



# CONNECTING CREDENTIALS

FROM NATIONAL DIALOGUE  
TO COLLECTIVE ACTION

Building Learning-based  
Credentialing Systems

[ConnectingCredentials.org](http://ConnectingCredentials.org)

September 2016

# CO-SPONSORS OF THE NATIONAL DIALOGUE ON CREDENTIALING

In early 2015, Lumina Foundation, in partnership with the Corporation for a Skilled Workforce, called for a national dialogue on postsecondary credentialing, inviting other organizations to join this effort as co-sponsors. Co-sponsoring organizations are listed here, grouped by category. The list of co-sponsors continues to grow, as does general interest in credentialing.

## Accrediting, Certifying & Standards Organizations (9)

- Accrediting Commission for Community and Junior Colleges, Western Association of Schools and Colleges
- Council on Licensure, Enforcement & Regulation (CLEAR)
- Institute for Credentialing Excellence
- Institute for Hazardous Materials Management
- National Coalition of Certification Centers (NC3)
- National Healthcare Association
- Postsecondary Electronic Standards Council
- Southern Association of Colleges and Schools Commission on Colleges
- WASC Senior College and University Commission

## Business & Industry (9)

- American Welding Society
- Best Western International
- Business-Higher Education Forum
- Business Roundtable
- Goodwill Industries International
- International Association of Business Communicators
- Manufacturing Institute
- National Network of Business and Industry Associations
- U.S. Chamber of Commerce Foundation

## Education Organizations/Associations (19)

- American Association of Collegiate Registrars and Admissions Officers
- American Association of Community Colleges
- American Association of State Colleges and Universities
- American Council on Education
- American Hotel & Lodging Educational Institute
- Association of American Colleges and Universities
- Association of College and Research Libraries
- Association of Private Sector Colleges and Universities
- Association for Career and Technical Education
- EDUCAUSE
- Midwestern Higher Education Compact
- NASPA – Student Affairs Administrators in Higher Education
- National Association of State Directors of Career Technical Education Consortium
- New England Board of Higher Education
- Southern Regional Education Board
- State Higher Education Executive Officers Association
- UPCEA - University Professional and Continuing Education Association
- University of Maryland University College
- Western Interstate Commission for Higher Education (WICHE)

## Foundations/Philanthropy (12)

- AARP Foundation
- ACT Foundation
- AT&T Aspire
- Bill & Melinda Gates Foundation
- Joyce Foundation
- JP Morgan Chase & Co.
- The Kresge Foundation
- Lumina Foundation
- National Fund for Workforce Solutions
- National Restaurant Association Educational Foundation
- Siemens Foundation
- USA Funds

## Labor Organizations (3)

- AFLCIO
- American Federation of Teachers
- North America's Building Trades Unions

## Policy, Research, Change Management Organizations (41)

- Achieve
- Achieving the Dream
- American Youth Policy Forum
- Aspen Institute's Skills for America's Future
- Center for Law and Social Policy
- Committee for Economic Development
- Community College Research Center
- Complete College America
- Corporation for a Skilled Workforce
- Council for Adult and Experiential Learning
- Digital Promise
- Educational Policy Improvement Center
- Forum for Youth Investment
- Georgetown University Center on Education and the Workforce
- George Washington Institute for Public Policy
- Hezel Associates
- Hope Street Group
- Information Technology & Innovation Foundation
- Innovate+Educate
- Institute for Evidence-Based Change
- Institute for Higher Education Policy
- Jobs for the Future
- John J. Heldrich Center for Workforce Development at Rutgers
- KnowledgeWorks
- MDC, Inc.
- National Academy Foundation
- National Center for Higher Education Management Systems
- National Institute for Learning Outcomes Assessment
- National Skills Coalition
- New America

- Office of Community College Research and Leadership at University of Illinois
- Opportunity@Work
- RTI International
- The Center for Occupational Research and Development
- The Migration Policy Institute
- T.E.A.C.H. Early Childhood National Center
- University of Wisconsin-Madison's Center on Wisconsin Strategy
- Women Employed
- Workcred – An Affiliate of the American National Standards Institute
- Workforce Data Quality Campaign
- Young Invincibles

## State/Local Government Organizations (1)

- Council of Chief State School Officers

## Student Organizations (1)

- Phi Theta Kappa Honor Society

## Technical & Data Services Providers in Credentialing Marketplace (14)

- AcademyOne, Inc.
- ACT, Inc.
- Badge Labs
- Burning Glass Technologies
- Collective Shift
- Credly
- Education Design Lab
- Educational Testing Service
- IMS Global
- Metacred
- National Student Clearinghouse
- Parchment
- Pearson North America
- StraighterLine

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# FOREWORD

In 2015, Lumina Foundation and Corporation for a Skilled Workforce (CSW) joined forces to establish the Connecting Credentials initiative and call for a national dialogue on how to build a well-functioning and sustainable credentialing system.

Since that time, more than 100 organizations in the credentialing marketplace have agreed to co-sponsor the dialogue. Co-sponsors include accrediting, certifying and standards organizations; business and industry; education organizations and associations; foundations and philanthropic organizations; labor organizations; policy, research and change-management organizations; student organizations; and technical and data services and communications providers. Concurrently, CSW and Lumina developed several *resources* to support the newly evolving Connecting Credentials partnership:

[Connecting Credentials Website](#) – Online platform for credentialing tools, research, and engagement activities.

[Connecting Credentials: Making the Case for a Revised Credentialing System](#) (June 2015) – Describes the problems with the nation’s current system of education and workforce credentials and lays out basic criteria for a reimagined system.

[Landscape Review of Innovations in the U.S. Credentialing Marketplace: A Working Document](#) (January 2016) – Describes and categorizes more than 125 efforts underway to improve aspects of the credentials system.

[Lessons from the National Summit on Credentialing](#) (January 2016) – Overview of discussions at October 2015 summit (described below).

[Beta Connecting Credentials Framework](#) (February 2015) – Competency framework that allows users to compare and connect credentials (e.g., degrees, certificates, industry certifications, licenses, apprenticeships, badges, and other credentials including informal learning) by using common language to describe the knowledge and skills (specialized, personal, social) that underlie all types of credentials.

[Connecting Credentials E-News](#) – Newsletter updating credentialing developments, with nearly 3,000 subscribers.

On October 5, 2015, 200 leaders representing more than 150 organizations convened for the first National Summit on Credentialing to consider a *shared vision* of a 21st century credentialing system. That vision incorporates the following concepts:

- All learning matters – wherever it is obtained.
- All credentials are based on learning outcomes and competencies.
- Credentials are portable, transferable, transparent, useful, and easily understood by students, workers, and employers.
- Learners and employers – the consumers of credentials – can make informed choices about the value of different credentials for their needs and their investment in pursuing these credentials.
- Credentials are supported by comprehensive digital records that communicate what learners know and can do, aggregate learning from multiple providers, and provide access to learners’ actual work products.
- Technology and common language enable transparency and interoperability among all credentials.

The summit dialogue identified nearly 20 *priorities for action* to realize this vision – with five areas emerging as highest priority: 1) establish common language, 2) create an open, interoperable data and technology infrastructure, 3) assure credential quality, 4) improve employer use of credentials, and 5) build pathways to equity.

The summit concluded with a clear next step: engage major stakeholders in developing recommendations for action, starting from these five areas of focus. Toward this end, Connecting Credentials established five work groups organized around each one of the areas for focus, co-facilitated by key leaders with subject matter expertise. Work groups met between January and April, delivering recommended actions for key stakeholder groups to consider. In all, more than 100 stakeholders, cutting across levels and sectors, engaged in work group discussions (see [page 34](#) for participants and facilitators).



In mid-May, work group facilitators met to consider how to integrate individual group recommendations. Work group reports are available [here](#). The emerging seven-point action plan outlines key steps needed to realize the vision of a redesigned credentialing ecosystem.

Action plans are always subject to change, and this one will be no exception. Going forward, the action plan will be housed at [connectingcredentials.org](http://connectingcredentials.org), where it will be updated regularly. We will work to capture changes as they occur in the credentialing ecosystem; who is carrying out these changes; when they take effect; and what resources are used to create these changes. Communicating progress will be an important next step for our partnership – to help us refine our plans and be accountable to one another.

Connecting Credentials also will create a dashboard that will show *if* and *how much* the needle is moving on credentialing change that better supports learners and employers. We will engage our [co-sponsors](#) to help develop the dashboard – forging a shared understanding of how progress should be measured. We believe this is essential for improving the credentialing ecosystem.

We owe a tremendous debt of gratitude to the five planning work groups who so skillfully and thoughtfully took the outcomes of the National Summit on Credentialing and expanded the conversation over many months. They deepened our understanding of the daunting challenges in our credentialing marketplace while pointing to many solutions that can aid the effort to build an effective 21st century credentialing ecosystem.

A year after the first National Summit on Credentialing, we’re pleased to provide the following recommendations to guide our collective action. Together, we can create the 21st century credentialing system that our nation needs.

- **Action will be needed on all seven fronts:**
- 1. Develop scalable ways to engage employers in the credentialing marketplace.
- 2. Empower learners to navigate the credentialing ecosystem.
- 3. Develop common language centered on competencies.
- 4. Create an open, interoperable data and technology infrastructure.
- 5. Foster shared understanding of credential quality among stakeholders and reciprocity among quality assurance processes.
- 6. Pursue a public policy agenda that advances equity in the credentialing ecosystem.
- 7. Promote field-based development of new credentialing tools, policies, and practices.

# WHY CONNECTING CREDENTIALS MATTERS

In the 21st century economy, people need more than a high school diploma to land a good job that leads to advancement. Postsecondary credentials are the currency through which people’s knowledge and skills are recognized. They help connect people to jobs, connect employers to the skilled workers they need, and connect educational programs to each other in educational and career pathways. The proliferation of educational opportunities and dizzying array of postsecondary credentials in the U.S. marketplace have great potential. Not only can they increase social mobility and economic opportunity for learners, they can also support employers’ talent sourcing and development needs in an increasingly competitive, rapidly changing, and uncertain global economy.

The problem is, this potential is not being realized. Too many learners in the United States face a credentialing marketplace that is confusing and chaotic, especially for low-income, minority, and other underserved and underrepresented learners. The cost and quality of programs that result in credentials vary enormously. Tools to accelerate completion and enhance learning – such as stackable credentials, credit for prior learning, competency-based programs, and work-based learning – are not universally available, in part because of inadequate ways of measuring learning and outdated transfer and articulation policies and processes. Some credentials do not pay off, creating dead-ends for learners who can least afford missteps. Current career navigation systems and services are insufficient, and the credentialing marketplace lacks “truth in credentialing” – which would give users the ability to discern credential quality, portability, and transferability. Efforts to improve equity and opportunity in the credentialing marketplace are typically few and small-scale, and many learners have little or no access to these “islands of innovation.”

