

# Work-based Learning Models for Youth that Leverage Certifications and Apprenticeships

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# Presenters



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# MSSC Background

- ▶ 1998–2001 Federally mandated as the “Voluntary Partnership” for all of manufacturing to develop industry-led standards, assessments and certifications for front-line workers (entry-level through front-line supervisor) for all manufacturing sectors
- ▶ 2001 Federal Gov’t endorses the MSSC national “Gold” standards: involving over 700 companies, 4000 front-line workers, 300 experts, \$9+ million public & private funds—foundation for CPT & CLT
- ▶ CPT: Applicable to all front-line production jobs (6 million)
- ▶ CLT: Applicable to all front-line material handling and distribution jobs (5.3 million)
- ▶ Applicable to a broad population of: students, incumbent workers, veterans, dislocated workers, unemployed, & returning citizens

# MSSC Since 2001 - “Today

- Participating Federal Agencies: DOD, DOL, DOED, DOJ, DOC, & VA
- Only National Certification Body Accredited under ISO 71024 (Personnel Certification) and endorsed by NAM for both Mfg. & Logistics
- 1550+ MSSC Authorized Assessment Centers
- 50 States + D.C.
- 2600+ Authorized CPT and CLT Instructors
- Given 215,000+ assessments
- Issued over 155,000+ credentials

# Business Round Table (BRT) Quality Assurance “Federally Funded” Industry Certifications

Define “industry”: Represents an entire industry, a large industry sector or major occupation

- Choose programs that are 3<sup>rd</sup> Party Accredited with audits consistent with ISO 17024 (Personnel Certification)
- Certifications that are based on industry-defined, nationally validated, competency-based standards developed in cooperation with a nationally-recognized trade association or other industry body,
- Use certifications that have applied legally defensible validation methods
- Focus on certifications that are recognized nationwide (national portability) supported by an infrastructure able to deliver related training and assessments nationwide
- Focus on education and training programs that include “earn and learn” experiences and include attainment of industry-recognized credentials
- Choose programs that use well-qualified, experienced instructors who are themselves certified,
- Focus on programs with assessments delivered under strong security safeguards.

# MSSC Core Competencies:

## ▶ Critical Work Functions of Production

- Safety
- Quality Practices & Measurement
- Manufacturing Processes & Production
- Maintenance Awareness
- Green Production

