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Tiny but Magnified?
The Role of Micro-Credentials in Dynamic Labor Markets

Ann Person • Nan Maxwell • David Leaser • Brenda Perea
Roy Swift • Pamela Frugoli • Holly Zanville

Welcome

**Ann Person,
CIRE director**

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About CIRE

- **The Center for Improving Research Evidence (CIRE):**

  – **Draws upon Mathematica's 40+ years of experience using rigorous evaluation designs to assess the impact of social policy and programs**

  – **Uses qualitative and quantitative analysis to build a better understanding of what programs work best, where, and for whom**

  – **Works to bridge the gap between research and practice**

  – **Follow @MathPolResearch on Twitter to tweet us your questions and comments. Hashtag: #microcredentials**

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Today's Presenters

Nan Maxwell,
Mathematica

David Leaser,
IBM

Brenda Perea,
Colorado
Community
College System

Roy Swift,
WorkCred

Today's Discussants

Pam Frugoli, U.S. Department of Labor

Holly Zanville, Lumina Foundation for Education

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Micro-credentials:

Do they hold promise?

Presentation at the CIRE Forum

June 29, 2017

Nan L. Maxwell

What are micro-credentials?

> **A credential that shows a mastery of one or a few job competencies and is more specialized and focused than traditional academic degrees**
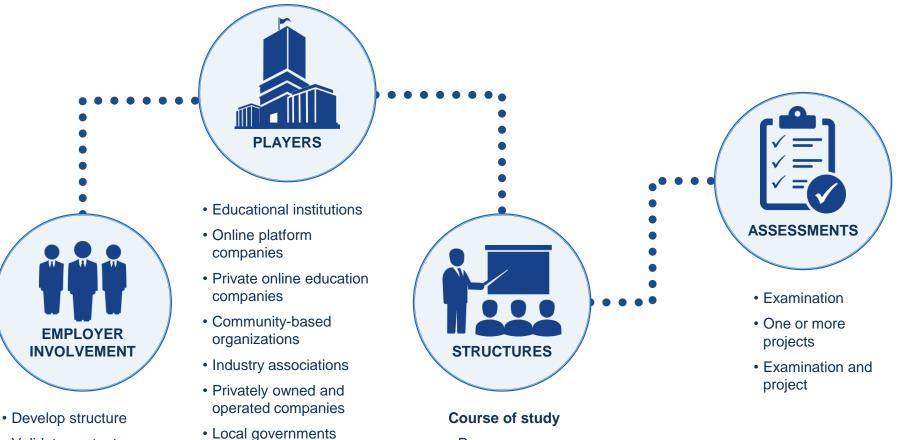
Micro-credentials include

- Certificates
- Certifications
- Badges

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What has prompted their growth?

- **Belief that degrees do not prepare individuals for work**

- **High cost of obtaining a bachelor's degree**

- **Degree programs are not generally tied to labor markets**

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What are the key components?

PLAYERS

- Educational institutions
- Online platform companies
- Private online education companies
- Community-based organizations
- Industry associations
- Privately owned and operated companies
- Local governments

EMPLOYER INVOLVEMENT

- Develop structure
- Validate content or credential
- Offer credential
- Provide instruction
- Provide labor market information

STRUCTURES

Course of study

- Program
- Course
- Material availability

Mode of instruction

- Online
- In person
- Hybrid

ASSESSMENTS

- Examination
- One or more projects
- Examination and project

What are the opportunities and challenges?

Opportunities

- **Responsive to labor market needs**

- **Build a wide range of skills**

- **Stacked for career mobility**

- **Low time and financial costs**

Challenges

- **Diffused information makes credential identification and selection difficult**

- **Credentials have uneven quality**

- **Established employer policies can be difficult to change**

- **Funding challenges can reduce access**

- **Limited skills and access can inhibit take-up**

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How can micro-credentials help?

Effective workforce development practices

- **Provide a degree or industry-recognized credential related to jobs in demand**

- **Use flexible and innovative training**

- **Relate training closely to a real job or occupation**

- **Engage employer and industry**

- **Provide access to accurate and up-to-date labor market information**

- **Integrate education, training, and support services**

Do micro-credentials hold promise?