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## Common stories in the confusing credentialing marketplace

After *Tanya* lost her job of 10 years, she enrolled in a short-term training program that issued her a “certificate of completion.” The certificate has not been helpful in her job search and she doesn’t know what to do.

*Andrew* realizes he needs a postsecondary credential to start a new career. He had trouble keeping up in math in high school and dropped out before getting his diploma. The colleges in his community offer hundreds of credentials but little help to select pathways. His Internet search turned up 40 million entries for “credentials” without services to help him categorize the possibilities he might look into.

*Juan* is trying to hire five technically skilled workers for his small business. He’s seen resumes from hundreds of applicants; the top 10 hold different credentials – degrees, certifications, certificates, and badges – and in some cases combinations of these. Juan doesn’t understand what these mean and wishes there was a place to go to understand what these credentials mean, how they compare, and which to trust.

*Maria* wants to enter the healthcare field and thinks that becoming a nursing assistant would be a good first step. She discovers more than 60 educational programs in her state that will help her become a nursing assistant, varying in cost from \$4,000 – \$15,000, with different time frames and rules. She can’t find information about success rates of graduates or any other easy way to compare choices.

*Jordan* is completing a noncredit occupational education program at his community college. He has gained valuable skills but doesn't know how to communicate that to an employer. Along the way he decided to pursue a degree but finds that none of the courses he's already taken will count toward the degree – he's faced with starting over if he wants to enter a degree program.

The business community has had mixed results leveraging credentials for purposes of hiring and career advancement. This is partly due to the lack of transparency among types of credentials and poor alignment of credentials with rapidly changing labor market needs. Beyond using the bachelor's degree as a rough proxy for work readiness, many employers struggle to understand how to interpret credentials and to see the return on investment for using them in their hiring and promotional practices. At the same time, employers struggle to communicate the competencies and skills they need in ways that students and those who teach and advise them can understand. As a result, the credentialing marketplace often poorly serves employers and learners alike.

Many credentials exist in the marketplace – degrees, certificates, industry certifications, badges, licenses, diplomas, and more – but there's little transparency in how they are developed, what they mean, how worthwhile they are, and how they connect to each other. No common language exists that allows users to compare and connect credentials. No system assures credentials' quality or relevance in the workplace. No trusted source of information helps users easily obtain relevant information about credentials. And no tool helps users compare and align the levels and types of knowledge and skills represented by different credentials. We lack efficient and equitable ways to help learners, employers, educators, credential providers, and accreditors navigate this increasingly complex high-stakes marketplace.

Beyond using the bachelor's degree as a rough proxy for work readiness, many employers struggle to understand how to interpret credentials and to see the return on investment for using them in their hiring and promotional practices.

The result is a fragmented, dysfunctional system that is out of sync with 21st century needs. Federal, state, and institutional policies and practices must catch up with the fluid credentialing marketplace.

But, there *is* some good news. Many innovations are underway to address these challenges. Learners have a variety of pathways within postsecondary education, ranging from two- and four-year colleges and universities to employer-based training programs to coding boot camps and beyond. Learners have many options for learning, including online instruction and competency-based education programs. There are new and different kinds of credential providers, and new digital ways of documenting and communicating what learners know and can do. And, employers are trying new competency-based approaches for sourcing and developing talent.

These innovations are being implemented by various organizations, with efforts reflecting their missions and perspectives. Some initiatives are pursuing data- and technology-driven approaches that empower learners and employers in the credentialing marketplace. Others are focusing on policy and regulatory change to adapt quality assurance processes to a more open learning and credentialing environment. Still others are focusing on system alignment and increased navigation and supports to create pathways to quality credentials to help all learners succeed.

Underlying all of this work is the clear understanding that no one group can reshape the nation's credentials system; many groups, working together, must be involved. The following plan for collective, concrete action can help us realize the shared vision of a redesigned credentialing system.

# ACTION AGENDA: SEVEN PRIORITY AREAS

Simultaneous and mutually reinforcing work is needed across all of the following seven priority areas to build a well-functioning and sustainable credentialing ecosystem:

- 1 Develop scalable ways to engage employers in the credentialing marketplace.** Employer engagement is critical to help our nation achieve educational equity and optimal talent development. Strengthening employer engagement is essential because it increases credentials' relevance and value – for learners and employers – by aligning learning with labor market demands.
- 2 Empower learners to navigate the credentialing ecosystem.** In the ever-evolving worlds of education and employment, individuals must understand where they stand and what their choices are in terms of learning opportunities, credentialing, and employment options.
- 3 Develop common language centered on competencies.** We must create a common language framework that is supported by technology platforms and able to link all credentials. Such a framework can simplify communication among those who provide, earn, and use credentials (e.g., postsecondary institutions, industry associations, certifying organizations and licensing agencies, learners, employers, and other credential providers) and connect an individual's learning across school, work, and life.
- 4 Create an open, interoperable data and technology infrastructure.** A well-functioning credentialing ecosystem requires a comprehensive, open, public/private data and technology infrastructure. That infrastructure must capture what employers need through job ads and interviews, link data on all of the credentials awarded by providers to illustrate connections with other credentials and career opportunities, and enable individuals to manage their credentialing information.
- 5 Foster shared understanding of credential quality among stakeholders and reciprocity among quality assurance processes.** We must increase transparency about credentialing quality assurance processes through the use of common language and concepts about quality. Such steps are needed to improve understanding of the value of different credentials; to increase trust in and use of different credentials; and to enable stakeholders to cross-reference different quality assurance processes to facilitate transfer and mobility within the credentialing ecosystem.
- 6 Pursue public policy that advances equity in the credentialing ecosystem.** Federal, state, and institutional policies influence how learners, employers, educators, quality assurers, and others use and value credentials. These policies provide the incentives and sanctions that promote adherence to shared norms. These policies can either aid or hinder the development of credentialing pathways that enhance learner success. Policy drives funding for services, infrastructure, innovation, capacity building, and evaluation. All are needed to create a more equitable credentialing ecosystem.
- 7 Promote field-based development of new credentialing tools, policies, and practices.** More than 125 initiatives are already underway that address aspects of the credentialing challenge. These islands of innovation need to be connected and leveraged – used to spur new innovations. Creative initiatives – well-informed by research – must occur at all levels to help inform policy change, build infrastructure, and increase understanding and ownership of a marketplace of diverse credentials.

As we reimagine the credentialing landscape, we must focus on two key outcomes: 1) improving learners' economic and social mobility, and 2) improving employers' ability to find and develop talent. By strengthening the public-private credentialing infrastructure and adopting more supportive policies, we can help improve practices throughout the ecosystem. For example, policy changes can facilitate student transfer and advancement. Better data systems can inform learner and employer decisions. Professional development, data system enhancements, and increased funding can strengthen learner navigation and other supports. And development of user-friendly tools can help learners better communicate their knowledge and skills to employers and educators. Experimentation – encouraged and supported by policy, investment, research, and other aspects of infrastructure – can inform policy and behavior change.

We know a great deal about the weaknesses of our nation's traditional approaches to credentialing, and we are constantly learning about both the promises and perils of new approaches. We must push for change that happens in open systems, encouraging experimentation and the widespread sharing of tools and approaches. We believe this will lead to continuous improvement of the credentialing ecosystem. Concerted action by *all* stakeholders is needed if we are to create a credentialing marketplace that increases opportunity and improves results for all learners and employers.

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On the following pages, each of the seven priority areas for action is more fully explored. Each is presented using the following format:

- Title of the area of action.
- Rationale and top-priority challenges driving the call for action.
- Principles to guide action.
- Recommended actions.
- How these recommendations can be carried out.
- Example of a major effort underway that can be built on. Additional examples in each action area are provided in [Appendix A](#).

# 1 Develop scalable ways to engage employers in the credentialing marketplace

## Rationale

Employers are among the largest consumers of credentials and are increasingly becoming producers of credentials. Changes in hiring practices and policies have increased the importance of attaining credentials for job seekers and fueled disruption and innovation in the credentialing marketplace. Strengthening employer engagement in the credentialing marketplace, therefore, has the potential to improve the relevance and value of credentials.

Employers send important signals to the marketplace about the jobs to be filled and the skills they require. Employers send these “demand signals” through hiring practices (job ads, interview practices, and their reliance on different kinds of credentials to identify qualified employees), partnerships with education and training programs, and talent-development processes such as internal training and employee tuition-reimbursement programs.

Strengthening employer engagement in the credentialing marketplace has the potential to improve the relevance and value of credentials.

Employers’ use of credentials across industries and regions varies considerably. More and more employers see value in non-degree credentials and are factoring them into their hiring decisions. This trend opens up opportunities for and legitimizes new pathways to career success. At the same time, many employers continue to rely on degrees as the gold standard in their human resources policies and practices. Still other employers hardly use credentials at all.

Greater transparency regarding what credentials represent (knowledge and skills and the quality assurance that stands behind them) increases the likelihood that employers will trust credentials and use them to inform their decisions about human resources.

## Challenges driving the call for action in this area include:

- Inconsistency among employers in defining and communicating common demand signals.
- Uneven participation among employer groups in organizing employers to better communicate their requirements.
- Insufficient tools designed for employers to communicate shared competency, credentialing, and other requirements around critical core functions or occupations that are relevant to their talent sourcing, hiring, and career advancement processes.
- Limited understanding by educators about employers’ needs for specific knowledge and skills.
- Lack of models designed to attract and engage employers of all sizes to ensure the employer voice is truly representative in organizing the range of workplace knowledge and skill needs.
- Lack of clarity about how using credentials improves an employer’s bottom line – what return an employer can realize from investing time and money in expanding use of credentials.
- Lack of transparency and comparability among all credentials relevant to the talent acquisition and development process.
- Inadequate performance data and labor market value of third-party, industry-recognized credentials.
- Insufficient employer endorsements of quality credentials and the institutions and programs that deliver them.

## Principles to guide action

- The business community should lead in providing better market signals, especially for those industries suffering a skills gap and/or experiencing employment growth.
- Credentialing solutions should be “bottom-up,” generated from market signals at the local and regional levels, with employer signals tied directly to their talent sourcing and hiring process.
- Engaging large numbers of employers requires employer champions as well as employer collaboratives or member associations that can function as intermediaries.
- Generating and aggregating employer-demand signals should no longer be a one-time or intermittent activity. It must be a continuous and dynamic process so that it can ensure the ongoing relevance of credentials.
- National organizations should help achieve economies of scale and support local and regional efforts by providing networking opportunities, technical assistance, and ongoing resources.