## ▶ Certified Logistics Associate (Foundational)

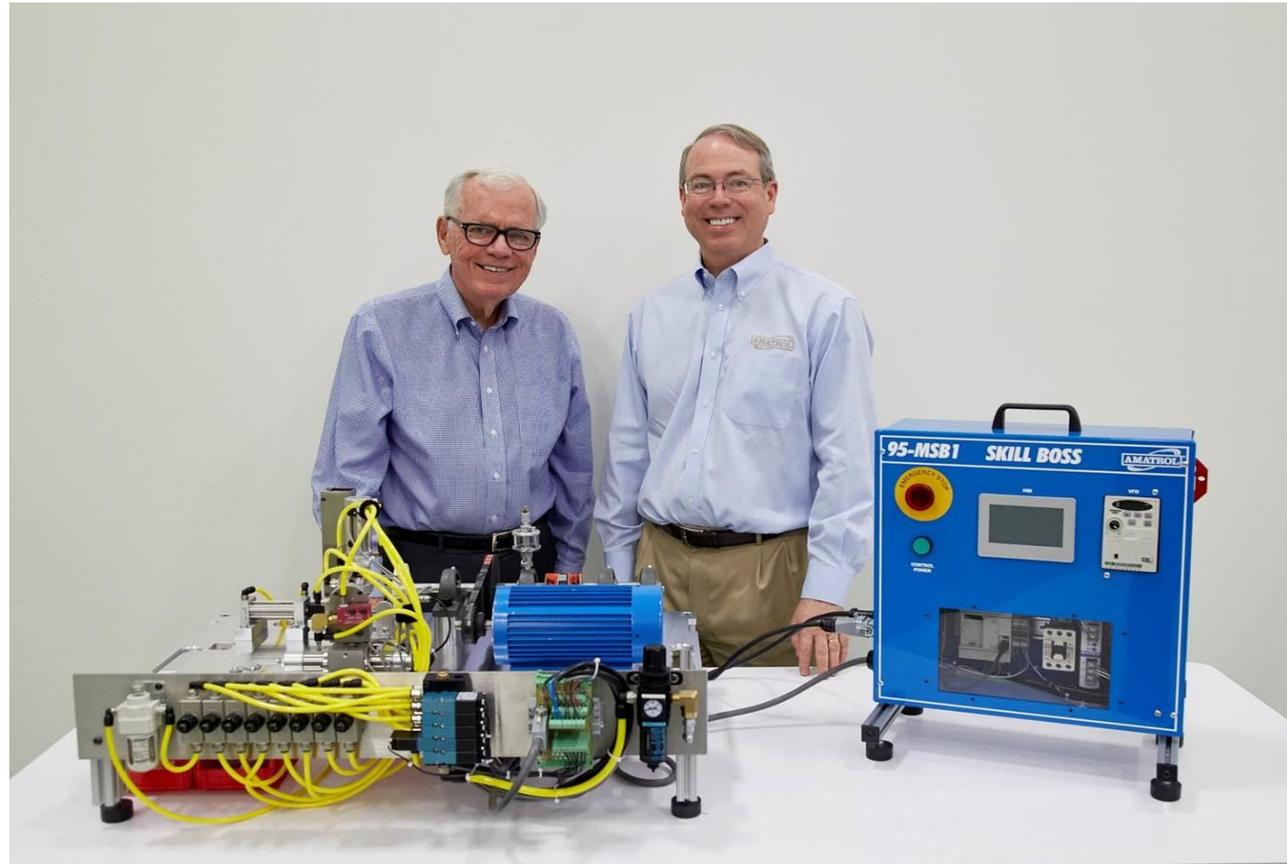
- Global supply chain life cycle, basic terminology, safety, quality, equipment, behavior, teamwork, communication, computers

## ▶ Certified Logistics Technician (Mid-technical)

- Receiving, storing, ordering, packaging, shipping, inventory control, transportation modes, dispatch, tracking, measurement, metric conversion

# CPT + “Skill Boss”

- ❑ 4 CPT “Hands-on” Certificates
- ❑ Full CPT “Hands-on” Certification
- ❑ Covers 55 hands-on skills
- ❑ Integrates with CPT virtual e-learning



# Successful Implementation

- Public Private Partnerships: Industry, Secondary, Post-Secondary, WIBs, Associations/Chambers, ED groups, city and state governments
- Imbed credentials into pre-apprenticeships and full apprenticeships
- Imbed credentialing programs in secondary and post-secondary: for-credit, dual-credit, non-credit, approved state lists
- State legislation to reward CTE credentials
- WIBs combine unemployment compensation with skills training
- Veterans programs
- Department of Corrections—CTE for incarcerated = tax payers not tax burdens (DOL Bonding Program)
- Charity Organizations: Good Will, United Way, Easter Seals, Salvation Army

# MSSC CPT DOL Approved Apprenticeship Programs

## Pre-Apprenticeship:

- Secondary & Opportunity Youth (WIOA funded)
- Imbed ACT NCRC “Silver Level”
- Related CPT Training: 80 hours junior year and 80 hours senior year
- On the Job Learning (OJL): 280 hours (8 weeks) in the summer of junior year and 280 hours (8 weeks) in the summer of senior year, for which the student will receive a stipend from the participating employer.
- A MSSC Certificate of Completion at the end of the pre-apprenticeship

# MSSC CPT DOL Approved Apprenticeship Programs cont'd (WIOA funds)

## Industrial Manufacturing Technician (IMT): (3000 hrs.)

First 260 hrs. “Related Instructional Component”:

- NCRC “Silver Level” math and English
- CPT Certification
- Communication & Teamwork

Full IMT Program:

- Customize for any mfg. sector
- Operate industrial production related equipment,
- Work with manufacturing related tools,
- Perform work processes related to a wide variety of manufacturing settings.

