hilda Solis, reinforced this commitment by making it a goal to increase the awards of degrees, certificates, and other industry-recognized credentials among Americans. In 2010 and 2011, we have seen these priorities reflected in federal initiatives sponsored by the U.S. Department of Labor, including the *Career Pathways Initiative*, the *Workforce Innovations Grants*, and the *Trade Adjustment Assistance Community College and Career Training* grants program (TAACCCT). With new guidance outlined in pending WIA reauthorization, once the legislation passes, career pathways may well become the model according to which states and tribal communities approach the design and operations of their education and training systems in the coming decades.

## WHAT ARE CAREER PATHWAYS?

Career pathway-oriented workforce development has the goal of increasing individuals' educational and skills attainment and improving their employment outcomes while meeting the needs of local employers and growing sectors and industries. Career pathway programs offer a clear sequence, or *pathway*, of education coursework and/or training credentials aligned with employer-validated work readiness standards and competencies. This systems approach makes it easier for people to earn industry-recognized credentials (through more flexible avenues and opportunities for relevant education and training) and to attain marketable skills so that they can more easily find work in growing careers. These comprehensive education and training systems are particularly suited to meet the needs of working learners and non-traditional students. Career pathway programs feature the following characteristics:

1. **Sector Strategy**—Career pathway education and training programs align with the skill needs of industries important to the regional or state economies in which they are located, and reflect the fact that employers in the targeted industry sectors are actively engaged in determining the skill requirements for employment or career progression in high-demand occupations.
2. **Stackable Educational/Training Options**—Career pathway programs include the full range of secondary, adult

education, and postsecondary education options, including registered apprenticeships; they use a non-duplicative progression of courses clearly articulated from one level of instruction to the next; they provide opportunities to earn postsecondary credits; and they lead to industry-recognized and/or postsecondary credentials.

3. **Contextualized Learning**—Career pathway education and training programs focus on curriculum and instructional strategies that make work a central context for learning and help students attain work readiness skills.
4. **Integrated Education & Training**—As appropriate for the individual, Career pathway programs combine occupational skills training with adult education services, give credit for prior learning, and adopt other strategies that accelerate the educational and career advancement of the participant.
5. **Industry-recognized Credentials**—Effective Career pathway programs lead to the attainment of industry-recognized degrees or credentials that have value in the labor market.
6. **Multiple Entry & Exit Points**—Career pathway programs allow workers of varying skill levels to enter or advance within a specific sector or occupational field.
7. **Intensive Wrap-Around Services**—Career pathway systems incorporate academic and career counseling and wrap-around support services (particularly at points of transition), and they support the development of individual career plans.
8. **Designed for Working Learners**—Career pathway programs are designed to meet the needs of adults and non-traditional students who often need to combine work and study. They provide childcare services and accommodate work schedules with flexible and non-semester-based scheduling, alternative class times and locations, and innovative uses of technology.

## ABOUT THE CAREER PATHWAYS INITIATIVE

The *Career Pathways Technical Assistance Initiative* (2010 – 2011), conceived and funded by the U.S. Department of Labor, Employment and Training Administration, involved cross-system collaboration and public and private partnerships at every level of its design. Department of Labor leaders modeled the collaboration expected among grantee teams through their partnership with the Department of Education, Office of Vocational and Adult Education (OVAE) and the Department of Health and Human Services, Administration of Children and Families.

The Career Pathways Initiative provided technical assistance to grantee teams representing nine states and two Native American entities that were focused on developing local, regional, and statewide career pathway systems. Each grantee convened teams of state and local partners to build effective and comprehensive career pathway systems; these teams in-

cluded local employers and representatives from the realms of workforce development, education, and human services. The grantees from this pilot initiative were Kansas, Kentucky, Maryland, Minnesota, Montana, New Mexico, Ohio, Pennsylvania, Virginia, Gila River Indian Community, and Tucson Indian Center (the latter two grantees are located in Arizona).

The Career Pathways Technical Assistance Initiative aims to strengthen career pathway systems for low-skilled adults and dislocated workers, leveraging the latest research and best practices to support their development. To facilitate the work of the grantees, project partners developed the **Six Key Elements of Career Pathways** framework (outlined in this toolkit) which identifies the components and strategies necessary for establishing a comprehensive career pathways system. The U.S. Department of Labor, Employment and Training Administration (ETA) was joined by a design team made up of representatives from the U.S. Department of Education/Office of Vocational and Adult Education (OVAE), Jobs for the Future, and Social Policy Research Associates to design the framework used to guide the initiative. Jobs for the Future staff members, Mary Claggett and Ray Uhalde, worked closely with the staff from ETA to design the Six Key Elements used as the primary framework for the initiative and the Readiness Assessment Tool. This work established the foundation for the development of the guides and toolsets outlined in this toolkit. Using the Six Key Elements framework as a guide, the initiative utilized three primary technical assistance strategies to support the grantee teams: team strategic planning institutes, individualized coaching, and peer-to-peer networking.

Representatives from each of the three federal agencies served as facilitators and subject-matter experts at the institutes. These staff members provided the teams with invaluable guidance and support as they developed their action plans to grow career pathways in their states and/or communities (see the box on the next page for the list of federal staff representatives involved in the project).

In addition to the federal facilitators, over 30 subject-matter experts from across the country participated in the career pathways institutes, providing individualized assistance to grantee teams. Their unique perspectives and the lessons they had learned doing this comprehensive work in other communities throughout the nation aided teams in sorting through complex systems (see the box on the next page for the list of subject matter experts involved in the project).

Technical assistance for this project was led by Social Policy Research Associates, who coordinated a team of training and technical assistance specialists from throughout the country. The following individuals made up the core technical assistance teams providing coaching and support to grantees in the initiative:

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## **ABOUT THE CAREER PATHWAYS TOOLKIT**

The *Career Pathways Toolkit: Six Key Elements for Success* was developed as part of the U.S. Department of Labor, Employment and Training Administration's *Career Pathways Initiative* to help guide state and local leaders in building and sustaining career pathway systems. This Toolkit offers a clear and user-friendly road map for administrators, service providers, practitioners, and policy makers seeking to develop career pathway systems at local, regional, and/or state levels. It details the *Six Key Elements Framework*, highlights promising practices, and provides tools designed to support visioning and strategic planning.

### **Section One: Six Key Elements of Career Pathways**

There are *Six Key Elements of Career Pathways* that help to guide local and state teams through the key steps necessary for developing a comprehensive career pathways system. The first section of this Toolkit provides an overview of these elements and the overall *Six Key Elements of Career Pathways* framework:

1. **Build cross-agency partnerships and clarify roles**
2. **Identify sector or industry and engage employers**
3. **Design education and training programs**
4. **Identify funding needs and sources**
5. **Align policies and programs**
6. **Measure system change and performance**

Included in this overview are examples of **promising practices** from many communities throughout the nation that help contextualize the *Six Key Elements* and provide examples of how different communities have implemented key components of career pathways systems.

Look out for **Quick Tips** and other boxes highlighting useful information to guide your team in carrying out activities within each element.

At the end of each chapter is a “**Tool Box**” that list team tools, publications, and resources available to facilitate implementation of the key components of each element.

## Section Two: Team Tools How-To Guide for Facilitators

The second section of the Toolkit presents the tools developed to assist leadership teams in building and sustaining

their career pathways systems. These tools were created for and used by the U.S. Department of Labor’s Career Pathways Initiative grantees between 2010 and 2011 as they developed their career pathway systems.

Organized as a “how-to” guide for facilitators, this section describes each tool’s purpose and gives instructions for how to use it. Each tool can be downloaded via links in the text.

## Section Three: Resources

The final section of the Toolkit is a collection of additional resources that may be useful to a team looking to develop a career pathways system. It includes a **glossary of terms**, a list of **resources and links** that facilitators and leadership teams have found valuable in supporting their career pathways system development, a **bibliography** of sources referenced and reviewed in this Toolkit, and an **index**.

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## SECTION ONE

# SIX KEY ELEMENTS FOR SUCCESS

## CAREER PATHWAYS: A SYSTEMIC APPROACH

To create a career pathways system that works effectively for program participants and employers, many organizations, agencies, and businesses work together to align their systems and services in pursuit of a shared mission. Working separately, education and training program providers will not impact their community workforce system (or their individual clients' lives) as deeply as they can when they are aligned to common goals and outcomes. When public agencies are stuck in their silos of workforce development, economic development, education and training, and social services, they will find it difficult to meet current and future labor market demands. A synergy occurs when these separate realms are connected and work together to create an effective, comprehensive career pathways system. Through a coordinated effort to align system and services across agencies, career pathway systems satisfy employers' labor needs and help workers achieve their career goals.

It is important to know that the career pathways model is implemented as a **system**, not a **program**. And implementing the system means creating new methods and ways of providing existing services, not grafting additional activities onto participating agencies' service menus. Thus, this work requires a change of mindset. Developing career pathways involves a process of coordinating and connecting different parts of multiple public and private services and activities to make up a comprehensive education and training system. Education and training programs are aligned with industry competency models and curriculum is aligned with employers' workforce readiness standards. Those parts are connected to allow individuals to enter and exit education, training, and work as needed throughout their lives, continuing to build their skills over time, until they reach their ultimate learning and career goals.

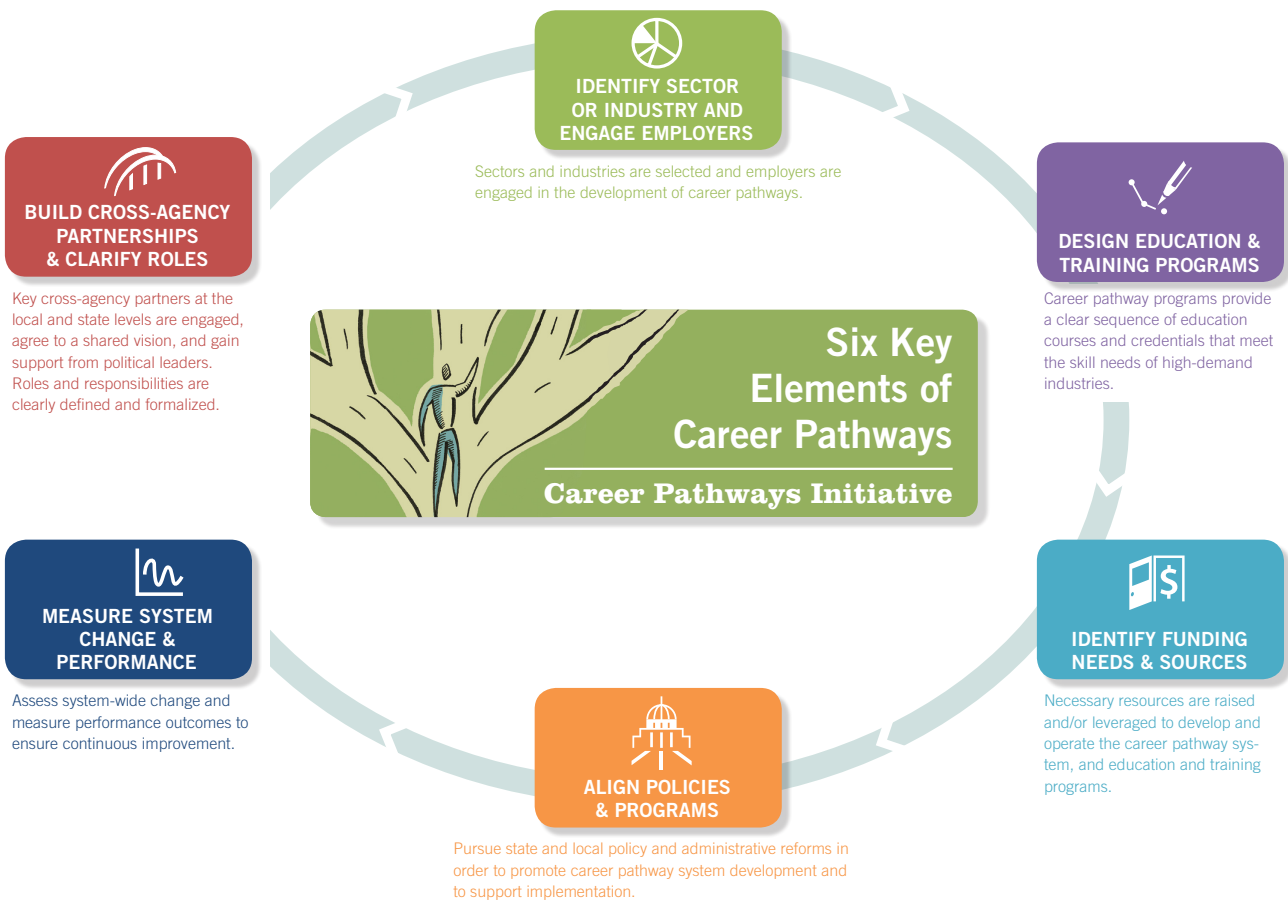
Career pathways systems are not launched overnight; they go through several stages of development. At the beginning, your state, tribal nation, and/or local community will form a leadership team that will guide implementation of the initiative. Early on, your team will identify the sector or industry you will use to model your first comprehensive career pathway, and engage employers as partners in multiple aspects of program design. Your team may decide to focus first on one area or region to pilot new approaches to education and training programs leading to industry-recognized credentials. As your system development and program design matures, your leadership team may begin addressing statewide or tribal nationwide policies for expanding career pathways to more local regions or communities. To sustain your initiative, your leadership team will seek and secure funding, and will initiate efforts to measure the impact of your system change reforms, using data to inform continuous improvement. We address these and other steps to building a comprehensive career pathways system in depth throughout this toolkit.

## THE SIX KEY ELEMENTS OF BUILDING A COMPREHENSIVE CAREER PATHWAYS SYSTEM

State and local teams build a comprehensive career pathways system from **Six Key Elements**. Work on these elements often proceeds simultaneously, but it is helpful to think of them as being developed in a particular sequence.

The graphic chart on the next page provides a brief overview of the each of the Six Key Elements and summarizes the key activities in each.

The graphic chart on the following page provides an overview of each of the Six Key Elements for developing career pathway systems and highlights the key steps involved in the process.



Developed by the US Department of Labor – Employment and Training Administration. May 2011





#### IDENTIFY SECTOR OR INDUSTRY & ENGAGE EMPLOYERS

##### Key steps:

- Conduct labor market analysis and share results with partners.
- Target high-demand and growing sectors.
- Identify key employers and clarify their roles.
- Sustain and expand business partnerships.



#### BUILD CROSS-AGENCY PARTNERSHIPS & CLARIFY ROLES

##### Key steps:

- Engage a team of cross-agency partners at the state and local levels.
- Establish a shared vision, mission, set of goals, and plan.
- Identify an intermediary to coordinate day-to-day collaboration.
- Define the roles and responsibilities of all partners.
- Clarify the working relationship between state and local partners.



#### DESIGN EDUCATION & TRAINING PROGRAMS

##### Key steps:

- Identify target populations and their "entry" points.
- Review or develop competency models.
- Develop career ladders and lattices.
- Seek employer validation of competencies and pathways.
- Design educational options that are modularized, accelerated, & contextualized.
- Ensure programs lead to industry recognized and/or post-secondary credentials.
- Provide comprehensive wrap-around support services.
- Provide flexible scheduling.



#### IDENTIFY FUNDING NEEDS & SOURCES

##### Key steps:

- Identify the costs associated with system & program development & operations.
- Determine the funds to be contributed by key partner agencies.
- Secure funding from public agencies & private foundations & organizations.



#### ALIGN POLICIES & PROGRAMS

##### Key steps:

- Identify & address statutory & administrative barriers to cross-agency collaboration.
- Identify and pursue needed reforms in state and local policy.
- Reform program procedures as needed.

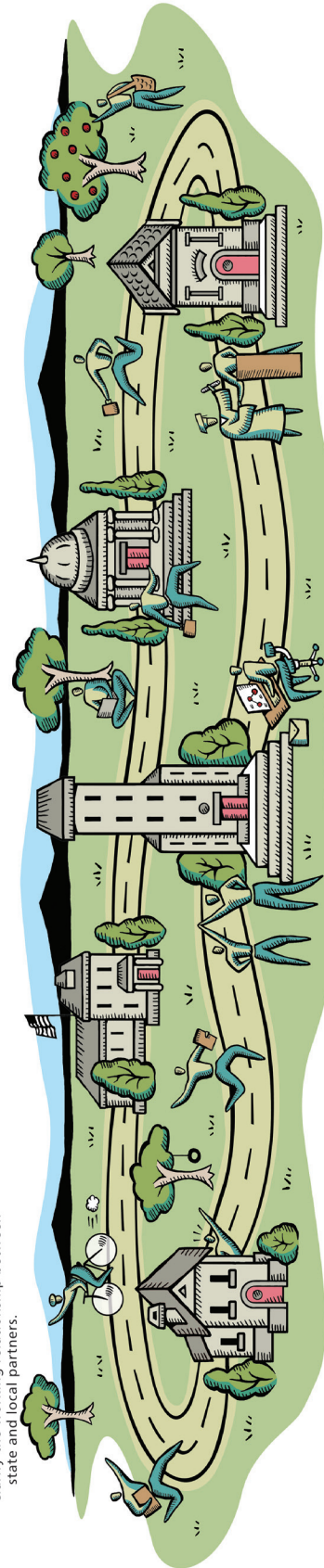


#### MEASURE SYSTEM CHANGE & PERFORMANCE

##### Key steps:

- Define desired system & program outcomes.
- Determine how to measure system and program outcomes.
- Establish how data will be collected, stored, tracked, and shared.
- Analyze data, revisit desired outcomes, and assess progress.

## Six Key Elements of Career Pathways Initiative







## ELEMENT ONE: BUILD CROSS-AGENCY PARTNERSHIPS & CLARIFY ROLES

Key cross-agency partners at the local and state levels are engaged, agree to a shared vision, and gain support from political leaders. Roles and responsibilities are clearly defined and formalized.

A career pathway system cannot be developed without strong, cross-agency partnerships at the local and state levels. Each partner ensures that the system operates to serve local labor market demands and the needs of the workforce. Together, state and local partners work collaboratively to establish a vision and policies at the state level while implementing career pathway programs and services at the local level.

The expertise necessary for designing successful education and training programs is dispersed across different arenas; strong working partnerships are what allow that expertise to be shared, leveraged, and effectively applied. Economists and employers share knowledge drawn from labor market information, career trainers and advisors design effective workforce training methods, educators provide instructional strategies, and social service providers contribute knowledge of support services and career counseling.

Successful partnerships also make it possible to leverage resources across systems and from different sources.

Developing a career pathways system begins with building cross-agency partnerships and involves several key steps described in depth on the following pages:

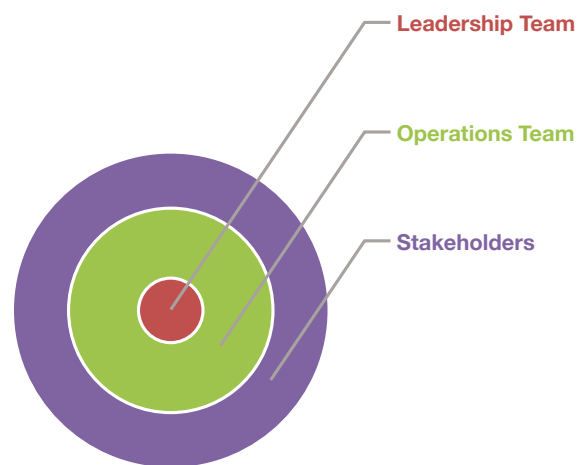
- Engage a team of cross-agency partners at the state and local levels.
- Establish a shared vision, mission, set of goals, and plan.
- Identify an intermediary to coordinate day-to-day collaboration.
- Define the roles and responsibilities of all partners.
- Clarify the working relationship between state and local partners.

### ENGAGE A TEAM OF CROSS-AGENCY PARTNERS AT STATE AND LOCAL LEVELS

A comprehensive career pathways system requires participation at many different levels. At the core, a diverse group of representatives from state and local public agencies, private

and non-profit organizations, and employers and members of the business community join together as a leadership team to guide the process of developing the career pathways system. They model interagency collaboration, craft and implement common goals, and develop a shared vision of how career pathways can benefit the local community and its citizens. This leadership team engages additional partner representatives to form an operations team responsible for designing, implementing, and operating the career pathways education and training programs. Other partners become stakeholders that support the career pathways work. As the career pathways system continually develops and changes, partners may move back and forth among the roles as needed.

The following diagram describes the various roles of the partners within the complete system.



For the career pathways system to be successful, senior state, and local leaders, including state and local elected officials support the leadership team by actively endorsing and championing the initiative through their actions, funding, and legislation.

See how Tucson Indian Center launched a successful healthcare career pathway in one year with strong partnerships and little start-up resources in the **promising practice**, on the next page.



## PROMISING PRACTICE FROM NOTHING TO SOMETHING—TUCSON INDIAN CENTER

The **Tucson Indian Center (TIC)** began its career pathways work from scratch. Prior to launching the effort in 2010, little work had been undertaken around career pathways in the region. After receiving \$30K grant and technical assistance from the U.S. Department of Labor, within one year, TIC developed a functioning career pathways system offering an occupational career ladder in Behavioral Health. The grant catalyzed the formation of the **Native American Pathways Out of Poverty Network (NAOPN)**, made up of the Tucson Indian Center (TIC), Pima County One Stop (PCOS), Pima Community College (PCC), employers (University Physicians Health-care and Desert Diamond Casino), and the local

tribal Workforce Investment Act (WIA) programs for the Tohono O'odham Nation and Pascua Yaqui Tribe. Incorporating direct employer feedback from local hospitals and mental health organizations, the team created a pioneering Behavioral Health Technician (BHT) career pathway that provides adults a path that goes all the way from Adult Basic Education at PCC, through a three-tier BHT basic certificate, a BHT advanced certificate, and an Associates Degree in BHT. Recruitment is currently underway for local area residents for the new BHT program, with slots reserved for TIC, Pascua Yaqui, and Tohono O'odham clients. As a testament to its stellar performance, TIC was invited to present its work

to the WIA Section 166 Indian and Native American Program grantees at the western regional and national conferences in spring 2011. The Tucson Indian Center leadership team demonstrated how with intentional partnership building, a little funding can go a long way.

For more information, view the presentation by TIC at the INAP 2011 national conference listed in Section Three: Resources.

### State-Level team Members

To be most effective, the state-level representatives on the cross-agency leadership team include, at a minimum, individuals from the state agencies responsible for the following public services:

- Workforce development
- Human services
- Secondary and post-secondary education
- Adult basic education
- Economic development

These *state team* members support the local team and assist in the development of an administrative and regulatory environment that aids local implementation and statewide growth or replication.

### Local-level team members

The local-level members on the leadership team are responsible for designing, piloting, launching, and growing a local or regional career pathways system. At a minimum, it is important to have local representatives from the following agencies:

- Workforce Investment Board(s) and local workforce development service provider agencies
- Community college(s) and post-secondary education providers
- Adult education providers
- TANF providers and human service agencies

- Economic development agencies and committees
- Community-based organizations (CBOs)
- Local businesses

<b>Recommended Leadership Team Members</b> A comprehensive leadership team includes representatives from the following entities:	
<b>Workforce Development</b>	State workforce agency State WIB Local WIB Local workforce agencies
<b>Education</b>	State adult education agency State secondary education agency State post-secondary education agency Local adult basic education providers Local secondary education providers Local community colleges Local universities
<b>Human Services</b>	State human service agency Local TANF providers Local human service agencies
<b>CBOs</b>	State community-based organizations State faith-based organizations Local community-based organizations Local faith-based organizations
<b>Employers</b>	Private businesses Public companies
<b>Economic Development</b>	State economic development agency Local economic development agency

See an example of how local and state level career pathway efforts coalesced to support career pathway system development in Oregon in the **promising practice** below.

## TEAM DEVELOPMENT AND SUSTAINABILITY

For leadership team members to be fully engaged, they are briefed so that they know how effective career pathways systems work, how they will help their customers and organizations meet their respective goals, and how they will benefit the overall community. This training also demonstrates the support for cross-agency collaboration that is being modeled by the system leaders.

Win-win partnerships provide real support for the effort that go beyond token letters of support. To create a win-win partnership, the team will do several things:

- Ensure that all partners understand each other's specific goals, the resources at their disposal, and their program performance measures and requirements. (This can be done by conducting a service mapping session, which is explained more thoroughly below.) Though many of the participating organizations and agencies are trying to achieve similar objectives—such as strengthening the local economy—they measure their progress in different ways. By understanding the core elements of each partner's work, the leadership team can develop a systemic framework that can complement everyone's goals.
- Make sure all partners understand the big picture of developing career pathways. This will help reduce resistance to change and avoid duplication of time and effort.
- Reflect the mission in all career pathway materials and constantly remind partners that the success of the career pathways system depends on the participant outcomes and how well they align with employer demands.
- Clearly communicate expectations of each of the participating partners while also acknowledging the value of their contribution to the overall effort. Partners need to realize the importance and impact of their contributions and receive appreciation for them.
- Use performance data to demonstrate progress and impact. This will also support partner buy-in and reinforce continued engagement over time. When the team regularly reviews

## QUICK TIP

### TO ENGAGE A TEAM OF CROSS-AGENCY PARTNERS AT THE STATE AND LOCAL LEVELS:

- Garner support for the initiative among senior or political leaders in the state/region.
- Include all key partners at both the state and local levels.
- Promote agreement to work collaboratively.
- Create and train the team.
- Bring on additional state or local partners as needed as your career pathways system grows and develops.
- Inform system players in the state/region about the career pathways system being developed and implemented.



## PROMISING PRACTICE A TEAM EFFORT—OREGON

When local areas make a concerted effort to understand the needs of local employers and the local workforce, they can lead an effort that forms the foundation of a comprehensive, statewide system. **Oregon's** statewide career pathways initiative evolved out of just such a locally based pioneering effort. Beginning in 1999, three community colleges decided to collaborate in designing new education and training programs tailored to meet the needs of the local workforce and the demands of employers. Using seed funding from the local Workforce Investment Board (WIB) and the League of Innovation, the colleges (Portland Community College, Mt. Hood Community College, and Southwestern Oregon Community College) developed programs focused on high-demand occupations.

Based on the success of their first models, they established partnerships with additional organizations and agencies, created additional pathways, and officially formed the **Oregon**

**Pathways Alliance** (Alliance) in 2004. The Alliance included five community colleges, the state's high school Career and Technical Education (CTE) Network, Department of Education, Employment Department, Department of Human Services, and local WIBs. The Alliance developed a comprehensive systemic framework that helped build capacity and define working relationships not only among the member organizations and within their respective institutions, but also throughout the state. Ensuring that local and state partners regularly garner input and buy-in from everyone involved—including faculty, department chairs, employers, student services staffs, advisory committees, and local WIBs—remains paramount to the Alliance's success.

The success of the Alliance encouraged other departments and colleges to launch similar efforts. By 2005, the Alliance convened an Oregon Pathways Academy for all 17 community college

campuses in the state. The academy brought together state teams from the Department of Education, Employment Department, Department of Human Services, and WIBs. Oregon then established an integrated state agency, the Department of Community Colleges and Workforce Development, to streamline and coordinate multiple funding streams including WIA, funding for vocational education from the Carl Perkins VTEA, and Adult Education. The integrated department provides resources and leadership to the 17 independently funded community colleges and seven local Workforce Investment Areas.

The pioneering spirit, leveraging of resources, and commitment to building and sustaining partnerships helped Oregon become the first state in the country to develop a statewide career pathways system and to become a recognized leader in career pathways initiatives.

For more information visit Worksource Oregon's website listed in Section Three: Resources.

data and compares themselves to benchmarks, partners can make course corrections and are clear that their contributions are adding value.

Team membership is periodically reviewed to ensure that the team includes representatives that support key functions and services within the system. In addition, partnerships are expanded as the group seeks to engage new target populations. For example, if individuals with disabilities are being targeted to participate within the career pathways system, the team reaches out to, and brings on as members, representatives from Vocational Rehabilitation offices and other state and local agencies who serve that population.

The leadership team will not be able to implement the career pathways system without the help of the staff members within the agencies and organizations represented on the leadership and operations teams. Therefore, once the leadership team convenes, it is important to inform all state and local staff members about the career pathways system being developed and implemented. Training multiple agencies' staff together on the new career pathways system will model collaboration and ensure that all staff members learn the same information.

For more information about strategic partnerships, view the Workforce3One webinar here: <https://www.workforce3one.org/view/3001107557559061701>

See an example of how local and state level career pathway efforts coalesced to support career pathway system development in Oregon in the **promising practice**, opposite.

## ESTABLISH A SHARED VISION, MISSION, SET OF GOALS, AND PLAN

Once the career pathways leadership team is formed, it is important to establish a shared vision and mission aligned with common goals. The vision provides a directional statement and a framework for the team's area of influence and responsibility by describing the desired future state of the community in a way that inspires the team to progress. A mission statement—a brief description of the team's fundamental purpose—helps the team agree on what to work on together. Defining these elements will allow the team to establish an agreed-upon set of goals and develop a plan to guide collaborative work. As the system will evolve over time, the team commits to reviewing and revising the vision, mission, goals, and plans regularly to match changing interests and goals.