Recommended actions	How this can be done
<p><b>Work at all levels – national, state and local – to organize and build employer awareness of opportunities to provide better demand signals to the credentialing marketplace.</b></p>	<p>Organize and leverage the employer community by industry sector or common workforce needs across multiple industry sectors to communicate regular updates about commonly needed skills and credentials; and identify where there are shared skill needs across various industry sectors.</p> <p>Leverage larger companies to educate and organize their suppliers to secure interest, buy-in, and participation from small- to mid-sized employers.</p> <p>Develop funding mechanism(s) to help partners at the local level build the trusted backbone infrastructure with capacity to carry the work forward (e.g., chambers of commerce and economic development organizations).</p>
<p><b>Support sustained employer engagement in leading the development and expanded use of diverse credentials.</b></p>	<p>Engage corporate human resources leaders and develop new tools and practices to facilitate hiring based on competencies, including active use of diverse credentials that attest to competencies.</p> <p>Provide guidance to employers on recognizing, preferring, and requiring credentials as part of a non-discriminatory hiring process.</p> <p>Build tools that facilitate and streamline the process of identifying and communicating competency requirements as a shared activity among employers and education and training partners.</p> <p>Develop standard-setting and auditing capabilities for managing quality assurance among talent suppliers.</p> <p>Develop and capture outcome and performance measures to better evaluate the value and return on investment of credentials for employers.</p>
<p><b>Improve employer demand signaling in real-time labor market information systems.</b></p>	<p>Identify and share best signaling practices and tools among different types of employers, and what their benefits are for employers.</p> <p>Develop a communications strategy for employers and major job boards to adopt common language and data elements in job ads that build on existing job posting standards. (See additional recommendations under “<a href="#">Create an open, interoperable data and technology infrastructure.</a>”) Language should include clear signals about the strength of requirements for different credentials and competencies (i.e., preferred or required).</p>

<p><b>Support employers and intermediary organizations in developing, recognizing, and credentialing authentic high-quality work-based learning that is consistent with employer demand signals.</b></p>	<p>Cultivate and invest in intermediaries to coordinate work-based learning among learners, education providers, and employers.</p> <p>Encourage the development of authentic, credential-bearing project-based learning experiences that involve interdisciplinary groups of students working in cross-functional teams.</p>
<p><b>Change the institutional culture in higher education to recognize that employers, not just students, are institutional customers.</b></p>	<p>Encourage postsecondary education faculty and administrators to work more closely with industry in rethinking credentialing policies and practices (e.g., embedding industry certifications within higher education programs).</p> <p>Promote sustained educator engagement in dialogue with employers through sector partnerships.</p> <p>Include credential relevance to industry requirements in the definition of a quality credential.</p>

### Example of building block: Talent Pipeline Management

The U.S. Chamber of Commerce Foundation (USCCF) – through a partnership with USA Funds – is engaging employers and their partners across the country in developing a new employer-led approach for closing the skills gap. By leveraging lessons learned from supply chain management and applying them to education and workforce partnerships, USCCF is supporting employers to play a new leadership role as “end-customers” of talent supply chains.

In this new role, employers are better able to communicate their demand for skilled positions and signal hiring and partnership requirements (e.g., competencies and credentials) using a shared language. Employers are also able to analyze current sources of talent and better manage performance-based partnerships with preferred providers. Those partnerships can now be managed based on the providers’ ability to meet the time, quality, and cost requirements of producing a skilled and competitive workforce for the employer and/or employer collaborative. The business community also has guidance for how to implement employer-led quality assurance for a wide variety of talent suppliers who can earn a preferred provider status that can be marketed to prospective students.

USCCF is now implementing a Talent Pipeline Management Academy to spread this movement to communities across America. Through the academy, about 40 chambers of commerce, economic development organizations, and other business associations will be trained on how to organize employer collaboratives and implement talent supply chain strategies and solutions. In addition to this training, USCCF will assist communities with new web-based tools and resources that support employer demand signaling and peer-to-peer exchange of information, such as shared language for communicating competency and credentialing requirements for skilled positions.

## 2 Empower learners to navigate the credentialing ecosystem

### Rationale

A well-functioning credentialing ecosystem relies on clear employer signals and improvements in the ways learners are able to navigate the credentialing marketplace. Learners need to be able to identify credentialing pathways that lead to education and careers of choice, and credential holders need to be able to clearly communicate their knowledge and skills to educators and employers.

Strengthened advising and navigational supports are essential to help all learners – especially low-income, minority, and other underserved and underrepresented learners – navigate the complex set of choices they need to make regarding credentials, educational programs and career options. Learners need to know the prerequisites for programs leading to different credentials, understand the labor market value and portability of different credentials, and see how different credentials relate to each other and fit into various credentialing pathways. They also need to understand the cost of different programs of study, the quality of credential providers, and the availability of financial aid. While more information is becoming available, it's not always accessible to learners in user-friendly ways. Current career navigation systems and services are inadequately funded and not designed to deal with the complexity and rapid changes of modern labor markets. Front-line workers lack the ongoing professional development that would enable them to keep current with dynamic labor market and occupational needs and trends.

Learners need to be able to identify credentialing pathways that lead to continuing education and careers of choice, and credential holders need to be able to clearly communicate their knowledge and skills to educators and employers.

As digital badges, online extended transcripts, and portfolio systems become available and employers increasingly use technology-supported and competency-based sourcing and hiring and promotional practices, both entry-level and incumbent workers need to know how to manage and effectively communicate information about their own knowledge, skills, and credentials throughout their careers.

### Principles to guide action

- We need to bring together and balance technical and human solutions.
- Navigation aids should include self-directed options and those that provide guidance from professionals. All options should provide assessment tools to help people better understand their own strengths, weaknesses, skills, and interests.
- While new technology-driven, user-friendly applications have the potential to address part of this challenge, these applications must be designed with diverse learners' needs in mind.
- Navigation supports need to be tailored to local labor market trends so that the information provided is relevant and useful for decision-making.

Recommended actions	How this can be done
<b>Strengthen academic and career guidance and navigation supports.</b>	<p>Develop new tools and applications for making data about pathway options, learner outcomes, wages, and the labor market easy to obtain and use.</p> <p>Bolster ongoing professional development of educational advisors, career navigators, and emerging related positions to promote equitable practices.</p> <p>Increase financial support for educational advising and career navigation.</p>
<b>Empower credential holders to manage and communicate information on their own competencies.</b>	<p>Identify leading practices in professional profiling, portfolio, and transcript systems.</p>
<b>Support technology and data system enhancements.</b>	<p>Develop tools that map credential relationships and show how combinations of credentials are required or preferred for particular industries or occupations, and/or how they create or align with career pathways.</p> <p>Develop tools to help education and workforce practitioners identify the most needed credentials in particular regions and industry sectors. (See additional recommendations under “<a href="#">Create an open, interoperable data and technology infrastructure.</a>”)</p>
<b>Give consumers information on how credentials and training programs are meeting the skill needs of employers and advancing careers and earnings for workers.</b>	<p>Continue to invest in studying credentialing pathway labor market outcomes, and broadly and effectively disseminate information on how the credentialing system is working for learners and potential consumers.</p>

### Example of building block: Credential Transparency Initiative

Since 2013, with support of Lumina Foundation, the [Credential Transparency Initiative](#) (CTI) has worked to create greater coherence and transparency in the credentialing marketplace by:

1. Developing common terms for describing key features of credentials and credentialing organizations that can be used to present comparable information via Internet search engines such as Google.
2. Creating a first-of-its-kind voluntary, web-based registry that shares comparable information from credentialing organizations about the range of credentials and how these credentials relate to each other. CTI is working with nearly 100 colleges, universities, and other credentialing organizations as pilot-site partners to provide information about their credentials to the registry.
3. Testing practical software applications for employers, students, educators, and other credential stakeholders. The first app will allow Credential Registry users to gain access to the websites of participating credential issuers, build customized directories of credentials based on their own criteria, and publish those directories on the registry to help guide others in the use. Just as travel apps such as Orbitz and Travelocity enable users to search for and compare flights and hotels, the Credential Registry will allow users to see what various credentials represent in terms of competencies, transfer value, third-party approval status, and more. For example, other apps in development will enable employers to communicate their credentialing requirements; support the review of competency-based resumes; and assist colleges and certification organizations to develop and write more transparent and assessable competency statements based on employer requirements.

CTI has been led by George Washington University's Institute of Public Policy, Wordcred – an affiliate of the American National Standards Institute (ANSI), and Southern Illinois University's Center for Workforce Development. Strategic direction has been provided by an advisory group of industry and education groups and a technical committee to ensure that standards of the registry and directory app meet the specifications of the World Wide Web Consortium (W3C) and other key standards organizations. As the CTI moves to scale up, a new nonprofit organization and board assisted by four stakeholder advisory groups (higher education; business; certifying and standards organizations; and quality assurance groups, including accreditors) will manage that effort.

The Credential Registry will allow users to see what various credentials represent in terms of competencies, transfer value, third-party approval status and more.

# 3 Develop common language centered on competencies

## Rationale

Common language is a necessity for building a strong and connected credentialing ecosystem. We can no longer tolerate a system in which credential providers (educational institutions, industry sectors, and third-party providers), credential recipients (learners), and credential users (employers and educational institutions) have their own distinct lexicons.

For decades, the term “credential” has been synonymous with an academic degree – and, in specialized occupations, with “licenses” and “certifications.” As new forms of credentials (i.e., badges, certificates, and nanodegrees) have entered the marketplace and expanded rapidly, credential issuers, earners, and employers are all struggling to understand and effectively use these credentials.

Information that should be shared easily within and across different contexts has become increasingly incomprehensible and unworkable.

Definitions that once seemed rock-solid are now fungible. Terminology that previously imputed value and meaning to certain credentials, like degrees, is splintering under the added weight of new credentials. Language understood and valued in one industry comes across as gibberish in another. What do we mean when we use the term *degree*? What is an *open badge*? How do either of them relate to a *certificate*? Information that should be shared easily within and across different contexts has become increasingly incomprehensible and unworkable.

## Principles to guide action

- A common language framework, supported by technology platforms with the capacity to link all credentials, makes it possible to connect an individual’s learning across academia, workforce, civic opportunities, and social connections – to benefit learners, employers, and the larger social structure.
- A structured, accepted foundational language of credentials can be used to bridge education and workforce, simplifying communications while ensuring that various stakeholders are able to indicate experience, skills, and knowledge in contextualized ways.
- Competencies – what an individual knows and can do – underpin all types of credentials, either explicitly or implicitly, and can serve as a basis for common language.