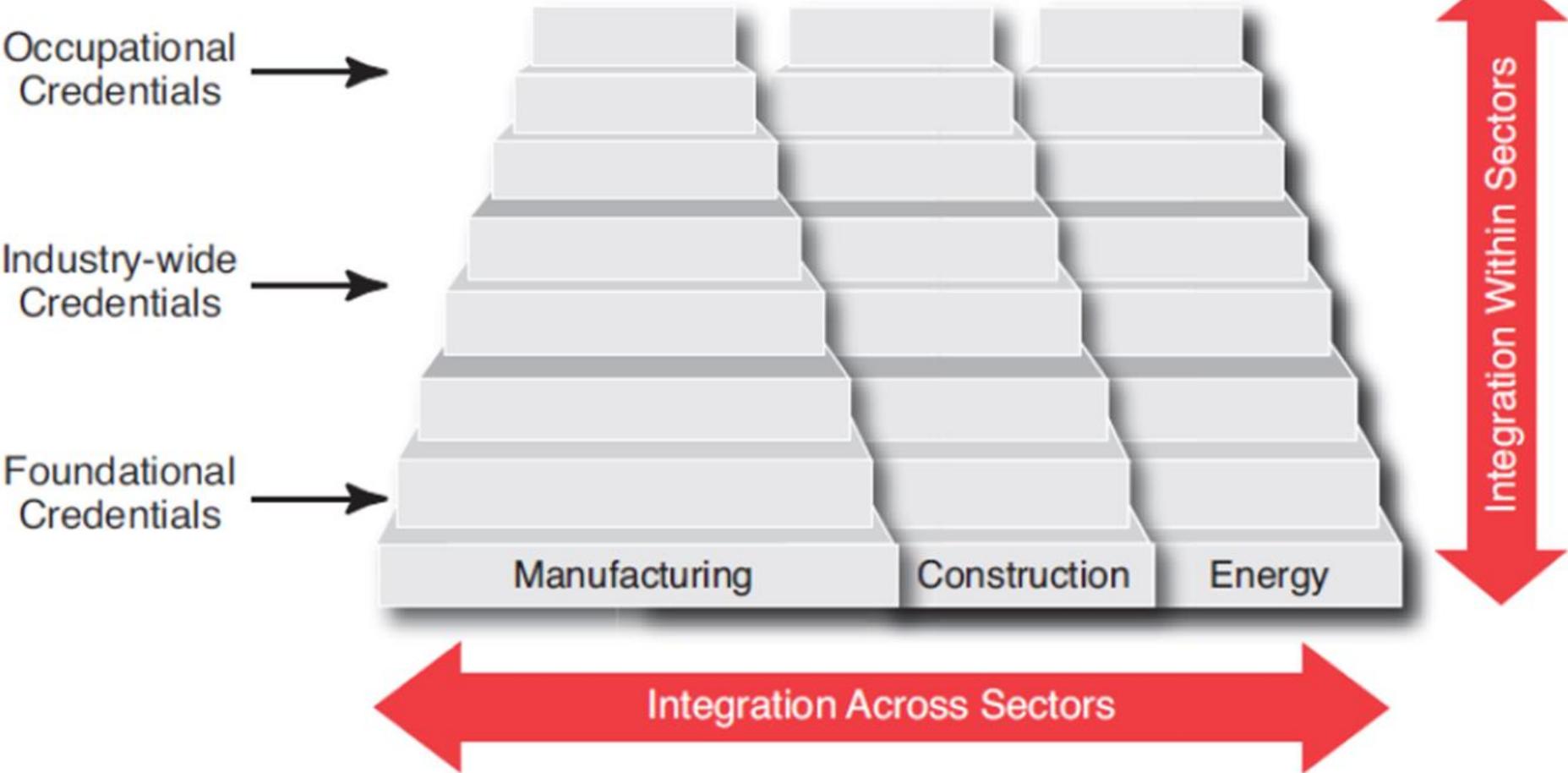
# MSSC CPT Secondary Intern “Academies” Model