Developing a shared vision, mission, and set of goals is no easy task. According to national career pathways expert Julian Alssid, "Developing a career pathways system is really about getting stakeholders—businesses, educational institutions, workforce development and economic development entities, government agencies, community-based organizations and others – to identify a goal or objective that they can all agree to work on together. And that's no small order; given that these groups have different areas of focus, funding priorities, speak different languages and so on."

The leadership team may find it helpful to develop its shared vision and mission during a facilitated strategic planning ses-

## QUICK TIP

### WHEN CONDUCTING SERVICE MAPPING WITHIN THE COMMUNITY, REMEMBER TO:

- Assess the capacity of educational and training institutions
- Assess the strengths, weaknesses, challenges, and gaps within the state and region's education and training programs against meeting sector and industry training needs.
- Assess the wrap around and support service needs
- Assess the capacity of agencies that provide wrap around and support services

sion. The *Six Key Elements Readiness Assessment* tool (see tools section) can help the team form its implementation plan by having it look at progress, priorities, gaps, technical assistance needs, and next steps. The *Next Steps Action Planning* tool will lead the team to aligned, prioritized goals.

## DEFINE ROLES AND RESPONSIBILITIES OF ALL PARTNERS

While some agencies provide services to the general population, others may serve only "targeted" populations. It takes a variety of agencies and/or funding streams to provide enough services and products to both targeted and universal populations. Without clearly defined roles and responsibilities, the system can be very confusing, and some responsibilities may be overlooked.

A prerequisite for defining the roles and responsibilities of each of the partners within the career pathways system is shared knowledge of the services each agency provides, the populations it serves, and the service models on which its programs are based.

*Community service mapping* is a process that your team can use to generate this knowledge. And in doing so, you will produce the data necessary for coordinating services among multiple agencies and identifying funding streams that can support the development of a career pathways system. The service mapping process will allow all parties to understand each others' existing roles and responsibilities. Your team can then develop an operational and strategic plan to be carried out by team members who are assigned functional roles and/or individual task responsibilities. Your team may decide to formalize these relationships with a written agreement or within a memorandum of understanding (MOU) in order to support sustaining relationships over time.

The chart at the bottom of the page outlines some of the common roles and responsibilities assigned to the key partners involved in developing a career pathways system.

## IDENTIFY AN INTERMEDIARY TO COORDINATE DAY-TO-DAY COLLABORATION

Development of a career pathways system requires day-to-day, on-the-ground coordinating of cross-system activities and collaboration, often coordinated by one organization or agency. This organization functions as a go-between, or *intermediary*, coordinating the work of all the separate partners. The intermediary takes care of various operational functions identified by leadership team members, such as coordinating and facilitating team meetings and supporting completion of action plans. In a broader sense, the intermediary is responsible for daily thinking about the next steps needed to move the system forward, and therefore needs to stay one step ahead of the leadership team. The intermediary also serves as the system's champion, promoting it to the leadership team, key partner agencies, and the community as a whole.

Early on in the development of your initiative, your team will want to decide which person and/or agency will take lead in coordinating the leadership group activities and assigned tasks involved in carrying out the initiative.

state officials acting in advisory and supporting roles? However the working relationship is defined, it is important to ensure that roles are understood and agreed upon among partners at the state and local levels. Like other partnerships, it may be useful to formalize these relationships with a written agreement or within a memorandum of understanding (MOU). See the **Tool Box** for an MOU that defines one example of a state/local working relationship.

## CLARIFY WORKING RELATIONSHIP BETWEEN STATE AND LOCAL PARTNERS

In addition to clarifying the roles and responsibilities of the various collaborating partners, the leadership team may want to define the working relationship between the state-level agencies and the local-level agencies and partners. Are decisions made at the state level, with local officials expected to implement them? Or are most decisions made at the local level, with

<b>Workforce Agencies</b>	Provide labor market information Engage employers Recruit and make referrals Provide support services Assess skills Provide job search assistance Provide job placement services	<b>Educational Institutions and Agencies</b>	Design programs Develop curricula "Chunk" and "modularize" curricula Create links between credit and non-credit Promote portability through articulation agreements Provide support services Assist with financial aid
<b>Economic Development Agencies</b>	Provide labor market information Engage employers	<b>Human Services Agencies</b>	Recruit and make referrals Provide support services Engage employers
<b>Community Based Organizations</b>	Recruit and make referrals Engage employers Provide support services	<b>Employers</b>	Develop curricula Provide trainers/faculty Provide training facilities and equipment Provide employment/internships

## Team Tools

See Section Two—*Team Tool How-to Guide* for facilitator instructions for each of the following tools:

Six Key Elements Graphic Framework <https://learnwork.workforce3one.org/view/2001120641504542734/info>

Six Key Elements Readiness Assessment Tool (printable documents) <https://learnwork.workforce3one.org/view/2001120642516555109/info>

Six Key Elements Readiness Assessment Tool (online tool) <http://www.mahernet.com/tiki/tiki-login.php>

Six Key Elements Action Planning Tool <https://learnwork.workforce3one.org/view/2001120642119875739/info>

Service Mapping Tools <https://learnwork.workforce3one.org/view/2001120642445820802/info>

## Reports and Publications

*Career Pathways Initiative: Building Cross-Agency Partnerships* webinar recording, U.S. Department of Labor and Social Policy Research Associates, March 2011 <https://www.workforce3one.org/view/3001107557559061701>

Sample Partner Agreements <https://learnwork.workforce3one.org/view/2001126942046585407/info>





## ELEMENT TWO: IDENTIFY SECTOR OR INDUSTRY AND ENGAGE EMPLOYERS

Sectors and industries are selected and employers are engaged in the development of career pathways.

A career pathways system must be **employer driven**. This means that it has **active** employer involvement from inception through implementation. Employers remain involved even after the system is in place, helping to evaluate the system and initiating activities and direction to support continuous improvement.

Employers play a primary role in determining the industries and sectors around which to build the career pathways. Employers are engaged in validating labor market research and

- Identify key employers within the targeted sectors/industries.
- Clarify the role of employers in the development and operation of programs.
- Sustain and expand business partnerships.

### QUICK TIP

#### KEY QUESTIONS FOR THINKING ABOUT EMPLOYER ENGAGEMENT:

- How will you determine labor market trends, skill development needs and opportunities, and employer preferences?
- How will you select which employers (or industry representatives) to approach?
- How will you “pitch” career pathways to them?
- How do you plan to work with employers during the various phases of the project (design, launch, operation, evaluation)?

confirming the skills and credentials required for the occupations chosen for the system. Employers may also play a role in program curriculum design and instruction (see Element Three for more information about curriculum design). Finally, employers provide vocational training, internships and apprenticeships, and, ultimately, permanent jobs as part of the career pathways system.

Engaging employers early on in the design of your initiative will help ensure that your career pathways system is aligned with growing sectors and industries. The following steps will help guide your leadership team with supporting this element:

- Conduct labor market analysis and share results with partners.
- Target high-demand and growing sectors.

## CONDUCT LABOR MARKET ANALYSIS AND SHARE RESULTS WITH PARTNERS

The leadership team analyzes the labor market in order to identify the best sectors around which to build career pathways. Assessing the current and projected labor **supply** for a particular

### QUICK TIP

#### CHECK OUT THESE USEFUL ONLINE TECHNOLOGIES FOR REAL-TIME LABOR MARKET RESEARCH:

- Wanted Analytics  
<http://www.wantedanalytics.com/>
- Burning Glass  
<http://www.burning-glass.com/technology/job.html>
- EmployOn  
<http://www.employon.com/>
- Indeed.com  
<http://www.indeed.com/>
- Simply Hired  
<http://www.simplyhired.com/>
- Geographic Solutions  
<http://www.geographicsolutions.com/>
- Monster.com  
[www.monster.com](http://www.monster.com)

sector or occupation is as important as determining its current and projected demand for labor. It is important to use data that are as accurate and as up-to-date as possible.



## PROMISING PRACTICE

### HOW TO GET EMPLOYERS ENGAGED? ASK FOR THEIR OPINIONS—MARYLAND

In **Maryland**, employer engagement emerged unexpectedly. Maryland has focused its career pathways efforts on its Upper Shore region, where the basis of the economy has shifted from natural resource extraction to manufacturing and services. Although hospitality, tourism, and construction are in decline, healthcare continues as an important economic engine in the region. Accordingly, the Maryland career pathways team wanted a better picture of the Upper Shore's healthcare labor force. The team had originally planned to hire a consultant to conduct a labor market analysis to get a clearer idea of which

occupations to target. Due to limited funding, however, the team decided to conduct an in-house “laborshed” analysis instead. This meant collecting data that would allow them to map the geographic distribution of healthcare workers in the region, irrespective of natural or political boundaries. The study would also address underemployment, the willingness of current and prospective employees to change employment, current and desired occupations, wages, hours worked, and the distances workers were willing to commute to work. The team conducted the laborshed analysis by compiling healthcare in-

dustry data via Internet resources. Before using this information to shape the career pathways action plan, however, they met with employers in the region to validate their findings. Being asked to validate this healthcare industry data piqued the employers' interest in the team's career pathways work, and they independently requested to be involved in the initiative. What began simply as a way to validate data became a valuable strategy for recruiting employers.

Traditional labor market information (LMI) tends to look backwards or too far into the future. Although looking backwards often reveals very specific detailed information about what occurred five years ago, it does not provide information about what is happening currently. Likewise, looking too far forward, as some LMI projections do, does not provide enough detail regarding the knowledge, skills, competencies, and occupational requirements needed to design effective training programs. In contrast, modern technology makes it possible to access **real-time data** using programs that constantly pull information from the Internet and provide recent, localized reports on labor demand and supply.

According to labor market research expert John Dorrer, “the density of job announcements on the Internet – and therefore findable and digital – has now reached about 70 percent or more of all vacancies in the economy. And it's nearly 95 percent of jobs outside of retail, food service, building maintenance and construction.” Real-time data are drawn from web-based tracking systems that analyze job postings and resumes placed into public and private exchanges. Data are pulled from the Internet on a daily basis, providing “indications of supply and demand trends, emerging occupations, current and emerging skill requirements, and market-based demand for education and certifications.” This information can be analyzed to reveal trends and to provide more accurate forecasts on which to base decisions about which industries and sectors to target for career pathway development.

For more information about real-time LMI view the Workforce3One webinar at <https://www.workforce3one.org/view/5001107429765257509/info>

See an example of how Maryland used labor market research to determine sector focus and to engage employers in their career pathways efforts in the **promising practice** at the top of the page.

## TARGET HIGH-DEMAND AND GROWING SECTORS

Career pathways both increase the educational attainment of individuals and meet employers' needs for skilled workers in

growing industries and their occupations. To meet both goals, programs are designed around industries and sectors in the state or locality that have high demands for labor and support career ladders that pay family-sustaining wages. Using findings from the labor market analysis, teams choose industry sectors within which articulated career pathways can be built. Many states have occupational growth in the health care, manufacturing, education, and energy sectors, for example.

A particular industry's growth and labor demands may vary by geographic scale. An industry that has high labor demands statewide may not have particularly high demands locally. States developing career pathways systems may treat these variations differently. Some states want career pathways to be based on sectors identified as being in high demand statewide. Other states want locality-based definitions of “high demand” to determine career pathway selections. (See website list in *Section Three: Resources* for assistance in choosing industry sectors.)

A state just starting out doing this work may want to focus first on a single industry. The lessons learned from this small-scale pilot may then inform efforts to add other industries or sectors.

Once the team identifies the high-demand sector, it chooses a subsector and lists all the occupations within it. Within this list, the jobs most in demand are identified. For example, within the healthcare sector, the area of health information technology (HIT) is expected to grow. One of the HIT occupations is electronic health records technologist, which involves transferring medical records from print to digital format. According to the Bureau of Labor Statics (BLS), there will be job growth in this occupation.

Some useful sources of information for locating in-demand jobs include the U.S. Department of Labor's (DOL) Competency Model Clearinghouse, the Career OneStop Certification Finder and Licensed Occupations database, and the My Skills My Future Web site. See *Section Three: Resources* for a list of links to these web sites.



## IDENTIFY KEY EMPLOYERS WITHIN TARGETED SECTORS/INDUSTRIES

Once sectors or industries have been chosen for the career pathways system, it is time to identify key employers within those sectors or industries. Local chambers of commerce and/or economic development agencies can assist the leadership team in identifying the key employers from particular industry sectors. The URL of a website that can help the leadership team members identify key employers can be found in the **Tool Box** at the end of this section.

While individual employer representatives will have perspectives that are useful for designing particular pathways, bringing together a group of employer representatives from several targeted businesses ensures that the pathways developed are valid and reflective of the industry generally. One useful approach for involving multiple employers is to create an employer or industry council.

See an example of how employers were engaged in the design of the career pathways system in Wisconsin in the **promising practice** below.

### Convince Key Employers of the Benefits of Participation

Once key employers from growing industries and sectors are identified, the leadership team develops an employer marketing and outreach strategy, which helps the team determine how to best engage these key employers. The team develops and uses a “pitch” that communicates to key employers the value and benefits of participating as active partners in the program.

Here is a sample script that the leadership team can use to get commitment from the key employers to participate in the career pathways program:

By participating with us in this process you will experience these benefits:

- The workforce system in the region/state will meet your business’ specific needs.

- You will gain access to a larger pool of skilled job candidates who possess the specific skills, certificates, and credentials required for the current and future labor market.
- Your incumbent workers will have training and education available to continually upgrade their skills.
- Training programs will meet your business’s requirements.
- Credential and certification programs will meet the specific standards set within your industry.
- You will be a part of making the community more globally competitive.

For assistance with developing marketing strategies directed to key employers, see *Questions to Ask Employers for Various Career Pathways Roles* in the **Tool Box** at the end of this section.

## CLARIFY THE ROLES OF KEY EMPLOYERS

In successful career pathways systems, key employers have multiple roles. Initially each key employer will choose the roles that its management perceives as being most beneficial to its business. As they learn more about the career pathways system, members of the leadership team encourage key businesses to explore other ways of contributing. Many of these roles may be summarized as follows:

- Determine which occupations within targeted industries and sectors should be included within the career pathways system.
- Vet the set of foundational academic, work readiness, and technical skills, abilities, and knowledge that are chosen as required for key occupations.



### PROMISING PRACTICE EMPLOYERS BEHIND THE WHEEL—WISCONSIN

Despite a tremendous investment in education and training programs, **Wisconsin** students were dropping out of programs without the skills needed for jobs in local industries. Likewise, employers in manufacturing and healthcare reported challenges with employee retention. About ten years ago, industry representatives approached their education and training partners asking for solutions to the problem of preparing a reliable supply of skilled workers. Through this alignment of common goals, **Wisconsin’s Regional Industry Skills Education (RISE)** initiative emerged to develop a system that better

engaged and prepared Wisconsin’s workers for jobs in growing industries.

Maintaining employer leadership in the development of the career pathway system was central to the RISE framework. To this day, employers play an important role in designing skill-requirement-aligned competency models for their industries. These competency models inform education and training curricula used by Wisconsin’s Technical Colleges, including “stackable” coursework and certificate programs. Employers also review and approve the list of training providers to ensure participants

receive industry-recognized certificates and credentials from technical colleges and apprenticeship programs. Employers and unions also participate in program operations, recruiting new students, supporting and delivering training, and aiding with retention strategies. The leadership of industry partners resulted in the development of a career pathway system that works for workers, employers, and education and training providers alike.

For more information see *Charting a Path, Building Blocks* in Section Three: Resources.

- Vet the certificates and credentials that are required for key occupations.
- Collaborate with training institutions to design education and training programs.
- Participate as instructors or training sites in the skill training programs.
- Provide training funds for individuals through tuition reimbursement or class-size training projects.
- Participate in the skill certification/credentialing process.
- Serve as mentors.
- Serve as a job shadowing site.
- Provide paid or unpaid internship positions for students.
- Hire individuals who have obtained the required certificates and credentials.

Each employer may serve in one or multiple roles. However, each of the roles listed above needs more than one key employer to ensure that all aspects of the career pathways system are employer-driven. Depending on the role of the employer, responsibilities can be formalized in a variety of ways. For example, a contract may be used to specify the parameters of the instructor role; an MOU may be signed for the job shadowing or mentor role. An informal agreement may be all that is necessary for the validation role.

See an example of employers taking a leading role in designing education and training programs for dislocated workers to fill in-demand occupations in the **promising practice** below.

## QUICK TIP

### WHEN ENGAGING KEY EMPLOYERS AND EXPANDING BUSINESS PARTNERSHIPS, REMEMBER TO:

- Use real-time data to determine the trends used to conduct a gap analysis.
- Create (or expand an existing) employer network and/or consortium representing targeted high demand industry sector/clusters.
- Develop a plan to support working with employers during various phases of the project (vetting of required skills, model design, program design, skill training, and hiring).
- Ensure employer partners inform skill needs and employment opportunities within key sectors.
- Ensure employers support development and implementation of all aspects of pathway models and programs to increase employer investment in programs and the students.
- Ensure employer partners agree to utilize credentials for employment decisions (e.g. hiring, promotions, etc.).
- Maintain open and on-going communication with employers and/or consortium members.

## SUSTAIN AND EXPAND BUSINESS PARTNERSHIPS

As the career pathways system expands to target other industries or sectors, additional employers are cultivated to inform all aspects of the career pathways system designed for their industries. In addition, as new student/worker populations are targeted, the team may need to recruit new employers to support education, training, and workforce development strategies for those populations.



## PROMISING PRACTICE

### TURNING LOSSES TO GAINS—OAKLAND, CALIFORNIA

**Alameda County, California** found solutions for an emerging industry and a new career path for a displaced workforce. Public/private partnerships led to employers taking a lead in developing career bridge programs for dislocated workers. Following 9/11, airline companies laid off large portions of their workforces, displacing thousands of workers in Oakland, California. The Alameda County Workforce Investment Board joined forces with the Bay Area Biotech Consortium to train these displaced airline workers for employment in an emerging biotech industry with a strong demand for more workers.

Supported by federal investment, a strong partnership of Alameda County public and private employers made this initiative a success. The initiative grew into the Biotech Workforce Network that brought together workforce, education, and biotech employers who partnered to develop the three month training program for entry level biotech manufacturing positions. The employers took an active role in designing the curriculum and providing work-based learning opportunities for the students, including pre-screening, assessments, tests, and classroom activities. They also provided career exposure activities (such

as workplace tours) and internships. For participants, the greatest outcome of this partnership was the access to high-wage careers. The first training class had a 95% placement rate with positions paying \$35,000 per year.

For more information visit the Biotech Workforce Network website and read *Ahead of the Curve: Responding to the Dynamic Biotech Sector* in Section Three: Resources.

In order to ensure continued commitment from business partners, the team nurtures these relationships. Below are some strategies for maintaining positive, productive relationships with employer partners:

- Create win-win partnerships by determining what each employer hopes to accomplish as a part of the career pathways system and helping the employer achieve it.
- Identify available resources for the system.
- Show sincere appreciation for, and demonstrate the value of each business partner's contributions.
- Communicate high expectations by telling business partners exactly what is needed and by what time.
- Share and discuss performance outcomes with all business partners.

## Team Tools

See Section Two—*Team Tool How-to Guide* for facilitator instructions for each of the following tools:

Six Key Elements Graphic Framework <https://learnwork.workforce3one.org/view/2001120641504542734/info>

Six Key Elements Readiness Assessment Tool (printable documents) <https://learnwork.workforce3one.org/view/2001120642516555109/info>

Six Key Elements Readiness Assessment Tool (online tool) <http://www.mahernet.com/tiki/tiki-login.php>

Six Key Elements Action Planning Tool <https://learnwork.workforce3one.org/view/2001120642119875739/info>

## Labor Market Research Tools

Wanted Analytics <http://www.wantedanalytics.com/>

Burning Glass <http://www.burning-glass.com/technology/job.html>

EmployOn <http://www.employon.com/>

Indeed.com <http://www.indeed.com/>

Simply Hired <http://www.simplyhired.com/>

Geographic Solutions <http://www.geographicsolutions.com/>

Monster.com [www.monster.com](http://www.monster.com)

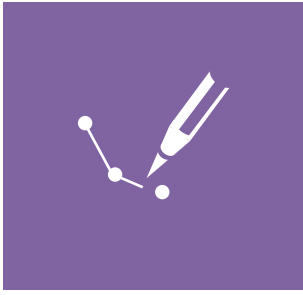
## Papers and Publications

*Using Real-Time Labor Market Information to Support Credential Attainment Career Pathways Webinar*—Recording: <https://www.workforce3one.org/view/5001107429765257509/info>

*Employer Based Strategies for Serving Disadvantaged Populations Webinar*—Recording: <http://www.workforce3one.org/view/3001014148469507258/info>

Workforce Strategy Center's Employer Interview Protocol <http://www.workforcestrategy.org/toolkit.html>

*Questions to Ask Employers for Various Career Pathways Roles*  
<https://learnwork.workforce3one.org/view/2001123644784711042/info>



## ELEMENT THREE: DESIGN EDUCATION AND TRAINING PROGRAMS

Career pathway programs provide a clear sequence of education courses and credentials that meet the skill needs of high-demand industries.

Adults and non-traditional, working learners often struggle to complete education and training programs that provide the necessary credentials for many growing careers. This is especially true for low-skilled and low-income individuals who often have other barriers to training and employment, such as insufficient academic or work readiness skills, or transportation and childcare needs. In addition, working learners have the added challenge of balancing jobs with education or training, which makes flexible training programs, such as evening/weekend, and/or online classes critical to their success.

When training and education programs do not accommodate the needs of adults and non-traditional students, these barriers frequently lead to high dropout rates. Developing career pathway-oriented education and training programs that incorporate design features that support the unique needs of specific targeted populations help patch the “leaky pipeline” of students dropping out of training programs.

Additionally, as the costs of education increase and the earnings of low-skill workers decrease, ensuring students are trained and educated for in-demand skills and occupations is paramount. When student loan default rates are at record highs it is crucial that our training and education systems are designed with clearly defined pathways to growing careers and industry sectors. Strategic program design can help potential students better understand their best options for securing employment upon program completion.

In a comprehensive career pathways system, education and training programs provide a clear sequence of education courses and credentials that prepare individuals, *regardless of their skill levels at the point of entry*, for postsecondary education, training, and employment. As addressed in Element One and Element Two, all the partners connected to the career pathway system work together to ensure that local education and training programs align with the requirements of growing industries and meet the education and training needs of diverse populations. Therefore, designing these programs cannot be “business as usual” and involves “out of the box” thinking and a degree of tailoring to best meet the needs of employers and students.

Career pathway systems move individuals from their points of entry through education and training programs to occupational advancement. Each partner provides a crucial part of the system, whether it be recruitment and point-of-entry assess-

ments, contextualized education and training programs, work-based learning experiences, or wrap-around support and case management. At its best, participants will move through the system seamlessly, experiencing an integrated, cohesive “flow” among different agencies and partners. A high-functioning system will lead to outcomes where participants earn industry-recognized credentials and are fully skilled and ready for new occupations. Ideally, they are then hired by local businesses that were involved in the development of the pathway system. See an example of an illustrated career pathway below.

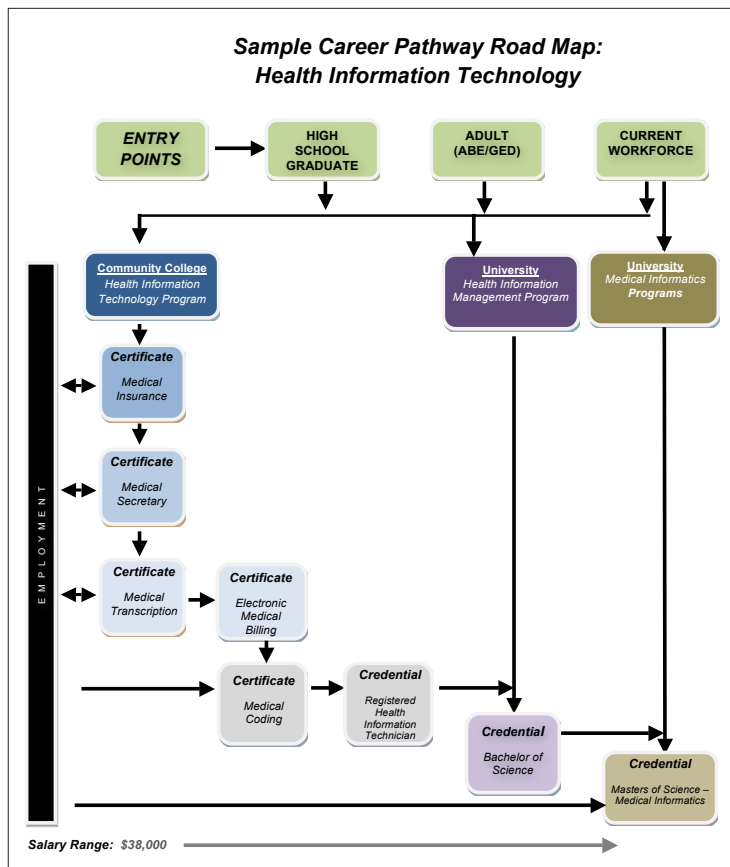
The following key strategies are necessary to develop and design an effective career pathways education and training program:

- Identify target populations and their “entry” points.
- Review or develop competency models.
- Develop career ladders and lattices.
- Seek employer validation of competencies and pathways.
- Design educational options that are progressive, modularized, accelerated, and contextualized.
- Ensure programs lead to industry recognized and/or post-secondary stackable credentials.
- Provide comprehensive wrap-around support services.
- Provide flexible scheduling.

### Sample Illustrated career pathway “Road Map”

As illustrated in the chart on the following page, this example of a Health Information Technology career pathway shows that individuals may enter the career pathway through a variety of entry points. Some enter after high school graduation. Others may access the pathway through the Adult Basic Education program. And some may be current workers who are looking to increase their skills or gain jobs with higher pay.

Ideally, no matter which agency they walk into, participants are assessed to determine where their point of entry will be into



the occupational pathway. The assessment results may indicate that some individuals need contextualized foundational, academic, and/or ESL training prior to beginning the specific Health Information Technology post-secondary classes. Others will begin a two-term post-secondary training program that will result in a Medical Insurance Certificate.

Other individuals may be assessed as ready to begin their post-secondary training in the four-year health information management program. This option can alternatively be pursued through two years of additional schooling by individuals who complete their Associate's degree. Current workers may be assessed as ready for direct access into the Master's degree program for Medical Informatics. They will be joined by individuals who have completed various routes to that program, including some who have come directly from the Bachelor's degree program and some who first achieved various certificates and an Associate's degree before earning their Bachelor's degree.

## IDENTIFY TARGET POPULATIONS AND THEIR ENTRY POINTS

An initial step in designing career pathway-oriented education and training programs is to identify the population(s) that will move through the career pathways system. Due to lack of funds or the need to start small and grow the programs as success and resources allow, many communities identify a single target population to initially serve through its career pathways program. Other communities may focus on two or more over-

lapping populations who share similar needs that can be addressed through program design and/or supportive services. This means knowing the work history, educational background, English proficiency, literacy skills, and occupational skills of the target population. The more known about the client base, the better a career pathway program will be able to address barriers and increase the potential for program success. Working learners and non-traditional students are commonly targeted for services, including low-skilled/low-income individuals, dislocated workers, and incumbent workers.

## PATHWAYS FOR LOW-SKILLED AND LOW-INCOME POPULATIONS

Since research indicates that higher levels of educational attainment are linked to increased earning potential, many communities are seeking ways to help those in the low-skilled/low-income population gain the education and skills they need to compete for jobs in the marketplace. Career pathway programs are well suited to help those in the low-skilled/low-income population address their lack of foundational skills, thus preparing them for entry-level jobs from which they can build their skills to obtain higher paying jobs. Since industry-targeted career pathway programs are tailored to fill current or anticipated labor shortages, they are typically more successful in job placement than traditional approaches, and can therefore meet the immediate financial needs of the individual. Studies have shown that participants of sector-focused programs tend to earn more and

## QUICK TIP

### USE THIS CHECKLIST TO QUICKLY ASSESS WHO IS CURRENTLY PROVIDING KEY SERVICES WITHIN YOUR EDUCATION AND TRAINING PROGRAMS:

#### Outreach

- Who performs outreach services?
- How do you reach your target population(s)?

#### Assessment

- Who performs assessment services?
- Are they non-duplicative across agencies?
- What assessment tools are used?
- Do the assessments provide credit for prior learning?

#### Education and Training Programs

- Is flexible, alternative scheduling available?
- Are curricula chunked and progressive?
- Are curricula contextualized?
- Are ABE programs clearly articulated with postsecondary academic and career-technical programs?
- Are programs designed to accelerate advancement?
- Are individualized career plans utilized?
- Does training reduce or accommodate language and learning barriers?

#### Credentialing

- Do the education and training programs lead to industry recognized credentials?
- Do they lead to stackable credentials clearly articulated to progressively higher-level credentials?

#### Wrap-around and Support Services

- Are job placement services available?
- Career and financial aid counseling?
- Dropout prevention services?
- Child Care?
- Transportation?

maintain more consistent employment than those who have not.<sup>3</sup> By accessing opportunities for additional training and higher paying jobs, they can help break the cycle of job instability.

