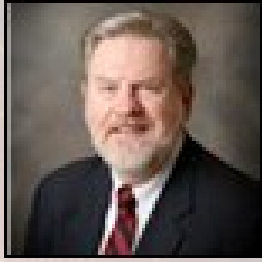
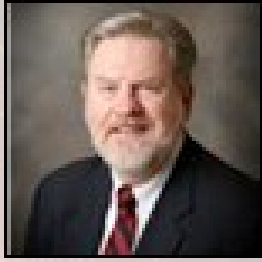

ATE CENTERS
Highlights of Advanced Manufacturing and Engineering Technology Resources from ATE Centers
April 28, 2016
Webinar will begin at 3pm ET
CLICK HERE TO WATCH THE WEBINAR RECORDING
CCTA | CENTERS COLLABORATIVE FOR TECHNICAL ASSISTANCE



Webinar Details

- For this webinar you will be in listen only mode using your computer or phone
- Please ask questions via the question window
- This webinar is being recorded – you will be sent a recording link



Brought To You By

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With Additional Support by the ATE Collaborative Impact Project

ATE CENTERS

Disclaimer: This material is based upon work supported by the National Science Foundation under Grants # 1205077 and # 1261893. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

The CCTA IS Led By

National Center for Convergence Technology (CTC) based at Collin College in Frisco, TX (lead)

South Carolina ATE National Resource Center (SCATE) based at Florence Darlington Technical College in Florence, SC

Florida ATE Center (FLATE) based at Hillsborough Community College in Tampa, FL

Bio-Link Next Generation National ATE Center for Biotechnology and Life Sciences (Bio-Link) based at City College of San Francisco in San Francisco, CA

Networks Resource Center based at the Maricopa Community College District in Phoenix, AZ

CCTA Purpose

- Respond to a request from the Department of Labor (DOL) to the NSF to have ATE Centers provide technical assistance services to DOL TAACCCT grantees
  - Success coaching
  - In-person convenings
  - Knowledge management /best practices
  - Peer-to-peer learning

CCTA Activities are Relevant for

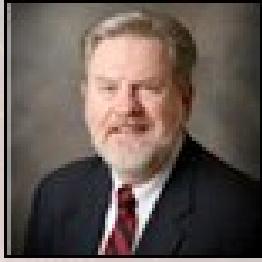
- Department of Labor grants
- National Science Foundation Projects and Centers
- Workforce-oriented programs of all kinds

Deliverables

- Topical Webinars and Teleconferences On
  - Existing and new solutions
  - Live/recorded with attendee Q&A
  - Archived on www.atecentral.net
- Other online media including videos and transcripts

Deliverables Continued

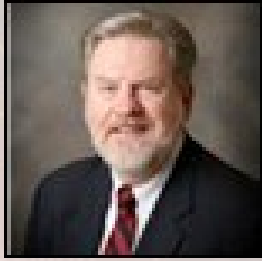
- Invitations to regional discipline-specific conferences
- Identify and document best practices
- Host convenings



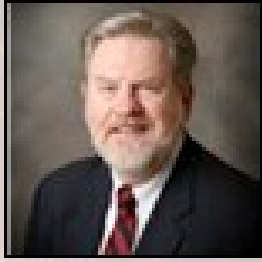
Poll #1: Your Affiliation

A. I am involved with an NSF grant
B. I am involved with a TAACCCT grant
C. Both
D. Neither

Overview



Looking for manufacturing education resources? All NSF ATE Centers develop a wealth of best and promising practices, skills alignments, curriculum, and other resources that support 2-year academic technical programs. Learn more about 6 Manufacturing focused centers, their resources and how best to access them in this fast paced lighting round type webinar.



Learning Objectives

At the end of this webinar, participants will:

1. Know how to access manufacturing-related resources from NSF ATE Centers
2. Discover and locate a variety of evidence-based research tools available for integration into technological education curricula

PRESENTERS

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360 Center

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Principal Investigator (PI)
WELD-ED

Karen Wosczyna-Birch
Principal Investigator (PI)
RCNGM

NSF ATE Program & ATE Centers

Partners with Industry for the NEXT American Workforce

www.atecenters.org

NSF ATE Centers

Advanced Manufacturing Technologies

Agricultural & Biological Technologies

Energy & Environmental Technologies

Engineering Technologies

Information Technologies

Learning, Evaluation & Research

Micro & Nano Technologies

Security Technologies

NSF ATE Advanced Manufacturing Centers and Project

Florida Advanced Technological Education Center of Excellence

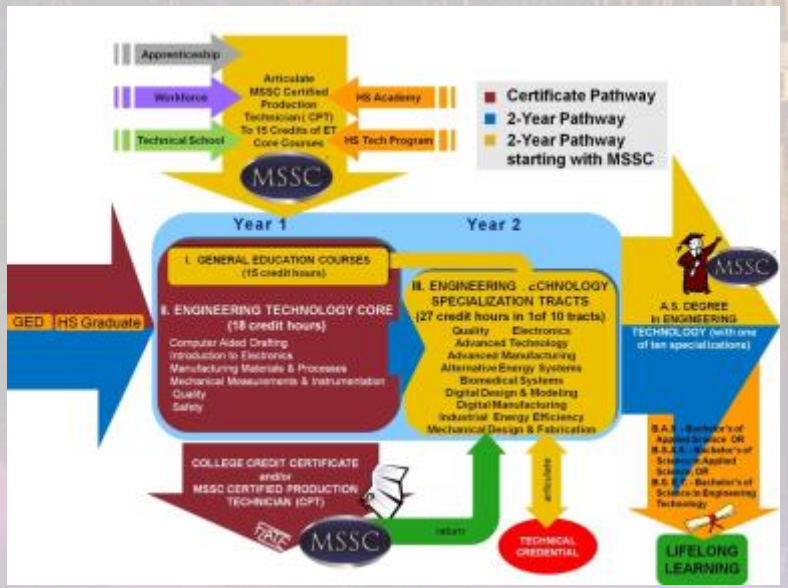
FLATE
FLORIDA ADVANCED TECHNOLOGICAL EDUCATION CENTER
A National Science Foundation Regional Center For Advanced Technological Education

FLATE will be Florida's leading resource for education and training expertise, leadership, projects, and services to promote and support the workforce in the high performance production and manufacturing community.

Impact locally. Lead nationally.

A.S. Engineering Technology Degree

Pathways to Manufacturing & Advanced Technology Careers



Meeting locations since 1996

FORUM on Engineering Technology

Learn. Share. Grow. Innovate.

