

Advanced Manufacturing Partnership Program

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Advanced Manufacturing Partnership

Launched June 24, 2011

National effort to bring together the Federal government, industry, universities and other stakeholders to identify & invest in emerging technologies with the potential to create high-quality domestic manufacturing jobs & enhance the global competitiveness of United States



Advanced Manufacturing Partnership

- **Co-Chairs**

1. Susan Hockfield (MIT)
2. Andrew Liveris (Dow)

- **Steering Committee**

1. Carnegie Mellon, Georgia Tech, Michigan, MIT, Stanford, UC-Berkeley
2. Allegheny Technology, Caterpillar, Corning, Dow, Ford, Honeywell, Intel, Johnson & Johnson, Northrup Grumman, Procter & Gamble, Stryker, United Technologies
3. DARPA, DOE, NIST, NSF, OSTP, PCAST



Objectives

AMP Mission Statement

The Advanced Manufacturing Partnership identifies collaborative opportunities between industry, academia and government that will catalyze development and investment in emerging technologies, policies, and partnerships with the potential to transform and reinvigorate advanced manufacturing in the U.S.

AMP Outcomes

1. Develop a permanent model for evaluating, prioritizing, and recommending federal investments in advanced manufacturing technologies
2. Recommend a set of 'partnership projects', focused on advancing high-impact technologies and creating models for collaboration that encompass technology development, innovation infrastructure, and workforce development
3. Provide recommendations to the Administration on the actions required to support investment in advanced manufacturing in the U.S.

AMP Work Streams

- Technology Development
- Shared Infrastructure and Facilities
- Policy
- Education and Workforce Development
- Communications and Outreach

Advanced Manufacturing Technology Development

- **Objective:** Identify and develop emerging technologies with transformative potential with the express intent that they be commercialized and deployed in the U.S.
- **Industry Lead:** Honeywell
- **University Lead:** University of California Berkeley
- **White House Contact:** Chuck Thorpe, OSTP

Advanced Manufacturing Technology Development

- Via surveys and regional meeting feedback, identify the key areas of greatest interest & need
- Prioritize the key areas with respect to significance to U.S. industry and potential for added value from AMP
- Develop a process for regular review

Shared Infrastructure and Facilities

- **Objective:** Assess opportunities to de-risk, scale up and lower the cost of accelerating technology from research to production through unique capabilities and facilities that serve all U.S. based manufacturers, in particular small and medium sized manufacturers
- **Industry Lead:** Caterpillar
- **University Lead:** The University of Michigan
- **White House Contact:** David Hart, OSTP

Shared Infrastructure and Facilities

- Benchmark existing infrastructures, virtual and physical, in the U.S. and abroad. Collect information using benchmarking metrics
- Synthesize information and identify go forward recommendations:
 - Advanced Manufacturing Innovation Institutes
 - Digital manufacturing infrastructure
 - A national data base for shared infrastructure and facilities
- Engage other workstreams to determine match of such infrastructure models for supporting the developments of key technologies and a skilled workforce

Policy

- **Objective:** Make recommendations to the Administration on economic and innovation policies that can directly or significantly impact the ability to improve research collaboration and the pathway to commercialization in support of U.S. based manufacturing and jobs
- **Industry Lead:** Stryker
- **University Lead:** Carnegie Mellon University
- **White House Contact:** Jason Miller, NEC

Policy

- Develop recommendations that can have a significant impact on improving the overall climate for investment in advanced manufacturing
 - Tax, Trade & Regulatory Reform
- Recommend policy actions and practices that will reinvigorate collaborations among universities and industry toward more rapid development and deployment of advanced manufacturing technologies
 - IP protection, tech transfer, master agreements

Education and Workforce Development

- **Objective:** Identify tangible actions that AMP can implement to support a robust supply of talented individuals to provide human capital to companies interested in investing in advanced manufacturing activities in the U.S.
- **Industry Lead:** Allegheny
- **University Lead:** Stanford
- **White House Contact:** David Hart, OSTP

Education and Workforce Development

- Initial focus of effort on **community colleges, with improvements at the university level**
 - A large pool of manufacturing talent
 - Can spur significant changes in the workforce near-term
 - Many existing examples of company/community college partnerships
- **Partnership models to improve training and curricula in high schools, community colleges, and universities**
 - Includes apprenticeships and internships as valuable skill building opportunities
 - Project-based instruction is extremely effective at preparing employees for real jobs in real environments, and should be promoted
- **Effort to improve the image of manufacturing among the public**
- **Veterans education, certification & work program**

Process to Date

- Work Streams
- Regional Meetings
- Additional Outreach

'Top Line' Recommendations

- Improve Image of Manufacturing
- Employer Driven Workforce Development at Community Colleges
- Advanced Manufacturing Innovation Institutes
- Leading Technology Domains Identified
 - Advanced Sensors, Measurement & Process Control
 - Advanced Materials Design & Processing
 - Information Technologies
 - Energy Efficient Processes
 - Nano-Manufacturing
- Tax, Trade & Regulatory Enhancements Required for Investment
- Enable Enhanced University-Industry Collaborations for Technology Advancement
- Develop Robust Regional & State Engagement in Advanced Manufacturing

Next Steps and Timeline

- Next Steps
 - Refine recommendations
 - Launch verticals
 - Develop cross-cutting recommendations
- Timeline
 - Co-Lead Meeting (week of February 10)
 - Work Stream Final Reports (March 1)
 - Steering Committee Meeting (March 7)
 - AMP Final Report – First Draft Complete (March 15)