Pathways to Competency-Based Credentials in Manufacturing
The NAM-Endorsed Skills Certification System

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The Manufacturing Institute
March 20, 2012
A Renaissance in Manufacturing?

- Over 300,000 jobs added in the last two years.
- Major consulting firms issue reports predicting a return of manufacturing from Asia.
Manufacturing’s Multiplier Effect

Economic Activity Generated by $1 of Sector GDP

Manufacturing
Information
Agriculture, forestry, fishing, and hunting
Construction
Transportation and warehousing
Professional and business services
Educational services, health care, and social assistance
Finance, insurance, real estate, rental, and leasing
Retail trade
Wholesale trade

Source: U.S. Bureau of Economic Analysis, 2007 Annual Input-Output Tables
U.S. Manufacturers face a 20% cost burden over competitors from our largest trading partners.

Corporate tax rates make up over half that burden as other countries have reduced rates.

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>Canada</th>
<th>Mexico</th>
<th>Japan</th>
<th>China</th>
<th>Germany</th>
<th>U.K.</th>
<th>Korea</th>
<th>Taiwan</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>40%</td>
<td>44%</td>
<td>34%</td>
<td>51%</td>
<td>33%</td>
<td>57%</td>
<td>31%</td>
<td>30%</td>
<td>25%</td>
<td>36%</td>
</tr>
<tr>
<td>2010</td>
<td>40%</td>
<td>31%</td>
<td>30%</td>
<td>40%</td>
<td>25%</td>
<td>29%</td>
<td>28%</td>
<td>24%</td>
<td>17%</td>
<td>33%</td>
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</tbody>
</table>
86% believe America's manufacturing base is —important or —very important to their standard of living;

If they could create 1,000 new jobs in their community with any new facility, they ranked manufacturing at the top of the list;

79% say a strong manufacturing base should be a national priority;

But...1/3 of parents would encourage their child to go into manufacturing

The lack of qualified workers is impacting growth and recovery.....
The Skills Gap in Manufacturing

- 82% of manufacturers report a moderate or serious skills gap in skilled production.
- 74% of manufacturers report that this skills gap has negatively impacted their company’s ability to expand operations.
- 69% of manufacturers expect the skills shortage in skilled production to worsen in the next 3-5 years.
- 5% of all jobs in manufacturing unfilled due to lack of qualified workers.
Manufacturers Need New Workforce Strategies

Top sources for new employees

- **Word of mouth**: 52%
- **Staffing agencies**: 40%
- **Online Job Boards**: 40%
- **Newspaper Ads**: 32%
- **Company recruiting function**: 26%
- **External search firms**: 18%
- **Company Websites**: 15%
- **Tech schools**: 14%
- **Community colleges**: 8%
- **Other**: 6%

The Manufacturing Institute & Deloitte - October 2011
Manufacturing Employment by Skill Group, 2003 through 2010

“I advise each of my staff that every worker hired is a million-dollar investment for this company. I’m calculating that most hires are under 45 years old; we intend to keep them for at least 20 years, and our average annual salary/benefits package is $55,000. In other words, we can’t afford to make a mistake—to hire someone without the right skills. Verifiable skills certification programs can make the difference between a good investment and a high-risk.”

Dennis Rohrs,
Human Resource Manager
Fort Wayne Metals, Inc.
PROVIDING COMPETENCY-BASED, CUSTOMIZED EDUCATION AND TRAINING FOR THE MANUFACTURING WORKFORCE... TODAY AND TOMORROW
Advanced Manufacturing Competency Model

- High Quality Middle Class Jobs
- Occupation-Specific Certifications
- Entry Level Industry Certifications
- Ready for Work, Ready for College
The NAM-Endorsed Manufacturing Skills Certification System

- Aligned to the Manufacturing Competency Model
- Nationally Portable
- Third-Party Validated (ISO/ANSI Preferred)
- Industry-Driven
- Data Based and Supported
Validating Skills with National Certifications

- **Academic & Workplace Competencies** (Reading & Writing, Applied Math; Locating Information)
  - National Career Readiness Certificate (ACT)

- **Production** (Safety, Quality Practices & Measurement, Manufacturing Processes & Production)
  - Certified Production Technician (MSSC)

- **Welding**
  - American Welding Society

- **Machining & Metalforming – CNC**
  - National Institute for Metalworking Skills

- **Technology & Engineering**
  - Society of Manufacturing Engineers
THE NATIONAL ASSOCIATION OF MANUFACTURERS ENDORSED

Skills Certification System

Producing a High-Performance Manufacturing Workforce

Founding Partners

Partners
Models

“If you look at how community colleges are organized... developmental education sits in one silo while non-credit workforce training sits in another silo. To achieve real solutions, we have to be much more integrated in how we deploy these assets.