PSC 2008

TCC 2010

GCCC 1997, 2003, 2014

2003, 2010 FSCJ

FGC 2011

DSC 2000, 2005, 2011

CCF 2007

SSC 2008

LSSC 2016

VC 1999, 2006, 2015

BCC 2007

HCC 2005, 2013

UCF 1996

SPC 2002, 2009, 2013

PSC 2009, 2014

SCF-M 1998, 2012

IRSC 1998, 2006, 2012

2004 PBSC

FKCC 2015

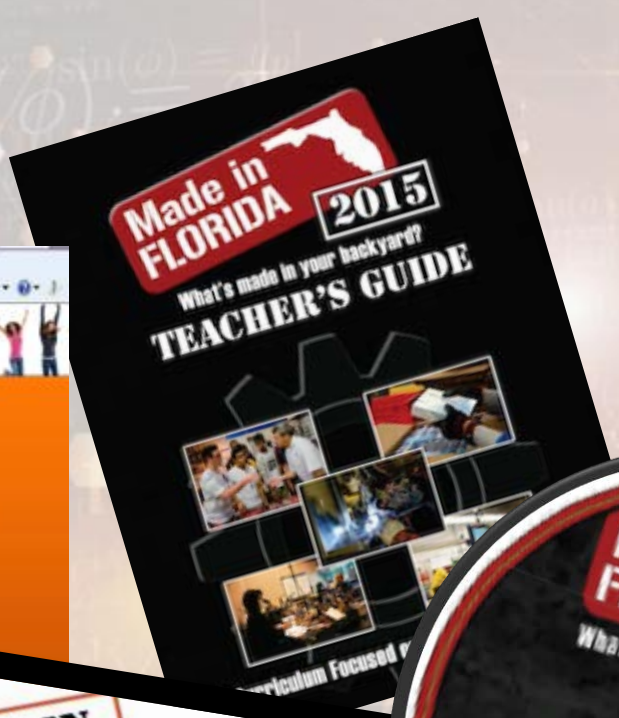
2001

FLATE GUIDES

BEST PRACTICE

www.fl-ate.org/Best_Practices/

Made in FLORIDA



www.madeinflorida.org

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ATE CENTERS

FLATE's wiki

...full of great FREE RESOURCES for you!

www.flate.pbwiki.com

Made in Florida STEM Lesson Plans For Elementary, Middle & High School Educators	Career Education Resources	Modules for Advanced Technological Education	The Toothpick Factory A Simulating Game for Soft Skills	Student Activity Sheets
Industry Tour Resources Find pre-tour lessons, post-toursurveys and many resources for all your *Made in Florida* tours!	**Recruiting all GIRLS who love S.T.E.M.!** Resources for GIRLS in STEM!	**FLATE Presentations, Publications, Meetings & Webinars**	aa **Professional Development Opportunities for Teachers** NEW! Summer Energy Camp for Teachers	**Camp Resources** STEM Summer Camps Robotics & Energy Camp Resources for everyone.
Read FLATE's Monthly Newsletter! FLATE FOCUS	**FLDOE Career Resources** Florida's new education and career planning system! Florida Department of Education fldoe.org			

A.S. Engineering Technology Degree

Manufacturing & Advanced Technologies

Credential Alignment & Articulations
High School, Post Secondary Technical, A.S. levels

CNC Machining

last edited by MARILYN BARGER 2 weeks ago — Page history

This page houses links to the new 2015 Florida Machining Technology Curriculum Frameworks for High School and PSAV hosted on the FDOE website. It also hosts the alignment and crosswalk of the Curriculum Frameworks standards and benchmarks to the skills in NIMS Machining Level 1 & Level 2 credentials.

Link to FDOE Manufacturing cluster home page

***NOTES to Educators and Users of the Alignments and Crosswalk Documents*

FLORIDA SECONDARY LEVEL ALIGNMENTS/CROSSWALKS	FLORIDA POST SECONDARY LEVEL ALIGNMENTS/CROSSWALKS
Link to current FLDOE Secondary Machining Technology Framework Secondary Machining Technology Framework alignment and crosswalk to NIMS credentials	Link to current FLDOE Post Secondary Machining Technology Framework Post Secondary Machining Technology Framework alignment and crosswalk to NIMS credentials
Secondary "High Level" Machining Tech-NIMS Alignment (alignment summary)	Post Secondary "High Level" Machining Tech-NIMS Alignment (alignment summary)
FLORIDA A.S. LEVEL ALIGNMENTS/CROSSWALKS	
Link to current FLDOE AS ET Degree Frameworks (w Mechanical Fabrication & Design specialization)	
ET Degree Mechanical Fabrication and Design Specialization alignment and crosswalk to NIMS credentials	
Links to current FLDOE Frameworks for College Credit Certificates (CCCs) under Mechanical Fabrication and Design Specialization: CNC Machinist / Fabricator (CCC – 0648051002) CNC Machinist Operator / Programmer (CCC – 0615000015) Mechanical Designer and Programmer (CCC – 0615080503)	
CCC-NIMS alignment files: CNC Machinist Operator CCC alignment and crosswalk to NIMS credentials CNC Machinist-Fabricator CCC alignment and crosswalk to NIMS credentials Mechanical Designer and Programmer CCC alignment and crosswalk to NIMS credentials Florida AS ET Degree "High Level" Alignment (alignment summary)	
FLORIDA CAPE FUNDING LISTS and STATEWIDE ARTICULATIONS	
FLDOE Website for CAPE Certification Lists (Secondary and post-secondary) and statewide articulations	

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FLORIDA POST SECONDARY LEVEL ALIGNMENTS/CROSSWALKS

Link to current FLDOE Post Secondary Machining Technology Framework

Post Secondary Machining Technology Framework alignment and crosswalk to NIMS credentials

Post Secondary "High Level" Machining Tech-NIMS Alignment (alignment summary)

FLATE: Florida Advanced Technological Education Center of Excellence

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A National Science Foundation Regional Center For Advanced Technological Education

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CA²VES

Center For Aviation And Automotive Technological Education Using Virtual E-Schools

CA²VES: The Center for
Aviation & Automotive Technological Education
Using Virtual E-Schools

CA²VES: The Center for

Aviation & Automotive Technological Education

Using Virtual E-Schools

Providing **research-centered resources** and **evidence-based leadership** for 2-year colleges and the broader ATE community, by designing and developing **state-of-the-art virtual reality-based modules** that support automotive and aviation technological education.

CUCWD: The Clemson University Center for Workforce Development

Florence-Darlington Technical College

Greenville Technical College

South Carolina Advanced Technological Education Center of Excellence

Spartanburg Community College

Help

EducateWorkforce

A resource for technical colleges, and their students.

- Video Lectures
- Virtual Reality
- Open Texts & ePUBs
- Interactive Assessments
- A Novel Approach
- Industry Backed

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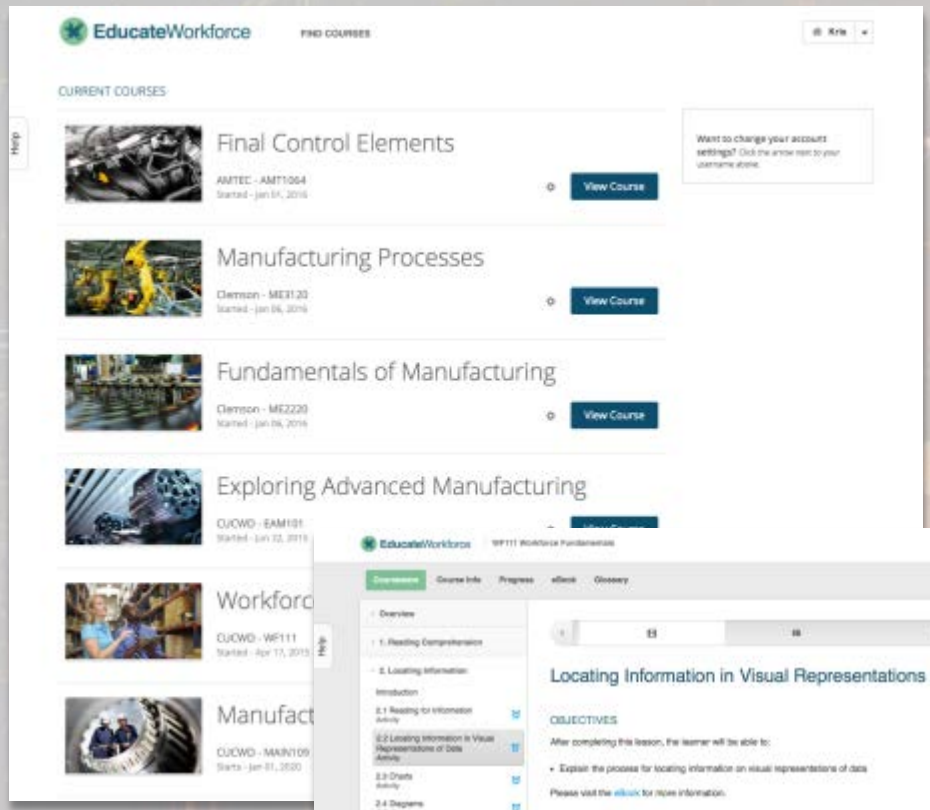

