



REGIONAL EMPLOYMENT BOARD
OF HAMPDEN COUNTY, INC.

Your Connection to Workforce Development

Amp-It-Up

Advanced Manufacturing Career Awareness Program

The Final Report

The **Amp-It-Up Advanced Manufacturing Career Awareness Program** was funded by the Massachusetts Development Finance Agency. Matching funds and in-kind contributions were provided by the lead agency, the Regional Employment Board of Hampden County, Inc. (REB), the regular member companies of the Western Massachusetts Chapter of the National Tooling and Machining Association (WMNTMA), additional advanced manufacturing companies in the Pioneer Valley Region and West Springfield High School.



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March 2016

OVERVIEW

In July 2014, the Precision Manufacturing Regional Alliance Project (PMRAP) released **The Workforce Development and Technology Adoption Report** that indicated that programs to increase school, student, and parent awareness of careers in advanced manufacturing were a key priority of the regional advanced manufacturing companies.

The Final Report of the **Amp-It-Up Advanced Manufacturing Career Awareness Program** summarizes project deliverables, outcomes and economic benefits, and lessons learned from designing and implementing an advanced manufacturing career awareness program focused on Grade 8 students in selected middle schools in the Pioneer Valley Region and Grade 9, 10, and 11 students from West Springfield High School.

The Regional Employment Board of Hampden County, Inc. (REB), as one of the workforce development entities facilitating and coordinating career awareness programs for middle and high school students in the Region, used the project deliverables and the information detailed in **The Final Report** as the platform for its continued work in partnering with the regional advanced manufacturing companies to implement career awareness programs for parents, educators, and students during the 2015-2016 school year.

Building sustainable industry-education partnerships that are focused on results and measurable outcomes is critical for implementing successful career awareness programs. The Amp-It-Up Advanced Manufacturing Career Awareness Program clearly strengthened this relationship and provided a unique opportunity for sustaining this industry-education partnership moving forward.

The Final Report can be viewed on the web site of the Regional Employment Board of Hampden County Inc. at www.rebhc.org

CONTACT INFORMATION

For additional information on **The Final Report**, please contact David M. Cruise at 413-755-1362 or dcruise@rebhc.org. For information on the Massachusetts Development Finance Agency, please visit their web site at <http://www.massdevelopment.com/>



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I. Industry Sector Profile

Technology enabled advanced manufacturing is one of the most important industry clusters in the Pioneer Valley and Massachusetts. The advanced manufacturing cluster in the Pioneer Valley Region is led by the Western Massachusetts Chapter of the National Tooling and Machining Association (WMNTMA) - www.wmntma.org.

Currently, there are 7,884 employees working in 293 advanced manufacturing companies in the Region. The regional companies are part of a supply chain for prime contractors, original equipment manufacturers (OEMs), and systems integrators that persistently demand that their suppliers maintain exacting quality standards at competitive and reduced pricing. A major new shift for businesses in this sector is the insistence that their supply chain become a value chain, accomplishing more value-added tasks, including assembly and final product work.

The WMNTMA, as the established industry association representing the regional advanced manufacturing companies, has adopted the following strategic goals for FY 2016 to reflect the realities of the present marketplace. These goals frame the regional sector companies strategic focus, guide their engagement in regional workforce and capacity building initiatives, and help broaden, strengthen, and sustain the partnership.

1. Build a well-educated, technologically skilled and highly adaptable STEM workforce
2. Strengthen Cluster Development and Increase Business Competitiveness
3. Increase industry-wide awareness of the Pioneer Valley Region as an innovative and agile high technology precision manufacturing region.
4. Transform industry capability and capacity to be innovative and improve manufacturing processes and operations

The WMNTMA was the lead partner with the Regional Employment Board of Hampden County, Inc. (REB) www.rebhc.org in the implementation of the deliverables in the Amp-it-Up Advanced Manufacturing Career Awareness Program.