Recommended actions	How this can be done
<p><b>Develop a glossary of key credentialing terms that groups can use as a starting point from which to develop other definitions needed for their own specialized situations.</b></p>	<p>To encourage the broad use of a few shared definitions that are required to conduct a meaningful dialogue about credentials, the Common Language work group developed an initial version of a <u><a href="#">glossary</a></u>. Credentialing stakeholders are encouraged to use the glossary, and provide feedback that can improve it.</p>
	<p>Create a road map and user guide for continued building of the glossary. The road map should include examples of how these definitions can be used by different audiences in different contexts and specify research needed to test and refine those examples.</p>
	<p>Report on how the glossary’s terms are being used, including citations in the literature over the next five years.</p>

<p><b>Use the beta Connecting Credentials Framework as a vehicle for building competency-centered language that effectively addresses multiple audiences.</b></p>	<p>Create a feedback loop that ensures the glossary is reviewed and improved over time.</p>
	<p>Use Creative Commons copyright to ensure the glossary is open for use and adaptation.</p>
	<p>Field test application of the beta Framework within and across user groups to determine its value in various uses and to strengthen its content.</p>
	<p>Improve the Framework's ease of use, in part by automating the Framework and application tools.</p>
	<p>Gather, organize, and publish qualitative and quantitative results from the field testing of various applications of the Framework.</p>
	<p>Create data collection, storage and maintenance systems that support continuous product improvement, knowledge development, and management, thus increasing the Framework's impact on the credentialing ecosystem.</p>

### Example of building block: The beta Connecting Credentials Framework

The Right Signals project, led by the American Association of Community Colleges (AACC) and supported by Lumina Foundation, is engaging 20 community colleges to test a variety of strategic approaches using the Credentials Framework in areas such as the development of badges, alignment of industry credentials to programs and courses, and the movement of competencies from non-credit to credit programs.

Another promising field test of the Credentials Framework is being implemented in partnership with Capella University. Capella is aligning Registered Nurse/Bachelor of Science Nurse Fast Track programs to produce a scalable and replicable taxonomy that will describe competencies at multiple levels and help in the production of electronic transcripts. Additional Framework field tests include work with state workforce systems, the U.S. Geospatial Foundation, and the SUNY system.

These initiatives make heavy use of the Connecting Credentials Framework, released in beta version by Lumina in 2015. The Framework focuses on using competency descriptors as a mechanism to profile the level and types of knowledge and skills associated with any credential. It is an analytic tool that allows users to think through interrelationships among credentials and can be applied in both educational and workplace environments. The Framework is organized around two learning domains – knowledge and skills (specialized, personal, social) – and breaks out competencies in those domains into eight levels based on the relative complexity, breadth and depth of learning. Corporation for a Skilled Workforce is managing development of the beta Connecting Credentials Framework, including providing technical assistance to groups testing applications of it.

## 4 Create an open, interoperable data and technology infrastructure

### Rationale

A well-functioning, transparent, consumer-friendly credentialing ecosystem requires a comprehensive open data and technology infrastructure. Such an infrastructure can capture employer signals of worker requirements through job ads and interviews. It can link data on all of the credentials awarded by providers to illustrate connections with other credentials and career opportunities. In addition, it can enable individuals to control and manage their credentialing information.

Eight types of information systems are part of the current credentialing ecosystem:

- **Employer Human Resource Information Systems:** Used by employers to manage human resources, some systems are comprehensive and address the full array of human resource management functions. Others are more specialized (e.g., competency management systems, recruitment management systems, applicant tracking systems). Many of these systems are used to recruit, screen, and hire talent, based in part on competencies and credentials. They also are used to post online job openings, and identify and recruit job-seekers who are identified by searching online credential holder and professional profiling platforms (e.g., [LinkedIn](#)).
- **Online Credential Holder and Professional Profiling Systems:** Used by individuals to publish and manage an online professional profile, they include a wide variety of competency and credentialing information (e.g., [LinkedIn](#), badging, and academic transcript platforms) as well as the systems used by credentialing organizations to link, transfer, and validate this information (e.g., credential validation services). This domain has a number of initiatives including [Badge Platforms](#); American Association of Collegiate Registrars and Admissions Officers [Extended Transcript Initiative](#); IMS Global Learning Consortium's [Competency-based Education](#); Postsecondary Electronic Standards Council's (PESC) [transcript initiatives](#); and the World Wide Web Consortium's (W3C) [Verifiable Claims Task Force](#).
- **Online Learning Management Systems and Learning Resource Management Systems:** These systems use competency data to manage learning, link to external learning resources, and provide information to credentialing organizations to document the attainment of competencies required for credentials. These systems can also be used to transmit information to online credential holder and professional profiling systems and make recommendations to individuals based on changing employer needs and trends in the credential marketplace. This domain includes initiatives such as the [Learning Registry](#) and national, state, and institutional Open Education Resource initiatives.
- **Social Media:** These systems make connections to people and places for professional purposes. This domain includes professional profiling platforms ([LinkedIn](#), for instance, is a social media platform that makes connections to people and places for professional purposes).
- **Student Information Systems and National and State Longitudinal Data Systems (containing individual-level and aggregate data):** These systems compile, link, and manage individual-level data on students and workers, including demographics, participation in and completion of education and training, credentials awarded, and employment and earnings. These systems have historically focused on participation in publicly funded education and training and on those individuals who receive traditional for-credit degrees and certificates from public colleges and universities. They seldom include extensive coverage of independent universities and proprietary schools. Recent initiatives have focused on expanding coverage to non-credit certificates and industry and professional certifications. This domain includes State Longitudinal Data Systems (SLDS) that link state education and workforce data systems, as well as national and regional clearinghouses such as the [National Student Clearinghouse](#) (NSC) and the [Western Interstate Commission for Higher Education](#) (WICHE).

This category also includes pilot projects being conducted by the National Skills Coalition (NSC) and the Association of Career and Technical Education (ACTE) [Certification Data Exchange Project](#) to include industry and professional certification data. This area includes initiatives to improve the coverage and quality of these data systems, including [Workforce Data Quality Campaign](#) (WDQC) efforts addressing P-20/workforce systems, and improving the use of these systems such as the work of Georgetown University [Center for Education and the Workforce](#).

- **Credentialing Organization and Credential Information Systems:** These systems maintain information on the organizations that issue credentials and the credentials themselves. This includes systems that manage information on specific types of credentials such as industry and professional certifications (e.g., Department of Labor [Certification Finder](#)) and career and education guidance systems that provide information on colleges and universities and their programs and degrees. The more recent [Credentialing Transparency Initiative](#) (CTI) is developing a Credential Registry that would provide comparable information about the full range of credentialing organizations and credentials, including information on competency requirements (see example on [page 11](#)).
- **Government Statistical Systems and Labor Market Information Systems:** These systems compile and transmit statistics based on government administrative records and surveys (e.g., [Interagency Working Group](#) on Expanded Measures of Enrollment and Attainment (GEMEnA)) as well as government and private data services that produce labor market information based on online job postings (e.g., [Burning Glass](#)), labor market returns for credentials (e.g., Georgetown University [Center on Education and the Workforce](#), [Collegemeasures.org](#), state consumer information systems), and industry and occupational demand and supply related to credentials.
- **Competency and Credential Frameworks and Taxonomies:** These are information resources that provide common terminology for essential data on credentials and their key features such as competencies and credential connections. Competency frameworks include the [Degree Qualifications Profile](#) (DQP), Liberal Education and America's Promise (LEAP) [Essential Learning Outcomes](#), the Connecting Credentials beta [Credentials Framework](#), [O\\*NET](#), and the industry sector [competency models](#) developed by the U.S. Department of Labor. One example of credential connections frameworks is the CompTIA [Career Roadmap](#) that identifies credentialing pathways for information technology certifications.

Despite the substantial data and technology components operating in the credentialing marketplace, these infrastructure components are not well connected. While competencies are becoming an increasingly important currency in the marketplace, most existing data systems have not been designed to manage related data. Where competency data is included, it is inconsistent. Real-time labor market information systems compile information from online job postings, but no public information exists that links these postings to actual hires, let alone successful hires.

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Likewise, the national and state longitudinal data systems which have individual-level data enabling analysis of education and career trajectories do not provide sufficient coverage of the full range of credentials. Public data systems often lack information about certificates and degrees from non-public education providers (e.g., for-profit career schools, private independent schools) and about attainment of state-issued licenses and industry-awarded certifications. Even data about credentials students earn from public education institutions is incomplete. For example, a recent report on certificates in Connecticut estimated that only 52 percent of certificates are currently picked up by the state's data system. In addition, there is no single trusted source of comprehensive and comparable information about all types of credentials.

## Principles to guide action

- A fully interoperable public-private data and technology infrastructure requires a new approach to how employers “signal” their requirements for workers (e.g., through job ads and interviews), and how individuals can control and manage their credentialing information.
- This infrastructure should be designed to support a new generation of online tools that improve access and opportunity in the credential marketplace. Application (app) developers can use this public-private data infrastructure to develop useful tools, similar to tools already used in many sectors (e.g., travel and customer product apps) that draw from multiple public and private data sources.

Recommended actions	How this can be done
<p><b>Improve data tools to capture and communicate employer requirements.</b></p>	<p>Engage employers in developing common language and standards for use in communicating demand through job postings.</p> <p>Create real-time labor market information data tools to capture this information.</p>
<p><b>Improve information on career and credential connections.</b></p>	<p>Improve the practice and precision of matching programs of study and occupations to credentials, including certifications and licensing.</p> <p>Encourage credentialing organizations to clearly communicate how the credentials they award relate to others and where they can best be applied in terms of industry and occupation. These specifications should fit into established taxonomies: <a href="#">Classification of Instructional Programs (CIP)</a> for programs of study, North American <a href="#">Industrial Classification System (NAICS)</a> for industries, and <a href="#">Standard Occupational Classification (SOC)</a> for occupations.</p> <p>Explore the value of using privately operated data sets, such as those with resume information, to conduct richer analyses of education and career pathways; and assess the benefits and limitations of using this data (see additional recommendations under “<a href="#">Empower learners to navigate the credentialing ecosystem.</a>”)</p>
<p><b>Improve credential coverage in public-private data systems.</b></p>	<p>Develop a public-private credential registry that houses comprehensive information on all types of credentials and that can be linked to both public and private data systems.</p> <p>Work with credentialing organizations in high-demand industries to develop models for linking certification data with individual-level information about education, other types of credentials, and employment. They should disseminate lessons learned from pilot data-linkage projects, including recommendations for expansion to additional states and/or industries.</p> <p>Develop and promote state policies to enhance state data systems so that they include all types of education providers. The goal is to capture attainment of all quality credentials and the full range of participating learners.</p> <p>Promote cross-state data sharing of credential information through a nationwide clearinghouse and/or regional data-sharing agreements and use of shared taxonomies.</p>
<p><b>Improve competency data management and exchange.</b></p>	<p>Explore and inventory the many competency <i>frameworks</i> now in use across public-private data systems, and identify opportunities for developing crosswalks and connections.</p> <p>Explore how different <i>data systems</i> capture, manage, and exchange competency data, and identify opportunities for improving data management and exchange.</p> <p>Promote the adoption of technical standards for competency-based data interoperability among institutional application systems. Standards must be readily findable, open, and easily adopted, requiring no membership agreements.</p>
<p><b>Improve data exchange among professional profiling, portfolio, transcript systems, and other data systems through the use of standards and other strategies.</b></p>	<p>Explore how current systems that use standards for improving interoperability can attest and verify their conformance in the credentialing marketplace.</p>
<p><b>Develop user-friendly data tools and applications.</b></p>	<p>In developing these tools, policymakers, practitioners, and entrepreneurs – at all levels – should prioritize development on the most important uses for major stakeholders. These tools should provide outcome data on how different credentials and training programs meet employer needs and advance worker careers and earnings.</p>

## Example of building block: Education Performance Data System

The National Association of Manufacturers and the Manufacturing Institute, in partnership with the National Student Clearinghouse and the U.S. Census Bureau, and with initial funding from USA Funds, are designing a system to match student education records with employment and wage data and third-party credential attainment records. This combined data set will give current and prospective students, employers, and policymakers an alternative means of evaluating the quality and effectiveness of educational programs in preparing individuals to enter the workforce.