However, it can be difficult to employ individuals with multiple barriers to employment, such as insufficient educational and/or work experience, limited English proficiency, poorly developed academic skills, and/or lack of work-readiness skills. These barriers, along with child-care needs, transportation and

housing instability, and severe financial constraints make hard-to-employ populations more at risk of failing to complete the education and training programs that can help them acquire jobs where they can earn family—and life-sustaining wages. For example, a study of adult community college students (age 25 to 64), found that only four to six percent of low-skilled students who started in ESL or ABE programs continued on to complete a year of college courses, or earn a certificate or degree.<sup>4</sup>

In order to address the various needs of target populations, the multiple partners involved in the career pathway system often work together to provide an array of wrap-around and support services to complement education and training programs. At their best, career pathway programs are customized to meet the needs of individual targeted groups, by designing the education and training programs to support students with accessing programs and supporting course completion and credential attainment. For example, see the **promising practice** on the next page featuring *Instituto del Progreso Latino's* program that supports low-skilled/low-income workers in Chicago earn certificates and credentials in the growing health careers sector.

See Social Policy Research Associate's *Career Ladders for the Hard to Employ Issue Brief* for more information about how to support low-skilled and low-income populations <https://www.workforce3one.org/view/2001027338263742261/info>

## Pathways for Dislocated Workers

Workers who have been dislocated because of factory closure or company downsizing have often been employed in a particular industry for many years. Many of these long-term workers entered their previous jobs without a high school diploma or GED and may not have upgraded their skills through formal training. Most of today's jobs require a higher level of skills than the dislocated workers possess. Since they are in need of skills upgrading in order to find employment, they are a good match for training designed to fill the labor needs of growing industries. A career pathway system will make it more likely that they get back to work in jobs that will sustain them.

See *Building Bridges in Wisconsin: Connecting Working Adults with College Credentials and Career Advancement* for some good ideas about how the Wisconsin career pathways system served and helped many dislocated workers through the economic downturn <http://www.cows.org/pdf/rp-building-bridges.pdf>

## PATHWAYS FOR INCUMBENT OR WORKING LEARNERS

An important goal of working with employers and incumbent workers is to help build career ladders within existing firms or industries that increase the ability of an individual to move up within the company. The basic goal when targeting incumbent workers for career pathways is to assist employers in advancing

<sup>3</sup> For more information, see Public/Private Ventures study, *Tuning In to Local Labor Markets: Findings From the Sectoral Employment Impact Study*.

<sup>4</sup> For more information on late-start, adult community college students, see Washington State Board for Community and Technical Colleges' publication, *Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Longitudinal Student Tracking Study* <http://www.eric.ed.gov:80/PDFS/ED496218.pdf>





## PROMISING PRACTICE

### INNOVATION THROUGH CUSTOMIZATION—CHICAGO

Staff members at *Instituto del Progreso Latino* in **Chicago, Illinois**, learned early on that in order to keep their adult population engaged in learning they needed an innovative curriculum approach. Contextualized basic skills courses allowed the ***Carreras En Salud*** program to combine academic instruction with technical training for the healthcare industry. *Instituto's* curriculum developers observed the workplaces of their employer partners, specifically looking

at the duties, skills, and information required to perform jobs such as Certified Nursing Assistant (CNA) and Licensed Practical Nurse (LPN). These observations led to the production of a customized curriculum that met the needs of employers and had embedded in it the basic academic skill instruction that students needed. *Instituto's* success shows in its high retention rates (70% to 90% depending on the cohort) and the average wage increases of their LPN

program completers (\$10 to \$25 per hour). Additionally, 88% of students complete their Vocational ESL/Pre-CAN courses and 77% advance to the bridge portion of the program.

For more information see *Carreras En Salud: A Chicago Bilingual Health Care Career Pathways Partnership* and *Instituto del Progreso Latino* in Section Three: Resources.

their current workers so they do not have to look outside their businesses to fill positions. By building career ladders within existing firms/industries, employers can support the advancement of individuals within the company who have demonstrated skills and commitment to their employer. Career pathway systems for incumbent workers allow employers to shift their resources from recruitment into employee investment. Trainings are often provided at the work site, accommodate work schedules, and are partially or completely subsidized through employer contributions. This easy access to training leads to better employee retention and higher productivity.

For more information about supporting incumbent or working learners utilizing career pathways, see Jobs for the Future's publication, *Creating Career Pathways for Frontline Health Care Workers* at the following: <http://jobs2careers.org/resource/creating-career-pathways-for-frontline-health-care-workers/>

For ideas about supporting low-skilled incumbent workers, see Social Policy Research Associate's and Mathematica Policy Research Associates' publication, *Employer Resource Networks: Uniting Businesses And Public Partners to Improve Job Retention and Advancement for Low-Wage Workers* <https://www.workforce3one.org/view/2001027338066773526/info>

Once target populations are identified, teams work to ensure there are multiple points of entry for each population. Entry points vary depending on a variety of factors including what the individual hopes to achieve in his/her career, the individual's opportunities for immediate college entrance, and family and work obligations. Accreditation and articulation agreements also impact the entry points. Since those in the low-skill/low-income population will typically enter into short-term options that offer modularized, stackable certificates, it is important that these courses be accredited and articulated to additional programs. Financial considerations are also important. Diploma, certificate, and associate degree programs typically cost less annually than Bachelor's degree programs.

## REVIEW OR DEVELOP COMPETENCY MODELS

The first step in designing education and training programs that help students meet the skill requirements of specific occupations and careers is to develop a competency model aligned

with the selected industry or sector. An industry competency model is a collection of competencies that together define successful performance in a particular job or job family. Competency models articulate the business and industry requirements that are essential components for the development of curricula, skill assessment instruments, and certifications. Competency models also facilitate the development of the career pathways and career lattices that provide the framework for career advancement.

The *Competency Model Clearinghouse* provides tools and resources for building competency models (from scratch or by modifying existing models) as well as developing career ladders/lattices based on competency models. See the resources in the **Tool Box** at the end of this section for a link to Competency Model Clearinghouse resources.

## Developing Competency Models—How It Works

Employers are crucial in developing competency models for selected occupations within the targeted local and regional industry sectors. Employers and education/training partners often work together to develop competency models that provide a clear description of what a person needs to know and be able to do—the knowledge, skills, and abilities (KSAs) required to successfully perform “critical work functions” or tasks in the workplace.

Industry competency models are developed through a job profiling process. This process is completed within businesses and is based on the expertise of the job's best performers. During the process, high performers identify the critical or most frequently performed tasks within the job and the competencies needed to perform those tasks. The U.S. Department of Labor has developed a database of competencies that can serve as a good starting point when developing a competency model for a particular job. The team can ask local employers to validate a competency model drawn from the database, and make recommendations for changes based on the unique requirements for their businesses.

Once employers have informed and validated the competencies related to the selected occupations and the career ladders that make up the career pathways, the team can engage employers in program development.



This is done by asking employers several questions:

- Which of these competencies are needed for entry-level jobs?
- Which of these competencies are needed for each step in the career progression?
- Which competencies build upon each other and lead to the next step in the career progression?
- Which of these competencies are lacking within the current labor force and need skill building opportunities for workers and job candidates?

Validated competency models serve as a foundation for career ladders and lattices and curriculum development.

For more information about developing competency models and for a list of available tools, see the resources in the **Tool Box** at the end of this section for links to federal resources.

## DEVELOP CAREER LADDERS AND LATTICES

At the heart of effective career pathway programs are career ladders and lattices that describe the passageways by which individuals can ascend from entry-level jobs to higher level jobs within an occupational area. According to the U.S. Department of Labor, from their O\*NET website, “career ladders and lattices consist of a group of related jobs that may comprise a career. They often include a pictorial representation of job progression in a career as well as detailed descriptions of the jobs and the education and experiences that facilitate movement between jobs.” Career ladders display only “vertical” movement between jobs. In contrast, career lattices show both vertical and lateral movement between jobs and may reflect more accurately the complex career paths of individuals in today’s work environment.

In other words, career ladders and lattices are what make up the career pathway of selected occupations and are what the education and training programs should be aligned to support. The role of the career leadership pathways team is to systematize what already exists, creating an educational/training/certification framework that corresponds to and coordinates with what exists in the work world.

### Linking Competency Models to Career Ladders/Lattices—How It Works

Employer-validated competency models inform the design of educational and vocational courses that lead to the knowledge, skills, and abilities required for employment in specific jobs. Using these competency models, educational institutions design incremental training modules as a sequence of courses leading to industry-recognized credentials or certificates. Participants may complete one or more certificated or credentialed program, all linked together within the career ladder. In gen-

eral, each “rung” on the ladder (usually marked by an earned certificate or credential) leads to the opportunity for employment within a certain set of occupations associated with the career ladder. Optimally, participants are able to “enter” and “exit” the career pathway ladder over the course of their careers, periodically “stacking” or earning additional certificates and credentials leading to positions of increased responsibility and higher wages.

By mapping courses and credentials against the required skills in relevant employment opportunities at each level, teams can create career-ladder and career-lattice visuals that illustrate employment and career progression in high-demand occupations. To learn how to create these visuals, see the **Tool Box** at the end of this section for a link to Competency Model Clearinghouse resources. The link leads to written instructions as well as a tutorial on how to build career ladders and lattices.

The chart on page 25 is an example of a one of these visuals. It is an illustration of a particular occupational sector and the related education and career lattices available to students.

## SEEK EMPLOYER VALIDATION OF CAREER PATHWAY PROGRAM PLANS

Once you have developed and articulated a sequence of education and training programs aligned with in-demand sectors and occupations, you should review the proposed career ladders with employers from targeted industries to confirm that they meet the skill needs of targeted local/regional industry sectors. A variety of questions can be asked to obtain the information needed:

- Have we identified the right cluster of related occupations within this sector?
- Do these selected occupations match the vacancies in your sector?
- If not, which occupations should be a part of this career ladder?
- Is this career ladder complete?
- How does this career ladder compare to traditional career pathways in this sector? Is anything missing?

See the resources in the **Tool Box** at the end of this section for additional employer interview questions.

## DESIGN EDUCATIONAL OPTIONS THAT ARE PROGRESSIVE, MODULARIZED, ACCELERATED, AND CONTEXTUALIZED

It is important to structure education and training programs with enough flexibility in design to meet the needs of working learners and non-traditional students. As noted in the section introduction, many hard to employ and low income populations

face a number of challenges that makes program completion and educational attainment difficult within conventional education and training systems. To be successful, they often benefit from programs that are designed to cover the essential skills required for new occupations, and to do it quickly and within flexible program structures.

Adults and non-traditional students often have transferable skills that can be utilized and built upon if programs are structured to maximize prior learning. In addition, providing contextualized learning opportunities and real-work experience as an integrated aspect of the learning experience, helps to engage students who may otherwise be reluctant learners or intimidated by exclusively academic environments.

When designing education and training programs within each pathway, multiple points of entry and opportunities to build one certificate or degree upon another are important elements to supporting students and working learners with career progression. The articulated career pathway should include short-, moderate-, and long-term training and education programs to match the availability of different students (especially working learners and those balancing adult responsibilities) and include multi-level employment opportunities at different states of certificate or degree attainment.

Fortunately, many successful career pathway-oriented education and training programs across the country are pioneering new approaches to how curriculum is structured and how students move through different levels of learning to enter into and grow within careers.

See Washington State's [promising practice](#) below about their innovative I-BEST program that is being replicated in many communities across the country.

## Progressive and Modularized

Effective education and training programs in a career pathways system has coursework that is progressive and modular-

ized, moving in stepwise manner from high school through post-secondary training and education. Program sequences for each career ladder include required courses, as well as strongly recommended and directed electives for individual occupations. Students take courses in an intentional sequence that ultimately leads to their desired outcome (i.e. earning and/or building upon certificates and credentials). The education/training program is structured so that each course builds upon the next, with students moving through competencies, building and attaining new skills as they go. This not only occurs *within* the coursework, but also occurs *between* any two levels of training (or certificates). Sequenced academic and career courses lead the individual to progressively higher employment levels within a career ladder, or from one job to another within a career lattice, regardless of their skills at the point of entry.

When developing programs, those involved in program design may want to develop curricula in modules that are delivered in manageable “chunks” that can be completed by students with varying levels of proficiency. A chunked curriculum is one that has been broken down into smaller units, each of which is stackable and linked to other modules in a series that culminates in an industry-recognized credential. “Chunking” the curricula allows for individuals to earn credentials with more flexibility over time.

The flexibility of programs broken into progressive modules offers immediate access for students needing substantive remediation but who cannot commit to longer-term training. Programs that offer only short-term training may struggle to place their participants into meaningful employment. On the other hand, organizations that focus only on placing participants into jobs requiring long-term training will likely deter a significant number of potential participants who need immediate employment.



### PROMISING PRACTICE

#### ESL AND HEALTHCARE TECHNOLOGY, AN UNEXPECTED POWER COUPLE—WASHINGTON

In an effort to be more deliberate in combining adult literacy and job training, **Washington State** college leaders developed a model that integrates Adult Basic Education (ABE) and English as a Second Language (ESL) courses with technical training aligned to state career pathways. Research in Washington state and across the nation shows that relatively few ESL students transition to workforce training from basic skills courses. Those who do typically participate in training that is not aligned with career pathways leading to higher-wage positions and career advancement. Instead, ESL students typically take a patchwork of credit and non-credit courses, disconnected from industry-recognized training and credentials. The state addressed this problem by developing the **Integrated Basic Edu-**

**cation and Skills Training (I-BEST)** program, pairing ESL and ABE instructors and professional-technical instructors, who provide students with basic education and workforce skill training concurrently. The I-BEST model provides a mechanism for accelerating the learning of ESL students while simultaneously preparing them for work and higher-wage positions contributing to Washington state's economy. For example, for the Informational Technology for Healthcare pathway, the college developed a short certificate program that integrates ESL and ABE with introductory information technology (IT) and healthcare education. At the end of the course, completers receive a fifteen-hour certificate that qualifies them to work in a hospital or clinical setting. Participants also receive credit towards

a degree, along with a 46-hour certificate that earns them higher wages in occupations such as Unit Coordinator, Patient Coordinator, and Medical Records Clerk. The IT for Healthcare program continues through a bachelor's degree in health information or information technology. The IT Healthcare pathway offers career ladders for students/workers who want to advance into many IT-related professions. I-BEST courses are now offered statewide in all college systems for each of Washington's career pathways.

For more information see the Washington State Board for Community and Technical Colleges (SBCTC) Resources in Section Three: Resources.

## Accelerated

Adults are often time-conscious learners. Working learners and other non-traditional students do not often have multiple years at a time to invest in skill development and training. They need to complete their training as quickly as possible so that they can re-enter the labor market and begin earning an income. Many of these adults may have attained, through life experiences, some of the knowledge and skills required to achieve their career goals. Therefore, effective career pathways education and training programs maximize instruction time by ensuring they do not sit through classes that teach skills they already know. These programs give credit for demonstrated prior learning. Results of administered skill assessments can be used to target and align skill remediation goals with career pipeline objectives.

Not every student learns at the same pace. Offering self-paced training curricula in education and training programs is a good option for allowing working learners to accelerate their educational completion and degree attainment. Due to their focus and deep commitment levels, many adult learners, if given the opportunity, can move more quickly through training programs than their younger counterparts. Affording students the opportunity to self-pace makes the most of time spent in the classroom. These design techniques reduce the number of classes to be completed and the time it takes learners to reach their goals.

## Contextualized

Research indicates that students (both adults and youth) learn best when there is added value for learning and when the skills or knowledge are relevant to daily life. People are also more receptive to learning material that clearly communicates how a particular lesson will be useful to learners. Furthermore, material that draws on a learner's experience is often acquired more easily. Because learning works this way, instruction is most effective when it is contextualized.

Contextualized instruction develops skills, knowledge, and attitudes drawn from the context in which they will be used, using real-life materials and situations from that context. For example, adult literacy courses can teach reading, writing, or math within the context of an industry sector such as construction, allied health, or service and hospitality. These and other methods of contextualization allows learners to see real-world applications or purposes for their learning.

Research has shown that students perform better in English as a second language (ESL) courses that are contextualized within the context of the workplace. Studies by ESL programs who have implemented contextualized courses have shown higher skill gains in students compared to traditional instructional methods. Teams provide career-specific ESL courses to introduce participants to the career pathways. In addition, the work-focused instruction allows for other learning opportunities

such as hosting employer partners and/or other work experience opportunities.<sup>5</sup>

Contextualized instruction is also another opportunity to engage employer partners. As discussed in Element Two, your leadership team may want to involve industry/employer partners in the process of developing programs and curriculum to enhance contextualization, and to assure the training is relevant. Including employer feedback in the design of the curriculum will strengthen the material and reinforce the value to working adults. In addition, employers may be willing to provide workplace learning experiences such as job shadows, internships, and apprenticeships to support learning within a workplace setting. Exposure to an industry will provide learners the opportunity to see what it is like in a real job setting, providing information on common workplace practices and norms. Making work a central context for learning will also help students attain work readiness skills.

See an example of how contextualization was used to support student learning and ensure a pipeline of skilled labor for employers in the [promising practice](#) about Connecticut on the next page.

## ENSURE PROGRAMS LEAD TO INDUSTRY-RECOGNIZED AND/OR STACKABLE CREDENTIALS

Research done in the state of Washington found that low-skilled adult learners need to complete one year of college and a technical certificate to really begin to see considerable wage gains. Reaching this “tipping-point” is also strongly associated with a learner's likelihood of continuing to achieve two years of occupation-specific postsecondary education.<sup>6</sup> Likewise, programs leading to industry-validated certificates and credentials support employer recognition of an individual's work-readiness and level of competency. For these reasons, it is important to design education and training programs that lead to career-enhancing credentials.

## Types of Credentials & Definitions

Many different types of credentials are awarded or offered by different agencies and organizations. Understanding the different characteristics of each type of credential and the “doorways” they provide to those who earn them can be confusing.

A credential attests to qualification or competence and is issued to an individual by a third party with the relevant authority or jurisdiction to issue such credentials (such as an accredited educational institution, an industry-recognized association, or an occupational association or professional society).

<sup>5</sup> For more information on and examples of contextualized learning see, *Building Blocks for Building Skills: An Inventory of Adult Learning Models and Innovations* <https://learnworkforce3one.org/command/view.aspx?look=2001010545753981422&mode=info&ppara ms=>

<sup>6</sup> For more information, see *Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Longitudinal Student Tracking Study* (The “Tipping Point” Research) [www.sbctc.ctc.edu/college/finance/pl\\_recsum\\_and\\_rollup\\_001.pdf](http://www.sbctc.ctc.edu/college/finance/pl_recsum_and_rollup_001.pdf)



## PROMISING PRACTICE

### COURSEWORK IMITATES WORK—CONNECTICUT

Involving employers in the design and delivery of student instruction supports academic contextualization for students and increases the likelihood that employers will have a pipeline of work-ready employees. In response to growth in the local biotechnology industry, the **Eastern Connecticut Workforce Investment Board** convened a group of employers, educators, and economic development agencies along with local, state, and regional government officials to

address the shortage in skilled labor. The group designed a training program for Clinical Data Manager positions, collaboratively taught by industry experts and local community college instructors. Together the industry experts and instructors designed courses that include interactive multimedia components that mimic real work scenarios and develop industry-defined skill competencies. The Clinical Data Manager Program curriculum is certified by the Society

of Clinical Data Managers and validated by the local biotech industry. Among those who complete the program, 79% secure employment and 15% are placed in internships. In addition, 59% of incumbent workers completing the program are promoted.

For additional information see *Building Blocks for Building Skills* in Section Three: Resources

There are many different types of credentials:

- Educational diplomas, certificates and degrees
- Registered apprenticeship certificates
- Occupational licenses (typically awarded by state government agencies)
- Personnel certifications from industry or professional associations
- Other skill certificates for specific skill sets or competencies within one or more industries or occupations (e.g. writing, leadership, etc.)

The following glossary provides brief definitions for different types of credentials. Extended definitions of each are found in Attachment 2 of TEGL 15-10, the “*Credential Resource Guide*” (p. 2-5).<sup>7</sup> See *Section Three: Resources* for links to this document and other credential-related information.

**CERTIFICATE:** A formal award certifying the satisfactory completion of a postsecondary education program.

**DEGREE:** An award conferred by a college, university, or other postsecondary education institution as official recognition of the successful completion of a program of study.

**CERTIFICATION/PERSONNEL CERTIFICATION:** A certification indicates that the individual has acquired the necessary knowledge, skills, and sometimes personal attributes (based on a formal study) to perform a specific occupation or skill. Personnel Certifications are granted by non-governmental agencies (usually associations and companies) and are intended to set professional standards for qualifications.

**APPRENTICESHIP CERTIFICATE:** An award certifying the completion of an apprenticeship program. Apprenticeship Certifi-

cates are issued by the U.S. Department of Labor or a state apprenticeship agency. The apprenticeship system offers two types of credentials: 1) certificate of completion of an apprenticeship program, and 2) interim credentials.

**LICENSE/OCCUPATIONAL LICENSE:** An occupational license is typically granted by a Federal, state, or local government agency; is mandatory in the relevant jurisdiction; is intended to set professional standards and ensure safety and quality of work; is required in addition to other credentials; is defined by laws and regulations; and is time-limited. Violation of the terms of the license can result in legal action.

Credentials that enhance careers are industry-recognized, stackable, or portable, or combine two or all three of these qualities.

**INDUSTRY-RECOGNIZED CREDENTIALS:** These “are either developed or endorsed by a nationally-recognized industry association or organization and are sought or accepted by companies within the industry sector for purposes of hiring or recruitment.” Having credentials be industry-recognized ensures potential employers that holders of the credential have the core competencies needed by employers for industry jobs.<sup>8</sup>

**STACKABLE CREDENTIAL:** This is one that “is part of a sequence of credentials that can be accumulated over time to build up an individual’s qualifications....Typically, stackable credentials help individuals move up a career ladder or along a career pathway to different and potentially higher-paying jobs.” Stackable credentials produce faster results for the student and the employer because students do not have to waste time by only taking academic courses before beginning any technical courses. The stacked design also facilitates navigating a career pathway since aggregating credentials will build to a degree.

**PORTABLE:** This credential is “recognized and accepted as verifying the qualifications of an individual in other settings—either in other geographic areas, at other educational institutions, or

<sup>7</sup> For more information on credentials see, *Credential Resource Guide* <http://wdr.doleta.gov/directives/attach/TEGL15-10a2.pdf>

<sup>8</sup> For more information on industry-recognized credentials please see Community Research Partner’s publication, *Ohio Stackable Certificate: Models for Success* [http://www.communityresearchpartners.org/uploads/publications/Ohio\\_Stackable\\_Certificates\\_Models\\_for\\_Success.pdf](http://www.communityresearchpartners.org/uploads/publications/Ohio_Stackable_Certificates_Models_for_Success.pdf)

by other industries or employing companies.” This gives value to all technical and career courses and makes the pathway easier to navigate. A portable credential is especially beneficial to low-skilled learners who may need to navigate multiple education systems (ESL, ABE, Professional/Technical schools) to attain a college level, industry credential.

## Strategies for Getting Started

Ensuring that education and training programs lead to career-enhancing credentials requires several strategies:

- Providers use appropriate assessment tools to determine placement and advancement of skill levels.
- Training providers clearly articulate for-credit and non-credit offerings.
- Training leads to a stackable credential, is validated by the labor market, and articulates progressively to higher-level credentials or degrees.
- Where industry-specific career ladders are not possible, short-term trainings in multiple and related occupations offer the opportunity for lateral movement and direct advancement.

As a first step, your team may want to Identify and classify all local training providers and the specific credentials their programs award. Your list should indicate if the provider is accredited, if it is on the state’s eligible training provider list, and whether it is public or private. It is important to include all institutions, regardless of status. See the **Tool Box** at the end of this section for resources to help identify local training providers.

See an example of how bridge programs for low-skilled students in San Francisco helped them earn industry-recognized credentials in the **promising practice** below.

## PROVIDE COMPREHENSIVE SUPPORT SERVICES

Although career pathways education and training programs are designed to do a better job of meeting the needs of life-long learners than traditional programs, some individuals will not be able to progress through them without the assistance of wrap-around and support services. Therefore, it is imperative to design programs that offer a broad range of support services that meet the needs of targeted populations. Access to support services is especially important during points of an individual’s transition from work to training or from training to work.

During the program design phase, the team assesses current service provision and providers and identify and address gaps in wrap-around and support services. Wrap-around services provide guidance and support that is tailored to meet the unique needs and responsibilities of target populations. At a minimum, a program provides the following services:

- Career assistance
- Case management
- Supportive services
- College adjustment and retention services
- Life skills assistance
- Employment assistance

### Career Assistance

Career assistance consists of providing career information, career assessment, career counseling, and help with career planning. Providing career information ensures that individuals who have limited knowledge about the various careers and career pathways available in the community will get the facts and data they need to find a job and/or career pathway that meets their needs both now and in the future.



## PROMISING PRACTICE

### CROSSING THAT BRIDGE WHEN THEY GOT TO IT—SAN FRANCISCO

For low-skilled workers, earning a credential is the primary gateway to a higher paying job. However, some of the best educational and training institutions have entrance requirements that pose barriers to potential students who might otherwise be well suited for programs or their related occupations. Individuals who have low basic skills, lack a high school diploma or GED, or speak English with limited proficiency may find themselves unable to enroll in training programs. Career bridge programs, like those in the **City of San Francisco**, provide an alternative avenue for those who are not able to access

education and training programs through the mainstream entrance. San Francisco’s bridge programs provide targeted instruction to address the gap between the education levels of participants and the requirements of institutions. For example, San Francisco Works (SFWorks) and the City College of San Francisco (CCSF) developed a semester long program, **Bridge to Biotech**, to train individuals with little or no scientific background for entry-level positions with biotech companies and prepare them to pursue postsecondary education in the life sciences. Participants are screened by SFWorks and at-

tend classes at the CCSF. Individuals with skill levels between 9th and 12th grade science and math receive training that prepares them for the college’s one- and two-year certificate programs for Biomanufacturing Technician, Biotech Technician, and Stem Cell Technician. After completing the bridge program, students may directly enroll in one of these Biotech certificate programs, bypassing traditional barriers to attaining this type of degree.

For more information see *Thriving in Challenging Times* in Section Three: Resources



Understanding the many possible careers is only part of what it takes to choose a career. Individuals also need to know where they will best fit within the labor market. Therefore, an effective program design also includes an assessment of each individual's skills (academic skills, "soft" or work readiness skills, and technical skills), abilities, and interests. It also needs to take into account an individual's previous experience, current life situation, salary needs, previous training, previous schooling, and the certificates and/or credentials he or she holds. This *career assessment* process helps individuals determine "where they are now."

Through career counseling, during which career information and career assessment information is explored and discussed, individuals are assisted in choosing a particular career, or "where they are going." Career counseling also helps the individual develop a career plan that will outline the steps he or she will take to move towards that career choice. In some cases it will be a direct route: training, attainment of a degree, and then placement. For others it will be a series of entrances and exits on the career training pathway before they reach their ultimate jobs in their chosen career fields. Therefore, it is important for each individual to have an individualized career development plan that shows the unique steps she or he will take to reach her or his ultimate goal. Career planning will support an individual's journey through the pathway, and provide "roadmaps" outlining the education, training, and credentials she or he must complete.

## Case Management

For individuals who are chronically unemployed or under-employed, re-entering a school setting can be daunting. Case management is key to ensuring an individual successfully engages in and completes his or her training. Case management can be provided by the training institution, as in the case of the dedicated counselor on campus, or can be provided by partner organizations.

Case management can take on many forms including:

- Enrolling students in groups through learning communities or cohorts
- Providing dropout prevention strategies and counseling to address barriers and help improve student success
- Enrolling students in TRIO, a federal program designed to "help students overcome class, social and cultural barriers to higher education"
- Providing a dedicated counselor on campus for career pathways students who will:
  - ◊ Coordinate all of the support services;
  - ◊ Interface with the traditional student service staff on campus to get needs met;

- ◊ Collaborate with other college staff members on academic advising;
- ◊ Monitor and support students in selecting classes; and
- ◊ Regularly check in on student performance and attendance so that a student who is struggling can be quickly identified and assisted.

## Supportive Services

Supportive services are an important tool in addressing life issues that may occur during an individual's participation in a career pathways program. There is an on-going assessment of an individual's need for assistance in a variety of areas such as child care, transportation, uniforms, tools, and medical and living expenses while in training. This will ensure that each individual is able to fully participate in and complete his or her education and training program.

As educational institutions have limited financial and human capital resources, community-based organizations and agencies often play a vital role in providing these support services. In addition, due to their strong cultural connections with targeted populations, CBOs may be particularly effective in supporting the needs of these students. This is another reason why you will want to build strong partnerships for a more effective career pathways system.

Financial aid (including assistance in completing the forms) will assist in paying tuition, fees, books, and supplies. Providing supportive services in the form of vouchers for child care and transportation allows participants to concentrate on completing their courses of study. Subsidizing training through incentive payments permits low-income participants with pressing financial needs to participate.

Tip: Take care when designing the programs to ensure that these supportive services are integrated among the partners and not duplicated by various agencies.