- **Maybe**

- **Future research might include exploring**
  - **Ways to increase knowledge needed about individual micro-credentials**
  - **Ways to validate quality in micro-credentials**
  - **Conditions that facilitate development of training leading to micro-credentials for low-skilled, entry-level workers**
  - **Impacts of micro-credentials on training and employment**

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Acknowledgements

Department of Labor

- **Pam Frugoli**

- **Gloribel Nieves Cartagena**

Both from the Employment and Training Administration

Project team

- **Nan Maxwell**

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- **Kristen Joyce**

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- **Diane Herz**

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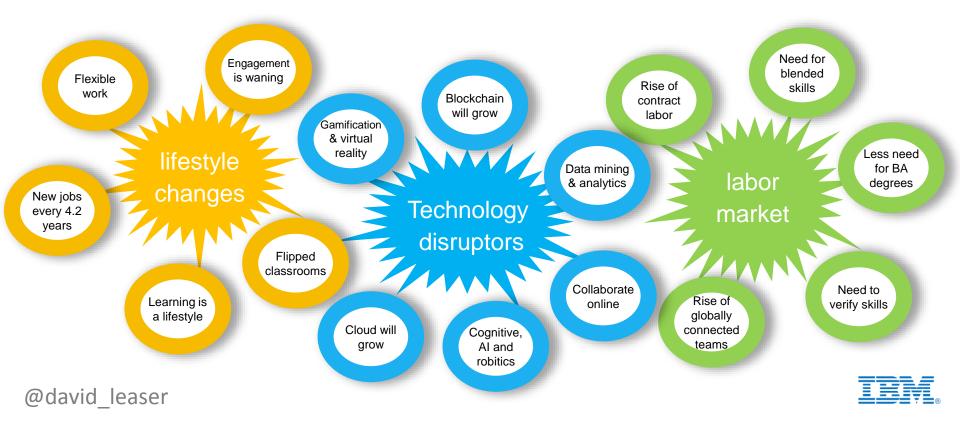
- **Angela Edwards**

  AEdwards@mathematica-mpr.com

Presenter

David Leaser, IBM

Signals are emerging that will dramatically change the way we develop and recognize skills

lifestyle changes
- Flexible work
- Engagement is waning
- New jobs every 4.2 years
- Learning is a lifestyle
- Flipped classrooms

Technology disruptors
- Gamification & virtual reality
- Blockchain will grow
- Data mining & analytics
- Cloud will grow
- Cognitive, AI and robitics
- Collaborate online

labor market
- Rise of contract labor
- Need for blended skills
- Less need for BA degrees
- Rise of globally connected teams
- Need to verify skills

@david_leaser

IBM

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At IBM, we **put these signals** together to create a solution

MONTHS **WEEKS**

18 12

2014 2016

Agile Development
requires "liquid skills"

+

Shadow IT
decentralizes IT

+

Hybrid Jobs
require "nano skills"

Rise of Teams
require expertise location

+

Gig Economy
requires a skills registry

+

New collar jobs
require new credentials

@david_leaser

IBM

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CREDENTIALS NOW MUST BE

☑ TIMELY

☑ VERIFIABLE

☑ PORTABLE

☑ DISCOVERABLE

☑ DIFFERENTIATING

IBM Badges: Five unique emblems

Knowledge | Skills | Proficiency | Certified | General
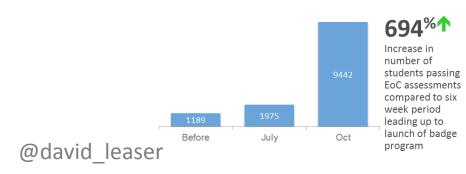
Badging is how we will measure *resume-worthy* IBM skills in the market

The results for IBM have been substantial

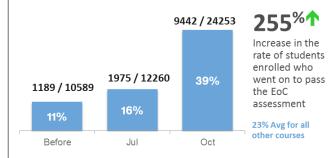## Student Enrollments

129%⬆

Increase in enrollments compared to six week period leading up to launch of badge program

Before: 10589
July: 12260
Oct: 24253

% of Enrollments Completing Courses

226%⬆

Increase in course completion rate when compared to six week period leading up to launch of badge program

40% Avg for all other courses

Before: 2,061 — 19%
July: 3,505 — 29%
Oct: 15,010 — 62%

No. of Students Passing EoC Assessment

694%⬆

Increase in number of students passing EoC assessments compared to six week period leading up to launch of badge program