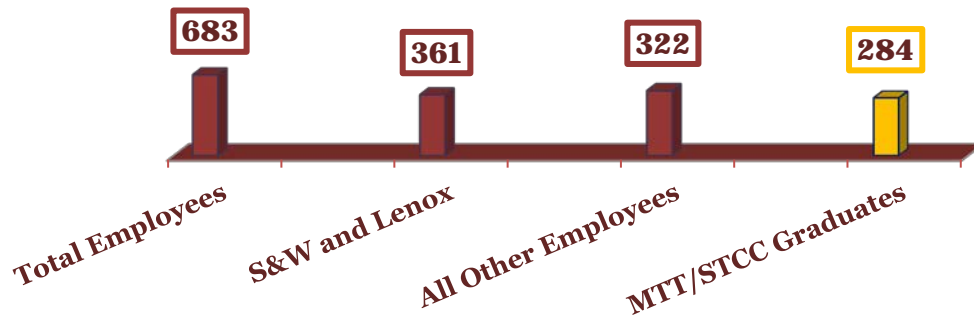
II. The Regional Industry Business Need

In July 2014, the REB's Precision Manufacturing Regional Alliance Project (PMRAP) produced the “**Workforce Development and Technology Adoption Report**”¹. The Report indicated that the companies are experiencing a critical shortage of qualified employees at the following critical junctures along their employment continuum, and this reality, above all others, is constraining their future growth and expansion.



The Report also highlighted the critical need for **683** new and replacement production employees over the time period of January 1, 2014-December 31, 2016. The educational institutions in the region project graduating **284** students during the same time period. This gap is constraining the SMEs ability to grow and remain competitive in their supply chains.

■ TOTAL Hiring- Replacement and New Production Employees



The companies also indicated that the following broad-based initiatives should be considered to strengthen advanced manufacturing as a critical industry sector in the Pioneer Valley Region and in the Commonwealth. The need for Programs to Increase School, Student, and Parent Awareness of Careers in Advanced Manufacturing is a key priority of the regional sector companies. This business need was a critical driver in the design and implementation of the Amp-It-Up Advanced Manufacturing Career Awareness project and was the platform for the execution of our project deliverables.

Initiative	Priority
State-Wide Marketing Campaign to Promote Precision Manufacturing Industry	3
Development of a Coordinated Applicant Referral System	
Continued Alignment of the Educational/Training Infrastructure and Programs with Industry Needs	1
Expanded Professional Development/Continuous Improvement Programs for Incumbent Employees	
Programs to Increase School, Student, and Parent Awareness of Careers in Precision Manufacturing	2

The companies also indicated that the following broad-based initiatives should be considered to strengthen advanced manufacturing as a critical industry sector in the Pioneer Valley Region

¹ Workforce Development and Technology Adoption Report- Precision Manufacturing Regional Alliance Project (PMRAP) -July 2014

III. Project Deliverables

A. Advanced Manufacturing Career Awareness Day

The REB, the WMNTMA, and the participating middle schools in the region partnered to implement **Advanced Manufacturing Career Awareness Day**. On June 3, 2015, **136, 8th grade students** who were scheduled to enroll as 9th grade students in the vocational technical/comprehensive high school in their respective school districts in September 2015 participated in Advanced Manufacturing Career Awareness Day.

The 8th grade students came from eight (8) middle schools in the following school districts in the Region:

1. **Springfield**
2. **Holyoke**
3. **Westfield**

Middle Schools	Company	No. of Students
Springfield Public Schools		
Chestnut Accelerated Middle School	WGI	20
Forest Park Middle School	Barnes Aerospace	20
Van Sickle Middle School	Smith & Wesson	10
Kiley Middle School	Hoppe Technologies	18
Kennedy Middle School	Ben Franklin Design & Manufacturing	26
Holyoke Public Schools		
Peck Full Service Community School	Universal Plastics	15
Westfield Public Schools		
Westfield Middle School-North	Advance Manufacturing	14
Westfield Middle School-South	B&E Precision Aircraft Components	13
TOTAL		136

Each of the 8 middle schools was partnered with an advanced manufacturing company and on June 3, 2015, 136, 8th grade students from the 8 middle schools, accompanied by teachers and guidance counselors, spent the morning visiting their partner company. The visit included a presentation by company management, company videos, tours of the company, discussion with employees, and where possible, opportunities for students to engage in non-hazardous hands-on manufacturing operations.