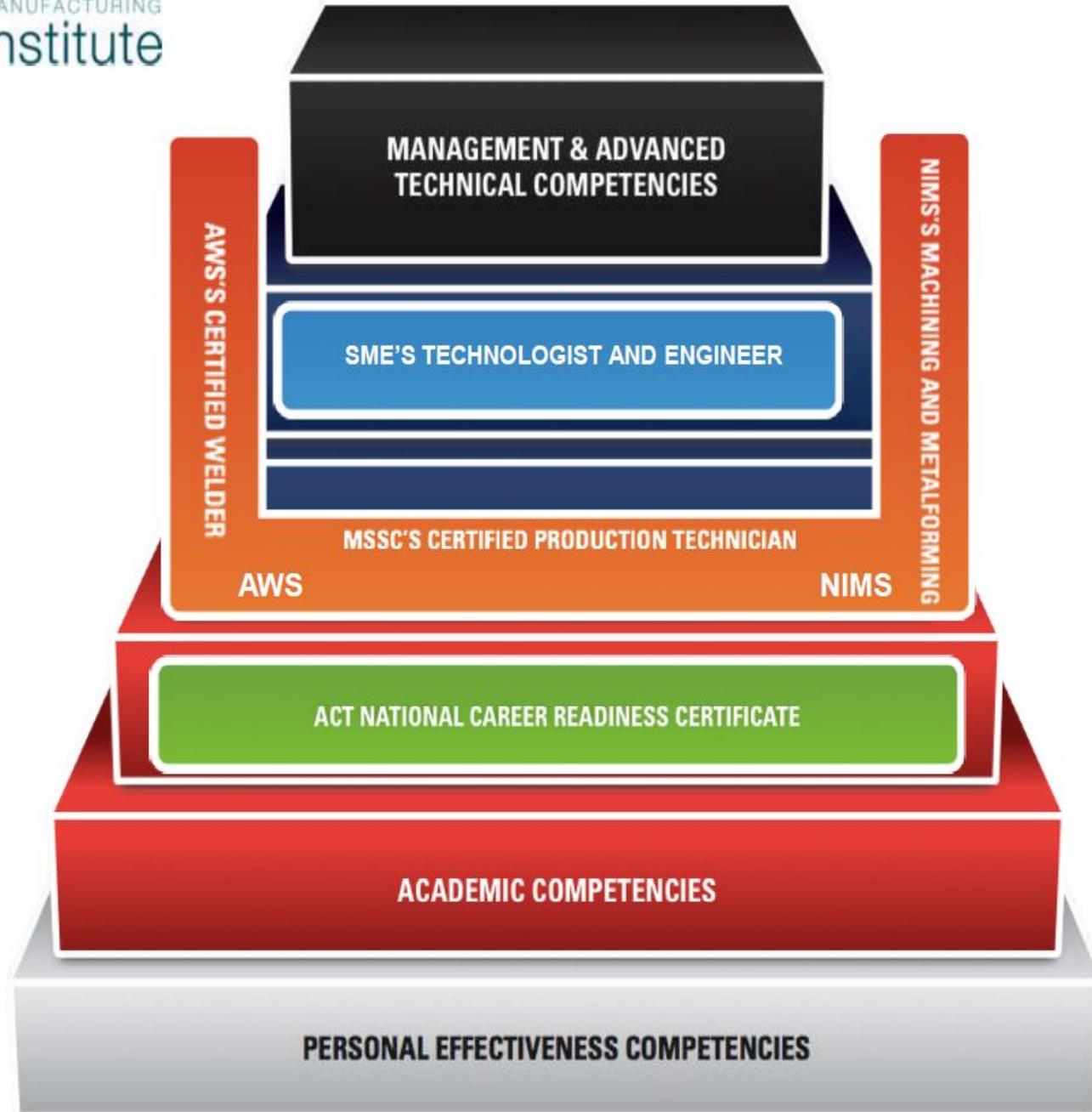
## HS Students:

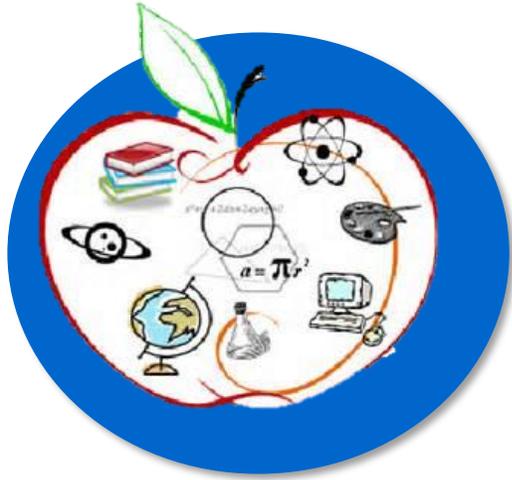
- NCRC Silver
- Earn the CPT Safety and Quality Certifications
- OJT: students perform 2 Summer Internships
- Employers build relationships with students
- Employers contribute \$1000 to Academy
- Students earn \$1800 per/internship

**GPS EDUCATION PARTNERS Leading MSSC CPT Model—”Andy Hepburn”**

# Horizontal and Vertical Skills Credential Integration







## What is Curriculum Profiling?

# Curriculum Profile

Identify Learning Objectives

Identify Knowledge, Skills, and Abilities

Identify WorkKeys skills and levels for entry and exit from the program



## Curriculum Analysis Report

Manufacturing Skill Standards Council's  
Certified Production Technician (CPT)  
Curriculum



## Curriculum Analysis Report

Manufacturing Skill Standards Council's  
Certified Logistics Associate (CLA) &  
Certified Logistics Technician (CLT)  
Curriculum



**Curriculum  
Profiling  
&  
Stackable  
Credentials**

MSSC:  
Curriculum  
Profile  
Results

**MANUFACTURING PROCESSES & PRODUCTION**

Objective/ Skill		Applied Math	Graphic Literacy	Workplace Documents
OBJ 9	Describe how to calculate torque given an application.	X	X	
SKILL 3	Calculate torque given an application.	X		
OBJ 10	Define the Law of Moments.			X
OBJ 11	Describe how to calculate the moment caused by a force.	X		X
SKILL 4	Calculate the moment caused by a force.	X		
<b>SEGMENT 4 LEVERS AND MECHANICAL ADVANTAGE</b>				
OBJ 12	Define a lever and explain its importance.			X
OBJ 13	Describe the operation of three types of levers.			X
OBJ 14	Describe the concept of Mechanical Advantage.			X
OBJ 15	Describe how to calculate the mechanical advantage of a lever.	X		X
SKILL 5	Calculate the mechanical advantage of a lever.	X		
SKILL 6	Measure the mechanical advantage of a lever.		X	
<b>Unit 39: Mechanical Linkages</b>				
<b>SEGMENT 1 FRICTION</b>				
OBJ 1	Define friction and explain its importance.			X

# MSSC: Curriculum Profile Results

- Applied Math for CPT Modules
  - Safety didn't require any math
  - Manufacturing Process and Production required Level 4 for entry and students should be at Level 5 at completion
- Examples:
  - Determine the hours worked:  $T = (H_s \times D) \times (H_B \times D)$
  - Calculate machine availability:  $MA = T_A - T_{SD} - T_{USD}$
  - Estimate product cost:  $C_P = C_{mat} + C_L + C_O$   
 $N$
  - Calculate productivity:  $P = \frac{N}{T}$
  - Calculate mechanical advantage:  $MA = \frac{W}{F} = \frac{L}{H}$

# MSSC: Curriculum Profile Results

## Skill Level Recommendations for Entry into the CPT Individual Certificate Modules

WorkKeys Skill	Workplace Documents	Graphic Literacy	Applied Math
Skill Level Range	3-7	3-7	3-7
Safety	4	3	Not Required
Quality Practices & Measurement	4	4	4
Manufacturing Processes & Production	3	4	4
Maintenance Awareness	3	4	4
Green Production	4	4	3
Overall Entry Level	4	4	4