## College Adjustment and Retention Services

Low skilled and low-income learners often face multiple barriers to success. Some of these barriers, such as child care, transportation, or financial challenges are the result of life circumstances, which can be addressed through partner agency services, as discussed above. Other barriers result from the learning process itself. This can include limited language skills, lack of college readiness, and/or inability to navigate the system. Individuals with language and learning barriers are often discouraged from participating in training and advanced education programs. In designing your career pathway programs, you may want to identify strategies for reducing or removing obstacles commonly faced by your target populations. As with case management, these services may be provided by the training institution or one of the other partner agencies.

For example, to address limited English proficiency, some schools—as part of their introduction to the career pathway—



## PROMISING PRACTICE

### FLEXIBILITY EQUALS ACCESS AND RETENTION—OHIO

Ensuring student success can be as simple as providing training programs that are flexible, accessible, and offer certain support services. Owens Community College (OCC) located in **Toledo, Ohio**, recognized early on that providing accelerated instruction in accessible locations would increase enrollment and retention rates at the campus. In 2007, OCC opened up the Learning Center at the Source, a One-Stop Career Center in downtown Toledo. Understanding the need to quickly get low-skilled adults into the workforce, OCC created accelerated basic skills courses that included two levels of

remediation in one class. Accelerating the instruction and providing the course in satellite locations allows OCC to provide instruction during the day, evenings, or weekends, making the program more accessible to working adults and parents. Additionally, OCC instituted, as part of MDRC's Opening Doors demonstration project, enhanced support services coupled with modest scholarships for eligible adult students. Students are assigned advisors who have smaller case-loads than most advisors on the campus and they are required to meet frequently to discuss their academic progress and address any issues

that might impact their participation in the training. Eligible students also receive a \$150 scholarship for two semesters and are supported with direct access to financial aid, one-on-one tutoring, and assistance with common barriers such as lack of transportation and childcare.

For more information on Owens Community College read *Ohio Stackable Certificates: Model for Success and Enhancing Student Services at Owens Community College: Early Results from the Opening Doors Demonstration in Ohio* in Section Three: Resources.

provide career-specific ESL courses. Individuals needing language assistance can learn at a much faster pace if other education and training is combined with ESL. In Washington's I-BEST program, ESL students on average earned four achievement points per student for increasing their basic skills compared to three points earned by students taking only ESL or ABE/GED classes. However, students in standard ESL classes who combined their basic skills classes with other instruction also garnered four points, demonstrating that contextualized basic education can increase the rate at which students gain skills and move to the next educational level. Even a moderate increase in achievement levels can increase retention significantly.<sup>9</sup> (See the **promising practice** about I-BEST featured earlier in this section).

As many of the individuals participating in career pathways may have been away from training for several years, they may need assistance in learning how to study most effectively. Therefore, providers offer workshops on study skills, test strategies, note-taking strategies, and how to make the most of study time.

Some individuals may need extra tutoring help, or mentoring. In Kentucky, colleges were encouraged to use in their career pathways initiative the "Ready to Work" TANF model, which includes mentoring. In Wisconsin's RISE partnership, colleges and workforce development entities that respond to the RFPs are expected to include "pathway support for lifelong learning" such as mentoring.

See how flexible programming and supportive services helped students in Ohio access and complete post-secondary training in the **promising practice** above.

### Life Skills

Sometimes, an individual's life issues prevent him or her from being successful in training. Including life skills within a career

pathways program design is a proactive means for ensuring the individual can be successful. For example, Arkansas includes seminars on time management and budgeting on some college campuses for career pathways students.

### Employment Assistance

A final component of student wrap-around and support services is employment assistance. This may be coordinated by the dedicated career pathways counselor, by school staff members in the career center, school staff members in other departments or, staff members in other partner agencies. Employment assistance comprises several activities:

- Workforce readiness preparation, such as assistance with resume development, training in job search techniques, and soft skills workshops
- Connection to internships, co-op programs, work/study programs, work experiences, and job shadowing
- Connection to placements in full-time jobs
- Job retention assistance

Employment assistance increases learning opportunities beyond the classroom and ensures the individual smoothly transitions into and maintains a job.

### PROVIDE FLEXIBLE SCHEDULING

When the career pathways system evolves beyond focusing on a few target populations, a variety of individuals will be participating in the career pathways education and training programs. This includes recent high school graduates, incumbent workers, individuals who have been dislocated from their jobs, adult learners, part-time workers/learners, individuals returning to the labor force, and recently returning veterans. The normal college and university schedule of semester classes that meet only three to four hours per week may not meet the needs

<sup>9</sup> For more information on addressing the needs of English language learners and Washington's I-BEST Model, see the Washington's State Board for Community and Technical Colleges' publication *I-BEST: A Program Integrating Adult Basic Education and Workforce Training*, Washington State Board for Community and Technical Colleges, 2005 [www.sbctc.ctc.edu/college/assessment/i\\_best\\_research\\_report\\_05-2.doc](http://www.sbctc.ctc.edu/college/assessment/i_best_research_report_05-2.doc)

of all of these learners. The education and training programs are designed to meet the flexibility and scheduling needs of lifelong learners. Several strategies can be used to provide flexible scheduling:

- Offer non-semester-based classes.
- Offer classes in the evening and on weekends.
- Offer alternative locations for training, including on location at businesses.

- Provide flexibility around course completion when students encounter unforeseen barriers.
- Develop web-based training for individuals who may lack easy access to education and training facilities, but who can complete online coursework from home computers.
- Develop mobile training sites for individuals in rural areas who may lack access to home computers and/or broadband Internet connections.



## Team Tools

See Section Two—*Team Tool How-to Guide* for facilitator instructions for each of the following tools:

Six Key Elements Graphic Framework <https://learnwork.workforce3one.org/view/2001120641504542734/info>

Six Key Elements Readiness Assessment Tool (printable documents)  
<https://learnwork.workforce3one.org/view/2001120642516555109/info>

Six Key Elements Readiness Assessment Tool (online tool) <http://www.mahernet.com/tiki/tiki-login.php>

Six Key Elements Action Planning Tool <https://learnwork.workforce3one.org/view/2001120642119875739/info>

Credential Asset Mapping Tool <https://learnwork.workforce3one.org/view/2001120641984071044/info>

Occupational Certification Worksheet <https://learnwork.workforce3one.org/view/2001120642273559927/info>

Career Pathways Program Design Chart <https://learnwork.workforce3one.org/view/2001120641684316308/info>

Career Pathways Road Map Tool <https://learnwork.workforce3one.org/view/2001120641835697644/info>

## Federal Websites, Tools, and Resources

Competency Model Clearinghouse <http://www.careeronestop.org/competencymodel/>

Tools for building Competency Models <http://www.careeronestop.org/competencymodel/careerpathway/cpwoverview.aspx>

TEGL 15-10, Attachment 2—*Credential Resource Guide* <http://wdr.doleta.gov/directives/attach/TEGL15-10a2.pdf>

Tools for building career ladders and career lattices  
<http://www.careeronestop.org/competencymodel/careerpathway/cpwoverview.aspx>

Perkins Collaborative Resource Network <http://cte.ed.gov/nationalinitiatives/rpos.cfm>

Office of Vocational and Adult Education's Programs of Study Framework  
<http://cte.ed.gov/nationalinitiatives/rposdesignframework.cfm>

National Association of State Directors of Career Technical Education Consortium <http://www.careertech.org/>

Current Employment Statistics <http://www.bls.gov/ces/>



Employment Dynamics <http://www.bls.gov/news.release/cewbd.toc.htm>

Employer Locator (COS) to identify local firms in growing industries  
<http://www.careerinfonet.org/employerlocator/employerlocator.asp?nodeid=18>

Employer Locator (COS) to identify the industry sector of a specific local employer  
<http://www.careerinfonet.org/employerlocator/EmpLocatorByKeyword.asp?nodeid=18&action=keyword>

Bureau of Labor Statistics <http://www.bls.gov/oes/current/oesrci.htm>

My Next Move <http://www.mynextmove.org/>

O\*Net <http://online.onetcenter.org/>

Licensed Occupation Finder [http://www.careerinfonet.org/licensedoccupations/lois\\_keyword.asp?nodeid=16&by=keyword](http://www.careerinfonet.org/licensedoccupations/lois_keyword.asp?nodeid=16&by=keyword)

Certification Finder [http://www.careerinfonet.org/certifications\\_new/default.aspx](http://www.careerinfonet.org/certifications_new/default.aspx)

Apprenticeship Program Finder <http://oa.doleta.gov/bat.cfm>

Education and Training Provider List <http://www.careerinfonet.org/edutrainig/>

## **“Real Time” Labor Market Research Websites and Tools**

Wanted Analytics <http://www.wantedanalytics.com/>

Burning Glass <http://www.burning-glass.com/technology/job.html>

EmployOn <http://www.employon.com/>

Indeed.com <http://www.indeed.com/>

Simply Hired <http://www.simplyhired.com/>

Geographic Solutions <http://www.geographicsolutions.com/>

Monster.com [www.monster.com](http://www.monster.com)

## **Reports & Publications**

*Breaking Through Practice Guide*, Jobs for the Future, Spring 2010  
<http://www.jff.org/publications/education/breaking-through-practice-guide/1059>

*Creating Career Pathways for Frontline Healthcare Workers*, Jobs for the Future, January 2011  
<http://jobs2careers.org/resource/creating-career-pathways-for-frontline-health-care-workers/>

*Career Ladders for the Hard to Employ Issue Brief*, Social Policy Research Associates, September 2010  
<https://www.workforce3one.org/view/2001027338263742261/info>

*Jobs and Career Ladders for the Hard to Serve Webinar*, Social Policy Research Associates, May 2010—Recording  
<http://www.workforce3one.org/view/3001016649301904425/info>

*Employer Resource Networks: Uniting Businesses And Public Partners To Improve Job Retention And Advancement For Low-Wage Workers*, Social Policy Research Associates and Mathematica Policy Research Associates, June 2010  
<https://www.workforce3one.org/view/2001027338066773526/info>

*Tuning In to Local Labor Markets: Findings From the Sectoral Employment Impact Study.* Private/Public Ventures, July 2010  
[http://www.ppv.org/ppv/publication.asp?search\\_id=20&publication\\_id=325&section\\_id=0](http://www.ppv.org/ppv/publication.asp?search_id=20&publication_id=325&section_id=0)

*Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Longitudinal Student Tracking Study (The “Tipping Point” Research).* Washington State Board for Community and Technical Colleges, 2005  
[http://www.sbctc.ctc.edu/college/d\\_basicskills.aspx](http://www.sbctc.ctc.edu/college/d_basicskills.aspx)

*I-BEST: A Program Integrating Adult Basic Education and Workforce Training,* Washington State Board for Community and Technical Colleges, 2005 [www.sbctc.ctc.edu/college/assessment/i\\_best\\_research\\_report\\_05-2.doc](http://www.sbctc.ctc.edu/college/assessment/i_best_research_report_05-2.doc)



## ELEMENT FOUR: IDENTIFY FUNDING NEEDS AND SOURCES

Necessary resources are raised and/or leveraged to develop and operate the career pathway system and its education and training programs.

Because career pathways system development involves agencies from different sectors, and is developed around cross-system activities, a primary function of the career pathways leadership team involves identifying funding needs and sources to support the collaborative work. Leadership team members often play an important role in identifying the costs associated with developing and maintaining both the career pathway **programs** and the core components of the **system**. It takes a team effort to identify available sources of funding for programs and system operations, exploring opportunities for braiding funding across agencies, and assessing gaps so that the partnership can work together to seek additional resources. This process can be complex, but may be necessary if comprehensive system alignment is the goal.

Once funding needs and potential sources have been identified, your leadership team may want to work together to secure and leverage contributions from key state and local partner agencies to cover as much of the projected costs as possible. For any unmet needs, your team members may want to secure funding from public agencies and private and philanthropic organizations to support the development and maintenance of system functions and program design, implementation, and operations.

### QUICK TIP

#### KEY QUESTIONS FOR SECURING FUNDING:

What are your costs?

- System development and maintenance
- Education and training program development and maintenance
- Direct customer costs

What contributions will each partner make to each of the above types of costs?

What additional funding sources have you explored to cover the unmet need?

Your leadership team may want to carry out the following strategies to sustain your career pathways system financially:

- Identify costs associated with system and program development and operations.
- Determine the funds to be contributed by key partner agencies.
- Secure funding from public agencies and private foundations and organizations.

### IDENTIFY THE COSTS ASSOCIATED WITH SYSTEM AND PROGRAM DEVELOPMENT AND OPERATIONS

As a first step, your leadership team members may want to conduct an assessment of the costs associated with system development and maintenance, as well as program development and operations.

#### Identify the Costs Associated with System Development and Maintenance

System development and maintenance costs include those required to create and operate the career pathways system. While costs associated with running education and training programs may be obvious to plan for, those associated with coordinating cross-system functions and overall system development and maintenance may be overlooked. System development costs, those involved in creating the system, occur only once. They include the costs associated with carrying out the following activities:

- Recruit, interview, and hire an intermediary individual or organization.
- Recruit and engage partners to form the leadership team.
- Identify local partners to participate in local career pathway operations teams.

- Develop MOUs with key partners and employers.
- Develop MOUs between state and local agencies to support effective working relationships.
- Educate and inform agencies within the system and people within the community about career pathways.
- Conduct initial state and regional labor market analyses.
- Conduct initial state and regional asset mapping and analysis.
- Create initial policies to support the development of an effective career pathway system.
- Inform legislators of career pathway system development work and program alignment changes.
- Develop system measures for career pathways system improvement.

Your leadership team can identify the ongoing system maintenance costs incurred in supporting broad-based system enhancement and operations by carrying out the following activities:

- Support operational functions for coordinating state and local teams, including ongoing funding for an intermediary individual or organization.
- Recruit and engage additional partners as needed to serve on the leadership team.
- Identify, recruit, and engage additional local partners to participate in local career pathway teams.
- Revise MOUs with key partners and employers as necessary.
- Revise MOUs between state and local agencies as necessary to support effective working relationships.
- Update agencies within the system and people within the community about career pathways.
- Conduct ongoing state and regional labor market analyses.
- Conduct ongoing state and regional asset mapping and analysis.
- Identify and align policies to support effective career pathway system operations.
- Inform legislators of career pathway system outcomes and program alignment changes.

- Maintain, analyze, and utilize system measures for career pathways system improvement.

### **Identify the Costs Associated with Developing and Implementing Programs**

There are many costs associated with developing and implementing education and training programs. These costs arise from carrying out the following activities:

- Design education and training programs.
- Operate pilot programs (e.g. personnel, facilities, equipment, materials and supplies).
- Develop contextualized curriculum aligned with industry-validated competency models.
- Revise instructional formats to be more accelerated and compress training content.
- Coordinate initial employer vetting of curricula.
- Ensure career ladders lead to industry-recognized credentials.
- Provide initial cross-system professional development for staff.
- Develop new avenues for earning credit for work that was previously noncredit-bearing, as well as credit for prior work and experiences.
- Cover unreimbursed program costs for pilot programs, such as those associated with equipment and faculty time for instruction.
- Develop outcome measures and methods for evaluating program effectiveness.

Since the career pathways system will be evolving and new programs will constantly be developed to meet the changing needs of businesses, the costs of designing and implementing these programs will be ongoing.

### **Identify the Costs Associated with Program Operations**

After education and training programs have been implemented, there will be costs to operate and maintain these implemented programs. These costs are similar to those for program implementation and include those associated with carrying out the following activities:

- Update education and training programs.
- Bring pilot programs to full scale.

- Operate programs (e.g. personnel, facilities, equipment, materials and supplies).
- Update contextualized curriculum aligned with industry competencies.
- Develop new or break down existing courses into more flexible, stackable modules.
- Sequence course work into modules or “chunks” that lead to industry-recognized certificates, and that can be “stacked” towards earning progressively higher degrees.
- Coordinate ongoing employer vetting of curriculum.
- Ensure that training leads to industry-recognized credentials.
- Provide ongoing cross-system professional development for staff members.
- Provide credit for work that was previously noncredit-bearing, as well as credit for prior work and experiences.
- Cover unreimbursed program costs such as those associated with equipment and faculty time for instruction.
- Collect and analyze data to track program outcomes and support program improvement.

## DETERMINE FUNDS TO BE CONTRIBUTED BY KEY STATE/LOCAL PARTNER AGENCIES

Once costs have been determined, state and local partners work together to determine how relevant state and local partner agencies will pay for the various operational and functional components of the career pathways system. For example, one partner may contribute funds covering outreach and recruitment; another may support case management and counseling;

while additional partners may use their funds for curriculum development and instruction and training costs. The leadership team will determine what existing funds can be leveraged to support each of the core components and how much additional funding must be raised and leveraged from federal, state, local, and foundation sources.

Resource maps help teams calculate existing and needed funding sources. The “Team Tools How-to Guide” in Section Two of this Toolkit provides an overview of how *Input Resource Maps* and *Service Resource Maps* can help teams identify the agency funds available to support specific services offered through the career pathways system. See Section Two: *Team Tools How-to Guide* for facilitator instructions and examples of each type of Resource Map.

See how the leadership team in the state of Virginia is leveraging public and private funds for their career pathways initiative in the **promising practice** below.

## SECURE FUNDING FROM PUBLIC AGENCIES AND PRIVATE FOUNDATIONS AND ORGANIZATIONS

The leadership team explores all potential funding sources available to cover the shortfall between total costs and what partner agencies and organizations can contribute and leverage. The team will seek funding from a variety of sources, including public agencies, private foundations, and non-profit organizations, including the following:

- WIA Titles I, II, and IV
- Wagner-Peyser Act funds
- Carl Perkins Act funds
- TANF funds
- State government
- Economic development agencies



### PROMISING PRACTICE IT TAKES A VILLAGE...TO FUND CAREER PATHWAYS—VIRGINIA

Finding sufficient funding for an initiative is inevitably challenging. State and local leaders in **Virginia** are addressing this challenge by fostering local, state, and Federal partnerships and by soliciting both public and private funding. In 2007, Governor Tim Kane created the multiagency statewide **Career Pathways Task Force and Work Group**, chaired by the Secretary of Education. The task force brought together the Virginia Department of Education, the Virginia Community College System (VCCS), the Department of Labor and Industry, the Virginia Economic

Development Partnership (VEDP), and other state agencies. Having a range of local and state agencies at the table has led to collaborative funding for the initiative. In addition to securing funding from state and local agencies, Virginia has also leveraged Federal funding through the Workforce Investment Act, postsecondary Perkins funds, and most recently the Department of Labor’s Career Pathways grant. The task force did not stop with public funding, however – they developed a proposal to the Ford Foundation and received \$300,000 to launch career pathway

initiatives in three workforce regions. Virginia strategically engaged private foundations, state and Federal agencies, and education and workforce agencies in order to create shared responsibility for funding a common goal: development of an effective career pathways system.

For more information, see Virginia’s profile on the Career Pathways Initiative online Community of Practice at [https://learnwork.workforce3one.org/page/sites\\_va](https://learnwork.workforce3one.org/page/sites_va)



## PROMISING PRACTICE

### FUNDING THE FUTURE—PHILADELPHIA

Engaging employers and understanding future workforce trends at the start of an initiative is crucial to developing effective career pathway systems that serve employers and workers alike. Too often relationships with employers are sought at the end of partnership or program development, leading to insufficient outcomes for both employers and students.

In Pennsylvania, a group of employers partnered with local and national health care unions to develop the **Philadelphia-based 1199C Training and Upgrading Fund (TUF)** as a way to meet the needs of employers while expanding and connecting educational supports for low-

skilled adults. The TUF is an alliance of 55 employers who make monthly contributions (1.5% of gross payroll) to the fund. The fund paid for the development of a new healthcare education and training school, and remaining funds subsidize education and training for union members and individuals in the broader community who are pursuing health careers in Philadelphia.

TUF has helped union and community members acquire new skills, which supports employee retention and helps low-skilled adults enter career pathways to higher earning potential. It also meets the demands of its employer base by regularly updating training to address new work

requirements and other changes in the industry. Members of the leadership team meet regularly with employers, conduct focus groups to evaluate program design, and host symposiums focused on emerging trends in the healthcare field. The initiative has received recognition from Secretary of Labor Solis and Secretary of Education Duncan for paying attention to the interplay of employer and workforce needs.

For more information, visit the 1199C Training and Upgrading Fund's website listed in Section Three: Resources.

- Private foundations
- Local businesses

See how employers funded the development of a new health education and training program in Philadelphia in the above [promising practice](#).

See Section Three: Resources Section of this Toolkit, *Funding Career Pathways and Career Pathway Bridges: A Federal Policy Toolkit for States* to find a list of funding sources that may be used to support career pathways systems.

- Supportive services (transportation, child care, uniforms, living expenses while attending training, etc.)

See Section Three: Resources Section of this Toolkit, *Funding Career Pathways and Career Pathway Bridges: A Federal Policy Toolkit for States* to find how each funding source may support various costs of career pathways systems.

## Secure funding to off-set participants' training fees

You team may also want to look at off-setting participant training fees and other direct customer costs through public or private sources. Some of direct training costs may be covered by student aid programs (such as Pell grants and state grant programs), WIA funding, employer-paid tuition reimbursement programs, and scholarships. Other direct customer costs may be covered through federal funds such as those from WIA, TANF, and TAA.

Direct customer costs are associated with the following:

- Tuition and fees, books and supplies
- Assessment services
- Academic support and tutoring
- Career counseling, advising, and planning
- Case management and coaching, including navigation of financial aid options and educational programs
- Mentoring for youth
- Work experience and internships

## Team Tools

See Section Two—*Team Tool How-to Guide* for facilitator instructions for each of the following tools:

Six Key Elements Graphic Framework <https://learnwork.workforce3one.org/view/2001120641504542734/info>

Six Key Elements Readiness Assessment Tool (printable documents) <https://learnwork.workforce3one.org/view/2001120642516555109/info>

Six Key Elements Readiness Assessment Tool (online tool) <http://www.mahernet.com/tiki/tiki-login.php>

Six Key Elements Action Planning Tool <https://learnwork.workforce3one.org/view/2001120642119875739/info>

Service Mapping Tools <https://learnwork.workforce3one.org/view/2001120642445820802/info>

## Reports and Publications

*Funding Career Pathways and Career Pathway Bridges: A Federal Policy Toolkit for States*, Center for Law and Social Policy, October 2010 <http://www.clasp.org/postsecondary/pages?id=0003>

*Dollars and Sense: Using Federal Resources to Fund Career Pathways and Bridges*, Center for Law and Social Policy, November 2010 <http://www.clasp.org/postsecondary/publication?id=0840&list=publications>

*Leveraging Funding Opportunities for Disadvantaged Populations: Strategies and Sources*, Social Policy Research Associates, September 2010 <https://www.workforce3one.org/view/2001027337891370541/info>







## ELEMENT FIVE: ALIGN POLICIES AND PROGRAMS

State and local policy and administrative reforms are pursued in order to promote career pathway system development and to support implementation.

As the preceding pages have made clear, implementing a career pathways system is not business as usual. It requires new approaches, new partnerships, creativity, and hard work. It requires changing not only *what* the partners are trying to do and *how* they do it, but also modifying the structure within which the system operates in fundamental ways. This structure—made up of the laws, regulations, policies, and procedures associated with workforce development, education and training, social services, economic development, and the various associated funding streams—typically poses a variety of barriers to implementing the shared goals and vision of a career pathways initiative. The success of the initiative will largely depend on partners finding the relevant policy levers that allow them to align the structure in support of the new vision. They will find that some of those levers—such as program procedures—can be moved quite readily, while others—such as state statutes—require legislative changes that require the building of support among elected and appointed leadership at the state level, usually takes a long time.

The art of building career pathway systems is in determining which changes are most crucial and finding a way to sequence their implementation based on the pace of change that each allow. This usually leads to an iterative implementation process where each successive change builds on the other but delays

with one don't hold up the rest of the change process. Furthermore, because the policy environments vary from state to state, recipes for success, necessarily, have to be devised at the state and local levels.

This change process may be broken down into three tiers of activities:

- Identify and address statutory and administrative barriers to cross-agency collaboration.
- Identify and pursue needed reforms in state and local policy.
- Reform program procedures as needed.

### IDENTIFY AND ADDRESS STATUTORY AND ADMINISTRATIVE BARRIERS TO CROSS-AGENCY COLLABORATION

Even if partners are willing to do whatever is necessary to develop a comprehensive career pathways system, there may be statutory barriers to cross agency collaboration. In order to create an effective career pathways system, the following barriers that may have a basis in statutes need to be addressed:



### PROMISING PRACTICE

#### PUBLIC/PRIVATE PARTNERSHIPS LEAD TO LEGISLATIVE REFORMS—MASSACHUSETTS

In some states, career pathways development begins at the local or regional level and leads to state-level legislation and policy reforms that form the foundation of a comprehensive statewide career pathways system. In 2001, a group of local funders and government officials in **Boston, Massachusetts** gathered to explore how the philanthropy community could augment public investment in workforce development initiatives and better meet the needs of employers. These discussions led to the founding of **SkillWorks**, a multi-year, dual-customer initiative focused on helping low-income individuals attain jobs in high-demand industries while helping

businesses find and retain skilled workers.

Over time, the SkillWorks partnerships expanded beyond the region and led to the creation of the **Workforce Solutions Group (WSG)**, a broad-based coalition of workforce development organizations dedicated to improving and reforming the Massachusetts workforce development system. WSG partners went on to lead a statewide public policy advocacy campaign that formed the basis for the Workforce Solutions Act of 2005. Additionally, WSG advocacy led to major advances in workforce development programs across the state. In 2006, the Commonwealth of Massachusetts implemented the

Workforce Competitiveness Trust Fund (WCTF), which supports sector partnerships across the state. In January 2011, SkillsWorks and WSG filed groundbreaking legislation through the Middle Skills Solutions Act, seeking to increase credential attainment and wages for Massachusetts workers. If passed, the bill will build upon existing resources to develop a stronger system for preparing adult, non-traditional students for the high-demand occupations of the future.

For more information see the SkillsWorks website and the Workforce Solutions website listed in Section Three: Resources.



## PROMISING PRACTICE

### HOW TO MEET WORKFORCE NEEDS—ALIGN CAREER PATHWAYS UNDER TANF—ARKANSAS

Students in the state of Arkansas have historically had educational attainment levels below the national average. For generations, **Arkansas** was the only state in the southern region where more than half of the adults did not have post-secondary degrees. In order to remain attractive to employers as a place to do business, Arkansas needed to make changes in its state institutions to encourage post-secondary education and to increase retention rates. Realizing that incumbent workers will remain as the majority workforce population through 2020, the state chose to focus its efforts on adult learners, using the **Arkansas Career Pathways Initiative** to align funding streams, data management systems, and performance measures across agen-

cies in order to promote the career pathways programs for incumbent workers and other adult learners and facilitate their successful completion of degree and certificate programs.

Arkansas state administrators made one key legislative step: classifying career pathways under state TANF legislation. This allows TANF recipients who participate in any career pathway program offered at a community college to count their education toward the new work requirement. Under this legislation, funding from the Department of Workforce Services finances career pathway education and training programs provided by the Arkansas Department of Higher Education. As a result, these two organizations' goals are aligned to common outcome mea-

sures and they can more easily collaborate on all aspects of system design and service delivery, including staff professional development, assessment, provision of support services, and case management. Both agencies are held accountable to the outcomes measures and count successful participant outcomes toward their federal reporting obligations. This realignment of policies strengthens cross-system working relationships at the state and local levels and eases the sharing of information across partners.

For more information see *Career Pathways as a Systematic Framework: Rethinking Education for Student Success in College and Careers, Charting a Path*, and *Arkansas Career Pathways* in Section Three: Resources.

- Lack of capacity for co-enrollment (or concurrent enrollment of eligible individuals in one or more state of federal programs)
- Lack of knowledge and capacity for braiding funding
- Disparate performance measurement systems for each funding source or program
- Conflicting service, population, and/or performance measurement definitions within different funding sources or programs
- Conflicting requirements that multiple funding sources be used as the “last resource” for services

Your leadership team may also decide to enlist the support of stakeholders for communicating the need for state legislative policy changes. Members of local WIBs and/or the statewide WIB Association can be highly effective in communicating this information to legislators. In addition, business and industry partners can be effective advocates for legislative change.

See the example of how leaders in Boston, Massachusetts led to state legislative policy reforms in the **promising practice** on the previous page.

## IDENTIFY AND PURSUE NEEDED REFORMS IN STATE AND LOCAL POLICY

In order to support smooth program design and system coordination, your leadership team may need to identify *key policy changes* necessary to implement the goals and vision for the career pathway initiative, including those that are necessary for coordinating efforts across the state and/or region. Many current policies—quite inadvertently—support the *status quo*, in which many adult education and postsecondary training institutions and career and technical education and academic

programs operate in silos. Each may not be aware of what the other programs are doing, thus making it difficult to work together. The end result is that individuals are not able to easily transition between academic programs, adult education development, and occupational skills training.

For example, current policies often do not promote active coordination between One-Stop and TANF service providers, which means that an individual can be served concurrently by both without either agency being aware that the other is serving the same person. Your leadership team members may want to support intentional collaboration between and among different public agencies, reducing duplication of services and better meeting the holistic needs of individual customers.