The system will first match certification data from major third-party credential providers in manufacturing with student records at the Clearinghouse. That combined educational attainment record will then be matched with IRS tax return data and state Unemployment Insurance wage records provided by the Census Bureau. Finally, demographic information and company characteristics will be included from the population and economic census. These records will be aggregated at the educational program level across a range of factors and exported for use.

The goals are to obtain data on the true outcomes of manufacturing education programs, present the data in a user-friendly format to all interested parties, and establish a set of performance benchmarks that enable manufacturing education programs to earn recognition and endorsement from the National Association of Manufacturers. The experience gained during this project will inform a best practice guide that will act as a road map for other industries and certification providers to follow and enable outcome-based performance measures for education and training programs in any sector of the economy.

This combined data set will give current and prospective students, employers, and policymakers an alternative means of evaluating the quality and effectiveness of those programs in preparing individuals to enter the workforce.

## 5 Foster shared understanding of credential quality among stakeholders and reciprocity among quality assurance processes

### Rationale

Quality assurance is essential to build trustworthiness, reliability, and transferability of diverse credentials. It gives us confidence that we know what learning stands behind these credentials.

Different stakeholders bring many perspectives to the definition of quality, and they rely on a variety of approaches to assure quality. As a result, the current credentialing landscape includes a variety of quality assurance approaches. These range from institutional or program accreditation processes within the education system to heavy reliance on third-party assessment of individual learners' competencies for industry and professional certifications. In addition, there are transparency and consumer information approaches that focus on making information about quality – especially labor market and other outcomes – easily accessible to different users. Quality assurance also includes performance-based accountability and consumer protection through regulation and other government action.

Many versions of these approaches coexist, making it difficult for stakeholders to understand or trust that quality is being assured across credentials. The varied approaches and values that stakeholders bring to quality assurance create confusion about what different credentials represent; this can – and does – impede portability across the credentialing ecosystem.

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### Four stakeholder priorities on quality assurance

Stakeholders have differing priorities when it comes to quality assurance According to the American Council on Education, as described in its 2016 report, *Quality Dimensions for Connected Credentials*:

- **Credential earners:** Learners and workers generally seek credentials as evidence that they possess certain knowledge and skills – attributes that can help them obtain educational opportunities and/or employment and career advancement. To achieve these purposes, credential earners need to understand their credential options, the cost and requirements of attaining different credentials, and the social and professional values – including potential earnings – associated with different credentials.
- **Credential issuers:** The organizations that award credentials are interested in the quality of credentials so that they can maintain or improve their reputation, attract new credential earners, be relevant to consumers, and meet the requirements of credential endorsers. Credential issuers include colleges and universities; professional and industry organizations; “non-traditional” learning providers such as community-based employment and training providers, boot camps and massive online course (MOOC) providers; sector and apprenticeship partnerships; high schools; and states (in the case of licenses).

- **Credential consumers:** Employers and educational institutions, the primary consumers of credentials, are interested in transparency, relevance, and quality assurance because they use credentials to make judgments and decisions about the qualifications and competencies of learners. They make such judgments for specific purposes, including: further education, employment, suitability for specific professional occupations and career advancement. Employers’ hiring policies, procedures, and practices across industry sectors indicate credential usage, which in turn is an indicator of the trust in and relevance of diverse credentials. Similarly, articulation and transfer rates among educational institutions and credit for prior learning policies reflect the value one institution places on the credentials issued by another.
- **Credential endorsers:** The accreditors or independent third parties that vouch for the organization awarding the credential and the quality of its credentials are most interested in transparency. They seek to understand the criteria and quality assurance processes associated with the credential.

## Principles to guide action

- Increased transparency and use of common language and concepts about quality would bring greater understanding of what different credentials actually represent and their value in different contexts.
- Increased transparency and shared understanding of quality assurance approaches would increase trust in and use of credentials and enable stakeholders to cross-reference different quality assurance processes to facilitate portability and mobility within the credentialing ecosystem.
- Any quality assurance criteria developed must be flexible to address diverse needs across stakeholders and the varying roles that different credentials play.

Recommended actions	How this can be done
<b>Develop flexible criteria for understanding and assuring quality across stakeholders and context.</b>	<p>Expand definitions of key terms related to quality assurance processes to include relevance, validity, and equity. A good starting point for discussion of quality criteria is the set proposed by the American Council on Education (ACE) in <a href="#">Quality Dimensions for Connected Credentials</a>. The report cites six key criteria that should be used to assess the quality of different types of credentials: transparency, modularity, portability, relevance, validity, and equity.</p> <p>Have stakeholders share their perspectives on how value and quality are defined in different contexts and industries or fields.</p> <p>Identify best practices for components of valid quality assurance processes and how quality assurance processes relate to outcomes.</p> <p>Develop effective ways to communicate with all stakeholders about quality assurance processes and recommendations.</p> <p>Disseminate information about outcomes associated with different credentials.</p>
<b>Incorporate attainment of “industry-recognized” credentials in institutional and programmatic performance and accountability systems at the federal and state levels.</b>	<p>“Industry-recognized” credentials should be defined as those credentials that are endorsed and used by employers and employer associations and that have tangible labor market outcomes.</p> <p>Clarify that the cost of credentialing is an allowable use of federal workforce funds, including under the Workforce Innovation and Opportunity Act.</p>

<p><b>Build alternative and flexible assessment methods, with identified steps and related processes.</b></p>	<p>Support field-based experimentation with competency-based assessment and related quality assurance approaches.</p> <p>Adapt regulatory constructs to encourage rather than inhibit innovation in credentialing.</p> <p>Support evaluation of these approaches for consistency and scalability.</p>
<p><b>Align definitions and performance measures across major federal programs and policies that affect the credentialing marketplace.</b></p>	<p>Pursue legislative, regulatory, guidance, discretionary funding, and technical assistance opportunities for promoting greater alignment of definitions and performance measures. This alignment must occur across federal policies, such as: Every Student Succeeds Act, the Higher Education Act, Perkins Career and Technical Education Act, the Workforce Investment and Opportunity Act, and other relevant legislation.</p> <p>Convene a federal interagency working/advisory group on credentialing, with representation from the field.</p>
<p><b>Develop new forms of data reporting that provide a clear picture of the needs and status of traditionally underserved and underrepresented populations.</b></p>	<p>Identify potential milestones and momentum points to measure progress and allow state experimentation with reporting on these measures.</p> <p>Gather and disseminate baseline information on these metrics.</p>

## Example of building block: Multi-State Collaborative to Advance Learning Outcomes Assessment/Valid Assessment of Learning in Undergraduate Education (VALUE), and National Survey of Student Engagement

Since 2014, under the leadership of AAC&U (the Association of American Colleges and Universities) and SHEEO (State Higher Education Executive Officers), the *Multi-State Collaborative to Advance Learning Outcomes Assessment/VALUE* initiative has developed and tested a model that will allow common student learning outcomes to be assessed across institution and state lines based on authentic student work (e.g., projects, papers, and research produced by students, whether in courses or co-curricular activities). The Collaborative’s purpose is to contribute to quality assurance and improvement efforts at institutional and state levels.

The Collaborative is establishing benchmarks for student learning across several outcomes essential for success regardless of students’ career paths (e.g., written communication, critical thinking, and quantitative literacy, among others). The work is also informing faculty members on how to redesign curricular pathways across general education and majors.

The initiative is unique because collecting data on student learning outcomes has never been done in such a systemic way without relying on standardized tests. By collecting students’ actual work, the initiative also captures the students’ levels of motivation and mastery. The 2015 pilot study spanned nine states and 76 public institutions, with 176 faculty scoring more than 7,200 student artifacts across three learning outcomes: 1) written communication, 2) quantitative literacy, and 3) critical thinking. In 2016, the work expanded to 12 states, 105 public institutions, and more than 190 faculty scorers scoring over 11,000 student artifacts.

Based on the successful 2014-2016 trials, the next step is to establish a national center (VALUE Institute) for the collection and study of data on student learning in college. This work builds on the Valid Assessment of Learning in Undergraduate Education (VALUE) process, an approach to assessment that focuses on authentic student work through the use of 16 rubrics VALUE developed and tested by faculty teams across the country. The rubrics measure the multiple skills and abilities learned across educational pathways. VALUE builds on complementary frameworks that articulate the essential learning behind credentials (e.g., Degree Qualifications Profile, LEAP Essential Learning Outcomes).

The evolving VALUE Institute will join forces with the National Survey of Student Engagement (NSSE), to link the direct faculty assessment of student learning through the VALUE rubrics with students’ own perceptions of their learning as captured by NSSE (managed by Indiana University Center’s for Postsecondary Research). This unique

coupling between the MSC, VALUE, and NSSE will reveal alignments, disconnects, and opportunities for improving the learning environment for all students.

The work across the three collaborating efforts has been supported by institutional resources, the Fund for the Improvement of Postsecondary Education (FIPSE), Bill & Melinda Gates Foundation, Lumina Foundation, Sherman Fairchild Foundation, and the Spencer Foundation. More on the initiative is available on the [SHEEO website](#).

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# 6 Pursue public policy that advances equity in the credentialing ecosystem

## Rationale

Policy barriers make it difficult for underserved and underrepresented populations, particularly racial and ethnic minorities and persons of low-income, to attain marketable credentials. Gaps in federal and state financial aid leave too many learners and workers with too few resources to achieve their educational and career goals. Course-numbering protocols and outdated policies on articulation and transfer hinder the development of quality pathways and “stackable” credentials. Tools that can accelerate completion and enhance learning – such as credit for prior learning, competency-based education programs, and work-based learning – are too often unavailable or not portable. Lack of quality research about credentialing pathways – especially those leading to sub-baccalaureate credentials – slows the spread of these innovations. As a result, strategies to improve equity and opportunity for the underserved and underrepresented operate at a small scale, creating “islands of innovation” rather than broader system change that reaches far more learners.