## Skill Level Recommendations for Exit from the CPT Individual Certificate Modules

WorkKeys Skill	Workplace Documents	Graphic Literacy	Applied Math
Skill Level Range	3-7	3-7	3-7
Safety	4	3	Not Required
Quality Practices & Measurement	4	4	4
Manufacturing Processes & Production	5	6	5
Maintenance Awareness	5	6	6
Green Production	4	5	4
Overall Entry Level	5	5	5

# GPS Education Partners

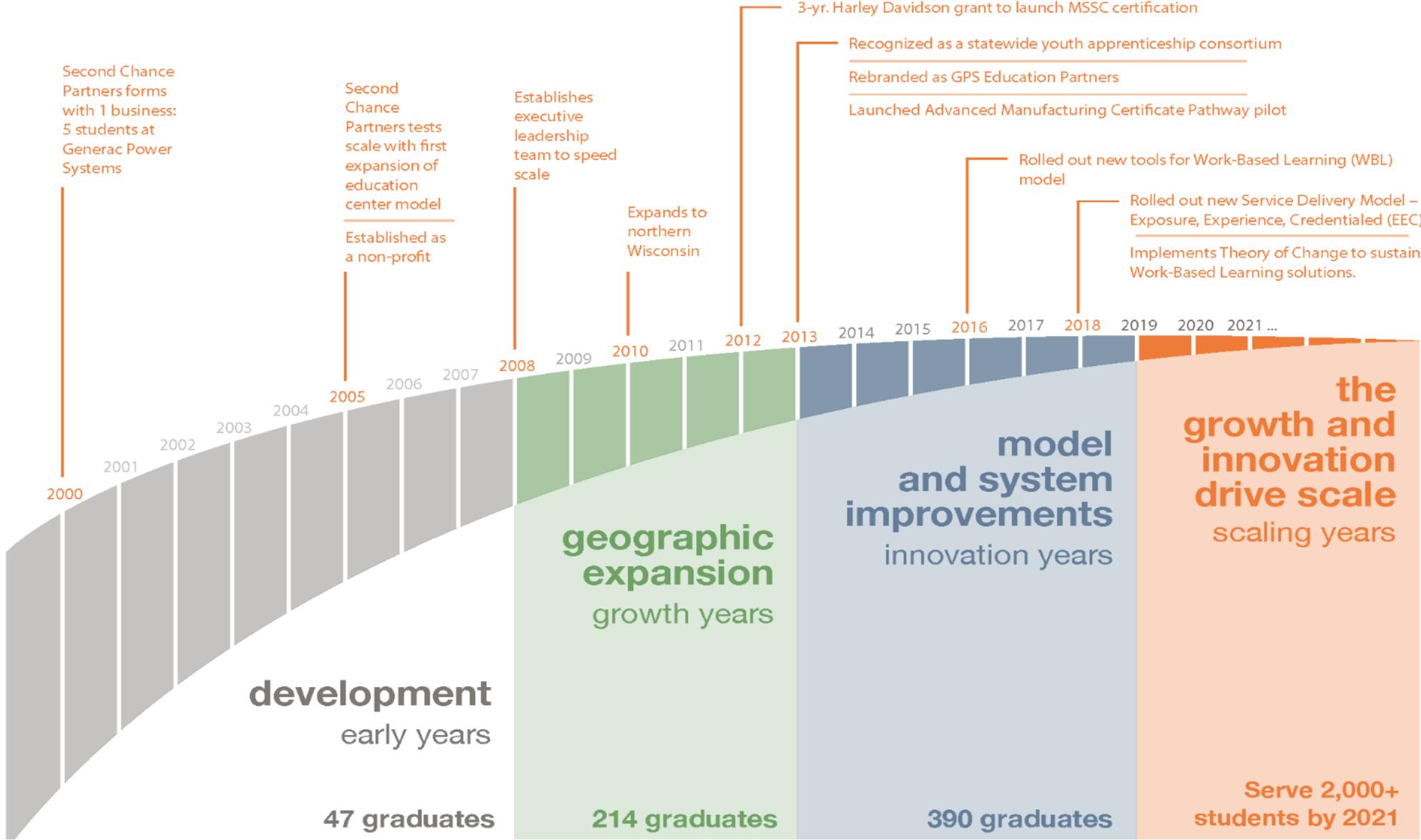
Non-Profit 501(c)(3) dedicated to solving **community** challenges through **Work-Based Learning** solutions.



