

Response to the Federal Request for Information on Adoption of Career Pathways Approaches for the Delivery of Education, Training, Employment, and Human Services

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Introduction

CLASP commends the Obama Administration and the U.S. Departments of Education, Health and Human Services, and Labor for their leadership in promoting career pathways and for their thoughtfulness in gathering input from a broad range of stakeholders to inform future efforts and investments supporting this innovative approach. The career pathways movement is growing – fueled by significant investment from public and private funders, as well as supportive federal policy guidance and the initiative of many state and local/regional partners over the last ten years. Several pockets of innovation have emerged including well-known efforts such as Washington State’s I-BEST program and California’s Career Advancement Academies. Most of the innovation to date has focused on career pathway *programs* and *practices*. However, if the career pathway approach is to live up to its full potential as a *systems transformation strategy*, we also will need investments, guidance, technical assistance, innovation, and a clear shared understanding of career pathway *systems*, how they are built and maintained, and how they can best support pathways and programs at the local level. Common language, joint cross-agency system criteria, and shared participant metrics will be essential.

CLASP and the [Alliance for Quality Career Pathways](#) (described in question 10 below) define “career pathway systems” as the cohesive combination of partnerships, resources and funding, policies, data, and shared performance measures that support the development, quality, scaling, and dynamic sustainability¹ of career pathways and programs for youth and adults. The “career pathway approach” connects progressive levels of education, training, support services, and credentials for specific occupations in a way that optimizes the progress and success of individuals with varying levels of abilities and needs; it deeply engages employers and helps individuals earn marketable credentials, engage in further education and employment, and achieve economic success. “Career pathways” operationalize this approach; see the Alliance for Quality Career Pathways 1.0 Framework (forthcoming in late June 2014) for more information on the essential features and functions of career pathways.

As the movement grows and stakeholders expand their efforts to build and strengthen systems, it is critical that career pathways reach low-income, lower-skilled, and other vulnerable populations. Although well-prepared students and workers/job seekers certainly can benefit from career pathways, the approach is particularly beneficial for more vulnerable populations, whose educational and career success is more often impeded by disconnects between systems – such as between adult education and postsecondary education and between education and comprehensive student financial and other supports - and limited access to innovative career pathway practices like

contextualized basic education and comprehensive integrated education, assessment, supports, and work experiences. If the programs in the Workforce Investment Opportunities Act are reauthorized this year, there will be more opportunities to advance career pathways with shared definitions, metrics, and other changes supportive of this approach.

Responses to Specific Questions in the [Request for Information](#)

One of the biggest hurdles to career pathways is the mismatch between current performance measurement systems and a career pathway approach to metrics. Many of the strongest facilitators of career pathways include revised and new policies, funding, and technical assistance. These key topics are addressed in the Request for Information (RFI) questions 10, 11, and 12, and we have prioritized them in our response by addressing them first. Responses to select other RFI questions begin on page 7.

Q10: Participant outcomes measured and extent of data used to monitor and improve the strength of career pathway systems

Tags: Alignment; Career Pathways; Career Pathway Metrics; Certificates; Certifications; Cross-System Outcomes; Outcome Measurement; Partnerships

Career pathway system partners have had to create their own systems outside and parallel to federal performance systems for monitoring key career pathway participant outcomes. This has resulted in a patchwork of measurement systems and a duplication of efforts. The [Alliance for Quality Career Pathways](#) initiative (the Alliance) seeks to address this challenge. This is a partner-driven, CLASP-led initiative to help state and local/regional partnerships strengthen their career pathway systems. In Phase I (2012-2014), Alliance partners from ten leading career pathway states—Arkansas, California, Illinois, Kentucky, Massachusetts, Minnesota, Oregon, Virginia, Washington, and Wisconsin—have developed and provided their consensus support for the Alliance for Quality Career Pathways Framework 1.0, which provides a common understanding of quality career pathways and systems. The framework provides a clear set of criteria and indicators for what constitutes a quality career pathway system, as well as participant metrics to assess and continuously improve their systems.

The purpose of the Alliance metrics is to provide a shared set of outcome metrics that can be used jointly by career pathway partners to measure career pathway participant progress and success. The Alliance metrics include three types of measures:

- A) *Interim Outcomes* that identify important progress steps, or “momentum points,” along a career pathway that may be attained prior to the overall results for the pathway;
- B) *Education and Training Outcomes along a pathway* that include the primary educational and training results for the career pathway, including licenses and industry credentials, certificates, and degrees; and
- C) *Labor Market Outcomes* that include the primary labor market results for the career pathway, to measure the progression in employment and earnings over time for pathway participants.