Advanced Manufacturing Career Awareness Day familiarized the students with the actual work that is performed in an advanced manufacturing company, provided students with information that they can share with their parents, and provided the teachers/guidance counselors with career information that they can reinforce with the students in preparation for their transition to high school in September 2015.

B. Pathways to Prosperity Program - Advanced Manufacturing (Gr.9-14)

The Pathways to Prosperity Program-Advanced Manufacturing (Gr. 9-14) began in September 2013 and its implementation is being facilitated by the REB. West Springfield High School (WSHS) is partnering with Springfield Technical Community College (STCC), West Springfield based advanced manufacturing companies, other regional advanced manufacturing companies, area companies who provide direct services to the regional advanced manufacturing companies, and the REB, to conduct the Pathways to Prosperity Program-Advanced Manufacturing.

The following companies and organizations are partners in the implementation of the Pathways to Prosperity Program-Advanced Manufacturing.

- ✦ Advance Welding
- ✦ Ben Franklin Design & Manufacturing
- ✦ Hayden Corporation
- ✦ Atlantic Fasteners
- ✦ Bates Fullam Insurance Agency
- ✦ Eastern States Exposition
- ✦ NUVO Bank & Trust Company
- ✦ Western MA Chapter of the National Tooling & Machining Association
- ✦ Larry A Maier Memorial Education Fund
- ✦ MA Center for Advanced Design and Manufacturing

The program is in Year 3 of implementation and has developed a Grade 9-14 career pathway system that has enrolled eighty (80), 9th, 10th, 11th grade students at West Springfield High School. The program's goal is to ensure that the participating students graduate high school, successfully transition to Springfield Technical Community College, earn an Associate degree/certificate in Mechanical Engineering Technology, and obtain a career employment position in advanced manufacturing.



The goals of the Pathways to Prosperity Program-Advanced Manufacturing are as follows:

1. Strengthen the educational program at WSHS.
2. Engage West Springfield based advanced manufacturing companies and other advanced manufacturing companies in a partnership with WSHS.
3. Provide participating students with opportunities to be exposed to careers in advanced manufacturing through job shadowing, internships and summer and part-time employment.
4. Respond to the future workforce needs of the regional advanced manufacturing companies.
5. Contribute to the on-going economic development of the Region.

In Year 3, we wanted to expose the Pathway students to careers in the engineering phase of advanced manufacturing by having the students visit a baccalaureate degree program at a Massachusetts based four year public institution. We took fifteen (15) students to UMass-Dartmouth and to see first-hand the research and related engineering activities in the College

and to discuss the importance of their high school mathematics, science, and technology courses as core requirements for a successful transition to an engineering degree program.

The REB used the funding from the Amp-it-Up grant to pay the cost of transporting the students from WSHS to UMass Dartmouth.

IV. Match Funding and In-Kind Contributions

The regional advanced manufacturing companies partnering in the Amp-It-Up Advanced Manufacturing Career Awareness Program provided significant in-kind contribution of time conducting the Manufacturing Career Awareness Day. Many of the companies have continued their engagement with their respective schools starting in September 2014. Companies are working with the Machine Tool Technology program department chairs to promote advanced manufacturing to students, teachers, counselors, parents and family members.

The following is a break out of the match funds and in-kind contribution from the companies and other partners who participated in the Middle School Career Awareness Day on June 3, 2015 and the Pathways to Prosperity program:

AMP-It-Up Deliverable: Advanced Manufacturing Career Awareness Day		
No. of Partnering Companies	No. of Hours	In-Kind Contribution@\$100.00/Hour
8	36	\$3,600
AMP-It-Up Deliverable: Pathways to Prosperity Program-Advanced Manufacturing		
No. of Partnering Companies/UMass Dartmouth	No. of Hours	In-Kind Contribution@\$100.00/Hour
6/1	25	\$2,500
TOTAL MATCH		\$6,100

In addition to the match funds and the private sector in-kind match from the partnering advanced manufacturing companies, the REB provided cash match of **\$3,593** to support the salary and fringe benefits of the part-time Amp-It-Up Project Coordinator.