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# GPSEd History Timeline



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# Partnered with World-class Employers

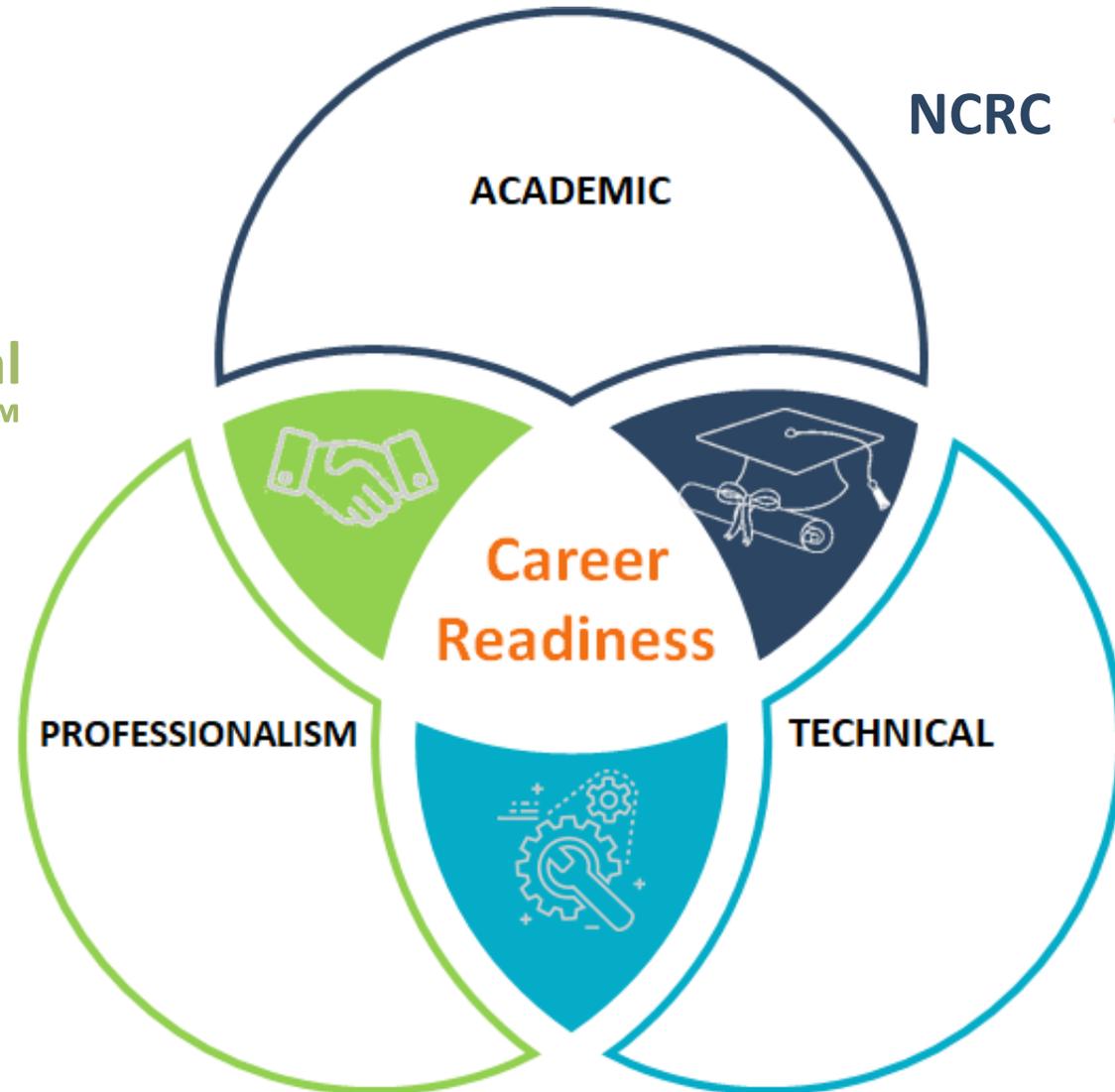


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# Using Certifications to demonstrate Career Readiness

