Private-Public Partnerships for U.S. Advanced Manufacturing

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U.S. Trade Balance of Advanced Technology

- 11% of U.S. GDP
- 12 million U.S. jobs
- ~ half of U.S. Exports

(U.S. Trade Balance Advanced Technology Manufacturing Products

Source: Census Bureau)
Two key AMNPO initiatives are

- NNMI – National Network for Manufacturing Innovation
- AMP – Advanced Manufacturing Partnership
Interagency Advanced Manufacturing National Program Office (AMNPO)

Executive Office of the President

Advanced Manufacturing Partnership (AMP / PCAST)

Advanced Manufacturing National Program Office (housed at DOC - NIST)
NNMI
National Network for Manufacturing Innovation
The Missing Middle, or the “Valley of Death”

US is envy of the world in invention and innovation

Private sector adept at commercialization

Gap in Manufacturing Innovation

Government & Universities

Private Sector

Investment

Basic research / manuf. processes / mass production

1 2 3 4 5 6 7 8 9

“Technology Readiness Level” or “TRL”
Institute Design

Academia
- Universities
- Community Colleges

Government
- Federal Government
- State/Local Government
- Economic Development Organization

Industry
- Large Manufacturing Companies
- Small & Medium Enterprise (SMEs)
- Start-ups

Network of IMIs

Institute for Manufacturing Innovation
- Prototype lab/shops
- Research facility
- Computer lab

Shared Use Facility
- Mfg. Demonstrations
- Workforce Development

Advanced Manufacturing National Program Office
Our first priority is making America a magnet for new jobs and manufacturing. And I ask this Congress to help create a network of fifteen of these hubs and guarantee that the next revolution in manufacturing is Made in America.

In the interim:
- DOE, DOD → Three institutes, awarded in early 2014
- $200 M federal investment over five years
“In my State of the Union Address, I also asked Congress to build on a successful pilot program and create 15 manufacturing innovation institutes that connect businesses, universities, and federal agencies to turn communities left behind by global competition into global centers of high-tech jobs.

“Today, I’m asking Congress to build on the bipartisan support for this idea and triple that number to 45 – creating a network of these hubs and guaranteeing that the next revolution in manufacturing is Made in America.”

July 30, 2013

**With Congressional Legislation**

- Open competition on **ANY** topic proposed by Industry and Academia
- Selection of topics made on merit
- Let best proposals of greatest impact to US industry move ahead
- Institutes by Administrative Action limited to topics Federal agencies need
- **Revitalize American Manufacturing & Innovation Act of 2013**
NNMI Bipartisan/Bicameral Legislation

Revitalize American Manufacturing & Innovation Act of 2013

Lead Sponsors

Sen. Sherrod Brown  
D Ohio

Sen. Roy Blunt  
R Missouri

Rep. Tom Reed  
R NY-23

Rep. Joe Kennedy  
D MA-4

Senate Commerce Committee Hearing Nov. 13, 2013

House Science Committee, Subcommittee on Research & Technology Hearing, Dec. 12 2013
AMP
Advanced Manufacturing Partnership

PCAST Body, reports to the President, Staffed by AMNPO
AMP Mission and Results

AMP Mission:

- Encourage approaches that sustain and grow U.S. leadership in advanced manufacturing, making the U.S. a magnet for jobs and investment; fostering broad, long-term collaboration among industry, academia, and government partners to drive advances in U.S. innovation and workforce capabilities.

Inaugural AMP achievements:

- Issued 16 recommendations across:
  - Enabling innovation
  - Securing the talent pipeline
  - Improving the business climate
- Spurred critical national initiatives, including the National Network for Manufacturing Innovation (NNMI)
Advanced Manufacturing Partnership

AMP Co-chairs
Andrew Liveris  
CEO, Dow Chemical

Susan Hockfield  
President, MIT

PCAST / AMP report released July 17, 2012 on whitehouse.gov
• 16 Recommendations in three areas: innovation, talent, and policy

Two early actions announced by Administration:
1) Coordinated “whole of government” effort via Advanced Manufacturing National Program Office

2) Pursue the “missing middle” via manufacturing innovation hubs
Launch of AMP 2.0

- AMP 2.0 kickoff Sept 30, 2013
  - First face-to-face at White House – Nov 12 2013
    - Short “letter-reports” on implementation topics
  - Regional engagement and outreach sessions to source input and highlight
  - Implementation on national initiatives

- AMP Coordinating Group (DOW, MIT, WHO, AMNPO)

- Five Working Teams established
AMP 2.0 Steering Committee

19 Leaders from Industry, Academia and Labor

Steering Committee Co-Chairs
- Rafael Reif
  President
  MIT
  Massachusetts Institute of Technology
- Andrew Liveris
  President, Chairman & CEO
  Dow

Leo Gerard
International President
United Steelworkers
USW
METALLOS

Ajit Manocha
CEO
United Foundries

Douglas Oberhelman
Chairman and CEO
Caterpillar

Annette Parker
President
South Central College

G.P. “Bud” Peterson
President
G.P. “Bud” Peterson

Wesley Bush
CEO and President
Northrop Grumman

Mary Sue Coleman
President
Michigan

David Cote
Chairman and CEO
Honeywell

Nicholas Dirks
Chancellor
Berkeley

Kenneth Ender
President
Harper College

Eric Kelly
President and CEO
Rensselaer

Eric Spiegel
President and CEO
University of Akron

Luis Proenza
President
University of Akron

Mike Splinter
Executive Chairman of the Board
Applied Materials

Christie Wong Barrett
CEO
MacArthur Foundation
AMP 2.0 Work Teams Focus

Team 1: Technologies

Launching public-private initiatives to advance transformative manufacturing technologies:

- Deploy small expert working teams against two to four of the technologies identified in the initial AMP SC report, with the goal of assessing actions and developing technology strategies for sustained U.S. leadership.

Team 2: Workforce

Scaling best-in-class demand-driven workforce solutions to develop technical skills:

- Identify the characteristics of successful partnerships and mechanisms to rapidly scale demand-driven workforce solutions in areas of critical skills need; and identify private sector and federal resources to leverage behind these solutions.

Team 3: NNMI

Supporting implementation of the National Network for Manufacturing Innovation (NNMI):

- Provide input on the implementation of the NNMI to ensure that the Institutes and the Network are appropriately geared towards industry needs and that core implementation issues are addressed.
AMP 2.0 Work Teams Focus (continued)

Addressing core advanced manufacturing policy questions related to new technologies:

- Core manufacturing questions have been identified that currently lack clear solutions. Investigate potential solutions to one to two of these central questions, for example:
  - Solutions to unique barriers that inhibit young firms from scaling new technologies in the U.S.
  - Challenges to rapidly deploying new technologies and processes across the U.S. supply chain

Driving excitement and engagement from the science and engineering community:

- Spearhead initiatives to implement the AMP 1.0 Manufacturing Image recommendations, which could include hosting a possible national advanced manufacturing innovation summit and public awareness campaign.
Thank you

www.manufacturing.gov