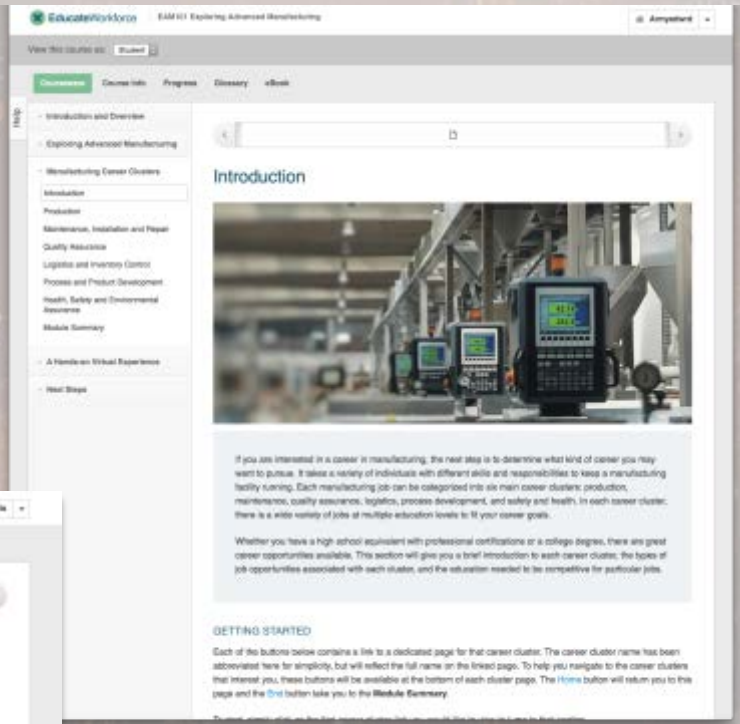

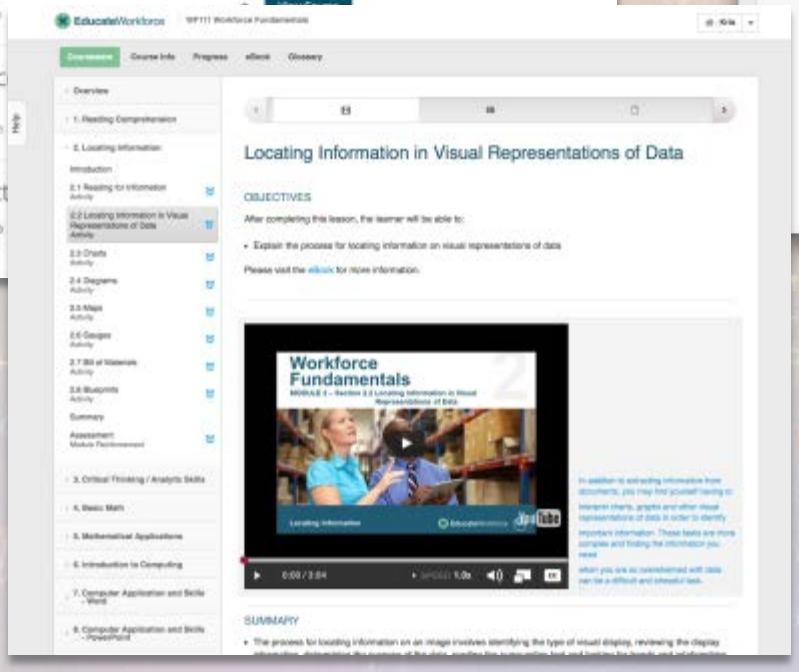

EducateWorkforce

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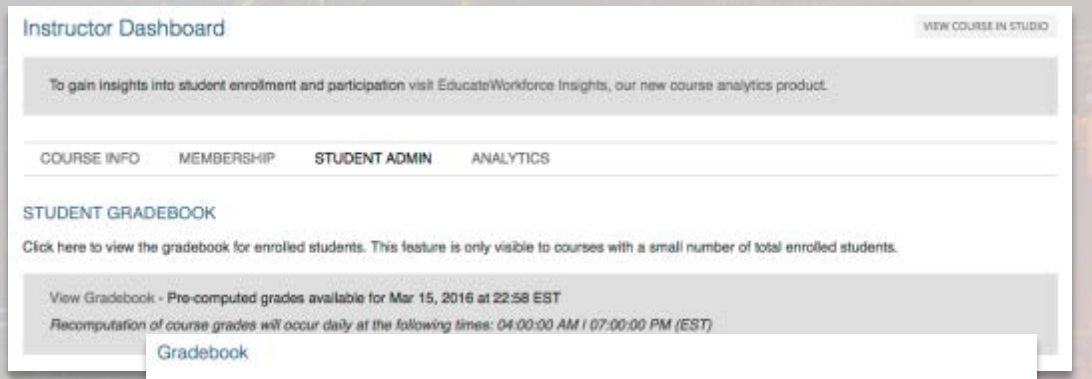
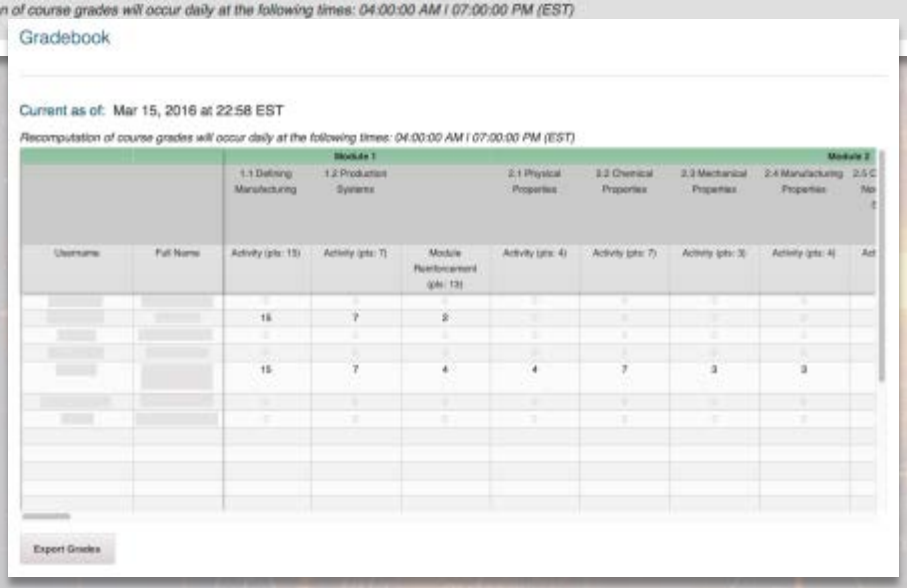
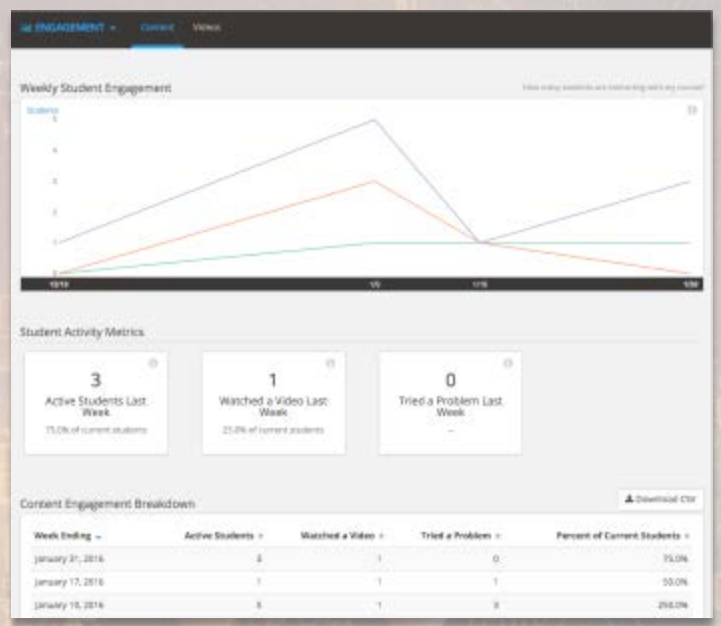
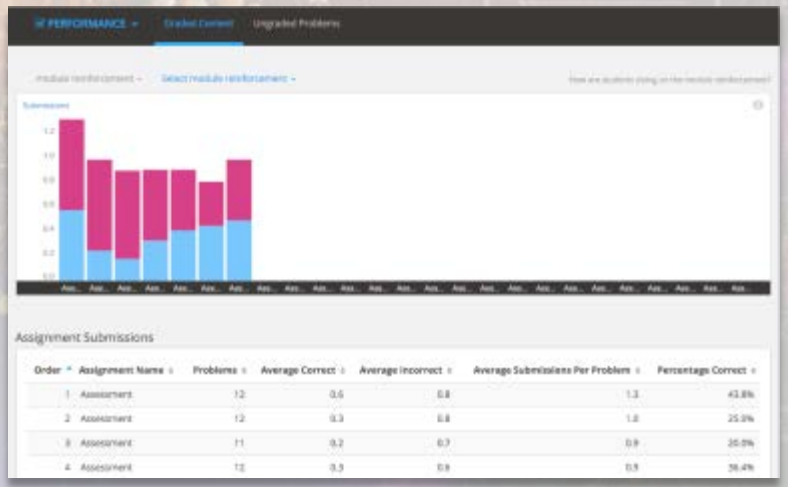