See the **promising practice** example above about how Arkansas classified Career Pathways under key state TANF legislation.

Another common challenge is that traditional education and training programs that operate on a semester or quarter system may not fit the needs and requirements of many working learners. For example, low-income/low skilled individuals, incumbent workers, and dislocated workers, often need programs that support their ability to re-skill quickly and in short, focused, timelines, with the opportunity to build on their skills incrementally over time and often while working. Addressing policies in state and local public education institutions that allows for greater flexibility in program schedules and educational programming is important for increasing access and supporting program completion for non-traditional students. In a career pathways system, changes in these areas are essential.

Your leadership team may want to review current state and local policies and identify those that need to be reformed in order to address issues such as these. These topics can provide the core around which new policies are developed. Once necessary policy reforms are identified, your local and state partners can jointly strategize on revisions and reforms. For the necessary changes to be made, you will likely need support



## PROMISING PRACTICE IN THE FAST TRACK FROM LOCAL TO STATEWIDE—MINNESOTA

The state of **Minnesota** is rapidly expanding its career pathways system from local areas to the state as a whole. Beginning in 2006, the Minnesota Department of Education, Office of Adult Basic Education and the Minnesota Department of Employment and Economic Development developed joint programming to better serve common clients across the Workforce Investment System. Additionally, local ABE programs and Minnesota state colleges and universities teamed up to launch the three-year (2007–2010) Minnesota ABE Transitions to Postsecondary Education and Employment Initiative. These activities laid the groundwork for receiving a

Shifting Gears planning grant from the Joyce Foundation in 2007. The grant funded the creation of Minnesota's **FastTRAC** initiative, aimed at increasing the number of postsecondary credentials awarded to low-wage, educationally underprepared adults through collaboration among the state's departments of workforce development, human services, and education.

As part of the FastTRAC initiative, Minnesota developed an integrated career pathways program model specifically designed for use across the entire state, but implemented at the local level. The model has three key components: it provides students with career readiness and

awareness experiences, uses curriculum that integrates basic education and skills training, and awards an industry-recognized credential upon program completion. The state began piloting the model through local implementation in 10 communities. By recently funding an additional 17 programs, it has laid the groundwork for creating a statewide system out of what was once a handful of local career pathway programs.

For more information, see the *Minnesota Career Pathway Factsheet* and the website for Ramsey County Workforce Investment Board listed in Section Three: Resources.

from local and state partner agency leaders, WIB members, and business and industry representatives.

Policy reforms may be directed toward achieving some of the following goals:

- Implementing a coordinated and systems approach to adult education and postsecondary training
- Developing new and/or strengthened linkages between career technical and academic programs at community colleges, Adult Basic Education, and One-Stop employment services
- Supporting integrated and coordinated services between One-Stop and TANF service providers
- Offering programs that allow students to earn portable and stackable credentials
- Supporting cross-program and cross-agency professional development strategy
- Developing an Eligible Training Provider List (ETLP) that promotes the development of career pathways

See the **promising practice** above about how Minnesota made statewide policy changes that grew out of successful joint programming and cross-system collaboration at the local level.

## REFORM PROGRAM PROCEDURES AS NEEDED

Frequently, individual agencies have distinct administrative and operational practices for organizing customer flow, delivering support services, assessing participants, providing career planning services, providing business services, managing client tracking databases, training staff, and collecting and analyzing labor market information. Each agency, using guidance provided by its own funding sources and state agencies, develops

its own customer flow procedures. For customers, the experience can be confusing, especially for those who must access multiple systems. For the implementation of career pathways, it presents a major challenge because it runs counter to the idea of an easily navigable path from education to a career.

Even documenting such basic items as customer identity or eligibility for services is often duplicated among many different agencies. In addition, results of assessments are not transferable from one agency to another. For example, some agencies use the TABE tool to assess an individual's basic skills levels, while others agencies use the CASAS. Some agencies use a "sales" approach to working with businesses, while others use a "solutions management" approach. In addition, several agencies may be able to provide assistance only after all other avenues have been exhausted, leaving them with the dilemma of which agency is the agency of "last resort."

Each of these approaches are in conflict with the vision of a career pathways system where cross-agency collaboration is key.

One strategy to address this dilemma is to utilize your cross-agency partners and assign a policy or procedure to each of them, and task them with reviewing the current situation and developing a new, common approach that will be used by all agencies. In order to confront "turfism", staff members are asked to consider the needs and desires of the customers they are collectively serving rather than each agency's needs and wants. This approach helps teams create procedures that are integrated across all partner agencies. Once new procedures are defined, all service providers will need to incorporate them into their organizational practices and train staff members to ensure effective administration.

Taking these steps to align approaches will help achieve:

- Integrated customer flow process
- Integrated support services process
- Common assessment process and set of tools



## PROMISING PRACTICE

### A TIGHT WEAVE—KENTUCKY

**Kentucky** approached career pathways development at the systems level from the very beginning, blending education and training within their community college system. In 1997, early in the development of the state's career pathways system, the Kentucky legislature passed the Postsecondary Education Improvement Act, which created the **Kentucky Community and Technical College System (KCTCS)** and made it the primary provider of workforce development and training in the state. KCTCS is made up of 16 colleges on 68 campuses and embraces the career pathway model as a way to achieve its mission of system integration. The system was selected in 2002 by the Ford Foundation to participate in the "Community College Bridges to Opportunity Initiative" that pushed state systems to address institutional barriers to the economic and academic advancement of disadvantaged students by connecting the developmental,

workforce and academic functions of the campuses.

KCTCS emphasizes that "career pathways is not a program, it is a systemic framework for a new way of doing business." Recognizing that creating this systemic framework requires coordination and better integration of programs, funding, organizational structures, and performance measures across agencies and their administrative policies, KCTCS partners aligned educational goals to thoughtfully integrate state departments and partners. The results were a series of connected instructional strategies that integrated work experience and support services. This enables students to combine school and work while advancing over time to better jobs within regional labor markets.

One challenge KCTCS faced in aligning educational and workforce goals was that institutional barriers were often reinforced by policies set at

the state level. Together with Jobs for the Future, the Kentucky partners formed the College Workforce Readiness Workgroup to find solutions to the internal policy challenges of aligning multiple missions. The group was tasked with suggesting strategies that could be implemented system-wide, and to look for opportunities to interweave multiple initiatives, address gaps, and create solutions. Through this work, KCTCS was able to strengthen partnerships by recognizing the constraints of existing policies, the limitations of funding streams, and the inefficiencies of competing missions. They also made a commitment to engage multiple stakeholders committed to working collaboratively to improve policies at the state and local levels, and to change the way they did business.

For more information, see Kentucky's Community Technical College System website listed in Section Three: Resources.

- Common career planning approach
  - Shared business-services approach
  - Shared client management information database
  - Common career pathways message
  - Shared professional development process
  - Shared approach to collecting and using real-time labor market information
- See how Kentucky made changes in public policy to thoughtfully integrate state departments and partners in the **promising practice** above.



## TOOL BOX

### Team Tools

See Section Two—*Team Tool How-to Guide* for facilitator instructions for each of the following tools:

Six Key Elements Graphic Framework <https://learnwork.workforce3one.org/view/2001120641504542734/info>

Six Key Elements Readiness Assessment Tool (printable documents)  
<https://learnwork.workforce3one.org/view/2001120642516555109/info>

Six Key Elements Readiness Assessment Tool (online tool) <http://www.mahernet.com/tiki/tiki-login.php>

Six Key Elements Action Planning Tool <https://learnwork.workforce3one.org/view/2001120642119875739/info>

Service Mapping Tools <https://learnwork.workforce3one.org/view/2001120642445820802/info>

### Reports & Publications

Jobs for the Future new policy guide for DOL [scheduled for release in late 2011](#)



## ELEMENT SIX: MEASURE SYSTEM CHANGE AND PERFORMANCE

Assess system-wide change and measure performance outcomes to ensure continuous improvement.

Measuring the impact of comprehensive system change can be complicated, but is important to sustaining the support necessary for carrying out a career pathways approach to education and training. Consistently collecting high quality data from service providers, program participants, and employers about their experiences and their outcomes, is integral to ensuring that the design of the career pathway system is reaping the intended results. Measuring the impact of your career pathways initiative will not only support your efforts to improve program design, but can be used to communicate to stakeholders the value of their investment.

Across the country, many states are designing state workforce longitudinal data systems that draw information across education and training programs to get a more complete picture of how individuals move through education and training programs and onto careers. These cross-system partnerships are collecting data that is more conducive to research and analysis that leads to program improvement, system change, and policy reform.<sup>10</sup> Career pathways system development offers a unique opportunity to improve strategies for measuring the impact of your efforts across systems and the performance of your programs.

As a first step, your career pathways leadership team will set goals and desired outcomes to guide system development. You will use these established goals and desired outcomes as benchmarks for measuring the performance of affiliated education programs, training programs, and supportive services. You may want to utilize both external and internal evaluation tools and use data to inform continuous improvement. The evaluation results may be shared with partners (especially employers) and the broader community to solicit broad-based support for and understanding of the career pathways system.

Data derived from measures that are tied to employer-driven standards and needs will help to sustain and expand employer engagement. By providing evidence that the career pathways system is successful, measurements help retain current partners and attract additional employers. Marketing the success of career pathways using the performance measures and out-

### QUICK TIP

#### KEY QUESTIONS FOR MEASURING SYSTEM CHANGE AND PERFORMANCE:

What are the desired outcomes of the career pathways system and its programs and how can they be measured?

What data should be collected to determine if the outcomes are achieved?

Who will collect the data and how?

How will the data be

- maintained?
- shared?

How will the data be utilized to

- make program improvements?
- engineer system-wide change?

comes also helps maintain current funding and can be used to garner new funding sources.

Outcome data supports continuous improvement of program design by showing what program components work best for targeted populations and what components may require redesign. Finally, analysis of outcome data informs the policy and procedural adjustments that may be necessary for maintaining alignment within the system.

Leadership teams will complete five steps to measure system change and performance:

- Define desired *system* and *program* outcomes.
- Determine how to measure system and program outcomes.
- Decide on collection methods.
- Establish how the data will be stored, tracked, and shared.
- Analyze data, revisit desired outcomes, and assess progress.

<sup>10</sup> For information about states that have designed workforce longitudinal data systems, see the Workforce Data Quality Initiative at <http://www.doleta.gov/Performance/workforcedata-grant09.cfm> and Administrative Data Research and Evaluation (ADARE) at <http://www.ubalt.edu/jfi/adare/>.

## DEFINE DESIRED SYSTEM AND PROGRAM OUTCOMES

The first step in measuring system change and performance is to determine the desired outcomes of the career pathway system at the *systems level* and within specific *programs*. Previously defined goals inform stated outcomes and are shared by all partners.

The leadership team develops desired outcomes and related measures during early strategic planning sessions to ensure that the activities carried forth will support long-term goals. All partners inform the strategies used for evaluating progress (based on their agency's unique services, populations served, goals, and practices) and actively support the manner in which assessment is carried out.

It is important to create both short-term and long-term measurements. The types of measurements used are also evaluated on a regular basis to ensure the team is measuring what it needs to know to continuously improve the system and the programs within it.

**System** outcomes focus on the impact that the career pathways approach is having on the overall community, as well as on the citizens and/or partners engaged within the system. There are a variety of outcome measures that help teams analyze *systemic impact*.

**Performance** outcomes measure the effectiveness of education and training *programs* and provide teams with data they can use to improve programs and assess the effectiveness of the strategies used for target populations.

## DETERMINE HOW TO MEASURE SYSTEM AND PROGRAM OUTCOMES

Determining how to measure system and program outcomes will likely involve many different stakeholders. The leadership team will determine desired goals and outcomes for the initiative with consideration of the existing priorities of federal, state, and local funders. The challenge to teams will be figuring out how to measure outcomes as painlessly as possible across systems, using existing reporting requirements if feasible. Ultimately, the leadership team (with validation from local employers and potentially from funders) agree on what data will be collected to determine if the outcomes are being achieved.

It is important that these measures and the data to be collected for them be common across all partners participating in the career pathways programs and system in order to ensure the compiled data are valid.

## DECIDE ON COLLECTION METHODS

Determining who will collect the data and what are the next steps in measuring system change and performance. The leadership team may want to work with an outside evaluator to provide system-wide evaluation of the initiative. If the team members decide not to work with an outside source, they may want to identify a lead agency that can coordinate data measurement efforts among all partners. Sometimes different agencies collect different components of the data, so it is important to make sure all partners are clear about their roles and responsibilities in collecting data. The MOA designates all partners who will be

### Key System Measures with Sample Performance Benchmarks

Return on investment: The overall cost effectiveness of the career pathways activities, including any increase they produce in tax revenue and any decrease in the use of public programs such as Medicaid and Food Stamps.

Increase in the number of individuals with family-supporting jobs

Increase in the size of the qualified labor pool

Effectiveness of the collaboration among partners

Achievement of sustained funding by institutional partners

Closing of TANF cash assistance cases due to increased wages and the receipt of transitional benefits of all work supports for which TANF exiters are eligible

Employment outcomes, including wages, benefits, retention, upgrades in pay, and promotions

Credential attainment rates

Increase in wages over time for graduates



## Key Program Measures

Number of individuals who enroll in a program

Number of enrollees who are retained in the program

Credits earned

Average GPA of enrollees

For adult education enrollees:

- Number who gain admission to a college and/or training program
- Number who pass a test or receive certification that validates readiness for college and/or readiness for a job or job training
- Period of time it takes to move various kinds of students certain “distances” along a learning pathway to a specified outcome(s)
- Evidence that the intermediate level of proficiency has been reached for ESL and ABE, including math

Number of courses or modules leading to degrees and certifications that are completed successfully

Number of certificates, degrees, diplomas, and credentials awarded to enrollees

Number of individuals who enter postsecondary education prepared for college-level work

Number of individuals who transition from basic skills to progressively higher levels of coursework

collecting information, how often it will be collected, and what each agency is responsible for collecting.

Typically, each agency partner is responsible for collecting data for the individuals it serves within the programs that are part of the career pathways system. Data on individuals enrolled in the career pathways programs are coded to ensure that they are included among the overall data being collected. Common demographic information for participants (such as age, gender, race, income level, highest school grade attended, ex-offender status, disability status, public assistance status) are tracked across programs in order to determine system outcomes for different target populations and groups.

See an example of how Minnesota is ramping up their data collection methods to better capture the outcomes of students participating in their statewide career pathways system in the [promising practice](#) on the next page.

## DECIDE HOW THE DATA WILL BE STORED, TRACKED, AND SHARED

Deciding how data will be stored, tracked, and shared is complex in any cross-system initiative.

Because participants involved in the career pathways system move through different points of entry, access different

supportive services, and exit at different points in the career ladder, tracking long-term performance outcomes and overall system effectiveness requires collecting data from multiple systems over long periods.

Currently most agencies only collect information on an individual’s progress through their own programs and services, and do not take into consideration what the individual achieves through participation with partner agencies. This makes some of the potential measurements, such as the number of individuals who transition from Adult Education to community colleges, difficult to capture. In addition, because an effective career pathways system allows individuals to move back and forth between education and employment over many years, evaluating the overall career pathways system, as well as some of the specific programs, requires coordination of data sources so that individual records can be tracked across programs over multiple years.

An ideal data system tracks an individual from pre-kindergarten through postsecondary education and into the workforce. Data covering this entire span allows each agency to determine how the services it provides to the individual will augment the services provided in prior years by previous agencies. An ideal system also has the ability to capture the progress of individuals moving in and out of training and work, as needed. A data



## PROMISING PRACTICE

### RAISING THE EVALUATION BAR—MINNESOTA

Minnesota's local career pathways system, **FastTRAC**, has always had in its programs report a standard set of short-term outcome measures: number served in bridge programs, number served in integrated programs, number of credits completed by individuals, and the like. This reporting system, however, fails to provide the data necessary for determining the effectiveness of the program. To remedy this deficiency, Minnesota is developing a data-tracking system that collects in-depth information on individual FastTRAC students. The data gathered using this system will paint a broader picture of each

student's situation and progress, showing such variables as use of the state's public assistance programs, current or most recent job title, and current wages. The system will also provide baseline data against which to compare future outcomes and thereby measure how well the program is performing.

Another level of outcome measures, focused on employment, employment within a field, and wage increases, will also be tracked by matching the state-level Adult Basic Education data of FastTRAC students with wage detail records. Additionally, by matching FastTRAC students'

ABE data with records in the Minnesota State Colleges and Universities system database, the career pathways team will be able to identify whether students have persisted within the education pathways in which they enrolled. After implementing these evaluation plans, Minnesota will look into methods for evaluating systems change.

For more information, see the *Minnesota Career Pathway Factsheet* and the web site for Ramsey County Workforce Investment Board listed in Section Three: Resources.

system that is comprehensive, shared, and longitudinal helps agencies provide better services and allows all the partner agencies to better align themselves to the goals of the career pathways system.

A shared database helps streamline data collection and analysis efforts. If a common database is not feasible, it is important to have a method for accessing each of the multiple data sources for the information needed to calculate and track the agreed-upon measures. This will ensure that information from each aspect of the career pathways system is utilized so that the impacts of the full career pathways system, not just its separate programs and services, are evaluated.

Data-sharing agreements are signed by all partners within the career pathways system. These agreements specify what information will be shared, with whom it will be shared, the purpose for sharing the data, and the process for sharing the data.

## ANALYZE DATA, REVISIT DESIRED OUTCOMES, ASSESS PROGRESS

The most important aspect of the measurement system is determining how the data will be utilized. In general, data can be used to make *improvements in specific programs* within the career pathways system and to make *career pathways system changes*.

Analysis of performance data will help determine whether individual programs are effective and whether progress is being made among all training programs within the overall career pathways system. Regular reviews of performance measures will ensure that agencies can make timely improvement to programs. Reviewing these measures will also determine what improvements can be made in customer flow and service efficiency.

The team routinely celebrates the success of effective programs and services.

The team asks these questions about both program measures and system measures:

- For which measures did we meet the performance targets?
- For which measures did we *not* meet the performance targets? Why not?
- What were the root causes for not meeting those measures' performance targets?
- Which of these root causes should we address?
- What are possible options for impacting those root causes?
- How can we test out those options?
- Are these the appropriate measures? If not, what *are* the appropriate measures?

Longitudinal studies are needed when using measures to identify and make system-wide changes. Reviewing the measures will help the leadership team improve the system in several ways:

- Enhance key partnerships.
- Identify labor market changes that will influence career pathways.
- Enhance employer partnerships.
- Determine the policy changes needed to support system-wide change.
- Determine which administrative and statutory barriers need to be addressed.
- Determine which procedures must be updated and enhanced.
- Reserve or secure additional funding for expanded programs and/or external or internal program evaluations

## Team Tools

See Section Two—*Team Tool How-to Guide* for facilitator instructions for each of the following tools:

Six Key Elements Graphic Framework <https://learnwork.workforce3one.org/view/2001120641504542734/info>

Six Key Elements Readiness Assessment Tool (printable documents) <https://learnwork.workforce3one.org/view/2001120642516555109/info>

Six Key Elements Readiness Assessment Tool (online tool) <http://www.mahernet.com/tiki/tiki-login.php>

Six Key Elements Action Planning Tool <https://learnwork.workforce3one.org/view/2001120642119875739/info>

Service Mapping Tools <https://learnwork.workforce3one.org/view/2001120642445820802/info>

## Reports and Publications

U.S. Department of Labor, Employment and Training Administration, Workforce Data Quality Initiative  
<http://www.doleta.gov/Performance/workforcedatagrants09.cfm>

Administrative Data Research and Evaluation (ADARE)  
<http://www.ubalt.edu/jfi/adare/>





## SECTION TWO

# TEAM TOOLS HOW-TO GUIDE FOR FACILITATORS

This section, written as a “how-to” guide for team leaders and/or facilitators, introduces the tools we’ve created to support career pathways teams as they develop career pathway systems and programs in local communities, across regions, and/or at the state level. The tools help teams build, improve, and sustain their career pathways systems.

Most of the tools in this guide were developed to support teams in their implementation of the *Six Key Elements* of career pathways outlined in this Toolkit. We recommend that your team identify one of its members (such as the career pathways coordinator) or an outside facilitator (such as a coach) as the person who leads the team through these processes as part of your ongoing strategic planning and system building.

## FACILITATOR TOOLS & TIPS

Most of the exercises and facilitated sessions described herein require the items listed below. Although each tool description lists the materials required for using that particular tool, it is a good idea for facilitators to have all these items available and ready to use during team meetings.

- **Oversized, printed copies of the tool being used.** Commercial printing companies (i.e. FedEx Office) can print oversized copies of charts fairly inexpensively. Be sure to request black-and-white oversized wall charts (color prints are very expensive). Most photocopy services can increase the size to 24" x 36" or 36" x 48" (depending on the size of your group).
- **Handout copies** of the appropriate charts and/or tools for each participant to use for personal notes.
- **Flipchart stand and pad** for recording group ideas and other content raised during group process.
- **Wall-safe tape** that will not harm charts or walls. (We recommend “artists’ white tape” available for purchase online at art supply companies.)
- **“Sticky” notes** in multi-colors, in both standard size and large 4" x 6" size.
- **Colored markers** to use for writing on charts. (We recommend Mr. Sketch brand markers, which don’t bleed through paper onto walls.)
- **A poster-friendly meeting room** with lots of good wall space for hanging and working with charts.

The following tools are reviewed in this section:

- Career Pathways Graphic Framework
- Six Key Elements Readiness Assessment Tool
- Next Steps Action Planning Tool
- Network Analysis Tools
- Service Mapping Tool
- Career Pathways Program Design Chart
- Occupational Credential Worksheet
- Credential Asset Mapping Tool
- Career Pathways Road Map Tool

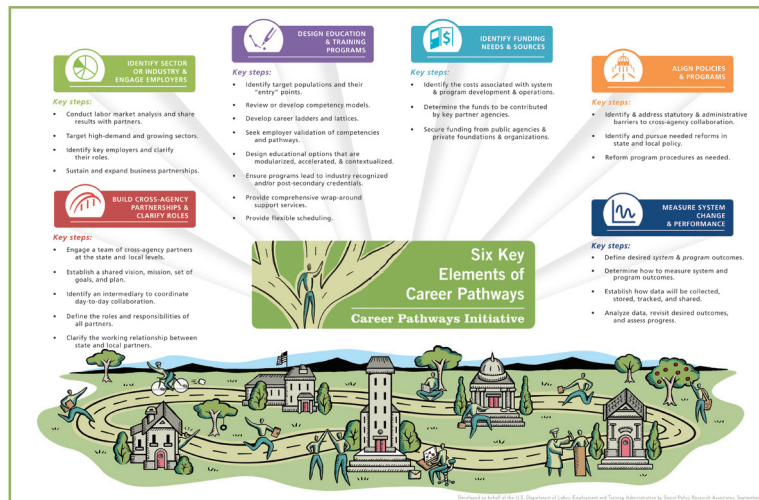
We recommend that you use wall-size versions of the tools for group reference (as noted above), with handouts for each individual to have for personal use and notes.

# THE TOOLSETS

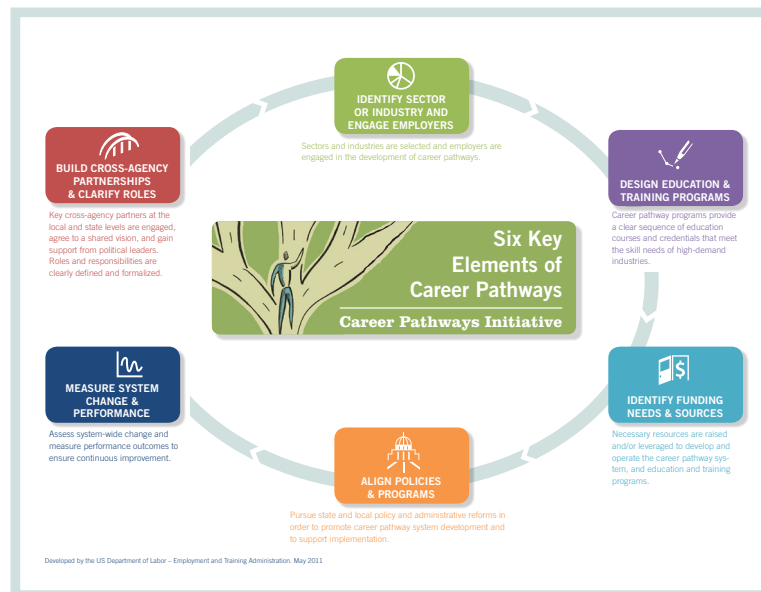
## Toolset #1 CAREER PATHWAYS GRAPHIC FRAMEWORKS

**PURPOSE:** The *Career Pathways Graphic Framework* provides an overview of the *Six Key Elements*. Facilitators may use this activity for instructional purposes or as a brainstorming tool. There are two versions of the framework:

**COMPREHENSIVE SIX KEY ELEMENTS CHART.** Includes the headings and key components of each element in bullets.



**SIMPLE SIX KEY ELEMENTS CHART.** Includes just the headings and summary descriptions of each of the Six Key Elements.



**LENGTH TO COMPLETE:** 10–30 minutes, depending on the level of description or discussion

**WHO PARTICIPATES:** Varies—may depend on whether the activity is being used to brainstorm or to educate.



**WHEN TO USE:** During team planning and visioning sessions

## Materials:

- One oversized printout of the Six Key Elements Chart (see “Facilitator Tools & Tips”)
- Handouts for each person (in color)
- Large sticky notes
- Small sticky notes
- Markers and tape

## Links:

7. Career Pathways Six Key Elements Graphic Framework Charts with instructions  
<https://learnwork.workforce3one.org/view/2001120641504542734/info>
8. Comprehensive Six Key Elements Chart <https://learnwork.workforce3one.org/view/2001126660947850297/info>
9. Simple Six Key Elements Chart <https://learnwork.workforce3one.org/view/2001126661218897270/info>

## How to Use the Career Pathways Graphic Framework

The graphic framework charts can be used either as an overview of the elements or for brainstorming. Both uses are explained below.

### Overview of the Elements

Both charts may be used to provide an overview of the Six Key Elements to new partners and stakeholders. The *Comprehensive Six Key Elements* chart includes more content for participants to refer to (and for the facilitator to discuss).

Some steps to follow using either version of the framework:

1. **Review all of the Six Key Elements**, noting that all six elements are critical to any comprehensive career pathways system.
2. Go back through each of the Elements, highlighting key components and characteristics of each. Provide examples, if possible (see promising practices in this Toolkit for ideas).

### Quick Brainstorming

You can use either version of the chart as the basis of a quick brainstorming session focused on a particular topic or goal. Two suggestions are provided below.

- **Quickly assess high-level needs.** Have participants each write on sticky notes issues and topics they think are a priority for the team to address related to one or more of the elements.
- **Map partnerships.** Use sticky notes to list, for each element, the assets that partners or organizations bring to the table. Alternatively, brainstorm who is needed to fill in gaps.

Some steps to follow using either process:

1. **Write on sticky notes** and ask participants to post them on the elements they correspond to.
2. **Cluster similar ideas** by grouping together sticky notes that reflect common themes, suggestions, or needs.
3. **Debrief and discuss** how this information can inform your team planning.

## Toolset #2

# SIX KEY ELEMENTS READINESS ASSESSMENT TOOL

**PURPOSE:** The *Six Key Elements Readiness Assessment Tool* helps your team assess your state's career pathways initiative by looking at progress, priorities, gaps, technical assistance needs, and next steps.

**LENGTH OF TIME TO COMPLETE:** 2-3 hours

**WHO PARTICIPATES:** There are two options for completing the assessment. One option includes the team leader alone and the other includes members of the leadership team.

1. **Team leader completes the assessment online.** Your team may identify one individual (for example the career pathways initiative coordinator) as the person responsible for completing the assessment online.
2. **Team members complete the assessment together during a team meeting.** The second option is to complete the assessment during an in-person meeting involving as many members of the leadership team as possible. Your team should identify a facilitator to guide the process as well as someone to record issues and ideas that come up through discussion.

**WHEN TO USE:** Complete the initial assessment as a baseline when career pathway initiative efforts begin. Repeat periodically (at least annually) to assess progress and determine priorities in annual plans.