Before: 1189
July: 1975
Oct: 9442

EoC Assessment Pass Rate to Enrollments

255%⬆

Increase in the rate of students enrolled who went on to pass the EoC assessment

23% Avg for all other courses

Before: 1189 / 10589 — 11%
Jul: 1975 / 12260 — 16%
Oct: 9442 / 24253 — 39%

@david_leaser

IBM®

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IBM Open Badges are creating employment

> " *I was having a tough time finding a job because my computer skills were considered 'out of date' and the **IBM badges were the perfect way to show employers** that I could easily get back up to speed and learn new skills.* "

After sharing her badge to LinkedIn, Twitter and to her online portfolio, **Coletta received a job offer after an employer verified her badge.**

Presenter

Brenda Perea, Colorado Community College System

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A Competency Marketplace Springs to Life in Colorado

Brenda Perea, Colorado Community College System

Digital Badges Bridge the Gap

By Frits Ahlefeldt

Colorado Community College System

CCCS Badges

In 10 Quarters with Digital Badges in 4 of the Quarters

Findings—Total MOOC Participants 4191

• Employers were still sending their employees to the MOOC and were asking the employees to show them the earned badges on www.cccs.credly.com

• Students completed specific micro-lessons specifically to earn digital badges

Statistics—With Badges

• 923 participants

• 727 or 70 % completed at least one sub-topic to claim a badge

• AND…. Of the 727, 436 completed a Topic to earn a Mastery Badge:

Non-Credit Workforce Training

Ecosystem Building

workcred

Connecting credentials, competencies, careers, customers

an affiliate of **ANSI**

Presentation for Mathematica on Micro-Credentials

June 29, 2017

Roy Swift, Executive Director, Workcred

Assumptions Regarding Micro-Credentials

❖ They are a component of or related to another type of credential

❖ They are "stackable" to other types of credentials

❖ They are "short-term" – earned in less than 6 months

❖ They are flexible and can adapt/change to a fast changing environment based on stakeholder input

workcred

MICRO-CREDENTIALS SHOULD BE HELD TO SPECIFIC STANDARDS/CRITERIA FOR QUALITY

Quality Criteria for Micro-Credentials

- ✓ Establishment of a micro-credential should be based on evidence to meet a market need

- ✓ Process for identifying validated competencies/learning outcomes should include input from appropriate stakeholders

- ✓ On-going systematic processes to continually evaluate the validity of the competencies/learning outcomes

- ✓ Alignment of the content, learning strategies, and assessments of learning

- ✓ Assessments measure what they are supposed to measure – validity and reliability

- ✓ Provide clarity/transparency of how the credential connects to other credentials, and how it may "fit" in a career pathway(s)

- ✓ Systematic program evaluation that leads to continuous quality improvement

workcred

for more information

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Discussant

Currently available information on certifications

Pam Frugoli,

Employment and Training Administration

U.S. Department of Labor

frugoli.pam@dol.gov
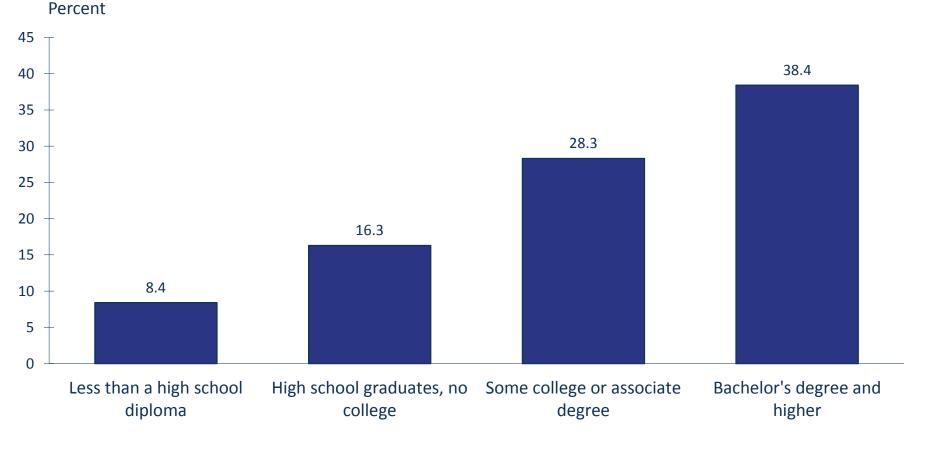
Who has a certification or license?