Roderick Nunn, Vice Chancellor, St. Louis Community College

- High school to community college
- ABE/bridge programs to credit certificate/diploma/degree
- Continuing education to for-credit
- Community college integration into current for-credit programs of study
- Pre-apprenticeship to apprenticeship
- Community college to four-year institutions
Modeling the Skilled Production Pathway In Kentucky

- Accelerated program first deployed in machining
- Designed to meet specific, immediate demand
- Grounded in the certifications to meet immediate need (basic skills and production)
- Supports dislocated workers and transitioning military
- Links to education to build the pathway
Deployment and National Scope

- **States with national philanthropic funding for deployment**
- **States with grassroots efforts and strategic partnerships advocating for deployment**

**Goal to Credential 500,000 Manufacturing Workers by 2016**
Certification Pathway Leads To Toyota Job Opportunity

**Class:** ATMA Senior Graduate 2012

**Internship 2010-2011:**
Toyota Motor Manufacturing, Texas

**College Certificates:**
Marketable Skills Award; OSHA Safety Card; Level 1 – Certificate

**Certifications:** Safety, Quality Practices & Measurement, Manufacturing Processes & Production.

Jacob Wagner, Toyota Features AMA Trainee, January 2012.
ALIGNING EDUCATION, CERTIFICATION AND CAREER PATHWAYS
For the Quality Assurance Industry at Lorain County Community College

EDUCATION PATHWAY

Masters and PhD
- Bachelor of Science/Engineering Discipline
  - University of Akron
  - Cleveland State University

Associate in Applied STEM/Science
- 53 Credit Hours / Two Years Full Time
- 24 Courses
- Day / Evening Curriculum

STEM Diploma Program
- 36 - 37 Credit Hours / One Year Full Time
- 14 Courses
- Day / Evening Curriculum

STEM Certificate Program
- 23 - 24 Credit Hours / One Year Part Time
- 9 Courses
- Day / Evening Curriculum

CERTIFICATION PATHWAY

Career Pathway
- Quality Technologist
  - $24.51 / hour (17-3020)
  - 10 – 15 years experience
  - $24.00 to $28.00 / hour

Employer Job Title / Wage Range
- Quality Engineer / Mgr/Supervisor
- Quality Technician or Inspector
- Quality Process Control Specialist
- Reliability Lab Specialist
  - $22.64 / hour (17-3026)

Career Pathway
- Quality Control Inspector
  - $15.76 / hour (51-9061)
  - 5 – 10 years experience
  - $15.80 / hour

Career Pathway
- Quality Inspector
  - Destructive
  - Testing / Tear down
  - 0 – 5 years experience
  - $13.00 – $15.00 / hour

Carrier Pathway
- Process Control Technician
- Quality Corrective Action Analyst
  - $15.84 / hour (51-4120)

Employer Job Title / Wage Range
- Lab Tech / First Piece
- Quality Inspector
  - $15.80 / hour

Employer Job Title / Wage Range
- Retraining / Lay Offs – Continuing Education Company
- Specific Apprenticeship

National Career Readiness Certificate
- Personal Effectiveness
- Academic Competencies
- Workplace Competencies

Applied STEM (High School)
- Dual Enrollment – Career Academy – Youth Development Programs

Out of School / Low Skill Youth / Adults
- WIA/Career Centers – ESL / VFLS – GED / ABE
  - "Bridge" and Foundation Programs

Skilled Adults
- Retraining / Lay Offs – Continuing Education Company
- Specific Apprenticeship

Produced with support from
Championing National Legislation

America Works

To require that certain Federal job training and career education programs give a priority to programs that provide an industry recognized and nationally portable credential.
A “Win-Win” Scenario

Educators

Workers

High-Quality Jobs

Employers

Regional Development
Contacts

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