The Alliance will continue with a Phase II (2014-2015) in which career pathway partnerships will pilot the career pathway metrics and share lessons with the field. In this piloting, we hope to demonstrate the specific data

elements and cross-system data matching capabilities that must be present for a state or local/regional career pathway partnership to implement each metric. We also hope to obtain initial results for several career pathways, so that state and local/regional career pathway partnerships can begin to assess the value of these metrics for transparency, continuous improvement, and accountability.

Q11: How do performance measures within specific federal funding streams facilitate or impede tracking of participant outcomes?

Tags: Alignment; Career Pathway Metrics; Cross-System Outcomes; Outcome Measurement; Partnerships; Performance Measurement; Shared Accountability

Performance measures within specific federal funding streams impede the tracking of participant outcomes for career pathways in several ways. First, federal performance measurement systems are focused on measuring results for funding streams, organizational units (e.g., states, local workforce areas) and institutions (e.g., colleges, community based providers) rather than career pathways, which often bridge multiple organizational units and institutions. Second, federal measures are focused on the participant outcomes achieved while participants are being served by specific funding sources, even though participants in career pathways often are enrolled in or benefit from multiple fund sources as they progress along a pathway. Third, federal measures are focused on a narrower set of outcome or process measures that are of special relevance to the particular fund sources, rather than the broader set of outcomes that reflect the entire scope of outcomes available along career pathways. Finally, current federal performance standards and negotiated levels do not take into account the challenges in serving disadvantaged populations; this creates disincentives for serving low-income and lower skilled participants if the measures only reflect the final outcomes achieved and not the interim or “milestone” outcomes achieved by participants or if the levels of performance are not appropriately adjusted.

Career pathway metrics under the Alliance 1.0 Framework have the potential to address each of these limitations of existing federal performance measurement systems. First, career pathway metrics are focused on results for participants within specific career pathways, rather than institutional or organizational outcomes. Career pathway metrics will follow career pathway participants across organizational and institutional boundaries as they move along the pathway, and thereby allow the measurement of results for individual career pathways, using the metrics that are appropriate for each career pathway.

Second, career pathway metrics are meant to provide a cross-system view of results, and to support shared accountability and improvement among partners. For example, the Alliance metrics combine elements of the cohort measurement and the exiter/completer models that are commonly used in education and workforce measurement systems, respectively. The Alliance approach is intended to mesh more closely with the reality of the variety of career pathway entry points, exit points, and levels of intensity that are seen in practice (see the Alliance 1.0 Framework for discussion). Observing results for a career pathway requires following participants across multiple educational settings and fund sources, just as it requires following participants across organizational or institutional boundaries. States are just now reaching a point through their State Longitudinal Data Systems (SLDS) where they can begin to identify the participants who are being assisted by multiple fund sources, and these efforts could form the basis for a shared system of outcome measurement for career pathways.

Third, career pathway metrics incorporate important interim outcomes not currently used in federal or state

performance measures that demonstrate progress toward pathway educational outcomes and employment outcomes, e.g., course completions, credit accumulation, and earnings progression. A set of such evidence-based interim outcomes could be very useful in helping to guide continuous improvement and evaluation of career pathways.

Finally, inclusion of interim outcome metrics, coupled with disaggregation of results will also help to reduce disincentives to serving low-income and lower-skilled participants who require additional services and a longer timeframe to succeed in postsecondary education and the labor market.

Career pathway metrics could provide a framework under which the limitations of existing federal performance measurement systems can be addressed, to enhance the ability to measure results for career pathways and their participants. In this context, career pathway metrics have several potential uses, including:

1. Continuous improvement of pathway programs and systems. A continuous improvement process provides a structured approach to using information to improve participant results. The metrics can play an important role in guiding these efforts.
2. Further development and refinement of SLDS. Taking a pathway view of measurement can help states make informed choices about the data sources, data elements and interconnections that may be needed as SLDS are implemented.
3. Increased transparency of outcomes for workforce, career and technical education, and postsecondary education programs showing participant progress and results through career pathways and across funding streams.
4. Accountability for educational and employment-related outcomes. These metrics have been developed primarily for continuous improvement and system development purposes.
5. Long-term outcome reporting and evaluation of the impact of career pathways on participants. Outcome data are often used to evaluate the impact of career pathway programs and systems (i.e., the difference that career pathway programs and systems make in the results for participants). The performance outcome metrics in particular could be used as part of an impact evaluation of results.
6. Inform federal performance systems – the Alliance career pathway participant metrics can inform the development of pilot programs or waivers of specific program requirements for using pathway approaches with disadvantaged populations, as well as overall performance measures.