Strategies to improve equity and opportunity for the underserved and underrepresented operate at a small scale, creating “islands of innovation” rather than broader system change that reaches far more learners.

## Principles to guide action

- Leverage federal, state, regional, and institutional policy, investment, and capacity to create credentialing pathways and stackable credentials that benefit all learners – particularly populations that have been historically underserved and underrepresented.
- Policy levers include providing robust information about best practices, fostering incentives, and expanding allowable costs to fund credentialing innovations.
- As suggested by the Alliance for Quality Career Pathways in its [Framework](#) (see [building block](#) at the end of this section), these policies and funding – together with partnerships, data and shared performance measures – should support the creation, growth, and sustainability of transparent, flexible, well-connected pathways.
- These pathways should address learners’ diverse needs and goals, and should also align all relevant public systems with private and nonprofit partners.

Recommended actions	How this can be done
<p><b>Use federal, state, regional, and institutional policy levers to increase incentives and reduce barriers, thus creating flexible credentialing pathways that lead to family-sustaining jobs.</b></p>	<p>Identify and pursue federal regulatory and legislative policies to support the design, implementation, and continuous improvement of credentialing pathways. Federal programs that heavily influence credentialing practices include, but are not limited to: Every Student Succeeds Act, Higher Education Act, Perkins Career &amp; Technical Education Act, Workforce Innovation &amp; Opportunity Act, and Juvenile Justice Delinquency Prevention Act.</p> <p>Ensure that new dollars support the design, implementation, and growth of guided credentialing pathways across systems from K-12 through higher education. These pathways should include on-ramps, co-enrollment, work-based learning, and credit for prior learning – all linked to articulation and transfer agreements.</p>

	<p>Recognize and address issues of access, cost, and volume to create effective credentialing pathways in rural areas.</p> <p>Use state and local discretion and resources in federal programs to help develop and implement stackable credentials and career pathway systems.</p> <p>Use federal and state discretionary funding (e.g., American Apprenticeship Initiative) to develop and implement stackable credentials and career pathway systems.</p> <p>Forge statewide and regional articulation agreements for dual and concurrent enrollment to ensure ultimate transferability of credit earned.</p>
<p><b>Align policy and funding to support adoption and use of career pathways resulting in quality credentials, especially for low-income, minority, and other traditionally underserved and underrepresented learners and workers.</b></p>	<p>Design credentialing pathways and systems to ensure that learners are not saddled with low-quality credentials and crippling debt.</p>
	<p>Adopt a shared policy agenda across elementary and secondary education, adult education, developmental education, postsecondary education, employment programs, youth-development organizations, and other related community-based organizations. This agenda must support state and local or regional stackable credentials and career pathway systems.</p>
	<p>Adopt shared metrics and dashboards to measure targeted learner success and progress in implementing career pathways systems.</p> <p>Promote actionable research into the effectiveness of career pathways and stackable credentialing initiatives, including the long-term outcomes of individuals who complete stackable credentials.</p>
<p><b>Scale stackable credentials that promote seamless articulation and transfer, including on-ramps for low-skill, low-income, immigrant, and other vulnerable learners and workers.</b></p>	<p>Streamline processes associated with and accelerate the adoption of credit for prior learning, alternative credit options, competency-based education programs, and work-based learning.</p>
	<p>Build the capacity of secondary, postsecondary, and adult education faculty to redesign guided credentialing pathways.</p>
	<p>Promote, streamline and accelerate modular, stackable credentials by competency or competency clusters, including credit for prior learning.</p>

## Example of building block: Alliance for Quality Career Pathways Framework

The Alliance framework provides a clear set of criteria and indicators for what constitutes a quality state and local/regional career pathway system, as well as metrics to assess participants’ progress. The framework is designed to help career pathway partners continuously improve their systems. It also can serve as a collaborative, comprehensive strategy for policymakers and funders to align and enhance their investments, technical assistance, and guidance for building and sustaining career pathway systems. The framework was developed by the Center for Law and Social Policy (CLASP) in collaboration with Arkansas, California, Illinois, Kentucky, Massachusetts, Minnesota, Oregon, Virginia, Washington, and Wisconsin – and their local/regional partners. The initiative was funded by the Joyce Foundation, The James Irvine Foundation, and the Greater Twin Cities United Way.

The Alliance framework provides a clear set of criteria and indicators for what constitutes a quality state and local/regional career pathway system, as well as metrics to assess participants’ progress.

The framework is being used by the states in different ways:

- Wisconsin’s Technical College System (WTCS) is using the Alliance career pathway metrics to design the performance dashboard for the statewide career pathway system it is developing with support from a federal Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant. The WTCS performance accountability system includes performance incentives for career pathway certificates and embedded technical diplomas.

- Virginia built its successful Career Pathways for Individuals with Disabilities effort using the Alliance framework. The Department for Aging and Rehabilitative Services and the Department for the Blind and Vision Impaired led the Virginia Career Pathway Committee through a process of identifying shared performance accountability metrics for a \$4.3 million federal grant and for the statewide system as a whole.
- California continues to invest in career pathways aligned with the Alliance criteria and accountability measures. California's Strong Workforce recommendations build on the momentum of Doing What Matters for Jobs and the Economy with another \$200 million investment to strengthen career pathways for both youth and adults.
- Minnesota's Temporary Assistance for Needy Families (TANF) program – the Minnesota Family Investment Program – made policy changes to remove barriers to education for TANF recipients and promote career pathways.

# 7 Promote field-based development of new credentialing tools, policies, and practices

## Rationale

Bringing about the large-scale systemic changes recommended in this action plan can seem daunting, but a great deal of change is already taking place throughout the country. These innovations need to be connected and leveraged through an entrepreneurial and open-source approach that encourages public sharing of products and lessons. More creative change initiatives are still needed at every level.

Trying out new approaches is important because it grounds policy and practice in what works – in the realities of what is learned by testing models. Experimentation provides a basis for peer learning and aids the spread of innovation. In an experimental effort, strategies can be adjusted quickly, and practitioners can adapt as they learn without having to wait for formal policy change.

Unlike the previous sections of this plan that focus on the *when, why, what, and how* to take action, this section focuses on *who* – on what key stakeholders can do to try out new and better ways of connecting credentials. For illustrative purposes, we draw on some of the many options for experimentation discussed earlier.

Trying out new approaches is important because it grounds policy and practice in what works – in the realities of what is learned by testing models. Experimentation provides a basis for peer learning and aids the spread of innovation.

## Principles to guide action

- Move forward on changing policy and practice based on our best understanding of what will make a difference for key stakeholders while simultaneously communicating what works and sharing lessons that inform the continuous improvement of norms, definitions of processes, and outcomes.
- Change the culture of credentialing – how key stakeholders understand, use, and connect credentials.
- Work across the credentialing ecosystem so that it reflects all stakeholder needs and perspectives.
- Use learning from field-based research to inform policy change, infrastructure building, and broad understanding and ownership of the credentialing marketplace.

Stakeholders	Recommended actions
Accreditation bodies	Experiment with ways in which accreditors can help improve transparency and trust in the quality of diverse credentials across the credentialing ecosystem.
	Experiment with ways in which accreditation bodies can help increase the relevance of institutional program design and learning outcomes in rapidly changing labor markets.
Certification bodies	Try new ways to ensure greater transparency and consistency of quality assurance processes associated with certification.
	Collaborate with other credential providers to promote credential portability.

<p><b>Communities and regions</b></p>	<p>Engage local chambers of commerce, school districts, colleges and universities, sector partnerships, workforce councils, and other relevant entities in addressing priority needs in local and regional credentialing marketplaces.</p> <p>Develop evidence that connected credentials benefit employers, learners, the economy, and the community as a whole.</p>
<p><b>Education and training providers and their associations</b></p>	<p>Explore ways in which competency-based credentialing contributes to increasing student success and distribute this information widely.</p> <p>Increase use of clear descriptions of learning outcomes and competencies, using shared definitions and language.</p> <p>Develop the capacity to make information about credentials awarded by education and training providers readable by the emerging Web 3.0 tools (e.g., Credential Registry and related apps).</p> <p>Describe competencies gained within liberal arts programs consistently with those in occupational/professional programs, so that the value from all programs is expressed clearly and can be interconnected.</p> <p>Identify leading practices and build professional capacity for assessment of learner competencies and career navigation, especially among faculty and assessment specialists at colleges and universities.</p> <p>Collaborate with partners across the ecosystem to promote greater articulation, transfer and credit for prior learning.</p> <p>Provide ongoing, equity-informed training for frontline workers on relevant program resources and labor market data.</p>
<p><b>Employers and employer associations</b></p>	<p>Organize at the national, regional, and local levels to clearly communicate demand for competencies and credentials to learners, workers, and credential providers – both within your industry sector and with other industry sectors when common messaging is appropriate.</p> <p>Incorporate competencies and credentials in talent sourcing and development processes.</p> <p>Play a more direct role in work experience that leads to credentialing (e.g., internships, work-to-learn, co-op education, employer-embedded assessments in education programs, assessment of learning acquired in workplace) and assuring the quality of programs and institutions.</p>
<p><b>Entrepreneurs</b></p>	<p>Develop a new generation of user-friendly data tools and applications that students, employers, and credentialing organizations can use to improve equity, value, and transparency in credentialing.</p>
<p><b>Federal government</b></p>	<p>Explore data collection, reporting, and other ways in which the federal government contributes to developing shared understanding of quality credentials and use of common language across education and workforce programs.</p> <p>Explore how federal policy changes can encourage expanded and consistent use of high-quality, competency-based credentials across multiple departments and agencies.</p> <p>Partner with the philanthropic community, states, and others to promote/support changes in credentialing policy and practice.</p>
<p><b>Philanthropic community</b></p>	<p>Engage leadership across the ecosystem to build awareness of credentialing-related problems and strategies for better connecting credentials.</p> <p>Support experimentation and research throughout the ecosystem to identify effective policies and practices in diverse contexts.</p> <p>Support efforts to institutionalize and scale effective policies and practices.</p>