## Materials:

- If one individual is completing the assessment, use the online, electronic version. Instructions for using the tool are available online.
- For in person assessment with teams:
- One, oversized printout of the *Readiness Assessment Tool* template (see "Facilitator Tools & Tips")
- Handouts for each person (in color)
- Markers and tape

## Links:

1. Six Key Elements Readiness Assessment Tool with instructions <http://learnworksassessment.workforce3one.org>

The screenshot shows the online interface of the Six Key Elements Readiness Assessment Tool. At the top, there is a navigation bar with links: Home, Complete Assessment, Priority Report, Contact, Profile, and Logout (anytime). Below the navigation bar, there are input fields for 'Organization Name and email address where the Summary Report is to be sent', 'Please enter the name of your Agency, Group or Company:', and 'Please enter your email:'. A 'Save and Exit' button is located below these fields. The main content area displays a list of 14 key elements for assessment, each with a 'Phase' dropdown menu and a 'Priority for Action' radio button. The elements are: 1. Occupations and pathways are employer-vetted and informed, and meet the skill needs of targeted high-growth sectors. 2. Education and training is non-duplicative and progressive, clearly articulating one level of instruction to the next and enabling students to move easily between academic and career technical programs and to and from work. 3. Programs are designed with multiple entry-points and exit points (on-ramps and off-ramps). 4. Curricula is "chunked" or organized in progressive modules, with each level clearly articulated to the next. 5. Training helps workers enter or advance within a specific sector or occupational field, regardless of their skills at the point of entry. 6. Curricula and instructional strategies are contextual and competency-based; they make work a central context for learning and help students attain work readiness skills. 7. Adult basic education programs are clearly articulated with postsecondary academic and career-technical programs. 8. Programs are designed to accelerate advancement into either postsecondary education or employment, shortening the duration of training or education. 9. Appropriate assessment tools determine placement and advancement, including credit for prior learning. 10. Programs lead to industry-recognized and/or postsecondary credentials that are stackable and articulate to progressively higher-level credentials or degrees. 11. Individualized career plans support an individual's journey through the pathway, and provide "roadmaps;" mapping for participants the education, training, and credentials they must complete to reach their goal. 12. Wrap around support services are available, including job placement services, career and financial aid counseling, especially during points of transition. 13. Training is accessible and flexible by varying training sites and schedules, reducing or accommodating language and learning barriers, and developing drop-out prevention services or policies. 14. Programs are organized to meet the unique needs of adult learners (including childcare, accommodating work schedules with flexible and non-semester-based

1. Build Cross-Agency Partnerships & Clarify Roles						
Please indicate the phase of implementation of your state for each of the key components listed. Also, indicate the level of priority for each action.	Initiation Phase	Planning Phase	Implementation Phase	Sustain/Enhance Phase	Priority for Action	
1. Key agency partners at the <i>local</i> level, are engaged, including: <input type="checkbox"/> Workforce Investment Board(s) and local workforce development agencies <input type="checkbox"/> Community College(s) and Postsecondary Education Providers <input type="checkbox"/> Adult Basic Education providers <input type="checkbox"/> TANF providers and Human service agencies <input type="checkbox"/> Economic Development agencies <input type="checkbox"/> Community-based organizations <input type="checkbox"/> Business representative(s)	1	2	3	4	A B C	
2. Key agency partners at the <i>state</i> level are engaged, including: <input type="checkbox"/> State Workforce Agency <input type="checkbox"/> Adult Basic and Postsecondary Education <input type="checkbox"/> Economic Development <input type="checkbox"/> Human Services	1	2	3	4	A B C	
3. Written memoranda of understanding clearly define the agreed upon roles and responsibilities of partnership members.	1	2	3	4	A B C	
4. A leadership or steering committee has been established to guide the process of developing a career pathways system.	1	2	3	4	A B C	
5. A labor market analysis and environmental scan of education and training providers has been completed.	1	2	3	4	A B C	

## How to Use the Six Key Elements Readiness Assessment (in person with teams)

The assessment tool is organized under the *Six Key Elements of Career Pathways Framework* and includes corresponding indicators that are components of each element. Your team will examine each indicator to assess your progress toward realizing that element. A four-point scale representing the phases of an ongoing development process will help you assess progress. For each indicator, identify the place on the scale that best reflects your current effort and circle the number.

The four-point scale for assessing progress is based on the following definitions:

- 1. Initiation Phase:** The team has discussed this indicator but has not started planning.
- 2. Planning Phase:** The team is engaged in a planning process to agree upon the steps necessary to move forward.
- 3. Implementation Phase:** The team has completed planning and is in the process of implementing strategies.
- 4. Sustain/Enhance Phase:** Strategies have been fully implemented. The team is addressing sustainability and further enhancement of this indicator.

The priority for action on any indicator can be ranked as high, medium, or low by circling A, B, or C (respectively) in the far right column.

- Have each team member individually complete the phases of development section of the self-assessment on the handout. For each indicator, team members will rate the progress using the four-point scale:

- 1 = Initiation Phase
- 2 = Planning Phase
- 3 = Implementation Phase
- 4 = Sustain/Enhance Phase

- Using the oversized version of the chart on the wall, have each team member make a “dot” next to his or choices using a marker.
- Discuss the group’s responses, especially where there are wide differences of opinion on progress. Then, have a discussion about whether any additional indicators of progress should be included.

4. Next, each team member assigns a priority to each section of the self-assessment keeping in mind a discrete time frame in which to complete the task (e.g. the next 6 months). It is helpful to limit the number of high-priority activities and to force a few “lows” in each section.
5. Again, ask all team members to mark their responses on the wall chart and discuss. Identify priority actions for inclusion in your next-steps plan.
6. Finally, evaluate your community’s overall progress towards realizing the key elements, and discuss some goals and/or next steps for making greater progress. The items flagged as priorities “for immediate action” may guide you in this last step. You will then use the Next Steps Tool to record your next steps and technical assistance needs.

<b>1. Build Cross-Agency Partnerships &amp; Clarify Roles</b>					
<i>Please indicate the phase of implementation of your state for each of the key components listed. Also, indicate the level of priority for each action.</i>	Initiation Phase	Planning Phase	Implementation Phase	Sustain/Enhance Phase	Priority for Action
1. Key agency partners at the <i>local</i> level, are engaged, including: <ul style="list-style-type: none"> <li><input type="checkbox"/> Workforce Investment Board(s) and local workforce development agencies</li> <li><input type="checkbox"/> Community College(s) and Postsecondary Education Providers</li> <li><input type="checkbox"/> Adult Basic Education providers</li> <li><input type="checkbox"/> TANF providers and Human service agencies</li> <li><input type="checkbox"/> Economic Development agencies</li> <li><input type="checkbox"/> Community-based organizations</li> <li><input type="checkbox"/> Business representative(s)</li> </ul>	1	2	3	4	A B C
2. Key agency partners at the <i>state</i> level are engaged, including: <ul style="list-style-type: none"> <li><input type="checkbox"/> State Workforce Agency</li> <li><input type="checkbox"/> Adult Basic and Postsecondary Education</li> <li><input type="checkbox"/> Economic Development</li> <li><input type="checkbox"/> Human Services</li> </ul>	1	2	3	4	A B C
3. Written memoranda of understanding clearly define the agreed upon roles and responsibilities of partnership members.	1	2	3	4	A B C
4. A leadership or steering committee has been established to guide the process of developing a career pathways system.	1	2	3	4	A B C
5. A labor market analysis and environmental scan of education and training providers has been completed.	1	2	3	4	A B C

## Toolset #3 NEXT STEPS ACTION PLANNING TOOL

**PURPOSE:** This flexible action-planning tool can help your team carry out strategic planning activities and articulate the action steps necessary for carrying out activities within the *Six Key Elements Framework*.

CAREER ACTION PLAN FOR:				DATE:	
KEY ELEMENT:					
Priority Objectives <i>What we will do</i>	Tactics/Activities <i>How we will do it</i>	Lead <i>Who is responsible?</i>	Expected Outcomes <i>What is the result?</i>	Due Date	Progress & Adjustments <i>What have we accomplished?</i>

**LENGTH TO COMPLETE:** 1–3 hours

**WHO PARTICIPATES:** Members of the leadership team

**WHEN TO USE:** Use to capture action steps at each strategic planning session. Regularly update based on the progress that occurs between planning meetings.

### Materials:

- One oversized printout of the Action Planning Tool (see “Facilitator Tools & Tips”)
- Handouts for each person
- Markers

### Links:

1. Action Planning Tool with instructions <https://learnwork.workforce3one.org/view/2001120642119875739/info>
2. Action Planning Tool template <https://learnwork.workforce3one.org/view/2001126551586034594/info>

## How to Use the Action Planning Tool

1. **Review priorities.** Review and discuss your key priorities. If you have completed the Readiness Assessment Tool, you may use this to review your priorities.
2. **List objectives.** List the prioritized activities or indicators in the “Objectives” column.
3. **Discuss tactics/actions.** Discuss and list the tactics or actions you will conduct to implement each strategy in the “Tactics/Activities” column.
4. **Determine who’s responsible.** Enter the name or initials of the person or persons (or organization) responsible in the “Lead” column.
5. **Discuss expected outcomes.** Discuss and enter the “Expected Outcomes” of the actions in the fourth column.
6. **Determine due date.** Enter the timeline and/or “Due Date” for each activity in the fifth column.
7. **Use tool to track progress in the future.** As progress is made return to this tool to enter relevant updates and information about progress and any modifications in the “Progress & Adjustments” column.



## Toolset #4 SERVICE MAPPING TOOL

**PURPOSE:** Community service mapping is a proven, non-threatening process for identifying each partner's WIIFMs (What's In It For Me)—the benefits that the organization or agency needs to accrue in order to make collaboration worthwhile. Attendees leave the service mapping session knowing 1) more information about each other's services and activities, targeted populations, goals, and objectives and how they do business; 2) what skills and workforce development services are necessary within the community to serve the universal and targeted populations; and 3) how to analyze service gaps, augmentations and duplication in services for the skills and workforce development activities.

SERVICE MATRIX TEMPLATE PAGE 1		Agency Name _____															
<b>Agency/ Funding Source</b> (List 1 funding source per row and the start /ending dates for them)		<b>Eligibility</b> - Reviewing gathered data about the individual against predetermined criteria to verify the individual's opportunity to receive service by a particular funding source				<b>Outreach/Recruitment</b> - Activities performed to identify potential users of the career pathway services				<b>Intake/Registration/ Application</b> - Gathering and capturing data elements about potential users of the career pathways system and its agencies to assist in determining eligibility for services and funding streams or to assist them in enrolling in services				<b>Orientation</b> - Providing information about all the service and funding streams within the career pathways system and how to access them			
<b>Funding Source:</b>	<b>Annual Capacity:</b>	Universal Target			Universal Target			Universal Target			Universal Target						
		Tar: _____			Tar: _____			Tar: _____			Tar: _____						
	(Total slots to be filled)	Tar: _____			Tar: _____			Tar: _____			Tar: _____						
<b>Start date:</b>	<b>Annual Served:</b>	Self Staff Both			Self Staff Both			Self Staff Both			Self Staff Both						
	<b>Total:</b>	Ind Group Both			Ind Group Both			Ind Group Both			Ind Group Both						
	(Total number of services provided - count individuals twice if they received 2 services)	Stand Alone			Stand Alone			Stand Alone			Stand Alone						
<b>Ending date:</b>	<b>Unduplicated:</b>	Lang: _____			Lang: _____			Lang: _____			Lang: _____						
	(Number served - count each person only one time)	Days/Hrs: _____			Days/Hrs: _____			Days/Hrs: _____			Days/Hrs: _____						
	<b>Waiting List: Yes No</b>	Walk In Appointment Both			Walk In Appointment Both			Walk In Appointment Both			Walk In Appointment Both						
	(Do you currently have a waiting list for individuals to receive your services?—Circle yes or no)	Fee Free			Fee Free			Fee Free			Fee Free						
		Ser Area: _____			Ser Area: _____			Ser Area: _____			Ser Area: _____						
<b>Funding Source:</b>	<b>Annual Capacity:</b>	Universal Target			Universal Target			Universal Target			Universal Target						
		Tar: _____			Tar: _____			Tar: _____			Tar: _____						
		Tar: _____			Tar: _____			Tar: _____			Tar: _____						
<b>Start date:</b>	<b>Annual Served:</b>	Self Staff Both			Self Staff Both			Self Staff Both			Self Staff Both						
	<b>Total:</b>	Ind Group Both			Ind Group Both			Ind Group Both			Ind Group Both						
		Stand Alone			Stand Alone			Stand Alone			Stand Alone						
<b>Ending date:</b>	<b>Unduplicated:</b>	Lang: _____			Lang: _____			Lang: _____			Lang: _____						
		Days/Hrs: _____			Days/Hrs: _____			Days/Hrs: _____			Days/Hrs: _____						
	<b>Waiting List: Yes No</b>	Walk In Appointment Both			Walk In Appointment Both			Walk In Appointment Both			Walk In Appointment Both						
		Fee Free			Fee Free			Fee Free			Fee Free						
		Ser Area: _____			Ser Area: _____			Ser Area: _____			Ser Area: _____						

**LENGTH TO COMPLETE:** 2-3 hours

**Who participates:** A representative from each partner agency providing services in the local area/state. Each representative must know the funding streams his or her agency receives and how each of those streams is used.

**WHEN TO USE:** Conduct a service mapping session to gather the baseline data needed for carrying out a service gap analysis for the region/state. One should be completed for support services and one for workforce development services.

## Materials:

- Printed 8½ x 11 copies of the service mapping charts for each partner agency. The chart should include the agreed-upon services to be reviewed in columns at the top (with draft suggested definitions), and agreed-upon items to be collected for each service listed within each box on the chart
- Agency Criteria Collection Form (see Appendix B)
- Definitions of data to be collected
- One highlighter for each partner agency
- Tape
- Flipchart and markers

## Links:

8. Service Mapping Tool with instructions <https://learnwork.workforce3one.org/view/2001126552554540652/info>
9. Service Mapping Tool template <https://learnwork.workforce3one.org/view/2001126552554540652/info>

## How to Use the Service Mapping Tool

1. **Complete the Agency Criteria Collection Form.** Each agency representative completes this form prior to attending the meeting.
2. **Identify services.** The facilitator should review the list of services around which the partners will provide the data.
3. **Define services.** Discuss and come to consensus on the definition of each service on which data will be collected.
4. **Review data.** Review the data (and the definition of each) that will be collected for each service.
5. **Complete the charts.** Each partner then completes their personal charts as appropriate for each service:

A. **List funding sources:** Each representative lists in the first column each funding source his or her agency receives that it uses to provide services (one per row). If the agency has more than two funding sources, the representative will need to have multiple sets of the form in order to complete one row for each funding source.

B. **Populations served:** Each agency notes the populations they serve for each service.

- **Universal**—Highlight if funding source does not have any specific limitations on who may be served with the funds.
- **Targeted**—Highlight if funding source limits service to specific groups or populations; enter the specific groups or populations the funds are restricted to serving. Then, enter the targeted population(s) that the service is specifically designed to serve. Partners only make entries for targeted populations if the services are designed to exclusively serve one or more targeted populations with the funding source they are recording.

For example: If your agency provides job search assistance as a service to many populations, you would mark “universal”. If however, you provide job search assistance to ex-offenders only, then you would enter “ex-offenders” on the line for targeted populations.

C. **How services are provided**

- **Self serve, staff-assisted, or both**—Highlight as appropriate.
- **Individualized, in groups or both**—Highlight as appropriate.

- **Stand alone**—If the customer can receive this service without enrolling into a program or funding source, highlight “Stand Alone.” If the customer can only receive the service once enrolled into a program or funding source, leave blank.
- **Language**—List in what language(s) other than English the service is offered

D. **Schedule:** Include information about when each service is available.

- **Days/hours per week:** Enter the days and hours per week the service is offered—For example: “M-F 8 am – 12 pm” or “M 1 – 2 pm.”
- **Walk in or Appointment**—Highlight as appropriate.

E. **Fee or free:** Highlight whether this service is free or has a fee.

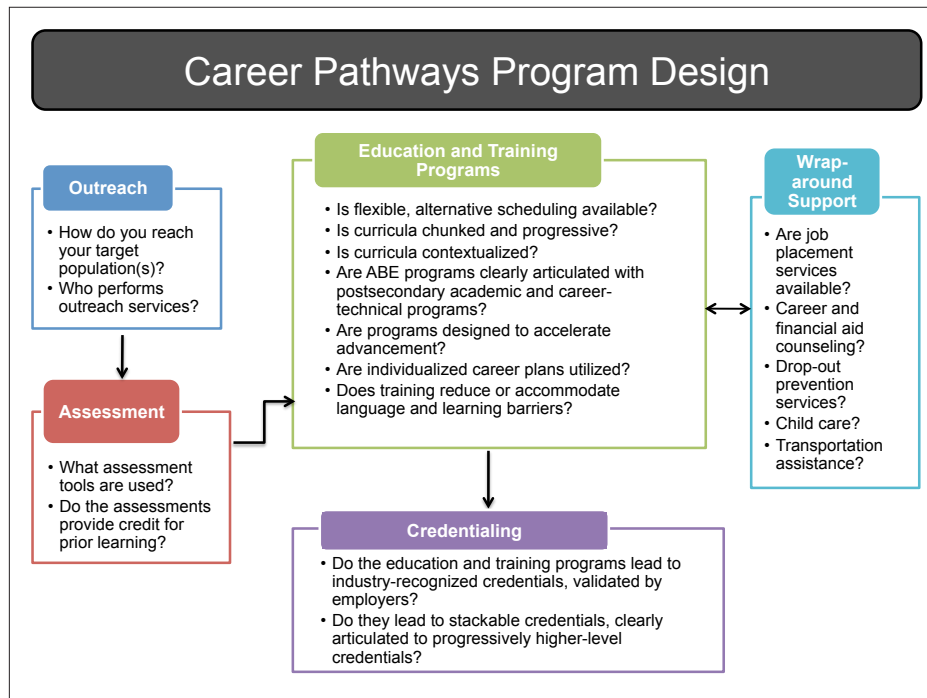
F. **Service area:** Enter the service area (zip code/neighborhood) where the service is offered. If the service is *restricted* to residents of a service area (zip code/neighborhood), list that in the **Target** box, and highlight “Target” in the first box under the service.

### Facilitator notes:

- If agencies are in collaboration and only one partner funds the service, the partner that funds the service is to record the service on the matrix.
  - If agencies are in collaboration and they both fund the service, both are to record it (but in the funding block, they should reference the joint funding agency and the source of funding).
  - If there is anything unusual about the funding arrangement, the agency representative should note the unique aspect of the funding arrangement in the funding block.
6. Once the partners have completed their forms, take the first page from each partner and tape the pages on the wall in a column. Repeat with each page.
- Divide the group into teams (one team for each page column). Have each team review the highlights and determine the gaps, duplications, and augmentations by using the information below. Gaps are those services that are not being provided currently, or do not have enough provided to meet the current need. (Gaps would have no highlights for a column, or would have some highlights but only for targeted populations, with no agency providing for the general population).
  - Duplications are those services for which availability exceeds need. (Duplications would have multiple funding sources/agencies highlighting a service and serving the same population or populations).
  - Augmentations are those services that are being provided by multiple agencies in order to meet the current demand. (The group would see augmentations as services with multiple highlights for the same service, but provided to different populations, or provided at different times or within different zip codes or in different languages in order to meet community needs.)
7. Discuss the gaps, duplications, and augmentations that are discovered and determine how the gaps and duplications will be addressed.

## Toolset #5 CAREER PATHWAYS PROGRAM DESIGN CHART

**PURPOSE:** This chart provides a useful reference for thinking about many of the key components of program design.



**LENGTH TO COMPLETE:** 1+ hours

**WHO PARTICIPATES:** Members of the leadership team

**WHEN TO USE:** When your team is ready to begin planning individual career ladders and career lattices.

### Materials:

- One oversized printout of the *Career Pathways Program Design Chart* (see “Facilitator Tools & Tips”)
- Handouts for each person
- Flipchart pad
- Markers
- Large sticky notes

### Links:

1. Program Design Chart with instructions <https://learnwork.workforce3one.org/view/2001120641684316308/info>
2. Program Design Chart template <https://learnwork.workforce3one.org/view/2001126552293308940/info>

### How to Use the Career Pathways Program Design Chart

The *Career Pathways Program Design Chart* can be used either for instruction or for brainstorming.

## Instruction

This chart can be used to provide an overview of the key components of designing career pathways programs. This is useful for teams to review when they are beginning to work on designing their career pathway road maps, are discussing career ladders, or are looking at the different system components that make up program support.

1. Walk through the chart. Discuss each part of the system that is involved in career pathway program design. Note the key questions to address in each part of the system. You may want to hone in on one element of the program design to have a focused conversation among team members.
2. Record key topics/questions. Use the flipchart to record key topics and questions that arise. Note any action items that the team wants to include in the action plan.

## Quick Brainstorming

If your team would like to do a quick assessment or brainstorm, you could use the chart in one of the following ways:

- **Quickly assess high-level needs** using sticky notes.
- **Map partnerships.** Use sticky notes to map assets that partners or organizations bring to each component of the system. Alternatively or additionally, brainstorm what is needed to fill in the gaps.

Some steps to follow using either process:

1. **Review system components and write assets and/or gaps on sticky notes.** Ask participants to post them on the parts of the system they correspond to.
2. **Cluster similar ideas** by grouping sticky notes together that reflect common themes, suggestions, or needs.
3. **Debrief and discuss** how this information can inform your team planning.

## Toolset #6 OCCUPATIONAL CREDENTIAL WORKSHEET

**PURPOSE:** This tool helps your team identify, sort, and classify the credentials in a specific occupational area. Unlike other tools presented in this section, this is a worksheet that will most likely be completed by one person or a small sub-committee outside of team meeting. The worksheet includes specific references and links to tools that will assist you with completing the worksheet. Once completed, the information collected during this exercise serves as a foundation for further analysis and strategic planning.

**LENGTH TO COMPLETE:** Research time varies, but could be significant. Completing the worksheet—2-3 hours.

Occupation Credential Worksheet		Sector:
<p>Use the following worksheet to fill in the types of credentials offered for each occupation within your chosen sector. Add or remove rows in tables and duplicate for additional occupations as needed.</p> <p><b>Occupation #1:</b> What does an individual need to enter into this occupation? Fill in the following matrix based on the unique credentials for your occupation.</p>		
Type of Credential & Title of Credential <i>List the type of credential (e.g. Certificate, Degree, Certification, License, or Apprenticeship Certification)</i>	Training Provider <i>List all training providers that provide this certificate, including those both on and off the ETPL list.</i>	Employer-validated? <i>Is this credential validated by local employers?</i>

**WHO PARTICIPATES:** Members of the leadership team or a sub-committee.

**WHEN TO USE:** After labor market data have been analyzed, industries and occupations have been selected, and training and employment programs have been identified.

### Materials:

- Electronic version of worksheet projected on an LCD screen
- Handouts for each person

### Links:

1. Occupational Credential Worksheet with instructions <https://learnwork.workforce3one.org/view/2001120642273559927/info>
2. Occupational Credential Worksheet template <https://learnwork.workforce3one.org/view/2001126551930225889/info>

## How to Use the Occupational Credential Worksheet

Research must be conducted prior to using this tool. This research may be completed by an individual and/or assigned to different committee members. The worksheet includes links to relevant websites and data sources.

It is useful to project an electronic version of the worksheet using an LCD projector so that the group can fill in data together more quickly.

1. **Identify an industry sector** within which an articulated career pathway system can be built and validate that the sector has jobs that are in demand.
2. **Identify a sub-sector** within the larger industry sector and list all the jobs within that subsector.
3. **Identify, sort, and classify the credentials** relating to each occupation according to their type (certification, degree, certification, license, apprenticeship) and their characteristics (industry-recognized, stackable, portable, accredited).
4. **Identify and classify all local providers** that provide training that leads to the specific credential (on the Eligible Training Provider List [ETPL] or not, non-profit vs. for profit, accredited, etc.)

Once this information is collected and synthesized, the team may want to use the *Credential Asset Mapping Tool* to further flesh out the career pathway ladder or lattice.



## Toolset #7 CREDENTIAL ASSET MAPPING TOOL

**PURPOSE:** After your team completes the Occupational Credential Worksheet (see above), this tool takes your team to the next level by providing a framework and process for gaining further understanding of the types of programs and training offered and the stackability and portability of each credential/occupational program. Researching and collecting data prior to completing this tool will be necessary.

Occupation <small>List the occupation the credential is for</small>	Type of Credential & Title <small>List the type of credential (e.g. Certificate, Degree, Certification, License, or Apprenticeship Certification)</small>	Training Provider <small>List all training providers that provide this certificate, including those both on- and off the ETPL list</small>	Integrated/ Accelerated <small>Is the training integrated with work experience and/or accelerated for adult learners?</small>	Online/ Classroom/ Work-based <small>Describe education environment and instructional methods</small>	Portfolio-eligible? <small>Is the program portfolio-eligible?</small>	Fee? <small>(What are the fees?)</small>	Employer-validated? <small>Is the credential validated by local employers? If so, describe.</small>	Stackable? <small>Is the credential stackable with other certificates? If so, describe.</small>	Portable? <small>Are the credentials portable to other states/industries? If so, describe.</small>	Credit/Non-Credit? <small>Are they credit or non-credit?</small>

**LENGTH TO COMPLETE:** Research time varies, but could be significant. Completing the worksheet—2-3 hours.

**WHO PARTICIPATES:** Members of the leadership team or a sub-committee.

**WHEN TO USE:** After completing the Occupational Credential Worksheet.

### Materials:

- Electronic version projected on an LCD screen
- Handouts for each person
- Markers
- Large sticky notes

### Links:

1. Credential Asset Mapping Tool with instructions <https://learnwork.workforce3one.org/view/2001120641984071044/info>
2. Credential Asset Mapping Tool template <https://learnwork.workforce3one.org/view/2001126551834845682/info>

### How to Use the Credential Asset Mapping Tool

Research must be conducted prior to using this tool. This research may be completed by an individual and/or assigned to different committee members. The *Occupational Credential Worksheet* includes links to relevant websites and data sources that may also be useful in filling out this tool.

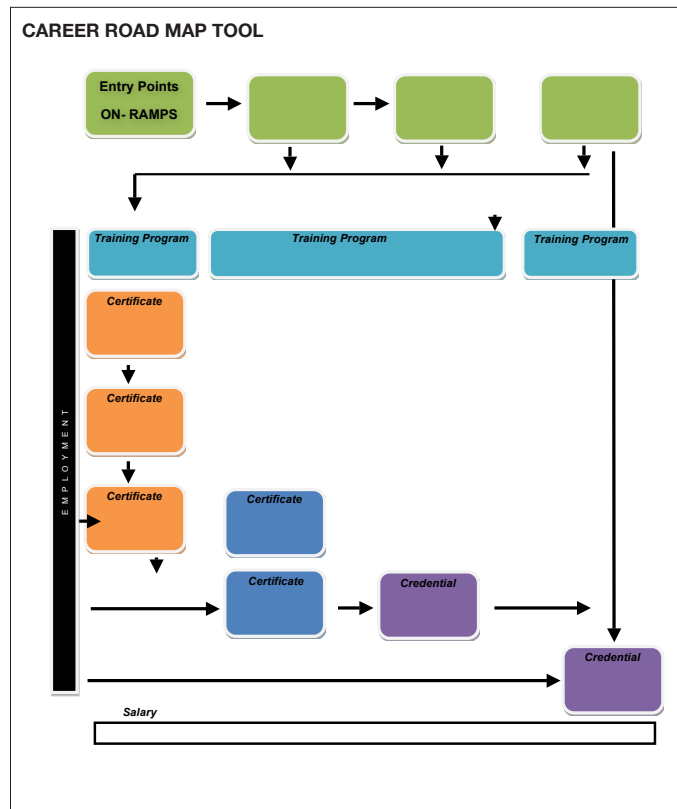
It is useful to project an electronic version of the worksheet using an LCD projector so that the group can fill in data together more quickly.

1. **Using previously collected data, fill in the matrix.** Use the Occupational Credential Worksheet and other data teams have collected to fill in this matrix.

2. **Determine where there are gaps.** Fill in additional information that team members know and/or contact employer partners to fill gaps.
3. **List questions and action steps.** Compile on a flipchart a list of questions for other colleagues and stakeholders. Make note of action items to include on the action plan.
4. **Use the information you've assembled to create a career pathway road map.** See instructions for using this tool below.

## Toolset #8 CAREER PATHWAY ROAD MAP TOOL

**PURPOSE:** When your team is ready to think through and construct a full “road map” for a career pathway, this tool will help guide you through all the steps in the process. Using sticky notes, markers, and an enlarged copy of the *Road Map Tool*, your team can map one or more pathways that provide the education and training needed for selected careers.



**LENGTH TO COMPLETE:** 1–2 hours

**Who participates:** Members of the leadership team, especially representatives of education and training providers.

**WHEN TO USE:** After labor market data has been collected and analyzed, industries and occupations have been selected, and training and employment programs have been identified.

### Materials:

- One oversized printout of the *Career Pathway Road Map* (see “Facilitator Tools & Tips”)
- Handouts for each person
- Flipchart pad (to write out the “Key”)
- Markers
- Large sticky notes

## Links:

1. Career Pathways Road Map Tool with instructions <https://learnwork.workforce3one.org/view/2001120641835697644/info>
2. Career Pathways Road Map Tool template <https://learnwork.workforce3one.org/view/2001126551703791036/info>

## How to Use the Career Pathway Road Map

Once your team has completed the *Credential Asset Mapping Tool*, you will be ready to begin to construct an illustrated *Career Pathways Road Map*. Each *Road Map* lays out the entry and exit points for particular occupations within an industry sector or sub-sector, and includes useful information such as salaries for occupations and connections with other career ladders.