In addition to the measurement challenges discussed above, there are two aspects of the existing federal performance accountability policies that may impinge on the ability to implement career pathways. First, even for programs where measures are similar, these measures are applied very differently to various funding streams, in terms of the specific populations to which they apply, the timing of when the measurements are taken, and the levels (state, regional, organizational) at which they are applied. Second, the definitions of performance success and failure, and the consequences (incentives or sanctions) vary considerably across the funding streams.

All of this creates an extraordinarily complex performance management environment at all levels, but one that is particularly difficult as the standards are applied at the local level. As the numbers of participants get smaller in small service areas and every participant has significant weight on each performance metric, administrators become risk averse (less inclined to serve clients who may not help them meet performance expectations). This impinges negatively on the ability of organizations and institutions to pool funding from multiple sources to provide the kind of longer-term interventions for disadvantaged individuals that is at the heart of the career pathway concept.

Temporary Assistance for Needy Families (TANF) funding presents a particular challenge for career pathways programs. On the one hand, TANF is among the most flexible of federal funding sources, able to support a wide

range of education and training programs, work-related activities, and supportive services for members of low-income families with children, including low-income youth. This funding can be the glue between more categorical programs, allowing career pathways to offer services that are critical to participant success but are not core to any given program. However, the primary performance measure under TANF, the work participation rate, allows only a narrowly defined set of educational activities to count as participation for TANF cash assistance recipients and focuses on the hours of participation rather than outcomes. This paradoxical combination creates an incentive for states to use TANF funds to support career pathways programs for needy parents, but places barriers to TANF recipients participating in these very programs.

Q12: Policy, TA, Funding, Research/evaluation, other changes that would support career pathway systems

Tags: Alignment; Career Pathway Metrics; Collaboration; Cross-system Outcomes; Professional Development; Student Financial Aid; TANF; WIA

a. Legislation, statutes and/or regulations to support the development of quality career pathway systems

- i. Reinstatement of the student financial aid “Ability to Benefit” provisions and year-round Pell.
- ii. Based on findings from the Department of Education’s Experimental Sites Initiative, explore regulations that allow use of Pell grants for shorter-term training.
- iii. Explore a cross-system model for shared accountability that would allow a fund source that contributes to participants in approved career pathways to:
 - Use the career pathway metrics for participants in approved pathways, rather than the fund source metrics;
 - Defer measurement of results for these participants until they had left their career pathways, even if they ended their use of the individual fund source;
 - Pool participants in approved career pathways by removing them from the measurement pools for the fund source measures and including them only in the calculations of results for the pathways; or
 - Exempt some high-risk participants from accountability measurement for experimental or demonstration programs.
- iv. The Departments of Education and Labor should partner with the Department of Agriculture in the development of new reporting measures for the Supplemental Nutrition Assistance Program - Employment and Training (SNAP E&T) program, as required under the recently enacted Farm Bill. This development process provides an opportunity to build on lessons from performance measurement and outcome reporting in related programs and to test the use of interim outcomes measures and other ways to ensure that programs are not penalized for serving highly disadvantaged populations.

- v. Use the Department of Education's Experimental Sites Authority to test new approaches to administering student financial assistance programs to support better student outcomes, including:
 - Remove restrictions on direct assessment programs for remedial education;
 - Test dual enrollment for both high school students and out-of-school youth;
 - Test a variety of prior learning assessment approaches;
 - Focus on quality and learning outcomes in competency-based education experiments; and
 - Encourage inclusion of industry certification exams and other third party assessments in experiments (for more information on these recommendations, see [our letter](#) co-authored with New America Foundation and Jobs for the Future to the Department of Education on January 31, 2014)
- vi. Promote a truly unified state workforce plan, which passage of WIOA would reinforce. Specifically:
 - Beyond compliance requirements, provide more direction on the process of developing a unified plan and who should be on the planning team; and
 - Develop a planning process that incorporates successful interagency planning and policy practices, including stronger expectations that all critical cross-agency partners come to the table and do so early in the process to ensure necessary buy-in.