Current population survey found:

- 17.8% of the population (16+) in 2015

- 25.5% of the employed

  - 22.4% with a license (possible certification)

  - 3.1% with a certification, no license

https://www.bls.gov/cps/certifications-and-licenses.htm
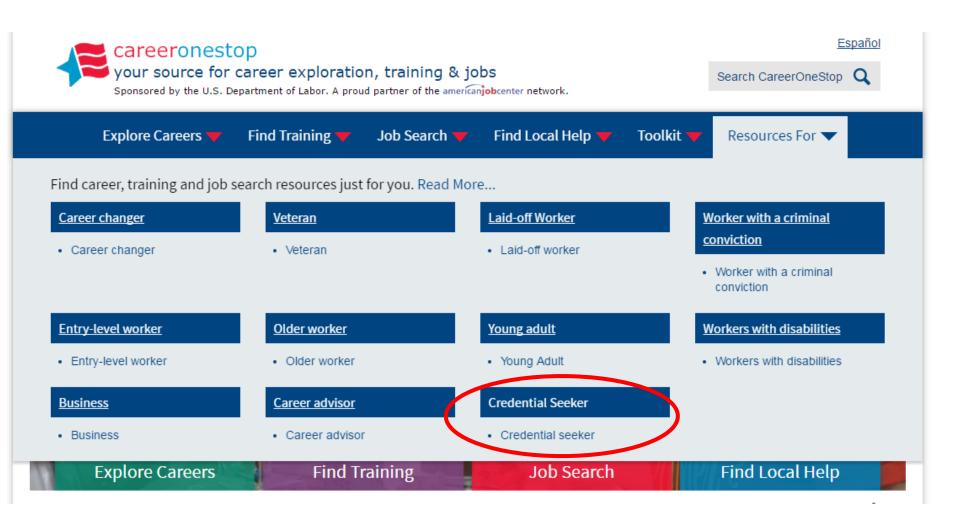
Who has a certification or license?

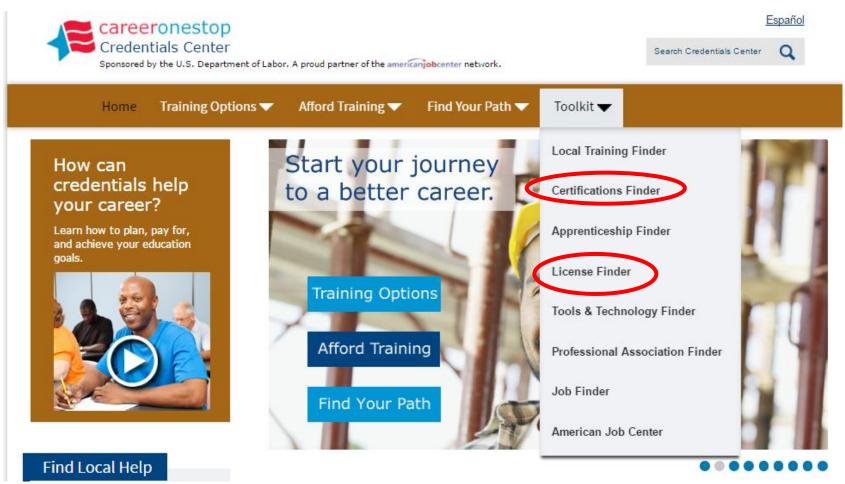## Certifications and licenses more common among workers with more education