Use the following steps to complete the *Road Map*:

1. **Select an industry or career** pathway to map out. Write this at the top of the chart.
2. **Map pathway.** Using sticky notes and markers, map out the pathway as a sequence of education and training episodes, each leading to a selected occupation.
  - Note specific “on ramps” for different populations and the corresponding agencies and programs.
  - Note the certificates and credentials that programs offer.
  - Note specific “off ramps” for different occupations and their related salaries.
3. **Draw connections.** Using markers, draw connections between career ladders and lattices, noting stages and connections within the pathway. For example, note where specific exit points such as certificates and credential attainment.
4. **Discuss barriers.** Discuss any foreseeable barriers (for example, key players who are not yet involved in the initiative, gaps in existing services, etc.) to designing the ladder or pathway and/or new avenues to explore. Note these on a separate piece of paper or in the *Action Plan*.

Once you’ve completed your *Road Map*, your team may want to develop it as an electronic illustration that can be shared with potential students and partners (see Oregon’s online Road Map tool or examples—link included in Section Three: Resources.)



## SECTION THREE RESOURCES

# CAREER PATHWAYS GLOSSARY

**Adult Basic Education (ABE):** Also referred to as ABS (Adult Basic Skills). Refers to pre-college, non-credit instruction in reading, writing, mathematics, and English language skills, to help adult learners obtain a General Educational Development (GED) credential or enroll in postsecondary education.

**Apprenticeship Programs:** Programs that offer on-the-job training and mentoring that are linked to training and job proficiency. Apprenticeships should provide organized instruction designed to provide knowledge on technical subjects related to their trade.

**Apprenticeship Certificate:** An award certifying the completion of an apprenticeship program. Apprenticeship Certificates are issued by the U.S. Department of Labor or a state apprenticeship agency. The apprenticeship system offers two types of credentials: 1) certificate of completion of an apprenticeship program, and 2) interim credentials.

**Bridge Programs:** Programs designed for individuals whose skills do not meet minimum requirements for certain degree or certificate programs. Bridge programs allow learners to start from their current skill level and develop the basic skills they need to begin the training program that is their ultimate goal.

**Career and Technical Education (CTE):** Also known as Professional Technical Education (PTE) or Vocational Education (VOC ED). Organized, educational activities that offer a sequence of courses that provide individuals with technical skill proficiency, an industry-recognized credential, a certificate, or an associate degree.

**Career Clusters:** A group of occupations and broad industries based on common knowledge and skills.

**Career Ladder:** A set of occupations that are linked together by common or complementary skills. These linkages provide workers with advancement opportunities and employers a pipeline of trainable employees.

**Career Pathways:** Career pathway programs are clear sequences of coursework and credentials that help individuals of varying skill levels earn credentials valued by employers, enter rewarding careers in in-demand and emerging industries and occupations, and advance to increasingly higher levels of education and employment. It is a framework for weaving together adult education, training, and college programs that are currently separated into silos and connecting those services to employers' workforce needs.

**Carl D. Perkins Career and Technical Education Act of 2006:** Federal legislation approved in 2006 with the purpose to more fully develop the academic, career, and technical skills of secondary and postsecondary education students who elect to enroll in career and technical education programs. Perkins funds provide limited resources for the development, improvement, and operation of CTE programs.

**Certificate:** A formal award certifying the satisfactory completion of a postsecondary education program.

**Certification/Personnel Certification:** A certification indicates that the individual has acquired the necessary knowledge, skills, and sometimes personal attributes (based on a formal study) to perform a specific occupation or skill. Personnel Certifications are granted by non-governmental agencies (usually associations and companies) and are intended to set professional standards for qualifications.

**“Chunked” Curriculum:** Also referred to as Modularized Curriculum. Curriculum that is divided into more manageable “chunks” or modules with the purpose of improving degree completion rates among non-traditional learners. Generally, each chunk leads to employment and connects to the next chunk, eventually leading to completion of an industry recognized professional-technical degree. Chunking is one element in a comprehensive career pathways system.

**Competency-based Curriculum:** A program of study based on the mastery of specific information and skills usually tied to application in the workforce.

**Contextualized Instruction:** Instruction that embeds traditional academic content (e.g. reading, writing, mathematics) within content that is meaningful to students’ daily lives and/or interests. Information is usually related to general workplace skills or a specific field or trade.

**Degree:** An award conferred by a college, university, or other postsecondary education institution as official recognition of the successful completion of a program of study.

**English as a Second Language (ESL):** Also known as English Speakers of Other Languages (ESOL). Various titles for students who are non-native English speakers.

**Fast-Track Programs:** Also referred to as Accelerated Programs. The time commitment of traditional courses can pose a barrier for working non-traditional learners. Fast-track programs are designed to take less time than traditional courses, thereby addressing the barrier. Courses can be presented in less time than conventional courses or can be an intensive, presented over a condensed period of time.

**General Educational Development (GED):** A high school equivalency certificate gained by passing five tests: writing, social studies, science, reading, and mathematics.

**High-demand Occupations:** Occupations having more than the median number of total (growth plus replacement) openings for statewide or a particular region.

**High-skill Occupations:** Occupations requiring postsecondary training or higher. Also occupations requiring long-term on-the-job training or related work experience.

**High-wage Occupations:** Occupations paying more than the industry median wage for the state or a particular region.

**Industry Clusters:** Geographic concentrations of interconnected companies and institutions that have some type of systemic relationship that complimentary within a region.

**Industry sectors:** Refers to industries organized according to the Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) classification schemes.

**Industry-recognized credentials:** Credentials that “are either developed or endorsed by a nationally-recognized industry association or organization and are sought or accepted by companies within the industry sector for purposes of hiring or recruitment.” Having credentials be industry-recognized ensures potential employers that holders of the credential have the core competencies needed by employers for industry jobs.

**Industry-Skill Standards:** The knowledge and skills needed for employment at various levels within specific industries. Industry employers or boards usually identify and define these skills.

**Job Readiness Skills:** Also referred to as Soft Skills, Employability Skills, or Work Readiness Skills. Job readiness skills are a set of skills and behaviors that are necessary for any job such as, social competence, job seeking and interview skills, etc.

**License/Occupational License:** An occupational license is typically granted by a Federal, state, or local government agency; is mandatory in the relevant jurisdiction; is intended to set professional standards and ensure safety and quality of work; is required in addition to other credentials; is defined by laws and regulations; and is time-limited. Violation of the terms of the license can result in legal action.



**Portable Credential:** A credential that is “recognized and accepted as verifying the qualifications of an individual in other settings—either in other geographic areas, at other educational institutions, or by other industries or employing companies.” This gives value to all technical and career courses and makes the pathway easier to navigate. A portable credential is especially beneficial to low-skilled learners who will have to navigate multiple education systems (ESL, ABE, Prof. Technical) to achieve college level, industry credential.

**Stackable Credential:** Refers to a credential that “is part of a sequence of credentials that can be accumulated over time to build up an individual’s qualifications.... Typically, stackable credentials help individuals move up a career ladder or along a career pathway to different and potentially higher-paying jobs.” Stackable credentials produce faster results for the student and the employer because students do not have to waste time by only taking academic courses before beginning any technical courses. The stacked design also facilitates navigating a career pathway since aggregating credentials will build to a degree.

**Temporary Assistance for Needy Families (TANF):** A federal program administered locally that provides case management and cash assistance to low-income families with minor children. The goal of the program is to reduce the number of families living in poverty through employment services and community resources.

**Workforce Investment Act (WIA):** The federal statute that establishes federal policy direction and appropriates federal funds for employment and training programs. These programs include training for disadvantaged youth, adults, and dislocated workers; adult education and literacy; employment services and labor market information; and rehabilitation services for individuals with disabilities.

**Workforce-Readiness Standards:** Guidelines for the skills needed to be successful in the workplace. This includes basic workplace skills such as workplace norms, communication skills, technology skills, and the ability to learn on the job.

**Wrap-Around (Student) Services:** Support services that are designed to ensure student success in educational programs. These may include, but are not limited to: Referrals between programs, career development, case management, mentoring, coaching and tutoring, work-friendly scheduling, childcare, federal and state need-based financial aid, job search skills training, and job placement assistance.

# RESOURCES & LINKS

## COMPREHENSIVE CAREER PATHWAY SYSTEM BUILDING

### RESEARCH, REPORTS & PUBLICATIONS

#### **Re-imaging Community Colleges in the 21st Century: A Student-Centered Approach to Higher Education**

*The Center for American Progress, 2009*

[http://www.americanprogress.org/issues/2009/12/pdf/community\\_colleges\\_reimagined.pdf](http://www.americanprogress.org/issues/2009/12/pdf/community_colleges_reimagined.pdf)

Community colleges' multiple missions make it difficult to comprehend the institutions in their totality, and they also challenge the institutions' overall effectiveness. A review of the research on these institutions suggests that few synergies have emerged between colleges' key domains of developmental education, vocational training, and transfer for baccalaureate attainment. Several researchers recommend that community colleges act as pivotal institutions in a career ladder linking secondary, postsecondary, and regional job training programs into a single, progressive, coherent, and sequential system with no redundant or competing parts. This is meant to maximize the effectiveness of community college vocational and occupational education. They stress the importance of institutional connections to local employers and regional job markets, and the need to integrate the academic and occupational curricula into programs in order to provide students with the broad set of skills and knowledge needed in the world of work.

#### **Building Bridges in Wisconsin: Connecting Working Adults with College Credentials and Career Advancement**

*The Center on Wisconsin Strategy (COWS), 2010*

<http://www.cows.org/pdf/rp-buildingbridges.pdf>

This report presents recent data and analysis on the educational and workforce challenges facing Wisconsin. It also 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.

#### **Career Pathways as a Systematic Framework: Rethinking Education for Student Success in College and Careers**

*The League of Innovation in Community Colleges, 2007*

<https://learnwork.workforce3one.org/command/view.aspx?look=2001103383488072718&mode=info&pparams=>

This report looks at the evolution of career pathways and the implications for moving forward by redefining existing models as a single systemic framework capable of serving students of all ages. It also goes further into identifying and breaking down the core elements of a comprehensive career pathway program, as well as practices associated with each core element.

#### **The Principles of the National Fund for Workforce Solutions and Their Implications for Public Policy**

*National Fund for Workforce Solutions, 2009*

<http://www.joincollaborative.org/extrfiles/downloads/priorities.pdf>

The National Fund for Workforce Solutions is an approach to workforce development designed to meet the needs of 21st-century workers, employers, and regional economies. It is built upon a set of principles that are grounded in over a decade of innovation, research, and evaluation. This policy brief summarizes these principles and their policy implications in order to inform efforts to reform the U.S. workforce development system. The recommendations include Building Public-Private Regional Funding Collaborative; Or-

ganizing Workforce Partnerships Around Dual Customer Sector Strategies; Building and Promoting Career Pathways; and Facilitating Results-Orientated Coordination Across Workforce Programs and Systems.

### **The Career Pathways How-To Guide**

*Workforce Strategy Center*

<https://www.workforce3one.org/command/view.aspx?look=3019&mode=info&pparams=>

This “how-to” guide describes a number of characteristics of successful career pathways programs, including clear linkages between remedial, academic and occupational programs within educational institutions; easy articulation of credits across institutions; “Wrap-around” supportive services; and “Bridge” programs.

## **WEBINARS**

### **Career Pathways: What, Why, and How? Webinar**

*U.S. Department of Labor, October 5, 2010*

<https://www.workforce3one.org/command/view.aspx?look=5001027448313677241&mode=info&pparams=>

The purpose of the Webinar is to provide an overview of the Six Key Elements of Career Pathways and to help Career Pathway Initiative grantees refine their implementation plans in preparation for the Career Pathways Institute.

## **WEB SITES/TOOLS**

### **Career Pathways Six Key Elements Graphic Framework**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120641504542734/info>

The Career Pathways Graphic Framework provides an overview of the Six Key Elements, which facilitators may use for instructional purposes, and as a brainstorming tool.

### **Six Key Elements Readiness Assessment Tool**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120642516555109/info>

The Six Key Elements Readiness Assessment Tool assists teams in forming and implementing their career pathways initiative at the local and state levels. This tool help teams assess their state’s career pathways initiative by looking at progress, priorities, gaps, technical assistance needs, and next steps.

### **Next Step Action Planning Tool**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120642119875739/info>

This flexible action-planning tool can assist teams with strategic planning activities and with articulating the action steps necessary for carrying out activities within the Six Key Elements Framework.

### **Six Key Elements Readiness Assessment Tool Online**

*U.S. Department of Labor, 2011*

<http://www.mahernet.com/tiki/tiki-login.php>

The Six Key Elements Readiness Assessment Tool assists teams in forming and implementing their career pathways initiative at the local and state levels. This tool help teams assess their state’s career pathways initiative by looking at progress, priorities, gaps, technical assistance needs, and next steps.

## **Career Pathways Initiative Community of Practice Web site**

*U.S. Department of Labor, 2011*

<https://learnwork.workforce3one.org/>

This Web site provides an overview of the U.S. Department of Labor's Career Pathways Initiative (2010-2011), including information about the grantees, and a library of resources and publications.

## **BUILD CROSS-AGENCY PARTNERSHIPS & CLARIFY ROLES**

### **RESEARCH, REPORTS & PUBLICATIONS**

#### **WIRED Issue Brief It Takes a Network: The Power of Cross-System Collaboratives for Youth**

*Social Policy Research Associates, 2010*

<https://www.workforce3one.org/view/2001023725621127007/info>

This issue brief highlights successful youth-service provider networks that have organized to meet the complex and comprehensive needs of disadvantaged and disconnected youth. We review core activities from local, regional, and state networks, exploring how the partners structured and sustained their cross-system initiatives.

### **WEBINARS**

#### **WIRED TAT Webinar Series: “It Takes a Network”: The Power of Cross-System Collaboratives for Youth Webinar**

*U.S. Department of Labor, August 10, 2010*

<https://www.workforce3one.org/view/5001022246006012820/info>

This webinar highlighted successful cross-system networks that have organized to better meet the needs of disadvantaged and disconnected youth. We heard from seasoned intermediary organizational leaders at local, regional, and state levels who discussed what catalyzed their collaboration, what they have accomplished, and how they continue to sustain their efforts.

#### **Career Pathways TAT Webinar Series: Building Cross-Agency Partnerships Webinar**

*U.S. Department of Labor, March 10, 2011*

<https://www.workforce3one.org/command/view.aspx?look=5001104843457641130&mode=info&pparams=>

For career pathways to succeed, multiple organizations must collaborate to support career entry and job advancement in the target sector. Career pathways partnerships often involve educational entities, workforce and economic development organizations, community organizations, and employers. While the composition and roles in an actual partnership will depend on the goals of the effort, the pre-existing relationships among the prospective partner organizations and the capacities and resources of each provide the building blocks of a career pathways system. This webinar will introduce the elements of cross-agency partnerships and will highlight three promising partnerships. The sites will speak from visual representations of their partnerships.

### **WEB SITES/TOOLS**

#### **Sample Partner Agreements**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001126942046585407/info>

These sample partner agreements provide examples for supporting collaboration among cross-agency partnerships in developing career pathways systems among the local partners and state/local leadership.

## Sample Partner Agreement

Workforce Strategy Center, 2008

[http://www.workforcestrategy.org/images/pdfs/publications/Sample\\_Partner\\_Agreement.pdf](http://www.workforcestrategy.org/images/pdfs/publications/Sample_Partner_Agreement.pdf)

This is a sample agreement for partners engaged in program development for career pathways.

## IDENTIFY SECTOR OR INDUSTRY & ENGAGE EMPLOYERS

### RESEARCH, REPORTS & PUBLICATONS

#### Ahead of the Curve: Responding to the Dynamic Biotech Sector

Biotech Workforce Network, 2006

<https://www.workforce3one.org/view/3624/info>

This report is the story of the Biotech Workforce Network—an evolving public-private partnership that proactively responded to the airline industry's crisis of 9/11, and advanced its mission to provide comprehensive regional education and training solutions, to keep the San Francisco Bay Area biotech businesses ahead of the curve.

#### From Hidden Costs to High Returns: Unlocking the Potential of the Lower-Wage Workforce

Insight Center for Community Economic Development, 2010

<http://www.insightccd.org/uploads/publications/wd/HiddenCosts-HighReturns.pdf>

This business brief summarizes groundbreaking research, which found these pioneering companies are benefiting financially by investing efforts and resources in employee development for their lower-wage workers and rewarding their growth with significant earnings increases. These forward-thinking employers see workforce development as key to maintaining a competitive edge. They view their lower-wage workers as a valuable asset: a means of continually improving quality and a potential talent pool for higher level positions.

#### Thriving in Challenging Times: Connecting Education to Economic Development through Career Pathways

Institute for a Competitive Workforce and the National Career Pathways Network, 2009

<https://learnwork.workforce3one.org/view/2001126573474524646/info>

This report highlights the growing importance of business engagement in education and successful models that create relevant, challenging learning environments with the potential to significantly increase American employers' access to high-quality employees. The report notes four key conditions needed for the success of career pathway models, including the agreement among employers, college administrators, and accreditation groups within a region on curriculum that matches their career ladders. The report provides multiple case studies that demonstrate an involvement on the part of employers and community organizations with a commitment to collaboration between secondary and postsecondary educators.

#### Massachusetts' Forgotten Middle-Skill Jobs: Meeting the Demands of a 21st-Century Economy

National Skills Coalition, 2010

[http://foundationcenter.org/pnd/connections/conn\\_item.jhtml;jsessionid=QQJGZLN2CYJDHLAQBQ4CGXD5AAAACI2F?id=302500010](http://foundationcenter.org/pnd/connections/conn_item.jhtml;jsessionid=QQJGZLN2CYJDHLAQBQ4CGXD5AAAACI2F?id=302500010)

This report looks at the disconnect between the trained workforce and the types of new jobs in the state of Massachusetts. It found that middle-skill jobs will comprise 38 percent of all job openings in the state between 2006 and 2016. However, preparation for middle-skill jobs has not kept up with demand. Only 32 percent of Massachusetts' workers have the credentials to fill them. According to the report, Massachusetts will need to continue to invest in proper training and education for its workforce to make sure the state has enough people to fill the growing volume of middle-skill jobs.

#### Tuning In to Local Labor Markets: Findings from the Sectoral Employment Impact Study

Private/Public Ventures, 2010

[http://www.ppv.org/ppv/publications/assets/325\\_publication.pdf](http://www.ppv.org/ppv/publications/assets/325_publication.pdf)

This study found that participants in sector-focused education and training programs were more likely to work, earned significantly higher wages, and were more likely to work in jobs with benefits than control group members. The study also found that successful

sector-focused programs require strong organizational capacity and adaptability among the involved workforce organizations; strong links to local employers that result in an understanding of the targeted occupations and connections to jobs; job readiness and basic skills training linked to occupational training; recruitment screening and intake processes that result in a good match between the applicant, the program, and the target occupation; and individualized supportive services to encourage training completion and success in the workplace.

### **Employer Resource Networks: Uniting Businesses and Public Partners to Improve Job Retention and Advancement for Low-Wage Workers**

*Social Policy Research Associates and Mathematica Policy Research Associates, 2010*

This issue brief describes the Employer Resource Network (ERN), an innovative, employer-based model that pulls together a consortium of small- to mid-size businesses to provide job retention services, work supports, and training opportunities for entry-level employees, many of whom are receiving public assistance. It provides an overview of key features of the ERN model so that other employers and government agencies may consider whether and how ERNs or a similar approach might be used to develop new services or enhance existing ones in their own local communities.

## **WEBINARS**

### **Employer Based Strategies for Serving Disadvantaged Populations Webinar**

*U.S. Department of Labor, May 18, 2010*

<http://www.workforce3one.org/view/3001014148469507258/info>

The purpose of this webinar is to discuss employer-based strategies for serving disadvantaged populations.

### **Using Real-Time Labor Market Information to Support Credential Attainment and Career Pathways Webinar**

*U.S. Department of Labor, March 22, 2011*

<https://www.workforce3one.org/view/5001107429765257509/info>

The purpose of the webinar is to help those implementing career pathways systems use real-time labor market information to support their career pathway efforts.

## **WEB SITES/TOOLS**

### **Solutions for a Growing Demand Web site**

*Biotech Workforce Network, 2011*

<http://www.biotechworkforcenetwork.com/index.html>

This Web site discusses the activities of the Biotech Workforce Network, a public-private partnership with the mission of recurring and training a homegrown workforce for the biotech sector. The Biotech Workforce Networks created a gateway program that helps students develop their abilities in English, math, and career planning to prepare for transition into a sequence of educational and career-oriented experiences.

## **JOB SPIDERING**

*Burning Glass Web site, 2011*

<http://www.burning-glass.com/technology/job.html>

This Web site aggregates and reports online job postings providing a comprehensive database of real-time job opportunity information.

### **Pathways to Career Success**

*CareerOneStop, 2011*

<http://www.careerinfonet.org/>

Sponsored by the U.S. Department of Labor's Employment and Training Administration, this database allows users to identify employers and access employer information by industry occupation and location. This site also identifies licensed occupations, certifications, and occupations associated with apprenticeship programs. Information is also available on education and training requirements as well as identifies current programs of study available.

### **Bridges to Biotech Biomanufacturing Certificate Programs Web site**

*City College of San Francisco, 2011*

[http://www.ccsf.edu/Departments/Biotech\\_Training/programs.htm](http://www.ccsf.edu/Departments/Biotech_Training/programs.htm)

This Web site provides an overview of the Bridges to Biotech program at the City College of San Francisco and their approach to career pathways programming.

### **1199C Training & Upgrading Fund: Helping Today's Healthcare Workers Prepare for Tomorrow's Workplace Web site**

*District 1199C Training & Upgrading Fund, 2011*

<http://www.1199ctraining.org/index.htm>

This Web site summarizes the District 1199C Training & Upgrading Fund career pathways efforts which are dedicated to: 1) providing access to careers in healthcare and human services through education and life skills training; and 2) building the capacity of the Delaware Valley's healthcare industry to create a high skilled workforce through the development of an educational pipeline that aligns with career ladder steps.

### **EmployOn Overview Web site**

*EmployOn, 2001*

[http://www.employon.com/about\\_overview.asp](http://www.employon.com/about_overview.asp)

This Web site provides real-time job search capabilities and provides labor market research data.

### **Building Integrated Workforce Development Solutions Web site**

*Geographic Solutions, 2011*

<http://www.geographicsolutions.com/index.asp>

This Web site is dedicated to Geographic Solutions which has become the nation's leading provider of software solutions for workforce development, employment, and training.

### **One Search, All Jobs – Web Site**

*Indeed*

<http://www.indeed.com/>

This Web site is an online labor market research tool. It provides information about occupations by location.

### **Monster.com Web site**

*Monster.com, 2011*

<http://www.monster.com/>

This Web site is an online labor market research tool. It provides information about occupations by location. It also provides online job readiness support.

### **My Next Move. National Center for O\*NET Development Web site**

*National Center for O\*NET Development, 2011*

<http://www.mynextmove.org/>

This Web site provides tasks, skills, and salary information for over 900 different careers based on information gathered from incumbent workers and occupational experts. Career outlook information is provided by Bureau of Labor Statistics' 2008 projections. New and emerging occupational information is provided by National Center for O\*NET Development.



**O\*NET Online. National Center for O\*NET Development Web site**

National Center for O\*NET Development, 2011

<http://www.onetcenter.org/>

Sponsored by the U.S. Department of Labor's Employment and Training Administration, this online database provides information on standardized and occupation-specific characteristics. This information breaks down the skills and activities associated with a given occupation.

**Simply Hired Web site**

Simply Hired, 2011

<http://www.simplyhired.com/>

This Web site provides real-time job search capabilities and provides labor market research data.

**Skillworks: Partners for a Productive Workforce Web site**

Skillworks, 2011

<http://www.skill-works.org/>

SkillWorks is a multiyear initiative to improve workforce development in Massachusetts with emphasis on better connecting community colleges and post secondary institutions to the workforce development system. This Web sites provides additional information on the organization and its initiatives.

**Questions to Ask Employers for Various Career Pathways Roles**

Social Policy Research Associate, 2011

<https://learnwork.workforce3one.org/view/2001123644784711042/info>

This resource provides questions for engaging employers in establishing a career pathway program.

**Current Employment Statistics**

U.S. Bureau of Labor Statistics, 2011

<http://www.bls.gov/ces/>

The Current Employment Statistics Program (CES) surveys 140,000 businesses and government agencies monthly to provide detailed labor market data such as employment, hours and earnings. The CES can be used to gain industry characteristics in the development of a career pathway.

**National Industry-Specific Occupational Employment and Wage Estimates**

U.S. Bureau of Labor Statistics, 2011

<http://www.bls.gov/oes/current/oessrci.htm>

Occupational employment and wage estimates are available by industry according to the North American Industry Classification System (NAICS).

**Quarterly Census of Employment and Wages Business Employment Dynamics**

U.S. Bureau of Labor Statistics, 2011

<http://www.bls.gov/news.release/cewbd.toc.htm>

The Bureau of Labor Statistic provides economic news releases that provide quarterly data on private sector job losses and gains by industry, state, and firm size. Data can be used to identify high demand industry sectors in the development of a career pathway.

**Apprenticeship Program Finder Web site**

U.S Department of Labor, 2011

<http://oa.doleta.gov/bat.cfm>

This site provides information about apprenticeship and training programs nationwide.

### **Business Intelligence for the Talent Marketplace. Wanted Analytics Web site**

*Wanted Analytics, 2011*

<http://www.wantedanalytics.com/>

This Web site is an online labor market research tool. It provides information about occupations and location.

### **Employer Interview Protocol**

*Workforce Strategy Center, 2008*

<http://www.workforcestrategy.org/toolkit.html>

This tool lays out a protocol to help guide conversations between workforce development professionals and employers.

### **Career Pathways: Higher Learning & Higher Earning in Oregon Web site**

*WorkSource Oregon, 2009*

<http://worksourceoregon.org/index.php/career-pathways>

This Web site is dedicated to WorkSource Oregon, a network of public and private partners to: ensure businesses have a ready supply of trained workers; connect businesses with the resources they need to grow their workforce and their business; and help connect those in need of work with the employers that are right for them.

## **DESIGN EDUCATION & TRAINING PROGRAMS**

### **RESEARCH, REPORTS & PUBLICATONS**

#### **Course Design Elements Most Valued By Adult Learners in Blended Online Education Environments: An American Perspective**

*Lunna Ausburn, 2004*

<https://learnwork.workforce3one.org/view/2001126566742799003/info>

This research describes course design elements most valued by adult learners in blended learning environments that combine face-to-face contact with web-based learning. It identifies the online course features and the instructional design goals selected as most important by a sample of 67 adults and compares the group rankings with those of various sub-groups based on gender, pre-course technology and self-direction skills and experiences, and preferred learning strategies as measured by Assessing the Learning Strategies of Adults (ATLAS). The results of the study support the principles of adult learning, indicating that adults value course designs containing options, personalization, self-direction, variety, and a learning community.

#### **Learning That Works for America: National Association of State Directors of Career Technical Education Consortium**

*Career Technical Education, 2011*

<http://www.careertech.org/>

In cooperation with the National Career Technical Foundation (NCTEF), NASDCTEc provides leadership and support for the National Career Clusters™ Framework to deliver high-quality CTE programs through improved curriculum design and instruction. The ultimate goal: To elevate student success in college and career while strengthening the economy and driving America's competitiveness worldwide.

#### **Early Outcomes Report for City University of New York Accelerated Study in Associate Programs (ASAP)**

*The City University of New York (CUNY) and NYC Center for Economic Opportunity, 2009*

<https://learnwork.workforce3one.org/view/2001126575121355369/info>

The ASAP program is designed to help students earn their Associate's degree as quickly as possible, with a target of 50 percent of students graduating within three years. In fall 2007 ASAP began with a pilot cohort of 1,132 students who were deemed fully skills proficient in reading, writing, and math. Having just completed its second year ASAP is well on its way to realizing its ambitious goals of graduating at least 50 percent of its original 2007 cohort within three years. As of August 2009, a total of 341 ASAP students from the original cohort have graduated with an Associate's degree, representing a 30.1 percent 2-year graduation rate. A comparison group of similar students from fall 2006 had a 2-year graduation rate of 11.4 percent. An additional 325 students are currently on

track to graduate by September 2010, which would result in 3-year graduation rate of nearly 60 percent. Fall 2006 comparison group students had a 3-year graduation rate of 24 percent.

### **Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College**

*Community College Research Center at Teachers College, Columbia University, 2008*

<http://ccrc.tc.columbia.edu/Publication.asp?UID=658>

Research finds that developmental education as it is now practiced is not very effective in overcoming academic weaknesses, partly because the majority of students referred to developmental education do not finish. This report recommends implementing a comprehensive approach to assessment, supporting more rigorous “tracking” research, and streamlining developmental programs and accelerating students’ progress toward engagement in college-level work. “The existing approaches to assessment for developmental placement should be reconsidered and perhaps replaced with an approach that tries explicitly to determine what a student will need to succeed in college generally rather than one that aims to identify a somewhat narrow set of skills a student possesses at a given point.”

### **Building Bridges to Postsecondary Training for Low-Skill Adults: Outcomes of Washington State’s I-BEST Program**

*Community College Research Center, 2009*

<https://learnwork.workforce3one.org/view/2001126573817637138/info>

The CCRC study compared the educational outcomes over a two-year tracking period of I-BEST students with those of other basic skills students. The study found that students participating in I-BEST achieved better educational outcomes than did other basic skills students, including those who enrolled in at least one non-I-BEST workforce course. I-BEST students were more likely than others to: continue into credit-bearing coursework; earn credits that count toward a college credential; earn occupational certificates; and make point gains on basic skills tests. On all the outcomes examined, I-BEST students did moderately or substantially better than non-I-BEST basic skills students in general.