V. Outcomes and Economic Benefits

The REB is confident that the activities conducted in the Amp-It-Up Advanced Manufacturing Career Awareness Program produced the following outcomes and economic benefits:

1. Advanced manufacturing companies increased new pipeline talent development by accelerating early engagement with 8th grade middle school students and 9th, 10th, 11th grade students from West Springfield High School.
2. Advanced manufacturing companies enhanced competitiveness by developing long term strategy to respond to future workforce needs.
3. Middle schools and West Springfield High School strengthened partnerships with a broad network of regional advanced manufacturing companies.

4. Parents become aware of and knowledge about educational and career pathways in advanced manufacturing, and are better prepared to provide informed decision-making and guidance to their middle school and high school student.
5. Middle school students obtained information on careers in advanced manufacturing that assisted them in making more informed decisions on their choice of which vocational technical program to pursue in high school.
6. WSHS students in the Gr-9-14 Pathways to Prosperity Program-Advanced Manufacturing were exposed to the requirements for a baccalaureate degree engineering pathway and the importance of completing STEM related courses in high school.

VI. Lessons Learned

The following lessons learned from the successful implementation of the Amp-It-Up Advanced Manufacturing Career Awareness Program may provide guidance to similar career awareness initiatives designed to promote awareness of advanced manufacturing as a viable and financially rewarding career pathway.

A. Industry Engagement and Leadership

Programs that are industry-led and represent broad sectors of the industry have a much better chance of succeeding and meeting the needs of industry, the schools, and the students. The Amp-It-Up Advanced Manufacturing Career Awareness Program made broad industry engagement and industry-driven leadership a critical part of its work. Industry and leadership engagement occurred in several important ways:

- ✚ Working with a local industry association can add significant value in the design and implementation of a career awareness and exploratory program. The Western Mass Chapter of the National Tooling and Machining Association (WMNTMA) continues to be the institutional catalyst for securing the broader industry's involvement and buy-in. Partnering with the leadership of the WMNTMA continues to be critical to the success of the Amp-It-Up Advanced Manufacturing Career Awareness Program delivery model.
- ✚ Conducting public and press related events connected with career awareness events and activities directly at manufacturing companies is a constructive way to solidify company engagement and support.

B. Data Collection and Analysis

The availability of real-time industry data continues to be a critical factor in program planning and implementation. The REB and its industry partners used data from a 2014 industry survey and focus groups to design and implement the deliverables in the Amp-It-Up Advanced Manufacturing Career Awareness Program.

C. Partnership Development

Building sustainable partnerships that are focused on results and measurable outcomes is critical for implementing successful career awareness programs. The regional industry's ongoing relationship with the eight (8) vocational technical/comprehensive high schools and

their sending middle schools allowed the Amp-It-Up Advanced Manufacturing Career Awareness Program to successfully implement its objectives. The Amp-It-Up program strengthened this relationship and provided a unique opportunity for sustaining this industry-education partnership moving forward.

D. Leveraged Investment

Leveraging investment from other funding sources and bundling funding to increase program capacity, strengthen instructional curriculum and accelerate student exposure to industry requirements and practices, should always be explored and, if available, should be strategically used to add-value to the program.

VII. Budget

The original Budget and Budget narrative, including information on the project match, is contained in Attachment 1.

EXHIBIT A

FINAL CERTIFICATION

I certify that I have reason to know of the status of completion of the work for the Project described in the Grant Agreement dated as of March 21, 2016 between **Regional Employment Board of Hampden County, Inc. (“Grantee”)** and **Massachusetts Development Finance Agency** and certify that the Project identified in the Grant Agreement has been substantially completed.

I further certify that the Grant Amount of \$8,633 has been spent on the Project pursuant to the budget for the Project identified in Grantee’s Proposal. I further certify that the required match of \$9,693 either matching funds or in-kind service was contributed to the Project.

