

# Digital Manufacturing and Design Innovation Institute

## *Workforce Development Efforts*



# Workforce Development Expectations & Background

**Workforce Development (WFD)** is a key pillar of DMDII's activities.

## GOALS:

- Support all partners on workforce **planning, education and training**
- Leverage and enhance the consortium of **academic centers, non profits, students, companies and workers**
- Expand the Institute's reach and relationship with **regions around the country**, including state and regional government partners
- DMDII WFD efforts are **aggregating several campaigns and programs** – several of which are already underway
- **The objective** is for DMDII's WFD efforts to be self sustaining by year 5

# Our Challenge: Manufacturing Jobs!



## Manufacturing Skills Gap

- Unfilled positions
  - 600,000 unfilled manufacturing positions around the country
  - Companies can't find workers to fill positions and therefore suffer
  - Baby boomers retiring – no one left to take positions
- Perception of manufacturing
  - Public has a misperception of manufacturing
  - AMP recommended increased awareness for manufacturing as a career



## Technology Skills Gap

- Lack of skilled laborers with specific skills
  - STEM labor market suffers from a very particular skills gap where workers skills' aren't specific enough.
  - Digital analytics across the product life cycle requires new technology skill sets.
- There is a “dog-fight” for tech talent

*-Wall Street Journal*

# DMDII is looking to be a leader in Digital Manufacturing WFD

## *DMDII's Role:*

DMDII is looking to be a leader in Digital Manufacturing Workforce development; helping to link workforce supply and demand in the digital space, through a set of initiatives.

## *This means identify a multi-year roadmap to:*

- Identify digital manufacturing skills and the supply and demand of digital manufacturing positions (yrs. 1 -2)
- Provide general education on Digital Manufacturing-101 (yrs.1-2)
- Conduct STEM education outreach (yrs. 1-5)
- Develop competency models and stackable credential for DM (yrs. 2-4)
- Conduct DM 201 and 301 courses (yrs. 2-4)

# Beginning: Workforce Development Initiatives



## Digital Manufacturing Roadmap

### ❖ Workforce Development Advisory Committee

The DMDII Executive Board will establish a national Workforce Development Advisory Committee comprised of industry, academic and government partners to develop a workforce development roadmap to guide workforce programs.

- Create a (5) year roadmap
- Short and long term goals
- Create a strategic investment plan
- Work with government agency to fund their manufacturing related WFD thru DMDII

# Workforce Development Initiatives



## LAYING THE FOUNDATION + PROVIDING PROFESSIONAL EDUCATION

### ❖ Digital Manufacturing Skills Classification “Taxonomy”

Partnering with Manpower Group to create a comprehensive breakdown of digital manufacturing (DM) skill sets and create job profiles that will match industry needs and be the basis for industry recognized DM skills certifications. This will be foundational for developing future DM curricula for training programs.

### ❖ Digital Manufacturing-101: “Online Courses”

Partnering with Coursera to develop DM online courses that will provide a certificate of completion from the university that developed the training module. This is targeted for DM senior managers, plant managers and manufacturing engineers of SMEs but will also be available to the general public.

### ❖ “Train-the-trainer” program for NIST MEP Center staff

DMDII is working with NIST/MEP to design a program for MEP state centers to become conversant in digital manufacturing to provide technical assistance to SMEs on adopting digital manufacturing processes and systems into their operations.

### ❖ 1,000 Jobs Campaign

This is a Chicagoland regional initiative supported by DMDII to raise awareness of DM career opportunities and match qualified candidates with DM job openings. DMDII intends to replicate best practices and expand program nationally through state members and the MEP network.

### ❖ Digital Analytics Boot Camp

Working with DMDII industry and academic members to develop a three to five day boot camp on the use of DM analytics throughout product lifecycle management, demonstrating the potential benefits and teaching how to develop and apply advanced analytics in manufacturing companies.

# Workforce Development



## BACK UP SLIDES

# Government's Expectations



## DMDII Co-Operative Agreement WFD deliverables

- ❑ **4.1.4.1** - Establish a framework and infrastructure to create a project based learning environment and create appropriate interfaces to interact with external educational and workforce training activities with the goal of educating students and training workers in advanced Digital Manufacturing and Design skills.
- ❑ **4.1.4.2** - Attract and develop students at all levels and educate teachers, faculty and instructors through multi-modal interfaces, hands-on training and programming
- ❑ **4.1.4.3** - Identify and engage relevant industry and industry association partners to address needs and skill gaps and create validated and accepted educational activities
- ❑ **4.1.4.4** - Provide professional education on Digital Manufacturing and Design
- ❑ **4.1.4.5** - Work with regional "Manufacturing Extension Partnership" locations as well as professional educational content developers

# STEM Program: Digital Days



**What:** Educational programming at DMDII facility

- Experiential learning: hands on interactive space, engaging tour, video, potential for guest speaker that is identified jointly, interactive learning time in auditorium

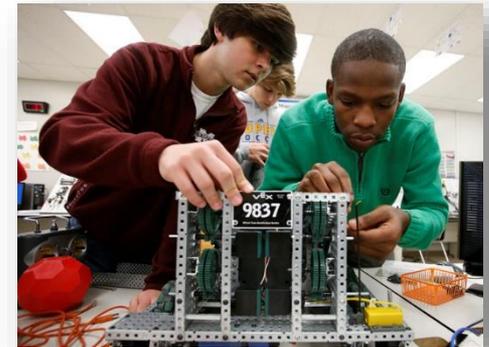
**When:** 2015-2016 school year, beginning in September 2015

- 3.5-4 hour experience including lunch/snack

**Frequency:** 2-3 times per business quarter

**Who:** 5<sup>th</sup>-12<sup>th</sup> graders focused on STEM, participants of partner nonprofit programs (small groups of 20-30)

- Manufacturing Day
- Science Olympiad
- Project Lead the Way
- Other regional partners (WI, IN, MI, OH)



 a UI LABS Collaboration