	Promote transparency and the use of common language across the ecosystem.
<b>Professional societies</b>	Expand the use of competency-based education standards and credentials within your purview.
	Explore better ways to ensure that credentials awarded are of high quality.
	Explore how to coordinate with other professional societies to promote greater portability of credentials across occupations.
<b>Researchers</b>	Evaluate the effectiveness of field-based innovations to make diverse credentials a tool for equity and mobility.
	Draw lessons from workforce, apprenticeship, and postsecondary education on effective strategies for engaging employers in improving the quality of credentials for all learners.
	Evaluate the effectiveness of career pathways initiatives and stackable credential system alignment initiatives. Look especially for their impact on credential attainment and other outcomes.
	Identify ways in which professional development of faculty and others charged with assessing knowledge and skills make effective use of alternative and flexible assessment methods.
	Redefine the credit hour used in colleges and universities in terms of competencies rather than time-based learning measures.
	Explore how lessons, models, and tools from credentialing reform in other countries can inform change within the U.S. ecosystem.
<b>Social and economic justice organizations</b>	Become a co-sponsor of Connecting Credentials.
	Help your networks understand how improvements in the credentialing ecosystem can contribute to increasing the social and economic mobility of learners and workers.
	Encourage your networks to become engaged in strengthening the credentialing ecosystem.
	Encourage and support learners in becoming well-informed users of diverse credentials.
<b>State government</b>	Encourage education and training providers in your state to make information about credentials they award readable by the emerging Web 3.0 tools (e.g., Credential Registry and related apps).
	Explore policy, technical assistance, and funding opportunities for increasing policy alignment and articulation across elementary, secondary, postsecondary, and training institutions.
	Experiment with the use of shared competency-based metrics for the award of credentials and licenses to practice in the marketplace.
	Assess performance metrics, incentives, and sanction policies that affect equity in credentialing.
	Task existing collaborative bodies such as P-20 councils, state workforce development councils, and sector partnerships to work at the state level and partner with communities to strengthen credentialing policy and practice.
<b>Student organizations</b>	Become a co-sponsor of Connecting Credentials.
	Help your networks understand how improvements in the credentialing ecosystem can contribute to increasing learners' social and economic mobility.
	Encourage your networks to become engaged in strengthening the credentialing ecosystem at all levels.

	Share stories in social media and other outlets on how individuals are impacted by our credentialing system.
	Encourage students to become well-informed users of diverse credentials.
	Inform the emerging vision of a credentialing ecosystem and suggest actions to achieve this vision.
	Use this plan and referenced documents and resources to familiarize yourselves with things that can be done at all levels in the credentialing ecosystem to improve value for learners and employers.
	Assess problems your constituencies encounter in the credentialing ecosystem, and use this plan to guide individual and collective action to address those problems.
<b>All stakeholders</b>	Share the lessons learned through the successes – and failures – you experience.
	Capture the stories of actual people who have been hampered by the current, disconnected credentialing system, and show how they benefit from changes you have made.
	Broadly share information on credentialing – in blogs, in your conference presentations, and in your newsletters.
	Sign up for the <i>Connecting Credentials E-News</i> and participate in future Connecting Credentials webinars, interactive e-conversations, convenings and work groups.

## Example of building block: Community Colleges Embracing Diverse Credentials

Over the last six years, hundreds of colleges have used multi-year Trade Adjustment Assistance Community College and Career Training (TAACCCT) grants to build strong partnerships with the workforce system, employers and industry groups. These partnerships are helping many colleges transform the way they serve adult learners, particularly dislocated workers. In this process, the colleges need to consider what credentials provide both labor market and educational value, how to collect data on the returns from investing in using particular credentials, how to make industry certifications credit-bearing and stackable with certificates and degrees, and what system changes are required to use diverse credentials.

One example of the transformational impact of these grants is the Kentucky Consortia for Information Technology Job Pathways in Computer and Medical Fields. The project includes six community colleges in concert with regional and national employers, the Kentucky Workforce Development Cabinet, the Kentucky Community and Technical College System, and the Kentucky Chamber of Commerce. It uses a TAACCCT grant to expand Kentucky’s online, personalized competency-based learning system to serve more students. Specifically, the program develops pathways to five new degrees and 11 stackable certificates in the medical and information technology fields.

TAACCCT has provoked a transformation in the use of industry certifications by community colleges. In a recent Lumina Foundation survey on the practice of embedding industry certifications in instructional programs, more than half of respondents have implemented this practice through their TAACCCT partnership. The \$2 billion federal TAACCCT program is administered by the U.S. Department of Labor in collaboration with the U.S. Department of Education.

## APPENDIX A: EXAMPLES OF BUILDING BLOCKS FOR REIMAGINING CREDENTIALS

### Employer leadership & engagement

**CompTIA Credentialing** – The Computing Technology Industry Association (CompTIA) is the voice of the world’s information technology industry. Its members are the companies at the forefront of innovation; and the professionals responsible for maximizing the benefits that organizations receive from their investments in technology. CompTIA is dedicated to advancing industry growth through its educational programs, market research, networking events, professional certifications, and public policy advocacy. The association’s work has focused on building credentialing pathways for the IT industry that leads to high-growth careers.

**National Network of Business and Industry Associations (NNBIA)** – Convened by the Business Roundtable and supported by the Joyce Foundation, ACT Foundation, Lumina Foundation, and Walmart, the National Network of Business and Industry Associations is coordinating cross-sector efforts to close the “skills gap.” Members include leaders in the manufacturing, retail, healthcare, energy, construction, hospitality, allied healthcare, automotive, and information technology sectors. Their efforts have focused on supporting stackable credentials, common employability skills that cut across sectors, hiring based on competency, and highlighting work-to-learn models.

**Employer-led Quality Assurance** – The U.S. Chamber of Commerce Foundation is exploring an employer-led, complementary form of accreditation in higher education to help close the skills gap in America. This effort calls for stronger involvement of the employer community in the governance of existing accrediting agencies and for employers to develop a complementary system, led by the business community, that recognizes and endorses programs based on their ability to prepare a career-ready workforce.

**Employer-driven Energy Workforce Planning** – With support from the Center for Energy Workforce Development (CEWD), energy industry members in more than 30 states have established employer-led state energy workforce consortia. The consortia focus on state or regional strategic planning, beginning with quantifying job demand and supply in partnership with their education providers and state workforce systems. A goal of state energy workforce consortia is to assist educators with embedding standard energy curriculum and awarding preferred energy industry credentials to ensure a qualified and diverse workforce.

**Retail+Plus and National Retail Services Competency Model** – Led by Innovate+Educate together with the Walmart Foundation, Retail-Plus seeks to grow a skilled workforce for the rapidly growing retail services sector in Dallas. The project is advancing entry-level incumbent workers to supervisory positions based on skills and competencies achieved through training and validated via assessment(s). This is part of a broader effort to leverage competency models for retail services and adjacent industries that will serve as the foundation to educate, recruit, hire, promote, and retain a highly skilled and credentialed workforce.

**Competency-Centric Analysis to Inform Planning** – College for America is pioneering an effort to leverage labor market trends and workforce analytics to identify leading and cross-cutting competencies in an in-demand field. These trends are then validated with partner employers. This information is used to support the development of competency-based programs delivered on flexible learning platforms. These platforms are used to support talent pipelines for partner companies while providing pathways for the advancement of new and incumbent workers.

**Essential Competencies Project** – Led by the Committee for Economic Development, this project is a four-year study of competency-based hiring by a select group of businesses. Many employers are uncertain about the skills and knowledge that predict job performance and lack reliable ways of assessing applicant skills. As a result, employers rely instead on educational attainment as a predictor of how well qualified the applicant is. This study is examining the feasibility and efficacy of competency-based hiring and potentially will provide a “proof of concept” for this innovation.

**National Aviation Consortium CertTEC Certification** – This critical aviation certification, [CertTEC Aviation Mechanical Assembly](#), is a comprehensive assessment of technician skills and knowledge in aviation manufacturing, such as drilling and riveting, sealing application, and electrical bonding and grounding. It is driven by a first-time partnership of major aviation manufacturers across the country, including Boeing, Spirit, and others, to fill an identified gap in the industry. The certification is closely aligned with the curriculum taught at the National Aviation Consortium colleges, specifically the National Center for Aviation Training.

## Learner navigation

**MyBestBets** – A web and mobile platform to help low-income students organize and manage their postsecondary education and career through an explicit set of exploration, decision, and enrollment tasks. By integrating local labor market data, postsecondary information, and employer preferences, [MyBestBets](#) helps students find postsecondary programs that lead to promising careers. This blended counseling approach combines technology with off-screen networking activities, adult support, and skills essential in helping young people find their path and stick with it. MyBestBets, which was developed by Jobs for the Future and YouthBuild USA with support from the Noyce Family Foundation, is being piloted in Los Angeles and New York City.

**Goodwill's Careers in Retail Initiative** – With support from the Walmart Foundation, this initiative provides free [training and support](#) to equip experienced, entry-level employees with the skills and credentials needed to advance to in-demand middle skills/middle management positions in the retail, food and beverage, and/or hospitality and tourism industries. Participants are able to take assessments on general knowledge, retail skills, and work ethic to create individual plans for growth, building on their strengths and improving areas of weakness. Employers can help grow their business and advance their employees with free, customized training and are also invited to participate in the end-of-course interviewing and hiring events.

**Career One Stop Credentials Center** – Offers credentials, licenses, and apprenticeship finders, other career guidance materials, and the [Competency Model Clearinghouse](#).

**Georgetown University Center on Education and The Workforce** – Publishes the most widely used and widely recognized tool for [tracking the value](#) of 137 college majors nationwide and in individual states.

**Certification Finder** – This tool from the U.S. Department of Labor helps individuals find certifications in a variety of careers, occupations, and industries. The [database](#) also can be searched by name of certification, organization that offers certifications, and an O\*NET or NAIC occupational code.

## Common language

**Quality Dimensions for Connected Credentials** – [This paper](#), issued by the American Council on Education, offers insights about key definitions that are important in credentialing.

**Clarifying Competency-based Education Terms** – A [lexicon](#) developed by the American Council on Education and Blackboard addresses and defines terms often used in the world of competency-based education – not all of which are commonly understood.

**Interactive Employability Skills Framework** – This website, operated by the U.S. Department of Education, is a [clearinghouse of resources](#) where policymakers, practitioners in education and workforce training, and others can identify employability skills and compare the skills identified by various instructional standards and assessments; understand key considerations for selecting an employability skills assessment; create a customized assessment comparison worksheet; and view practical examples of employability skills instruction and assessment.

**The Readiness Project** – Managed by the Forum for Youth Investment, [this project](#) uses accessible and actionable research and communications to suggest common language for the dynamic abilities people use every day; the high frequency skills, habits, and attitudes (competencies) that make up those abilities; the practices that support the development of those skillsets and mindsets and the gaps and traps that stand in the way of putting those abilities and practices into effect.

**Degree Qualifications Profile (DQP)** – A learning-centered [framework](#) developed by Lumina Foundation and managed by the National Institute for Learning Outcomes Assessment outlining what college students should know and be able to do upon completion of associate, bachelor's and master's degrees – in any field of study. Paired with

the complementary, discipline-specific process of Tuning, the DQP engages faculty in the work of improving courses and programs of study.