b. Technical assistance and non-regulatory guidance

- i. Provide more technical assistance similar to the 2010-2011 Career Pathways Institute
- ii. The Department of Education can provide:
 - Guidance and examples clarifying that Pell grants and other student financial aid can be used for aid-eligible career pathway programs;
 - Guidance on how Perkins funds can be used to support career pathways and bridges; and
 - Additional guidance and examples on how WIA Title II can support career pathways and bridges
- iii. The Department of Labor can provide:
 - Guidance and examples on how WIA Title I, dislocated worker funds, rapid response funds, and other federal workforce funds can be used to support career pathways and bridges; and
 - Guidance and examples, in partnership with the Department of Education, on how WIA funds and federal student financial aid funds can be used together to help working students cover tuition, fees, books, supplies, equipment, transportation, and room/board (and, for some students, child care costs) associated with postsecondary education.
- iv. The Department of Health and Human Services can provide:
 - Guidance and examples on how TANF can be used to support career pathways and bridges; and

- Encouragement for policies and practices ensuring that recipients of TANF cash assistance have full access to career pathways and bridges
- v. The Department of Agriculture can provide:
- Guidance and examples on how SNAP E&T can be used to support career pathways and bridges, including both the forthcoming SNAP E&T pilots and the core E&T program; and
 - Support to SNAP agencies in building better relationships with their workforce counterparts in order to provide career pathways opportunities to SNAP recipients.
- c. Funding strategies**
- i. To the fullest extent possible, align federal discretionary grants to consistently support career pathway system development and enhancement. Use consistent definitions, eligibility requirements, measures, and allowable activities.
 - ii. Ensure that all discretionary grants that allow career pathways include provisions for low-income, lower-skilled participants.
- d. Research and evaluation**
- i. Support research that analyzes the predictive value of interim measures regarding career pathway participants' likelihood of achieving credential and labor market outcomes.
 - ii. Over the next few years, as career pathway systems continue to be developed, support *formative* evaluations to learn and share with the field how these systems successfully develop, along with successes, challenges, and solutions. Over time, support the development of *evaluation models specific to systems*, such as theory of change evaluations.

Q1: Federal, State, or local policies, frameworks, or initiatives used to support systems

Tags: Career Pathways; Career Pathway Systems; Collaboration; Professional Development; Technical Assistance

In CLASP's experience working with state and local/regional career pathway partnerships around the country, the following Federal resources have been especially valuable for supporting the development of career pathway systems specifically. (1) The 2010-2011 Career Pathways Institute was an exceptional technical assistance offering. Bringing career pathway teams to the Department of Labor in Washington, D.C. for two intensive sessions and meetings with federal agency leaders brought clout and attention to career pathway leaders in their states and provided the teams concentrated time with each other to learn from peers across the country. Rotating the subject

matter experts between teams and providing just-in-time TA (rather than canned presentations) was especially valuable. (2) The *Six Key Elements for Career Pathways* framework has been a useful tool to help partnerships new to career pathways understand the steps to take to building career pathway systems. (3) The April 2012 Joint Commitment Letter on Career Pathways is often cited by agency heads and practitioners in the field as validation of their career pathways work, including system building. (4) The TAACCCT (Trade Adjustment Assistance Community College and Career Training) grants have been helpful, specifically because they have allowed funding to support staff to plan, coordinate, and facilitate the development of career pathways. These functions are critical to career pathways and system building, but are rarely adequately funded because they are considered “administrative” costs, which are capped. The TAACCCT round IV solicitation is especially supportive of building career pathway systems with the offer of additional funding to advance state career pathway systems and to improve statewide data integration and use. The main challenge will be that the funds will flow to consortia of community colleges; however, other partners are critical to the development of state (and local/regional) career pathway systems, including adult education, workforce development, human services, community-based organizations, and others. In an ideal world, either the grants would flow to a partnership that includes all partners important to career pathway system development or each of the other agencies/entities would also receive grants (from public or philanthropic sources) coordinated with the TAACCCT IV offering to advance state career pathway systems.ⁱⁱ

Two national initiatives that have supported the development of career pathway systems specifically are the *Shifting Gears* initiative and the *Alliance for Quality Career Pathways* (both funded by the Joyce Foundation). Both of these initiatives have focused explicitly on systems change and not simply program implementation. Results and lessons learned from *Shifting Gears* are succinctly captured in several reports and the evaluation on the [Shifting Gears webpage](#). The *Alliance for Quality Career Pathways* is described above. The Alliance framework can work in conjunction with the *Six Key Elements* framework in that the *Six Key Elements* provide specific steps to help new career pathway partners build systems, and the Alliance framework provides key system indicators and participant metrics that partners can use in ongoing continuous improvement. The Alliance framework also can serve as a shared comprehensive strategic framework for policymakers and funders to align and enhance their investments, technical assistance, and guidance for building, scaling, and sustaining career pathway systems.