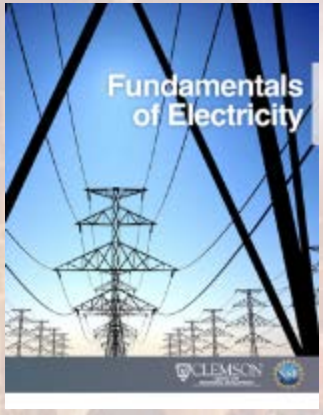


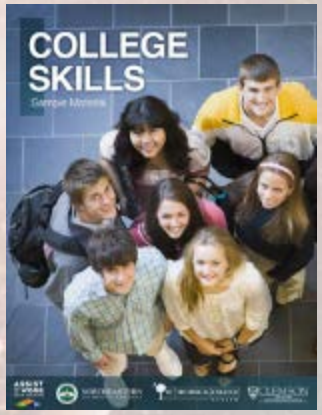
Instructor Tools & Analytics

- Career exploration
- Recruitment
- Introductory course materials

Virtual Reality Scenarios & Tools

iBooks and ePUBs





ePUB

Compatible with:

Increasing Diversity and Quality of the Advanced Manufacturing Pipeline

CARCAM
Consortium for Alabama Regional Center for Automotive Manufacturing

INDUSTRY FOCUSED EDUCATION FOR TECHNICAL CAREERS

Beverly Hilderbrand, Director/PI
Gadsden State Community College

www.carcam.org

AAMA Alabama Automotive Manufacturers Association

Alabama Technology Network

alabama's number one incentive AIDT

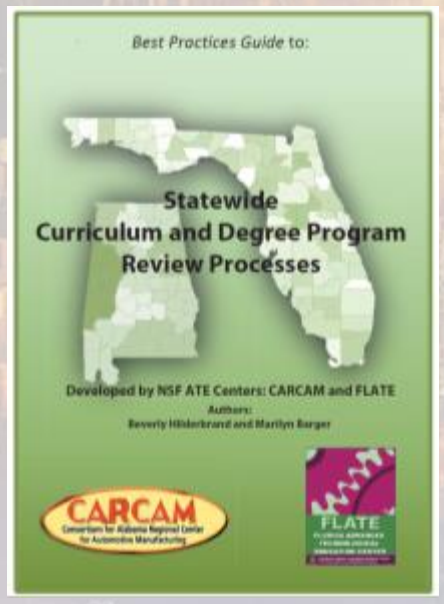
MADE IN ALABAMA

NSF National Science Foundation WHERE DISCOVERIES BEGIN

CARCAM BEST PRACTICE GUIDES

STEM/Robotics Camp Best Practices Handbook 2016

Curriculum Review Process Guide

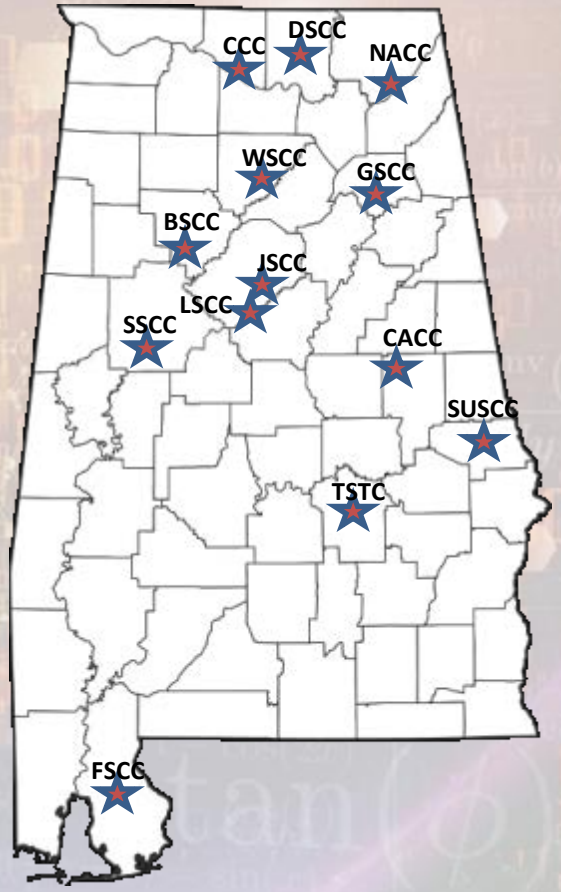


CGA Best Practice Guide

CARCAM

PARTNER COLLEGE NETWORK

- Bevill State Community College
- Calhoun Community College
- Central Alabama Community College
- Drake State Community & Technical College
- Faulkner State Community College
- Gadsden State Community College
- Jefferson State Community College
- Lawson State Community College
- Northeast Alabama Community College
- Shelton State Community College
- Southern Union State Community College
- Trenholm State Community College
- Wallace State Community College - Hanceville



