Advanced Manufacturing Partnership 2.0

PCAST Meeting

September 19, 2014

Motivation:
U.S Manufacturing Competitiveness

- The U.S. has been the leading producer of manufactured goods for more than 100 years.

- Manufacturing drives knowledge production and innovation in the United States by supporting two-thirds of private sector research and development and by employing the vast majority of U.S. scientists, engineers, and technicians to invent and produce new products.

- Strengths in manufacturing innovation and technologies that have sustained American leadership in manufacturing are under threat from new and growing competition abroad.

AMP2.0 Steering Committee

Andrew Liveris (Co-Chair), President, Chairman & CEO, The Dow Chemical Company

Rafael Reif (Co-Chair), President, Massachusetts Institute of Technology

***Shirley Ann Jackson* (PCAST member)**, President, Rensselaer Polytechnic Institute

Wes Bush, Chairman, CEO and President, Northrop Grumman

Mark Schlissel, University of Michigan

David Cote, CEO, Honeywell

Nicholas Dirks, Chancellor, University of California, Berkeley

Kenneth Ender, President, Harper College

Leo Gerard, International President, United Steelworkers

Eric Kelly, President & CEO, Overland Storage, INC

Klaus Kleinfeld, Chairman & CEO, Alcoa, INC

Ajit Manocha, CEO, Global Foundaries

Douglas Oberhelman, CEO, Caterpillar, INC

Annette Parker, President, South Central College

G.P. "Bud" Peterson, President, Georgia Institute of Technology

Luis Proenza, President, The University of Akron

Eric Spiegel, President & CEO, Siemens Corporation

Mike Splinter, Executive Chairman of the Board, Applied Materials, INC

Christie Wong Barrett, CEO, Mac Arthur Corporation

AMP2.0: Three Pillars

AMP2.0 built upon the three pillars established two years ago:

(1) Enable Innovation
(2) Secure the Talent Pipeline
(3) Improve the Business Climate

The goal was to carry out the vision set out in 2012 for the private sector and recommend paths that will generate future U.S. innovation in critical emerging manufacturing technologies.

AMP2.0: Reach-Out Events

AMP2.0 held five regional workshops across the country in 2014.

February 3, 2014	Atlanta, GA	Georgia Institute of Technology
April 2, 2014	Akron, OH	University of Akron, United Steelworkers
April 24, 2014	Troy, NY	Rensselaer Polytechnic Institute, Global Foundries
May 16, 2014	Cambridge, MA	MIT, Commonwealth of Massachusetts
June 9, 2014	Detroit, MI (with “Big M” manufacturing meeting)	University of Michigan, Northrup Grumman

AMP2.0 Recommendations

Pillar 1: ENABLING INNOVATION

- **Recommendation #1**: Establish a **national strategy** for securing U.S. advantage in emerging manufacturing technologies with a specific national vision and set of coordinated initiatives across the public and private sectors and all stages of technology development. This should include **prioritized manufacturing technology areas** of national interest, leveraging the technology prioritization and analysis process developed by the Advanced Manufacturing Partnership, and should facilitate management of the portfolio of advanced manufacturing technology investments.

- **Recommendation #2:** Create an **Advanced Manufacturing Advisory Consortium** to provide coordinated private-sector input on national advanced manufacturing technology research and development priorities.

AMP2.0 Recommendations

Pillar 1: ENABLING INNOVATION

- **Recommendation #3:** Establish a new public-private manufacturing research and development infrastructure to support the innovation pipeline, which complements Manufacturing Innovation Institutes at earlier and later technology maturation stages, through the creation of **manufacturing centers of excellence** (MCEs) and **manufacturing technology testbeds** (MTTs) to provide a framework that supports manufacturing innovation at different stages of maturity and allows small and medium-sized enterprises to benefit from these investments.

- **Recommendation #4:** Develop processes and standards enabling **interoperability** of manufacturing technologies; **exchange** of materials and manufacturing process information; and **certification** of cybersecurity processes for developers of systems.

AMP2.0 Recommendations

Pillar 1: ENABLING INNOVATION

- **Recommendation #5:** Create – through the National Economic Council, the Office of Science and Technology Policy, and the implementing agencies and departments – a shared National Network for Manufacturing Innovation **(NNMI) governance structure** that can ensure a return on investment for the NNMI's many stakeholders by including input from various agencies as well as private sector experts, organized labor and academia.

AMP2.0 Recommendations

Pillar 2: SECURING THE TALENT PIPELINE

- **Recommendation #6: Launch a national campaign to change the image of manufacturing**, and support National Manufacturing Day's efforts to showcase real careers in today's manufacturing.

- **Recommendation #7: Incent private investment in the implementation of a system of nationally recognized, portable, and stackable skill certifications** that employers utilize in hiring and promotion, by providing additional funds that build on investments being made through the Department of Labor and Department of Education Trade Adjustment Assistance Community College and Career Training (TAACCCT).

AMP2.0 Recommendations

Pillar 2: SECURING THE TALENT PIPELINE

- **Recommendation #8:** Make the development of **online training and accreditation programs eligible to receive federal support**, for example through federal jobs training programs.

- **Recommendation #9**: **Curate the documents, toolkits and playbooks** that have been created by AMP2.0 to further scale and replicate these important talent development opportunities, via the Manufacturing Institute.

AMP2.0 Recommendations

Pillar 3: IMPROVING THE BUSINESS CLIMATE

- **Recommendation #10**: Leverage and coordinate existing federal, state, industry group and private intermediary organizations to **improve information flow** about technologies, markets and supply chains **to small and medium-sized manufacturers**.

- **Recommendation #11**: Reduce the risk associated with scale-up of advanced manufacturing by **improving access to capital** through the creation of a public-private scale-up investment fund; the improvement in information flow between strategic partners, government and manufacturers; and the use of tax incentives to foster manufacturing investments.

AMP2.0 Recommendations

IMPLEMENTATION

- **Recommendation #12**: The National Economic Council (NEC) and the Office of the Science and Technology Policy (OSTP), within 60 days, should **submit to the President** a set of recommendations that specify: (1) **the ongoing EOP role** in coordinating the federal government's advanced manufacturing activities; and (2) **clear roles and responsibilities for Federal agencies and other Federal bodies** in implementing the above recommendations.