Q3: Funding streams and facilitators/challenges to aligning/braided funding

Tags: Alignment; Career Pathways; Career Pathway Funding; Career Pathway Systems; Collaboration; Scale; Sustainability

State and local/regional partners align and braid many sources of funds to support career pathways and systems. Several examples of braided federal sources are documented in CLASP’s [Funding Career Pathways and Career Pathway Bridges toolkit](#). Additional examples of local partnerships leveraging and coordinating resources including from TANF, WIA I, WIA II, and community colleges can be found in CLASP’s report, [Navigating Federal Programs to Build Sustainable Career Pathways in the Health Professions: A Guide for HPOG Programs](#). Many career pathway partnerships also leverage foundation funding, which is especially useful for flexible “start-up” funds to start new partnerships and pathways. Often, these sources also pay for hard-to-fund functions and “gap-filling” such as staff to support planning, development, and coordination of the career pathways and the

system, supportive services for participants who do not qualify for publicly funded services, career navigation assistance, and even “non-traditional” supportive services like emergency assistance. While this use of philanthropic funds is valuable to provide needed services that participants likely would not otherwise have access to, it is not a realistic strategy for scaling and sustaining these critical services; public formula funds should be made available for these types of functions and services.

External factors that facilitate braided funding include guidance and examples from other career pathway partnerships, as well as technical assistance. Factors internal to career pathway partnerships include partners having a shared vision of the career pathways and system, a shared strategy, clearly documented roles and responsibilities, a sustained commitment to the partnership itself, and adequate and knowledgeable staff who understand career pathways and the fund sources well enough to braid them.

The most significant funding impediment to career pathways is that funding for most relevant programs – WIA, Carl D. Perkins Career and Technical Education, TANF, among others - is too small to meaningfully contribute to scaling career pathways. Other impediments include lack of consistent funds and staff time to develop career pathways and integrate the services and programs necessary for successful career pathways; the mismatch between procuring adult education services at the state level and WIA Title I services at the local level; waiting lists in adult education programs; and the restrictions on counting education and training, especially basic education, as work activities for recipients of cash assistance under TANF.

Q7: Diverse populations – career pathway accessibility and responsiveness to their needs beyond education and training

Tags: Career Pathways; Collaboration; Disadvantaged Youth; Integration; Interim Metrics; Limited English Proficient; Low-Skilled Adults; Support Services

Career pathways can benefit all participants, but are especially beneficial for low-income, underprepared, and other vulnerable populations. One of the most powerful ways to ensure that career pathways are accessible to these populations is to embed them into the definition of career pathways and systems used in federal policy, guidance, and investments. CLASP has learned three important lessons in the Alliance for Quality Career Pathways regarding the definition and characterization of career pathways: (1) many fields use “career pathways” terminology but there is no common definition and they rarely recognize others who may also be implementing career pathways, i.e., adult education, career and technical education, higher education; (2) critical stakeholders like policymakers and employers are confused by the diverse multitude of uncoordinated career pathway efforts serving different populations; and (3) low-income, underprepared, and other vulnerable populations will be marginalized if they are not included in a broader career pathways frame that is inclusive of all types of career pathways.

The Alliance for Quality Career Pathways has developed new definitions of the “career pathway approach” and “career pathways” in order to strike a balance between these realities. Full definitions can be found in the Alliance framework at www.clasp.org/careerpathways, but essentially the Alliance definition of “career pathway approach” is broad to include all students and specifically points to “optimizing the progress and success of individuals with varying levels of abilities and needs.” Career pathways operationalize this approach, and one of the three essential features is “multiple entry points that enable well-prepared students as well as targeted populations with limited education, skills, English, and work experiences to successfully enter the career pathway,” and the

possible targeted populations are then expressly listed. Including definitions like these in federal opportunities and resources to build career pathway systems would help to ensure accessibility to career pathways for diverse populations, as well as more consistency across fields supporting career pathways.