### **Curriculum and Pedagogy to Integrate Occupational and Academic Instruction in the Community College: Implications for Faculty Development**

*Community College Research Center, Teachers College, Columbia University, 2009*

<http://ccrc.tc.columbia.edu/ContentByType.asp?t=1&ContentItemTypeID=3&PagePos=2>

This document describes a case study of seven community colleges that used curriculum and pedagogy to integrate academic and occupational education. Integration is accomplished by linking or clustering courses, infusing academic instruction into occupational education or vice versa, or adding components such as authentic assessment, career exploration, and work-based learning to traditional career-related education. An unanticipated finding was that only a small number of community colleges (at least in the four states targeted) actually offered courses that integrated academic and occupational curriculum. Benefits of integrated instruction included: (1) increased student motivation; (2) a greater sense of mutual support and community through linked courses; (3) interactions with different faculty offset the problem of increased faculty workload; (4) faculty improved their teaching skills and their awareness of other disciplines; and (5) integrated instruction may stimulate an updating of curriculum and help local employers to form relationships with the college. Obstacles included: (1) faculty resistance to change, or to academic-occupational integration in particular; (2) increased faculty workload; (3) a perception that integrated instruction reduced educational quality; (4) conflict in the standards or perceptions of faculty members in linked-course models; (5) questionable transferability of integrated courses.

### **Ohio Stackable Certificates: Models for Success**

*Community Resource Partners, Columbus State Community College Business and Industry Division, 2008*

[http://www.communityresearchpartners.org/uploads/publications/Ohio\\_Stackable\\_Certificates\\_Models\\_for\\_Success.pdf](http://www.communityresearchpartners.org/uploads/publications/Ohio_Stackable_Certificates_Models_for_Success.pdf)

The report includes a discussion of the context for Ohio Stackable Certificates, including legislation and stakeholder perceptions, including the barriers that adults must overcome to succeed in postsecondary education. It provides examples of National and Ohio best practices for engaging adults in postsecondary education, a framework for Ohio Stackable Certificates, and case studies of national and Ohio program model.

### **Building Blocks for Building Skills: An Inventory of Adult Learning Models and Innovations**

*Council for Adult & Experiential Learning, 2006*

<https://learnwork.workforce3one.org/command/view.aspx?look=2001010545753981422&mode=info&pparams=>

CAEL's Building Blocks' research, developed during WIRED, identifies the need for regional partnerships to focus on the merits of delivering accelerated and online learning programs, including "bridge" efforts to create logical sequences of content leading to articulated career ladders. Emphasis was placed on the assessment of prior learning leading to career readiness credentials, on-the-job learning (apprenticeships), and transitional jobs. The overarching goal was to engage employers in developing regional economic development strategies focused on sectoral approaches. Emphasis also was placed on data sharing through formative and summative evaluations.

### **Fueling the Race to Postsecondary Success: A 48- Institution Study of Prior Learning Assessment and Adult Student Outcomes**

*Council for Adult & Experiential Learning, 2010*

<https://learnwork.workforce3one.org/view/2001126574740737000/info>

This is a report that looks at Prior Learning Assessment (PLA) and Adult Student Outcomes. The Summary of Findings is as follows: The data from 62,475 students at the 48 postsecondary institutions in our study show that PLA students had better academic outcomes, particularly in terms of graduation rates and persistence, than other adult students. Many PLA students also shortened the time required to earn a degree, depending on the number of PLA credits earned.

### **How to Build Bridge Programs that Fit Into a Career Pathway: A Step-by-Step Guide Based on Carreras en Salud Program in Chicago**

*Instituto Del Progreso Latino, 2009*

[http://www.iccb.state.il.us/pdf/shifting%20gears/Instituto2010\\_HowToBuildBridgePrograms.pdf](http://www.iccb.state.il.us/pdf/shifting%20gears/Instituto2010_HowToBuildBridgePrograms.pdf)

A guide that provides tools and information necessary to develop and implement a career pathways program with specific examples drawn from Chicago's Carreras en Salud Program, a Shifting Gears Initiative. Carreras en Salud used bridge programs to strengthen their career pathway program. The program elements are discussed with practical examples and challenges in implementation, specifically around hard to serve populations like low-skilled workers and English as second language students.

### **The Breaking Through Practice Guide**

*Jobs For the Future, 2010*

<https://learnwork.workforce3one.org/command/view.aspx?look=2001103382589956519&mode=info&pparams=>

The Practice Guide is designed for practitioners who want to connect adults who have limited reading and math skills with postsecondary credentials. It compiles practices developed and implemented by community colleges in the National Breaking Through Initiative.

### **Creating Career Pathways for Frontline Health Care Workers**

*Jobs for the Future, 2011*

<http://jobs2careers.org/resource/creating-career-pathways-for-frontline-health-care-workers>

An effective, efficient workforce is essential to addressing rising costs in the health care industry. Nevertheless, effective investments in career advancement for frontline health care workers are limited. Creating Career Pathways for Frontline Health Care Workers focuses on promising practices drawn from Jobs to Careers.

### **Redesigning Mathematics Curriculum for Underprepared Students**

*Marva Lucas and Nancy McCormick, 2007*

[http://uncw.edu/cte/et/articles/Vol7\\_2/McCormick.pdf](http://uncw.edu/cte/et/articles/Vol7_2/McCormick.pdf)

Middle Tennessee State University published a report to examine the results of the pilot year of its redesign initiative for two mathematics general education courses. The courses, which counted for credit, were designed to accommodate the needs of underprepared students. These new courses replaced a course sequence that required underprepared students to take non-credit developmental courses before enrolling in general education. The new courses included enhanced use of technology and smaller class sizes. Hypothesis testing using z-test statistics showed that there was no significant difference between the pass rate in the newly designed courses and the (non-credit) developmental courses used in previous years, suggesting that underprepared students could learn more material in the same amount of time. Also, there was no statistically significant difference between the pass rate of underprepared students in the specially designed courses and students in the standard general education course that taught similar material.

### **Opening Doors to Earning Credentials: Impressions of Community College Access and Retention from Low-Wage Workers**

*Manpower Demonstration Research Corporation (MDRC), 2007*

<http://www.mdrc.org/publications/137/abstract.html>

This paper presents impressions from Opening Doors to Earning Credentials, a qualitative study that examines access and retention issues for low-wage working parents. The researchers were able to make a series of recommendations based on the feedback they received from students to better serve their needs given their financial and time constraints. Findings include: 1) Students are very interested in short-term certification programs and believe they could reduce work hours for a long period of time due to lost wages. Intensive, short-term education or training options may be more attractive for them. These demonstrations could include certification programs with employers or trade associations that use flexible modularized classes, the integration of basic academic and technical skills, and the opportunity to earn credit toward an AA degree, or beyond. These training programs could be offered along with support services that could be delivered through community-based organizations. 2) Students support distance learning that allows working parents more flexibility in when they attend classes and reduce transportation barriers.

### **Enhancing Student services at Owens Community College: Early Results from the Opening Doors Demonstration in Ohio**

*Manpower Demonstration Research Corporation (MDRC), 2007*

<http://www.mdrc.org/publications/449/full.pdf>

In 2003, MDRC launched the Opening Doors demonstration to test reforms in six community colleges aimed at helping students stay in school and earn credentials. This report provides early results of the Opening Doors program at Owens Community College in Toledo, Ohio. Analysis of student transcript data for the entire research sample of three groups at Owens shows that at both colleges, students in the Opening Doors program were more likely than students in the control group to reenroll in college after one semester.

### **A Good Start: Two-year Effects of a Freshman Community Learning Program at Kingsborough Community College**

*Manpower Demonstration Research Corporation (MDRC), 2008*

<http://www.mdrc.org/publications/473/overview.html>

As part of MDRC's multisite Opening Doors demonstration, Kingsborough Community College in Brooklyn, New York — a large, urban college with a diverse student population that includes many immigrants — operated a learning community program. The program placed freshmen in groups of up to 25 who took three classes together during their first semester. Using a rigorous research design, MDRC assigned 1,534 freshmen, at random, either to a program group that was eligible for the learning community or to a control group that received the college's standard courses and services. Analyses in this report show that the program improved some educational outcomes for students while they were in the program, but the impact did not persist. Initially the program did not change the rate at which students reenrolled. In the last semester of the report's two-year follow-up period, however, slightly more program group members than control group members attended college.

### **Learning Communities for Students in Developmental Reading: An Impact Study at Hillsborough Community College**

*Manpower Demonstration Research Corporation (MDRC), 2010*

<http://www.mdrc.org/publications/561/overview.html>

This report presents results from a rigorous random assignment study of a basic learning community program at Hillsborough Community College in Tampa Bay, Florida. Hillsborough's learning communities co-enrolled groups of around 20 students into a developmental reading course and a "college success" course. Three cohorts of students (fall 2007, spring 2008, and fall 2008) participated in the study, for a total of 1,071. The findings show that overall (for the full study sample), Hillsborough's learning communities program did not have a meaningful impact on students' academic success. Corresponding to the maturation of the learning communities

program, evidence suggests that the program had positive impacts on some educational outcomes for the third (fall 2008) cohort of students.

### **More Guidance, Better Results? Three Year Effects of an Enhanced Student Services Program at Two Community Colleges**

*Manpower Demonstration Research Corporation (MDRC), 2009*

<http://www.mdrc.org/publications/524/overview.html>.

As part of MDRC's multisite Opening Doors demonstration, Lorain County Community College and Owens Community College in Ohio ran a program that provided enhanced student services and a modest stipend to low-income students. This study's findings include the following: the program improved academic outcomes during the second semester that students were in the study; and after students in the Opening Doors program received their two semesters of enhanced counseling services, the program continued to have a positive effect on registration rates in the semester that followed. The program did not, however, meaningfully affect academic outcomes in subsequent semesters.

### **Linking School-Based and Work-Based Learning: The Implications of LaGuardia's Co-op Seminars for School-to-Work Programs**

*National Center for Research in Vocational Education and University of California at Berkeley, 1998*

<http://www.eric.ed.gov:80/PDFS/ED388861.pdf>

This monograph describes the mandatory cooperative education program at LaGuardia Community College in New York City, and the series of seminars that integrate school-based and work-based learning. This series of studies examines the history, practice, and quality of cooperative education (CE) in two-year colleges in regions where career education is firmly ingrained and widespread. One study describes a mandatory cooperative education program and its series of seminars that integrate school-based and work-based learning to actively explore careers; to master skills and competencies common to all jobs; and to explore social, ethical, political, and moral themes associated with working. The second study found that benefits of CE cited by students, employers, and schools were allowing employers to screen and "grow their own" employees, giving students direct knowledge about the workplace and applications of school-based learning in the workplace; and strengthening schools' links to employers. A key finding is that work-based components must become central to educational purposes of institutions so that it becomes as unthinkable to give them up, even in times of scarce resources.

### **Carreras En Salud: A Chicago Bilingual Health Care Career Pathways Partnership**

*National Council of La Raza, 2008*

[http://www.nclr.org/images/uploads/pages/Carreras%20en%20Salud%20case%20study%20\(2\).pdf](http://www.nclr.org/images/uploads/pages/Carreras%20en%20Salud%20case%20study%20(2).pdf)

The purpose of this report is to highlight the promising practices of National Council of La Raza's pilot site, Carreras en Salud. Funded by the U.S. Department of Labor, Carreras en Salud is a bilingual healthcare partnership designed to bridge the gap between low-paying jobs and higher-wage careers. Strategies and lessons learned surrounding program development, building bridge programs to scale, and working with a Latino population from the pilot are provided.

### **Background and Supporting Evidence for Adult Education for Work**

*National Center on Education and the Economy, Workforce Development Strategies Group, 2009*

<https://learnwork.workforce3one.org/view/2001126570035355466/info>

This paper provides specific steps the adult education system can take to develop and implement career pathways systems of learning that move low-skilled adults through work-oriented adult education programs and onto postsecondary programs. First, it briefly reviews how the basic skills problem in this country affects our economy and explains why the present response of the adult education system is inadequate to meet that problem. Second, it presents an overall vision of how a more comprehensive career pathways learning system that meets our nation's education and skill needs could be constructed, and the role that an Adult Education for Work system should play in that broader system. And third, it details specific measures that adult education programs can take (through the identification of quality elements) to make that vision a reality, focusing on seven areas: program design, curriculum and instruction, assessment and credentialing, high-quality teaching, support and follow-up services to encourage access and retention, connections to the business community, and monitoring and accountability systems.



### **Comparing the Impact of Traditional and Cooperative Apprenticeship Programs on Graduates' Industry Success**

Andrew A. Rezin & N.L. McCaslin, 2002

<http://scholar.lib.vt.edu/ejournals/JCTE/v18n1/pdf/rezin.pdf>

This study compared the outcomes of cooperative apprenticeship program graduates with those of traditional programs to identify if learning gains from these programs justified expansion of the models. Although nearly 95% of all graduates sampled were employed full-time, graduates from cooperative apprenticeship programs outperformed traditional program graduates in several areas, including higher minimum and maximum salaries, and reported current employment in jobs directly related to their program compared to traditional program graduates. The study concludes that cooperative apprenticeship programs provided improved outcomes and supports education / industry partnership efforts as a method to improve educational outcomes.

### **Career Ladders for the Hard to Employ Issue Brief**

Social Policy Research Associates, 2010

<https://www.workforce3one.org/view/2001027338263742261/info>

Based on the successful practices employed by a range of career pathways programs for low-skilled, unemployed individuals, this Issue Brief presents a set of six principles that should be the basis for the development of any program intending to use career ladder strategies as a means of bringing hard-to-place individuals into the workforce and keeping them there.

### **The Arkansas Career Pathway initiative: A New Model for Delivering Postsecondary Training to Adult Students**

Southern Good Faith Fund, 2008

<https://learnwork.workforce3one.org/command/view.aspx?look=2001103401584733327&mode=info&pparams=>

This brief describes the Arkansas Career Pathways Initiative (CPI). Currently, there are 25 sites in Arkansas, including all 22 two-year colleges in the state participating in the initiative. The report looks at changes in population characteristics in Arkansas as a means to target services. Their statewide model has allowed them to align policies and programs to leverage resources. Key components of the Career Pathways Initiative are discussed in detail.

### **Classrooms as Communities: Exploring the Educational Character of Student Persistence**

Vincent Tinto, 1997

[http://www.eric.ed.gov:80/ERICWebPortal/search/detailmini.jsp?\\_nfpb=true&\\_ERICExtSearch\\_SearchValue\\_0=EJ555722&ERICExtSearch\\_SearchType\\_0=no&accno=EJ555722](http://www.eric.ed.gov:80/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=EJ555722&ERICExtSearch_SearchType_0=no&accno=EJ555722)

This study examined the experiences of students enrolled for one year in the Coordinated Studies Program (CSP) at Seattle Central Community College. CSP required students to enroll together in a series of courses that crossed disciplines but dealt with the same theme, and the program emphasized cooperative learning activities. The study had both a qualitative component and a quantitative analysis that compared survey results and institutional outcomes between a sample of CSP students and students sampled from comparison classes at the college. Descriptive statistics showed that CSP students had significantly higher rates of persistence, and a multivariate analysis that controlled for student attributes and behaviors found that participation in CSP was an independent predictor of persistence into the second year of college. The qualitative case study suggested that CSP helped persistence by creating supportive peer groups, bridging the academic-social divide, and giving students a voice in the learning process.

### **Characteristics of the Community-Based Job Training Grant (CBJTG) Program**

The Urban Institute Center on Labor, Human Services, and Population, 2009

<https://learnwork.workforce3one.org/view/2001126571312337154/info>

This evaluation shares characteristics of the community-based job training grant (CBJTG) program. The evaluation reports "less than half the grantees (Community-Based Rounds 1-3) were planning to use the funds for collaborating with partners or developing certifications". In addition, Technical colleges are more likely than the average grantee to develop a new training program or expand an existing one and create certifications but are less likely to engage in partnerships and develop a new curriculum. Other types of grantees, including four-year educational institutions and public workforce investment system organizations, are more likely than average to collaborate with partners but are less likely to develop a new training program, certifications, or curriculum.



## **I-BEST: A Program Integrating Adult Basic Education and Workforce Training**

*Washington State Board for Community and Technical Colleges, 2005*

<https://www.workforce3one.org/view/2858/info>

The Integrated Basic Education and Skills Training (I-BEST) offered by the Washington State Board for Community and Technical Colleges system, pairs English as a second language with professional technical instruction to provide students with needed skills. In 2004 the state implemented 10 demonstration sites that focused on specific language competencies for application in an employment environment as part of ESL instruction. This report summarizes information about the project and outlines lessons learned, emphasizing the need to coordinate with other partners including employers.

## **WEB SITES/TOOLS**

### **Eastern Connecticut Workforce Investment Board: Programs and Services Web site**

*Eastern Connecticut Workforce Investment Board, 2011*

<http://www.ewib.org/Default.aspx?tabid=100>

The Eastern Connecticut Workforce Investment Board convened a group of employers, educators, and economic development agencies along with local, state, and regional government officials to address the shortage in skilled labor. This Web site provides additional information on the resulting training program for Clinical Data Manager positions, collaboratively designed and taught by industry experts and local community college instructors.

### **Kentucky Community and Technical College System: Higher Learning Begins Here**

*Kentucky Community and Technical College System, 2011*

[http://www.kctcs.edu/System\\_Initiatives/Career\\_Pathways.aspx](http://www.kctcs.edu/System_Initiatives/Career_Pathways.aspx)

This Web site provides additional information on Kentucky's career pathway programs. The types of industries included in KCTCS Career Pathway initiatives include: business, information technology, manufacturing and industrial technology, healthcare/nursing and allied health, and natural resources/energy.

### **Programs of Study. U.S. Department of Education, Office of Vocational and Adult Education Web site**

*Perkins Collaborative Resources Network, 2011*

<http://cte.ed.gov/nationalinitiatives/rpos.cfm>

The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) calls for states to offer career and technical programs of study. The Web site provides information on the framework for those programs of study. This web site provides information on grant funding and other resources to assist states and local grantees in the implementation of rigorous programs of study.

### **Career Pathways Program Design Chart**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120641684316308/info>

As teams are designing career pathways systems and programs, this chart provides a useful reference for thinking about many of the key quality elements of program design.

### **Career Pathways Road Map**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120641835697644/info>

As teams are designing career pathways systems and programs, this chart provides a useful reference for thinking about many of the key quality elements of program design.

### **Credential Asset Mapping Tool**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120641984071044/info>

This tool takes teams to the next level in constructing career ladders and pathways leading to credentials. Building on the Occupational Credential Worksheet, there is space to note information concerning the types of programs and training offered, and the stackability and portability of each credential/occupational program.

### **Occupational Credential Worksheet**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120642273559927/info>

This tool is designed to help grantees identify, sort, and classify the credentials in a specific occupational area. The information collected during this exercise serves as a foundation for further analysis and strategic planning.

### **Service Mapping Tool**

*Social Policy Research Associates, 2011*

<https://learnwork.workforce3one.org/view/2001120642445820802/info>

Community service mapping is a proven, non-threatening process to identify the WIIFMs (What's In It For Me) for all partners to network without bankrupting their funding streams. Attendees leave the service mapping session knowing 1) more information about each other's services and activities, targeted populations, goals and objectives and how they do business, 2) what skills and workforce development services are necessary within the community to serve the universal and targeted populations, and 3) how to analyze service gaps, augmentations and duplication in services for the skills and workforce development activities.

### **Career Pathways: I-BEST Web site**

*Tacoma Community College, 2011*

<http://www.tacomacc.edu/areasofstudy/transitionalstudies/careerpathwaysIBEST/>

This Web site is dedicated to the career pathway initiative at Tacoma Community College in Washington. I-BEST programs are for students who want to improve English language or basic skills but also want to earn a college-level certificate or 2-year degree. Students have two teachers in each class: one professional-technical instructor, and one English-language or basic skills instructor. In addition, I-BEST students receive additional support for each professional-technical course.

### **Massachusetts Workforce Board Association: About the Workforce Solutions Group Web Site**

*The Workforce Solutions Group, 2011*

<http://www.massworkforce.com/wsg-about.php>

The Workforce Solutions Group is a coalition led by the Massachusetts Workforce Board Association that is dedicated to improving and reforming the Massachusetts workforce development system. This Web site provides an overview of their career pathways initiatives in Massachusetts.

## **IDENTIFY FUNDING NEEDS AND SOURCES**

### **RESEARCH, REPORTS & PUBLICATONS**

#### **Funding Career Pathways and Career Pathway Bridges: A Federal Policy Toolkit for States**

*Center for Law and Social Policy (CLASP), 2010*

<https://www.workforce3one.org/view/4011015949120413581/info>

This policy toolkit lays out several core components of career pathway programs based on 7 states who are participating in a career pathway initiative: multiple entry points; innovations in program content and delivery, (e.g., flexible scheduling, contextualization, integration of bridge programs); sequence of education and training leading to credentials with value in the labor market; support services (provided by community organizations, community colleges, and/or other organizations); and strong role for employers in pathway development, worksite training, and contribution of resources.

## **Leveraging Funding Opportunities for Disadvantaged Populations: Strategies and Sources**

*Social Policy Research Associates, 2010*

<https://www.workforce3one.org/view/2001027337891370541/info>

This Issue Brief explores strategies for securing federal grants and other funding opportunities to sustain programs and services for disadvantaged adults and youth. It contains practical information and lists valuable resources. It is directed to those organizations and agencies seeking to forge strategic partnerships to leverage previously out-of-reach funding opportunities.

## **WEBINARS**

### **Dollars and Sense—Using Federal Resources to Fund Career Pathways and Bridges—Webinar**

*Center for Law and Social Policy (CLASP), November 18, 2010*

<http://www.clasp.org/postsecondary/publication?id=0840&list=publications>

This webinar will discuss how to use the toolkit can help combine federal funds to create a customized career pathways funding strategy. Program directors will discuss their state's funding strategy and how they're using career pathways to help low-skilled adults and youth attain postsecondary credentials and achieve economic mobility.

## **MEASURE SYSTEM CHANGE AND PERFORMANCE**

### **RESEARCH, REPORTS & PUBLICATIONS**

#### **Skills for Worker Advancement and Economic Growth**

*The Joyce Foundation, Shifting Gears Project, 2009*

<http://www.shifting-gears.org/>

This is a compilation of policy papers on data collection by the Shifting Gears project funded by the Joyce Foundation, dating from 2003 - 2010. An overview of the project: States seeking to increase the number of young adults and workers obtaining valuable post-secondary credentials can help achieve that goal by collecting data on student success. States can use the data to identify student achievement gaps and leaks in the educational pipeline, improve education and training programs, identify transition issues, and evaluate the effectiveness of state education and workforce development strategies as a whole.

## **WEB SITES/TOOLS**

### **Administrative Data Research and Evaluation (ADARE) Web site**

*Administrative Data Research and Evaluation, 2011*

<http://www.ubalt.edu/jfi/adare/>

This Web site provides information about states that have designed workforce longitudinal data systems. ADARE is the Administrative Data Research and Evaluation alliance of nine state partners covering 43 percent of the U.S. civilian labor force. Each state partner has negotiated data sharing agreements with state agency owners of pertinent administrative data. These agreements permit controlled access to administrative data sources for authorized research and evaluation purposes that do not disclose the identity of individuals or business entities.

### **Workforce Data Quality Initiative Web site**

*U.S. Department of Labor, 2011*

<http://www.doleta.gov/Performance/workforcedatagrants09.cfm>

This Web site provides information on grants awarded to improve analysis of workforce program impacts. The Workforce Data Quality Initiative funds will enable states to build or expand longitudinal databases of workforce data that also link to education data. States will use these longitudinal databases to conduct research and analysis aimed at pinpointing the effectiveness of employment and training programs to better inform workforce system customers.

## ALIGN POLICIES AND PROGRAMS

### RESEARCH, REPORTS & PUBLICATONS

#### **Strong Students, Strong Workers: Models for Student Success through Workforce Development and Community College Partnerships**

*Center for American Progress, 2009*

[http://www.americanprogress.org/issues/2009/12/strong\\_students.html](http://www.americanprogress.org/issues/2009/12/strong_students.html)

This policy paper discusses the importance of community colleges in training working adults and the critical problems these colleges are facing. In addition to issues surrounding student access, community college programs are not always well connected to areas of strong labor market demand. This report attempts to address these issues by reviewing the range of efforts made by community colleges, specifically addressing the following: systemic reform; instructional, curricular, and program reforms; and efforts aimed at disadvantaged youth.

#### **A Policy Guide for Career Pathways: Roles for the Workforce Investment System**

*Jobs for the Future, 2011*

[Scheduled for release in late 2011](#)

A guide for the workforce system in carrying out career pathways programs.

#### **Career Pathways: The Convergence of Transformations**

*The Kentucky Community and Technical College System, 2007*

<https://learnwork.workforce3one.org/view/2001126569509299334/info>

This presentation discusses the need for pursuing career pathways. It outlines resources dedicated to career pathway and the commonalities across the literature. Finally, it discusses how career pathways can transition from theory to practice.

#### **Career Pathways as a Strategy to Advance Low-Wage Workers: The Kentucky Experience**

*The Kentucky Community and Technical College System, 2006*

<https://learnwork.workforce3one.org/view/2001126569226196387/info>

Dr. Keith Bird, Chancellor of the Kentucky Community and Technical College System, presented this case study of Kentucky's career pathways program at the National Conference of State Legislatures. This presentation summarizes Kentucky's economic motivations for pursuing career pathways programs, challenges facing the state, examples of current efforts, and the positive associated outcomes.

#### **Aligning Multiple Missions: Policy Suggestions for the Kentucky Community and Technical College System's College and Workforce Readiness Group**

*The Kentucky Community and Technical College System, 2009*

<https://learnwork.workforce3one.org/view/2001126572988922093/info>

This policy piece addressed the need for mission alignment in Kentucky where all 16 schools in the Kentucky Community and Technical College System have pursued career pathways programs. The goal of mission alignment is to employ a state-wide system using a systematic framework that connects instructional programming and services to support student advancement. The College Workforce Readiness Group has recommended policies, procedures, and practices for Kentucky in the following topic areas: data driven improvements, students success and transition, and professional development.

#### **Charting A Path: An Exploration of the Statewide Career Pathway Efforts In Arkansas, Kentucky, Oregon, Washington, and Wisconsin**

*Seattle Jobs Initiative, 2009*

<http://www.seattlejobsinitiative.com/news/archives/pages/ChartingaPathSJIsNewCareerPathwaysReport.html>

This report, produced in partnership and with the primary support of the Working Poor Families Project, highlights the statewide career pathway efforts in Arkansas, Kentucky, Oregon, Washington, and Wisconsin. The career pathways framework is broken into identifying target populations, target sectors, employer engagement, and support services. In moving to implementation, this report discusses how states have motivated stakeholders, funded their programs, and challenges they've faced.

### **Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Longitudinal Student Tracking Study (The “Tipping Point” Research)**

*Washington State Board for Community and Technical Colleges, 2005*

<https://www.workforce3one.org/view/2732/info>

This study of students in the Washington State Community and Technical College system finds evidence that attending college for at least one year and earning a credential provides a substantial boost in earnings for adults with a high school diploma or less who enter higher education through a community college. These findings are consistent with studies that have used nationally representative samples of community college students. Short-term training and adult basic skills education by itself may help individuals get into the labor market, but usually does not help them advance beyond low-paying jobs. Only individuals who took basic skills courses concurrently with vocational training enjoyed a significant benefit in average rates of employment and quarterly earnings.

### **Net Impact and Benefit-Cost Estimates of the Workforce Development System in Washington State**

*W.E. Upjohn Institute for Employment Research, 2006*

<https://learnwork.workforce3one.org/view/2001126573474524646/info>

This study estimates the net impacts and private and social benefits and costs of 11 workforce development programs administered in Washington State. Six of the programs serve job-ready adults: Workforce Investment Act (WIA) Title I-B Adult programs, WIA Title I-B Dislocated Worker programs, Community and Technical College Job Preparatory Training, Community and Technical College Worker Retraining, Private Career Schools, and Apprenticeships. The net impact analyses were conducted using a non-experimental methodology. A variety of estimation techniques was used to calculate net impacts including block matching, comparison of means, regression-adjusted comparison of means, and difference-indifference comparison of means. Researchers estimated short-term net impacts that examined outcomes for individuals who exited from the education or training programs (or from the Labor Exchange) in the fiscal year 2003/2004 and longer-term impacts for individuals who exited in the fiscal year 2001/2002.

### **Bridging Business and Education for the 21st Century Workforce: A Strategic Plan for Virginia’s Career Pathway System**

*Workforce Strategy Center, 2008*

<http://www.vccs.edu/Portals/0/ContentAreas/Workforce/CareerPathwaysVA.pdf>

This report provides a brief review of the state of Virginia’s economy and the Governor’s workforce development plan. It also does an assessment of current career pathways initiatives in the state, evaluates progress, and then sets goals. Finally, recommendations are made for furthering Virginia’s career pathway initiative.

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