Percent

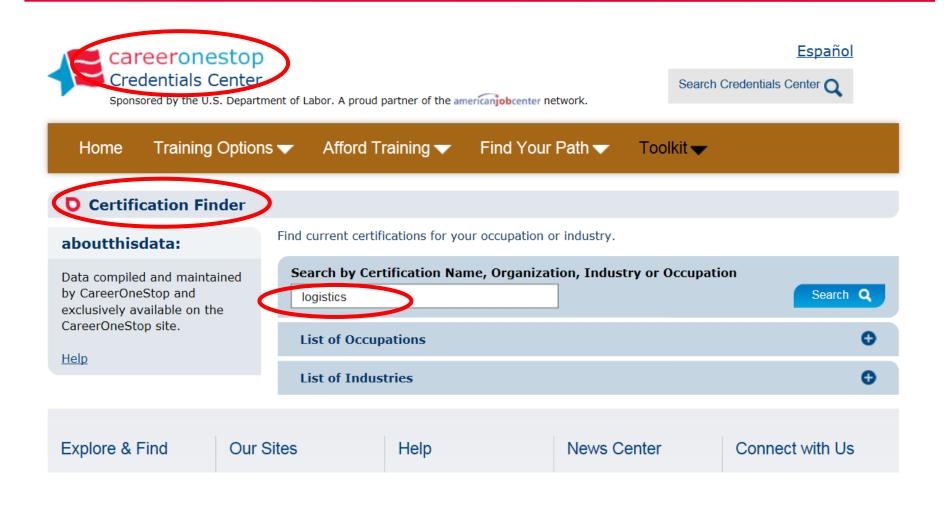Note: Data are 2015 annual averages of the percent of employed people age 25 or older with a certification or license.
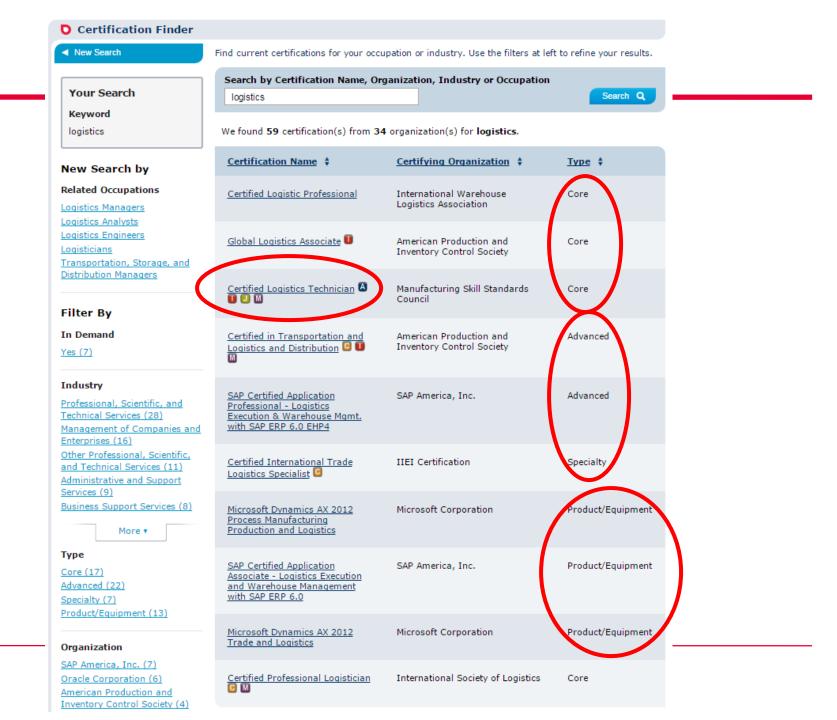
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www.CareerOneStop.org

CareerOneStop Credentials Center

https://www.careeronestop.org/credentials/index.aspx

Certification Finder

◄ New Search

Find current certifications for your occupation or industry. Use the filters at left to refine your results.

Your Search

Keyword

logistics

Search by Certification Name, Organization, Industry or Occupation

logistics

[Search 🔍]

We found **59** certification(s) from **34** organization(s) for **logistics**.

New Search by

Related Occupations

Logistics Managers
Logistics Analysts
Logistics Engineers
Logisticians
Transportation, Storage, and Distribution Managers

Filter By

In Demand

Yes (7)

Industry

Professional, Scientific, and Technical Services (28)
Management of Companies and Enterprises (16)
Other Professional, Scientific, and Technical Services (11)
Administrative and Support Services (9)
Business Support Services (8)

More ▾

Type

Core (17)
Advanced (22)
Specialty (7)
Product/Equipment (13)

Organization

SAP America, Inc. (7)
Oracle Corporation (6)
American Production and Inventory Control Society (4)