Another strategy to help ensure accessibility by diverse populations to career pathways, including low-income, underprepared, and vulnerable populations, is to ensure that the types of educational/training/credential programs and support services they need are consistently included in all federal career pathway efforts and that they are adequately funded. This includes career pathway bridge programs that provide contextualized and dual or integrated education for lower-skilled participants and support services such as personal supports (child care, transportation), academic supports (such as tutoring), and career navigation supports. It is critical that career pathways include these types of entry points and that these types of bridge programs are connected to subsequent career pathways (and are not allowed to stand on their own).

Lastly, how career pathways are measured will largely determine who they are designed to serve. To ensure that career pathways are accessible to diverse populations, it is important to measure and provide credit for helping underprepared and vulnerable participants achieve interim milestones that appear much earlier in the career pathway in addition to the typical credential and labor market outcomes in current federal performance measurement systems. See the responses to questions 10 and 11 above for a discussion of career pathway interim metrics.

In terms of responsiveness to needs, key critical needs beyond education and training that successful career pathways and systems will need to provide for include: support services, career navigation assistance, and quality work experiences. Although these functions are often just as, if not more, important than the education and training function in a career pathway for some types of participants, they are typically underfunded due to limited resources; funded sporadically when discretionary funding is available (this is not a sustainable strategy); or not funded at all. Another challenge is that, to be most effective, the combinations of specific services within these three critical need categories must be tailored to specific targeted populations and even specific participants. To achieve this integration, many career pathway efforts employ case managers, “coaches,” “navigators” (of support services and/or academic supports and/or career navigation, depending on the program) or other similar positions to help participants with specific service utilization.

The CLASP career pathways federal funding toolkit mentioned in question 3 above includes an appendix outlining several federal funding sources that can fund support services, career navigation, and work experiences. In 2011, CLASP also published [a guide for the Annie E. Casey Foundation’s Center for Working Families \(CWF\)](#) initiative that outlined and provided examples of states and local regions using a wide variety of federal funds to support the three pillars of the CWF model, which include support services, career navigation assistance, and quality work experiences. Guides to assist career pathway practitioners and leaders in braiding funding are only useful to an extent. Without adequate sustained funding specifically for these functions, career pathways and systems will continue to struggle to be responsive to these needs.

For diverse populations to be involved in career pathways and get access to the supports they need, it is important to ensure that the agencies, organizations, institutions, and employers that work with these populations are involved in the career pathway system – at multiple levels from the state partnership to each local/regional partnership. This includes but is not limited to human services, community-based organizations, agencies and organizations providing services to individuals with disabilities, corrections, etc. Employers play an invaluable role in quality career pathway systems. See criterion 2 in the Alliance for Quality Career Pathways 1.0 Framework for important indicators of engaging employers in career pathway systems and integrating sector strategy principles.

Q9: Challenges and facilitators to stackable credentials

Tags: Alignment; Articulation; Certifications; Certificates; Credentials; Prior Learning Credit; Stackable Credentials

In a recent paper, *Scaling "Stackable Credentials:" Implications for Implementation and Policy*, CLASP outlined several challenges in implementing stackable credentials that have value in both education and the labor market including: cross-walking various standards and metrics underlying industry and educational credentials; working within and around constraints created by state and institutional governance arrangements; bridging silos within and across educational institutions; overcoming the disconnect between credit-bearing and noncredit educational offerings; negotiating federal financial aid rules; balancing the need for local flexibility with the need for greater consistency to promote portability of credentials; and providing the right mix of traditional classroom instruction, online options and experiential learning opportunities through internships and work experience for students with different needs and different courses of study.

This paper also provided detailed information and examples of how these industry-recognized credentials can be incorporated into and/or aligned in a successful career pathways system. The paper identified the following five strategies states and colleges are using to stack credentials so that they have value in both education and the labor market and serve as stepping stones along career pathways: modularize existing applied associate degree and technical diploma programs; embed existing industry and professional certifications in career and technical programs; streamline and scale processes for awarding credit for learning represented by non-collegiate credentials; create "lattice credentials" that allow students to move both up a career ladder within an occupational field or across multiple pathways in a career lattice; and create dual enrollment options that enable students to work concurrently toward a high school diploma or its equivalency, marketable postsecondary credentials, and industry certifications.

ENDNOTES

ⁱ "Dynamic sustainability" means not only continuing the career pathways, programs, and system beyond initial development but also supporting their adaptation and continuous improvement over time based on experience, new information, data, and outcomes. In some cases, it may mean discontinuing career pathways and programs that are no longer in demand.

ⁱⁱ Other federal system building resources that we know less about because we are not directly involved include *Advancing Career and Technical Education in Career Pathways* and *Moving Career Pathways Forward*.