AMP It Up! Advanced Manufacturing Partnerships: Education and Industry Working Together to Develop Highly-Skilled 21st Century Technicians

Goals:

1) Workforce development and STEM learning

2) Career pathway

3) Stackable credentialing

4) Professional development

Alabama Automotive Manufacturing Technology AS Degree

I. General Education — **22 credit hours**

- English/Speech
- Math
- Humanities/Ethics
- Science
- Social Science
- Microcomputer Applications

II. AUT Core — **21 credit hours**

- Automotive Concepts
- Lean Mfg./Safety
- Robotics
- Electronics/AC/DC
- Blue Print Reading
- Programmable Logic Controllers (PLC)

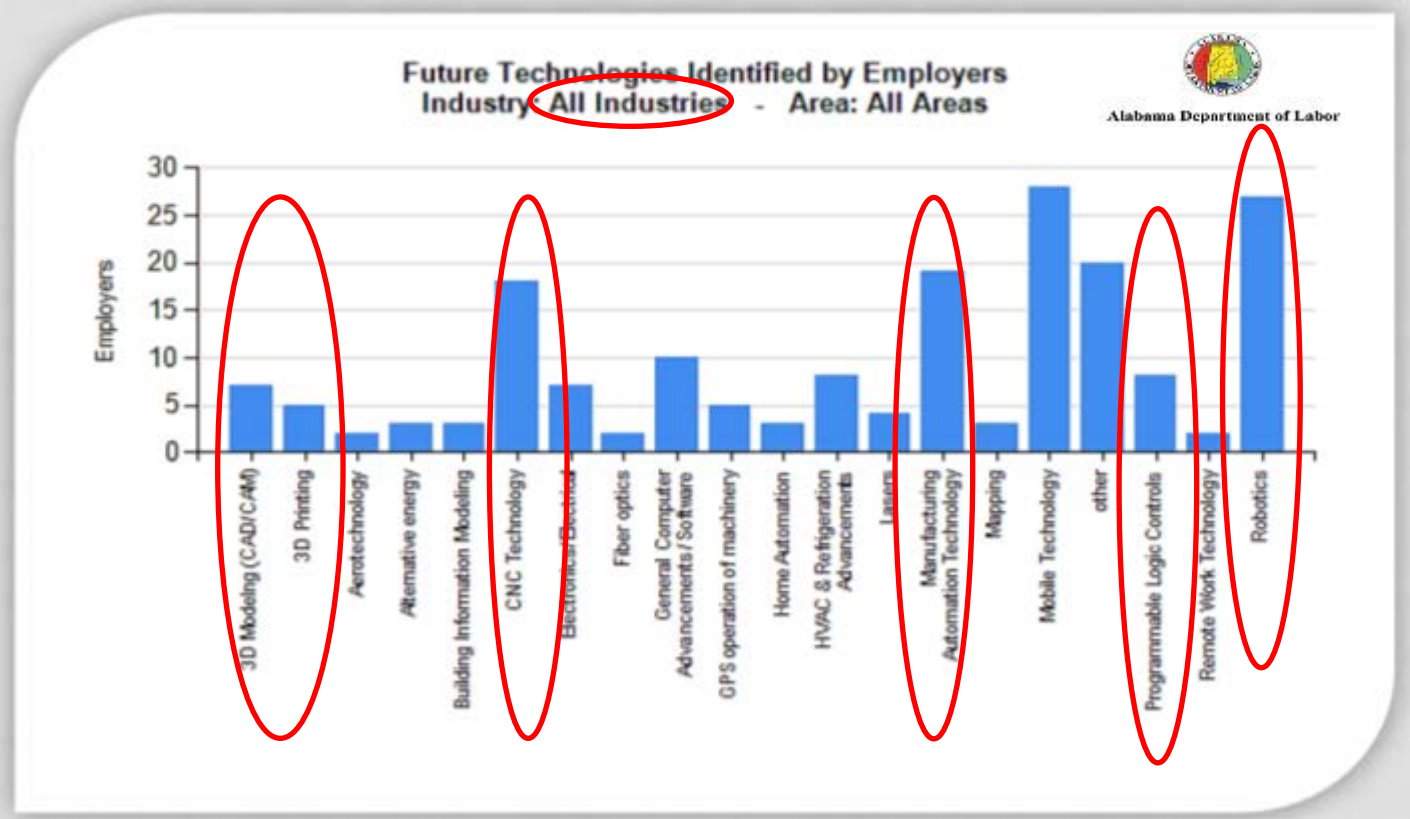
III. Specialization Tracks — **21-33 credit hours**

- Drafting
- Electronics
- Industrial Automation
- Machining
- Welding
- Warehouse Logistics*