A copy of the Final Report required by the Grant Agreement is attached as Schedule A hereto.

Dated: March 21, 2016

**REGIONAL EMPLOYMENT BOARD
OF HAMPDEN COUNTY, INC.**

By: _____

Name: David M. Cruise

Title: President/CEO

Attachment 1

AMP-it- Up Budget

Applicant:		Regional Employment Board of Hampden County, Inc.				
Project Title:		Advanced Manufacturing Career Awareness Program				
I. a. Direct Labor						
<i>name/title</i>	<i># of hours</i>	<i>rate/hr</i>	Grant Amount	Match Amount	Total Project cost	
Part Time Project Coordinator- 6 months- (.1 FTE)- Coordinate Project Work Tasks	97.49	\$28.25	\$2,754	\$2,754	\$5,508	
	0	\$0	\$0	\$0	\$0	
Total Direct Labor			\$2,754.00	\$2,754.00	\$5,508	
I. b. Direct Benefits/Fringe Costs						
Rate 23 % (% of Direct Labor)			\$633.00	\$633.00	\$1,266	
II. General & Administrative Overhead						
Rate 7.5 % (% of Direct Labor):			\$206.00		\$206.00	
III. Subcontractors/Consultants						
Middle School Career Awareness- Four (4) School District Transportation Companies	11 Round Trips	\$210	\$2,310	\$3,300	\$5,610	
Pathways to Prosperity- West Springfield High School Transportation	7 Round Trips	\$390	\$2,730	\$2,800	\$5,530	
Total Subcontractors/Consultants			\$5,040	\$6,100	\$11,140	
IV. Direct Materials						
Total Direct Materials			\$0	\$0	\$0	
Total Cost of Project			\$8,633.00	\$9,487.00	\$18,120.00	

Amp-It-Up

Advanced Manufacturing Career Awareness Program

Budget Narrative

Supporting Schedule - Budget Form		
Budget Category/Line Item	Additional Description/Basis of Cost	Amount
I-a Direct Labor	<p>Part Time Project Coordinator -6 Months- (.1 FTE) – Coordinate Project Work Tasks. 97.49 Hours @ \$28.25/Hr. = \$2,754</p> <p>Cash Match- Part Time Project Coordinator -6 Months- (.1 FTE) – Coordinate Project work Tasks. 97.49 Hours @ \$28.25/Hr. = \$2,754</p>	\$5,508
I-b Direct Benefits/ Fringe Costs	<p>Part Time Project Coordinator -6 Months- (.1 FTE) @ 23% Fringe Benefits = \$633</p> <p>Cash Match - Part Time Project Coordinator -6 Months- (.1 FTE) @ 23% Fringe Benefits = \$633</p>	\$1,266
II- General and Administrative Overhead	<p>REB Administrative Costs Computer, telephone, financial reporting costs. 7.5% of Direct Labor only costs.</p> <p>\$2,754 x 7.5%- \$206</p>	\$206
III- Subcontractors/Consultants	<p>School District Transportation Companies <u>Middle School Career Awareness Program</u></p> <p>Four (4) In-District Transportation companies to transport 160, 8th grade students from 11 middle schools to precision manufacturing companies on Advanced Manufacturing Career Awareness Day.</p> <p>\$210.00 @ 11 middle schools = \$2,310</p> <p>In-Kind Match- 11 partnering companies at \$100/ Hr. for 3 hours each company for Career Awareness Day. = \$3,300</p>	\$5,610
III- Subcontractors/Consultants	<p>School District Transportation Companies <u>Pathways to Prosperity Advanced Manufacturing Program</u></p> <p>West Springfield High School In-District Transportation company to transport 36, Pathway students to OEMs and institutions of higher education.</p> <p>\$390.00 @ 7 round trip tours/visits = \$2,730</p> <p>In-Kind Match-partnering companies, educational institutions at \$100/ Hr. for 28 total hours each = \$2,800</p>	\$5,530
TOTAL		\$18,120



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