GPSEd Professional Development Program™



NCRC



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MSSC



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# Principles of High Quality Work-based Learning

**Equitable** **Accountable**  
**Career-oriented**  
**Adaptable** **Portable**

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**PAYA**  
PARTNERSHIP TO ADVANCE YOUTH APPRENTICESHIP

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# Defining Principles for High Quality Work-based Learning

# Career-oriented

Learning is structured around knowledge, skills,  
and competencies that lead to careers with family-  
supporting wages.



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# HOBART SERVICE CAREER PATHWAY

Your road map to a rewarding career path that provides livable wages and opportunities for growth. Learn exactly which skills you need to enter or advance. You'll also have access to the exact education, training, and credentials needed.



**ASSOCIATES: BUSINESS OR INDUSTRIAL MANAGEMENT**



**HOBART SERVICE TRAINING SCHOOL**



**WORK-BASED LEARNING**



**HIGH SCHOOL COURSEWORK**



**SKILLS I**

- Communication Skills
- Electrical Circuits
- Motors
- Basic Robotics and Automation
- Hand Tool Identification and Use
- Computer Use for Office Applications
- Blueprint/Schematic Reading



**JOB OPPORTUNITIES**

Apprentice Technician  
(approx. \$10-\$15/hr)



**SKILLS II**

- Base:*  
Skills I
- Plus:*  
Customer Service  
Employability Skills  
Shipping and Receiving  
Mechanical Drive Inspection and Repair  
Electrical Systems  
Maintenance Practices  
Electrical Schematics  
Basic Electrical/Mechanical Troubleshooting



**JOB OPPORTUNITIES**

Service Technician Level 1-2  
(approx. \$20-\$23/hr)



**SKILLS III**

- Base:*  
Skills I and II
- Plus:*  
Advanced Electrical/Mechanical Troubleshooting  
Professionalism



**JOB OPPORTUNITIES**

Service Technician Level 3-4  
(approx. \$26-\$30/hr)



**SKILLS IV**

- Base:*  
Skills I, II, and III
- Plus:*  
Leadership  
Sales  
Business Management



**JOB OPPORTUNITIES**

Service Advisor  
(approx. \$32/hr)

Branch Manager  
(approx. \$36/hr)

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# Defining Principles for High Quality Work-based Learning

# Equitable

Learning is accessible to every student, with targeted supports for those adversely impacted by long-standing inequities in our education system and labor market.



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# Defining Principles for High Quality Work-based Learning

# Portable

Learning leads to postsecondary credentials and transferable college credit that expand options for students.



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# Defining Principles for High Quality Work-based Learning

# Adaptable

Learning is designed collaboratively to be recognized and valued across an industry or sector.



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# GPS Apprenticeship Growth Model



# Defining Principles for High Quality Work-based Learning

# Accountable

Student, employer and program outcomes are monitored using transparent metrics to support improvement.



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# GPSEd Student Success



**94%**

Graduation Rate



**94%**

Earned YA Certificate of Occupational Proficiency



**82%**

MSSC Certified Production Technician Pass Rate



NATIONAL CAREER READINESS CERTIFICATE®

**89%**

ACT National Career Readiness Certificate



**84%**

\*Employment Rate



**97%**

\*Employed and/or Attending Post-Secondary Education



**83%**

Pursuing Technical Careers

*\*'16-'18 Graduate stats*

# Thank You

Andy Hepburn: [GPSEd.org](http://GPSEd.org) or

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Neil Reddy: [mssc.org](http://mssc.org) or

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