Total 64 – 76 hours

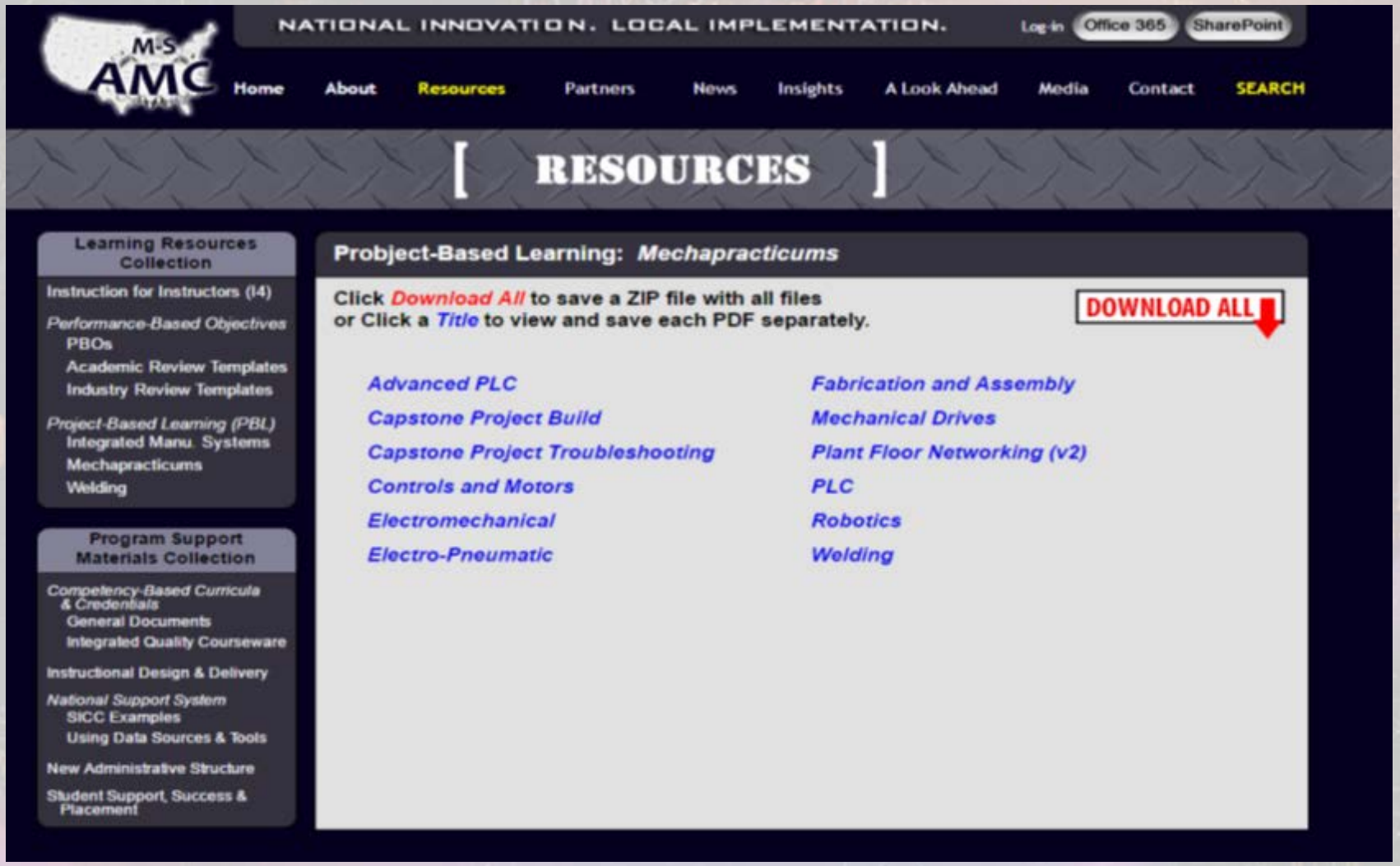
* New

FUTURE TECHNOLOGIES IDENTIFIED



www.msamc.org

www.msamc.org



CARCAM
Consortium for Alabama Regional Center for Automotive Manufacturing

www.carcam.org

THANK YOU!

Beverly Hilderbrand, Director/PI

bhilderbrand@gadsdenstate.edu

256.439.6871

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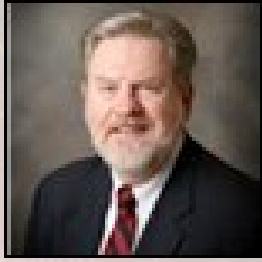


Questions?

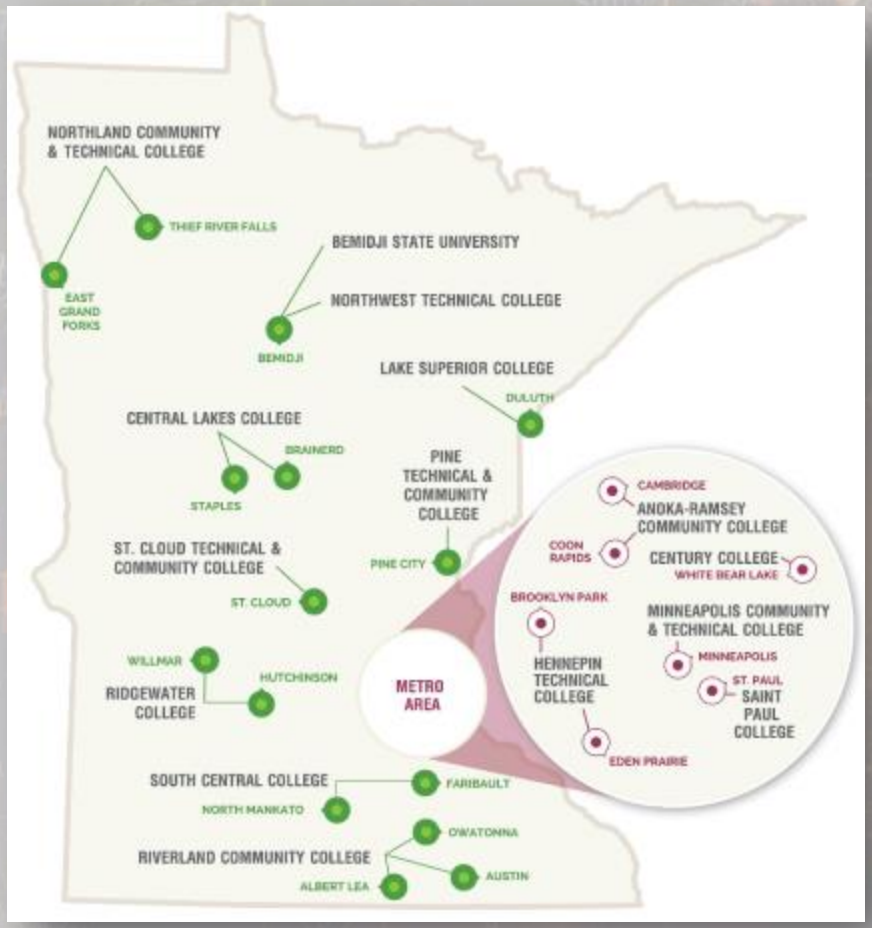
360 Manufacturing and Applied Engineering ATE Regional Center of Excellence

LEADING THE MANUFACTURING TALENT REVOLUTION

360 Manufacturing and Applied Engineering ATE Regional Center of Excellence

- 360 is an innovative education and industry collaboration to RECRUIT, EDUCATE, and TRAIN workers for dynamic careers in advanced manufacturing.

- Focused on filling the advanced manufacturing pipeline with qualified technicians



- 360 Consists of 15 MnSCU institutions (42% MnSCU)
- In existence since 2006
- State and federally funded
  - NSF Project “The eTECH Project” in 2009
  - NSF-ATE Regional Center 2012

360 | eTECH

eTECH
ONLINE & HANDS-ON MANUFACTURING EDUCATION

- Online and hands-on manufacturing education
- Adults and high school students
- Print Reading simulation
- 4 certificates
  - Production Technologies
  - Automation Technologies
  - Machine Technologist
  - Welding Technology

https://360etech.org/

360 |Career Success Skills

- 26 online learning modules
- To graduate a better qualified employee
- Provide faculty & industry with curriculum that addresses important skills
- Topics include verbal communications, reliability, effective listening, and more

http://www.360mn.org/action/skill-development/

Dream It. Do It. Minnesota

- Adopt-A-School Guide
  - Framework to work with K-12
- Teacher Guide
  - Lessons, activities, and videos
- Youth Outreach Toolkit
  - Easy-to-use materials for influencers and youth
- Game app

http://www.dreamitdoitmn.com/

Manufacturing Career Tool

- Developing interactive career tool to introduce youth to manufacturing careers
- Focus group data
  - Web tool with facts and quiz
  - Showcase “A Day in the Life” in manufacturing

WELD-ED

National Center for Welding Education and Training

Weld-Ed
National Center for Welding Education and Training

Weld-Ed
National Center for Welding Education and Training

Vision

Weld-Ed is a national partnership of colleges, universities, professional societies, government, and private industry committed to increasing the number and quality of welding and materials joining technicians to meet industry demand.

Mission

Weld-Ed strives to improve the quality of education and training services to address the hiring and professional development needs of the welding industry.