Certification Name ⬍	Certifying Organization ⬍	Type ⬍
Certified Logistic Professional	International Warehouse Logistics Association	Core
Global Logistics Associate 🟥	American Production and Inventory Control Society	Core
Certified Logistics Technician 🅰 🟥🟩🟪	Manufacturing Skill Standards Council	Core
Certified in Transportation and Logistics and Distribution 🟧🟥🟪	American Production and Inventory Control Society	Advanced
SAP Certified Application Professional - Logistics Execution & Warehouse Mgmt. with SAP ERP 6.0 EHP4	SAP America, Inc.	Advanced
Certified International Trade Logistics Specialist 🟧	IIEI Certification	Specialty
Microsoft Dynamics AX 2012 Process Manufacturing Production and Logistics	Microsoft Corporation	Product/Equipment
SAP Certified Application Associate - Logistics Execution and Warehouse Management with SAP ERP 6.0	SAP America, Inc.	Product/Equipment
Microsoft Dynamics AX 2012 Trade and Logistics	Microsoft Corporation	Product/Equipment
Certified Professional Logistician 🟧🟪	International Society of Logistics	Core

Local Training Finder	Certification Finder	Apprenticeship Finder	License Finder	Tools & Technology Finder	Professional Association Finder	Job Finder

�| Certification Finder

◄ Back to Results

Find current certifications for your occupation or industry. Use the filters at left to refine your results.

aboutthisdata:

Data compiled and maintained by CareerOneStop and exclusively available on the CareerOneStop site.

Help

Search by Certification Name, Organization, Industry or Occupation

logistics

Search 🔍

Certification Search Results: Certification Information

Certified Logistics Technician(CLT)

Certification Description

This credential addresses the core competencies of higher skilled, front-line material handling workers (first line of supervision) across the supply chain: from factories, to warehouses, to distribution centers to transporters.

Certifying Organization

Manufacturing Skill Standards Council
http://www.msscusa.org/

Certification Details

- Education and Training Required?   **No**
- Work Experience Required?   **No**
- Oral or Written Exam Required?   **Yes**
- Renewal Required?   **Every 5 Year(s)**
- Renew through Continuing Educational Units(CEU)?   **No**
- Renew through Re-Examination?   **Yes**
- Renew through Continuing Professional Development(CPD)?   **No**
- Does applicant have choice of at least two options from above for renewal (CEU, CPD, or exam)?   **No**

More Certification Information

Certified Logistics Technician Website

◄ Back to Results

Overview of Certification Icons

= This certification is considered in demand.

CareerOneStop's analysis indicates the certification is frequently mentioned in online job postings

= This certification is accredited by ANSI.

The American National Standards Institute (ANSI)

= This certification is accredited by NCCA.

- The National Commission for Certifying Agencies

= This certification is industry-endorsed

- Certifications marked as third-party endorsed are endorsed by a major industry association that is not itself the developer of the certification

= This certification is related to Military Occupational Specialties.

- These certifications were identified in Credentialing Opportunities On-Line (COOL) sites

= This certification is related to the Job Corps training program.

- Certifications marked with [J] are ones that have been selected by the industry groups that advise the Job Corps program on their training program offerings.

= This certification is related to Career and Technical Education Career Clusters

- Certifications marked with [C] are related to the knowledge and skills specified in one or more of the sixteen Career and Technical Education Programs of Study.

Discussant

**Holly Zanville,
Lumina Foundation
for Education**

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Panel Discussion

**Nan Maxwell,
Mathematica**

**David Leaser,
IBM**

**Roy Swift,
WorkCred**

**Holly Zanville,
Lumina Foundation
for Education**

**Brenda Perea,
Colorado
Community
College System**

**Pam Frugoli,
U.S. Department of
Labor**

Audience Questions?

- **Webinar audience: Submit questions with your name and organization through the Q&A widget**

- **In-person audience: State your name and organization before asking your question**

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For More Information

- **Mathematica's Center for Improving Research Evidence**

    – **CIRE@mathematica-mpr.com**

    – **Ann Person: aperson@mathematica-mpr.com**

Additional Resources:
- ✓ Nan Maxwell blog post: https://mathematica-mpr.com/commentary/conquering-the-job-market-without-a-college-degree
- ✓ Credential Engine: https://www.credentialengine.org/
- ✓ IBM Digital Badges: http://ibm.com/badging
- ✓ D. Leaser posts and blogs: https://www.linkedin.com/in/davidleaser/recent-activity/posts/
- ✓ IBM New Collar site: http://www-03.ibm.com/employment/us/new_collar.shtml
- ✓ Inside an IBM digital badge: http://ibm.biz/insideabadge

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Networking Reception Starts
Now
Mathematica Lobby, 12th Floor
4:30–5:30 p.m.