*Liberal Education and America's Promise (LEAP)* – A national advocacy, campus action, and research initiative that champions the importance of a 21st century liberal education for individuals and a nation dependent on economic creativity and democratic vitality. Its efficacy and scalability are being tested in the Multi-State Collaborative to Advance Learning Outcomes Assessment (see [page 21](#)) led by SHEEO involving about 100 colleges/universities in 12 states. General Education Maps and Markers (GEMs) shows educators how to apply the proficiencies and competencies articulated in the Degree Qualifications Profile (DQP) to the design of integrative and equity-minded general education programs, from first to final year. Several dozen four-year colleges, universities, and community colleges are applying GEMs guidelines through AAC&U grant-funded LEAP initiatives. A GEMs report on digital strategies for achieving key learning outcomes will be released in 2016.

## Data & technology

*Postsecondary Electronic Standards Council's Task Force on Academic Credit and Experiential Learning* – PESC, in partnership with the American Association of Collegiate Registrars & Admissions Officers, is developing postsecondary electronic standards.

*Competency-based Education and eT (extended transcript) initiative* – IMS Global is leading an initiative to create and test a conceptual framework and series of prototypes developed in conjunction with IMS members, AACRAO, and C-BEN (Competency Based Education Network).

*Certification Data Exchange Project* – National Skills Coalition (NSC) and the Association of Career and Technical Education (ACTE) are working to expand and improve data exchange between industry certification organizations and state longitudinal data systems. The project builds on an Illinois and CompTIA pilot project that demonstrated the feasibility of linking state and certification data safely and securely.

*State Workforce and Education Alignment Project (SWEAP)* – This initiative of National Skills Coalition is helping to develop system-wide information about workforce education and training programs for state policy leaders. The initiative is creating better cross-program information to allow state policy leaders to see how these programs can work together in their state, and how individuals can advance through these programs over time in the pursuit of postsecondary credentials and higher-paying employment. SWEAP is assessing how state policy leaders find such information useful for improving workforce development policy in their state, and ultimately educational and labor market outcomes for program participants.

*Interagency Working Group on Expanded Measures of Enrollment and Attainment (GEMEnA)* – This federal collaboration works to develop/validate national measures of the participation in and credentialing of education and training for work, and to build government-wide consensus for adoption of these measures in key federal data collections. GEMEnA is engaged in a rigorous process of survey item development to validate core items on: attainment of non-degree credentials, including industry-recognized certifications, occupational licenses, and educational certificates; and enrollment in education and training that prepares people for work.

*Multistate Longitudinal Data Exchange (MLDE)* – This project, led by the Western Interstate Commission for Higher Education (WICHE) and supported by the Bill & Melinda Gates Foundation, is building the necessary architecture, governance structures, and standard reporting, all while complying with applicable privacy laws, to exchange individual-level education and workforce data among at least 10 states. The effort, based on a four-state pilot, will help state policymakers and researchers answer important research questions about the development and mobility of human capital by linking education and employment outcomes across state lines.

## Quality assurance

*Educational Quality through Innovation Partnerships (EQUIP)* – The U.S. Department of Education, under federal Higher Education Act Title IV experimental sites authority, is conducting experiments to test new ways of allowing Americans from all backgrounds to access innovative learning and training opportunities that lead to good jobs, but that fall outside the current financial aid system; and strengthen approaches for outcomes-based quality assurance processes that focus on student learning and other outcomes. The experiments aim to promote and measure college access, affordability, and student outcomes. Other experiments focus on how to accommodate prior learning assessment, competency-based education and limited direct assessment under federal student financial aid programs.

*The CBE Landscape project* – Conducted by Public Agenda and the Forum For Youth Investment, this project designed 10 shared design elements and emerging practices of competency-based education. These design elements are associated with healthy and robust competency-based education (CBE) programs in postsecondary education. The project also included a survey of approximately 500 institutions developing or delivering CBE programs, which produced useful information for establishing quality assurances for CBE programs.

*Guided Pathways to Success* – Complete College America’s GPS (Guided Pathways to Success) Direct Seal of Approval program evaluates ed-tech vendors and their products, awarding the organization’s seal of approval to technology that is shown to help students get through college. The advisory board established to make these awards will judge the companies based on best practices the organization has outlined for its work on degree pathways. The first focus will be on products related to degree mapping, and subsequent awards will recognize companies that address other aspects of guided pathways. Complete College America is supported by the Bill & Melinda Gates Foundation, Lumina Foundation and other groups interested in educational reform.

## Policy

*WICHE Interstate Passport Initiative* – The Interstate Passport Initiative is developing the passport as a new framework for block transfer of lower-division general education based on learning outcomes and transfer-level proficiency criteria, thereby improving graduation rates, shortening time to degree, and saving students money. This work is supported by the Bill & Melinda Gates Foundation, Lumina Foundation, and the Fund for the Improvement of Postsecondary Education.

*Consortium for the Assessment of College Equivalency (CACE)* – The consortium has established standards for assessment of credentials from non-collegiate sources to award credit toward a degree through an agreement signed by six colleges. Participating colleges accept notarized documents from credential source (a transcript is not required).

# WORK GROUP CO-FACILITATORS AND PARTICIPANTS CHARGED WITH DEVELOPING RECOMMENDATIONS FOR ACTION FROM THE NATIONAL SUMMIT ON CREDENTIALING

## Developing common language to serve as the basis for a connected credentialing system

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### Participants

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- Steve Crawford, Credential Transparency Initiative
- Rhonda Epper, Community College of Denver
- Deb Everhart, Learning Objects
- Jonathan Finkelstein, Credly
- Julie Johnson, Complete College America
- Steve Midgley, Mixrun
- Tom Richardson, Automotive Service Excellence
- Liz Shuler, AFL-CIO
- Roger Tadajewski, National Coalition of Certification Centers
- Kelly Tran, Automotive Service Excellence
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- Jennifer Worth, American Association of Community Colleges
- Eboni Zamani-Gallaher, Office of Community College Research and Leadership

## Using real-time data and technology to empower credential users and create continuous feedback mechanisms

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- Bob Sheets, Credential Transparency Initiative

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- Tracy Petrillo, EDUCAUSE
- Dan Restuccia, Burning Glass
- Ken Sauer, Indiana Commission for Higher Education
- Philipp Schmidt, MIT Media Lab
- Mark Schneider, American Institutes for Research
- Michael D. Sessa, Postsecondary Electronic Standards Council

- Jeff Strohl, Georgetown University Center on Education and the Workforce
- Richard Varn, Educational Testing Service
- Jason Weaver, Parchment
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## Creating nimble end-to-end quality assurance processes to support portability and trust of credentials

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- Nicole Ifill, RTI International
- Peter Janzow, Pearson
- Robin Y. Jenkins, Council On Licensure Enforcement and Regulation
- Marcus Kolb, Ivy Tech Community College
- Amy Roedel, National Restaurant Association Educational Foundation
- B. Denise Roosendaal, Institute for Credentialing Excellence
- Kevin Sightler, Southern Association of Colleges and Schools Commission on Colleges
- Roy Swift, Workcred – An Affiliate of the American National Standards Institute
- Joseph Vibert, Association of Specialized and Professional Accreditors
- Jane Weissman, Interstate Renewable Energy Council
- Joan Wills, Center for Workforce Development
- Nick Winston, National Healthcareer Association

## Advancing scalable employer engagement approaches to improve demand signals and increase relevancy and currency of credentials

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- Jason Tysko, U.S. Chamber of Commerce

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- John Colborn, Aspen Institute
- Scott Ellsworth, Business Leaders United
- Kai Hirabayashi, Caterpillar
- Bob Jones, Management and Training Corporation
- Gretchen Koch, CompTIA
- Steve Kramer, National Restaurant Association Educational Foundation
- Chauncey Lennon, JPMorgan Chase

- Dane Linn, Business Roundtable
- Kathy Mannes, Jobs for the Future
- Jane Oates, Apollo Group
- Ann Randazzo, Center for Energy Workforce Development
- Martin Simon, National Governors Association
- Jim Wall, National Institute for Metalworking Skills
- Dave Young, Boeing
- Jim Van Erden, National Association of State Workforce Agencies

## Designing flexible credentialing pathways leading to family-sustaining jobs to increase equity

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- Judy Mortrude, Center for Law & Social Policy

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- Mary Kay Devine, Women Employed
- Maria Flynn, Jobs for the Future
- Jon Kerr, Washington State Board of Community and Technical Colleges
- Ben Konruff, Wisconsin Technical College System
- Jennifer Lerner, American Youth Policy Forum
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- Tia McNair, Association of American Colleges & Universities
- Todd Oldham, Monroe Community College
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- Willa Panzer, Wisconsin Technical College System
- Cam Preus, Blue Mountain Community College
- Andrew Rothstein, National Academy Foundation
- Joe Sharpe, American Legion
- Sally Smyth, Opportunity at Work
- Van Ton-Quinlivan, California Community Colleges
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## THE CONNECTING CREDENTIALS TEAM

The following individuals have been instrumental in developing the Connecting Credentials partnership. From Corporation for a Skilled Workforce (CSW): Michele Forte, Evelyn Ganzglass, Larry Good, Stephanie Krauss, Katie Hall, Susan Lupo, Mimi Maduro, Audrey Theis, Nan Travers, and David Wilcox. And from Lumina Foundation: Chad Ahren, Amber Garrison Duncan, Dewayne Matthews, Dave Powell, and Holly Zanville.



Lumina Foundation is an independent, private foundation committed to increasing the proportion of Americans with high-quality degrees, certificates and other credentials to 60 percent by 2025. Lumina's outcome-based approach focuses on helping to design and build an accessible, responsive and accountable higher education system while fostering a national sense of urgency for action to achieve Goal 2025.

As a private foundation, Lumina Foundation does not support or oppose any legislation. Lumina provides educational information, nonpartisan research and analysis to advance Goal 2025.

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Corporation for a Skilled Workforce is a national nonprofit that partners with government, business, and community leaders to support the creation of good jobs and the highly skilled workers to fill them. We help communities innovate so that they can compete. We help businesses cultivate talent so that they can grow. And we help people learn so that they can find good jobs—or create their own. For more than 25 years, we have been an effective catalyst for change. We identify opportunities for innovation in work and learning and provoke transformation in policy and practice. We have worked with dozens of workforce investment boards, state workforce agencies, community-based organizations, and colleges to create lasting impact through their collaborative activities.

Please visit [www.skilledwork.org](http://www.skilledwork.org)

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For more on the effort to improve the nation's credentials system, visit [www.connectingcredentials.org](http://www.connectingcredentials.org)

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