Partners and Affiliates

American Welding Society (AWS)

Regional Centers

- Chattanooga State Technical Community College (TN)
- Lorain County Community College (OH)
- College of the Canyons (CA)
- Honolulu Community College (HI)
- Illinois Central College (IL)
- North Dakota State College of Science (ND)
- Texas State Technical College (TX)
- Yuba College (CA)
- Weber State University (UT)
- The Ohio State University (OH)

Affiliate network of over 80 education and industry

Weld-Ed
National Center for Welding Education and Training

National Occupational Overview
Welder Occupations

SOC Code	Description	2015 Jobs	2025 Jobs	Change	Openings
47-2011	Boilermakers	17,245	18,288	1,043	8,980
51-2041	Structural Metal Fabricators and Fitters	79,977	86,841	6,864	40,213
47-4221	Structural Iron and Steel Workers	62,051	70,857	8,8066	30,227
51-4121	Welders, cutters, solderers and brazers	374,935	408,894	33,959	129,725
51-4122	Welding, soldering, and brazing machine setters, operators, and tenders	58,950	69,558	10,608	26,306
47-2152	Plumbers, pipefitters, and steamfitters	393,485	468,906	75,421	129,049
47-2211	Sheet Metal Workers	137,308	156,658	19,350	46,851
	Total	1,123,952	1,280,002	156,050	411,353

Source: EMSI Complete Employment – May 2014

Welding Programs
Student Enrollment/Completion Data

Academic Year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Secondary Enrolled	68,079	83,187	88,247	114,313	96,449	105,156
Secondary Completed	32,473	41,403	52,345	60,261	50,102	71,841
Post-Secondary Enrolled	25,180	29,228	43,465	51,358	69,672	53,919
Post-Secondary Completed	10,778	13,601	21,603	23,613	23,341	25,652

Source: Weld-Ed annual school survey

Faculty Professional Development

Summer One-Week Training:

Module # 1 – Welding Metallurgy

Module # 2 – Joining and Cutting Processes

Module # 3 – Design / Assembly / Robotic Welding

Module # 4 – Weld Quality and Inspection, Welding Codes, Specifications & Safety

Module # 5 – Laser Welding

Module # 6 – Instructional Design and Teaching Strategies for Welding Technicians

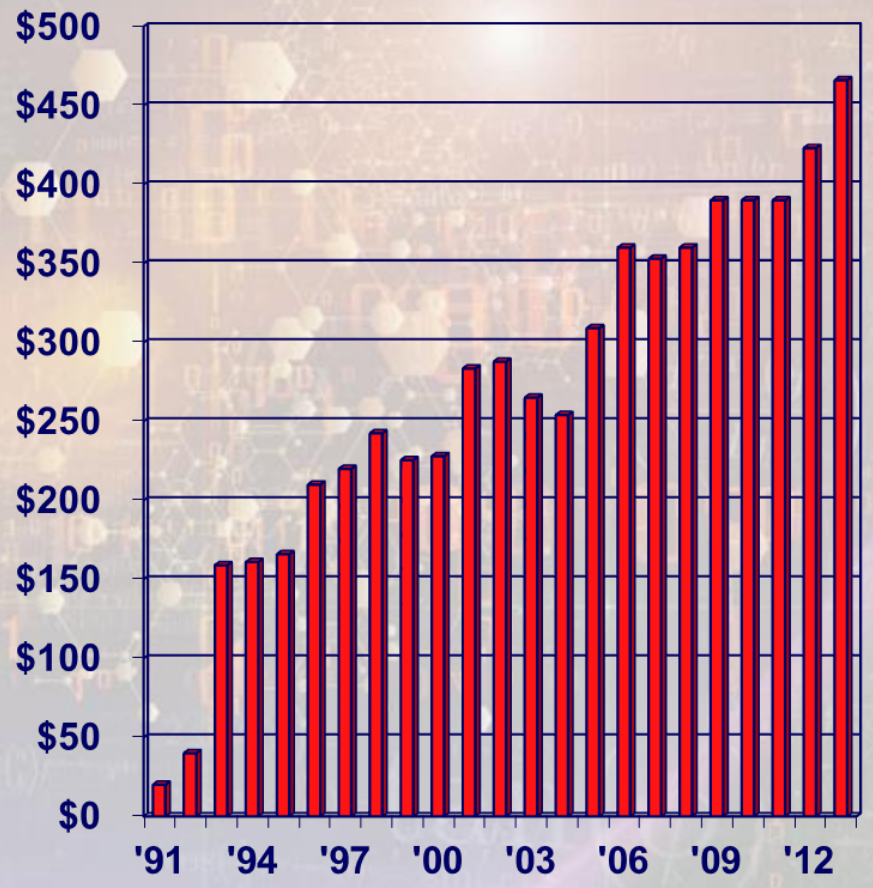
Module # 7 – Non Destructive Testing

Registration at www.weld-ed.org

Weld-Ed
National Center for Welding Education and Training

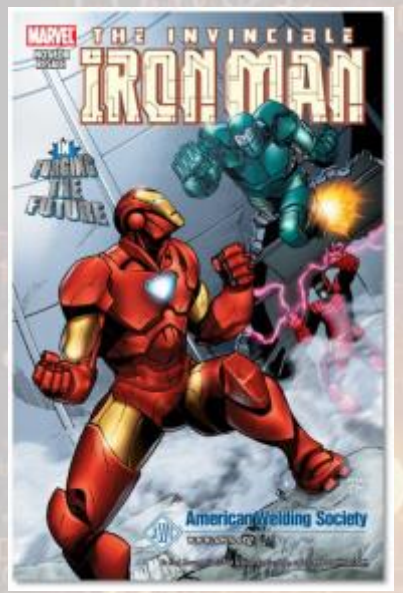
Scholarships

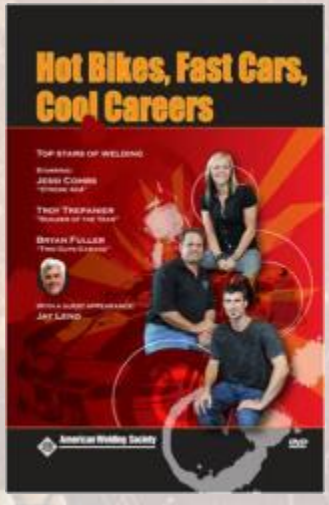
- In 2015, there were more than 500 recipients, and over $700,000
- Total of 5,370 students and over $6.4 million in 25 years

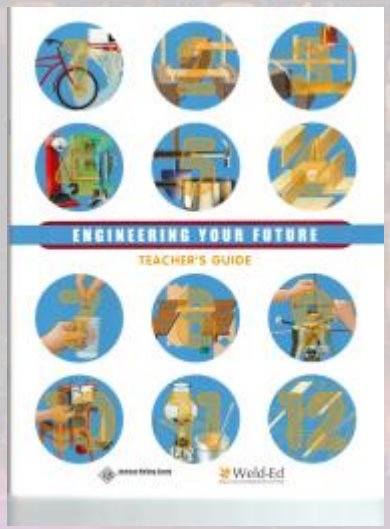


American Welding Society FOUNDATION

FREE at CareersInWelding.com







Careers in Welding Mobile Exhibit

Tour Schedule at
www.explorewelding.com

RCNGM

Regional Center for Next Generation Manufacturing

COT-RCNGM Goals: Regional Center in New England

COLLEGE OF TECHNOLOGY

Next Generation Manufacturing

www.nextgenmfg.org

A National Science Foundation Center of Excellence

Goal One

- Student Recruitment & Persistence

Goal Two

- Professional Development

Goal Three

- Curriculum Development

Goal Four

- Dissemination – Regional Collaboration

WHO WE ARE:

Middle Schools

- Comprehensive Schools
- CPEP: Inner City After School and Summer Programs
- Skills21 at EDUCATION CONNECTION

Secondary Schools

- 17 Technical High Schools
- Comprehensive High Schools
- Career Technical Education (CTE) Pathways

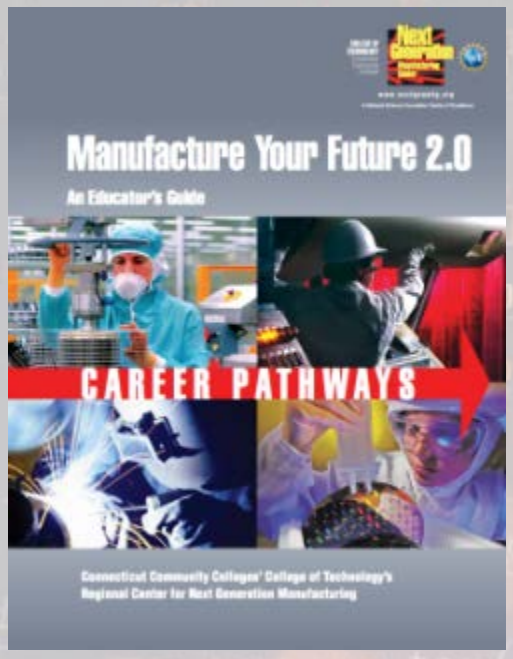
COT

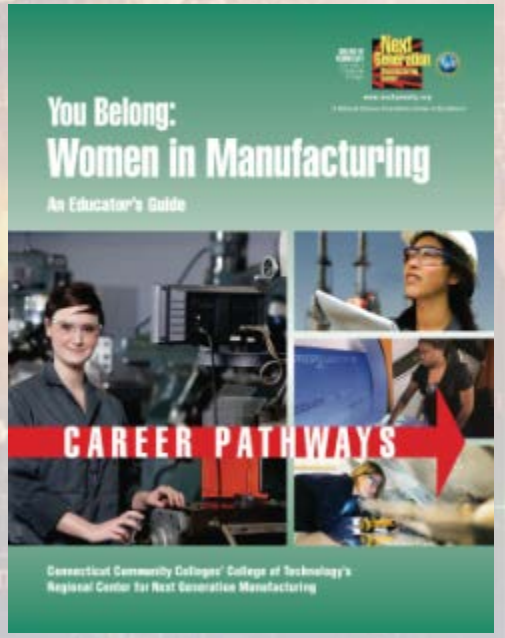
- Seamless Pathways that Include Stackable Credentials
  - 12 Community Colleges in CT
  - 8 Four-Year Universities
  - Regional Collaborations in ME, MA, RI, NH, VT

1. Student Recruitment & Persistence:

Teachers Guide with Curriculum and DVD

Manufacture Your Future 2.0





You Belong: Women in Manufacturing

Resources: www.nextgenmfg.org

STUDENT EXPOS/SYMPOSIUMS: Model One

Benefits

- ✓Appreciation for the manufacturing process
- ✓Essential understandings of careers
- ✓Current workplace practices and technologies
- ✓Opportunity for students to network
- ✓Opportunity to promote educational career pathways
- ✓Exposure to your college campus and what you have to offer

MODEL 1: STATEWIDE: Recreation of a factory floor (pods)
CNC: CAD/CAM; Metal Stamping; Wire/Spring Electroplating Lasers; Injection Molding

3,000 students, three days
In kind: marketing, communications, public affairs)
Cash support from RCNGM, Companies

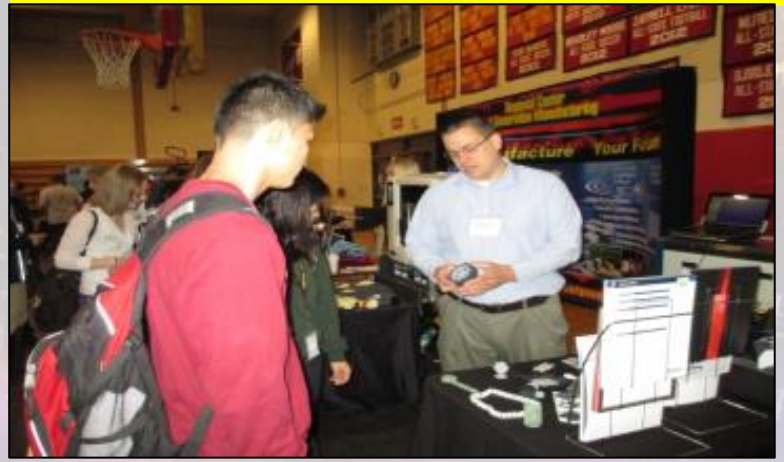
Model Two: **REGIONAL SYMPOSIUM MODELS AT HOST COMMUNITY COLLEGES (Two Formats)**

A. Manufacturing Process Format

- ✓10-minute sequential presentations – how a product is made
- ✓Company exhibits/demos
- ✓College tour (if time)
- ✓Highly structured/scheduled

B. Workshop Format

- ✓40-minute workshop presentations held concurrently
- ✓Company exhibits/demos held concurrently
- ✓General assembly (space/time allowing)



Faculty-Industry Externships

- Work Based Learning
- 4-Week full-time for faculty and teachers
- Curriculum Integration
- In partnership with industry
- Creates Long Term Education – Industry Partnerships
- RESOURCE:
  - BEST PRACTICE GUIDE AND CURRICULUM ON WWW.NEXTGENMFG.ORG

2. Professional Development/Marketing

High School Counselor Workshops

Workshop Model

- Host Community College: Overview & Tour by students and faculty
- Overview of Manufacturing Programs offered
- Job Placement with Salaries
- Guest Speakers from Local Manufacturers
- Improve Perception of Manufacturing
- DVD and Student Profiles
- BEST PRACTICES GUIDE ON:

  WWW.NEXTGENMFG.ORG

OTHER RESOURCES:

1. Summer Teachers' One Week Dissemination Workshop

- Teamwork and Professional Skills; Hands-on Workshops
- Curriculum Development
- Tunxis CC, Farmington CT – July 11-15, 2016
- Other Resources: State and Regional Manufacturing Surveys: Industry Needs, Higher Education
- Deloitte Surveys (2)
- CT Business &Industry Association Surveys

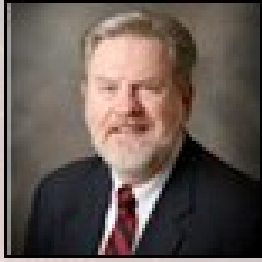
2. MFG Workshops with CMCC, ME

3. Greater Hartford Maker Faire:

- 2nd Annual: October 8, 2016

RESOURCES ON WWW.NEXTGENMFG.ORG

THANK YOU !!!!!



Questions?

Join Us – All Webinars 3 pm Easter

MAY 25, 2016

Meeting Requirements, Exceeding Expectations: Understanding the Role of Evaluation in Federal Grants

External evaluation is a requirement of many federal grant programs. Understanding and addressing these requirements is essential for both successfully seeking grants and achieving the objectives of funded projects. In this webinar, we will review the evaluation language from a variety federal grant programs and translate the specifications into practical steps. Topics will include finding a qualified evaluator, budgeting for evaluation, understanding evaluation design basics, reporting and using evaluation results, and integrating past evaluation results into future grant submissions.

Presenters:

Lori Wingate Director of Research The Evaluation Center at Western Michigan University

- **For Other Upcoming Webinars See: http://www.atecenters.org/ccta**

Join us in Pittsburgh, PA!

July 25-28, 2016

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ATE CENTERS

Register for HI-TEC and TAACCCT Convening

HI-TEC Conference July 27-28 in Pittsburgh, PA

Register at http://www.highimpact-tec.org/registration.php.

Free follow-up **TAACCCT technical assistance convening** for all TAACCCT grantees and others who can benefit on **Friday, July 29**.

Q&A and Contacts

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WEBINAR SURVEY

Please take a moment to help us become better

Highlights of Advanced Manufacturing and Engineering Technology Resources from ATE Centers

Thanks For Attending