National Network for Manufacturing Innovation (NNMI) - Overview
The Administration’s Continuing Focus on Advanced Manufacturing

June 2011
REPORT TO THE PRESIDENT ON ENSURING AMERICAN LEADERSHIP IN ADVANCED MANUFACTURING
Executive Office of the President
President’s Council of Advisors on Science and Technology
JUNE 2011

February 2012
A NATIONAL STRATEGIC PLAN FOR ADVANCED MANUFACTURING
Executive Office of the President
National Science and Technology Council
FEBRUARY 2012

July 2012
REPORT TO THE PRESIDENT ON CAPTURING DOMESTIC COMPETITIVEAdvantage in Advanced Manufacturing
Executive Office of the President
President’s Council of Advisors on Science and Technology
JULY 2012

January 2013
NATIONAL NETWORK FOR MANUFACTURING INNOVATION: A PRELIMINARY DESIGN
Executive Office of the President
National Science and Technology Council
Advanced Manufacturing National Program Office
JANUARY 2013

January 2013
Jan 2014
Feb 2014
Building the National Network for Manufacturing Innovation (NNMI)

“institutes of manufacturing excellence where some of our most advanced engineering schools and our most innovative manufacturers collaborate on new ideas, new technology, new methods, new processes.” President Obama, March 2012

FY15 – Revitalizing American Manufacturing Initiative (RAMI) Brown & Blunt (Senate), Reed & Kennedy (House)
Authorized Department of Commerce, NIST, Advanced Manufacturing Program Office as conveners of the NNMI
National Network for Manufacturing Innovation (NNMI)

“institutes of manufacturing excellence where some of our most advanced engineering schools and our most innovative manufacturers collaborate on new ideas, new technology, new methods, new processes.”

• Vision for up to 45 institutes of manufacturing innovation
• FY15 – Revitalizing American Manufacturing Initiative (RAMI) (Department of Commerce), Brown & Blunt (Senate), Reed & Kennedy (House)
• Close the gap between R&D and deployment of technological innovations in domestic production of goods

“We Can’t Wait” – use existing resources and authorities to demonstrate concept through a pilot institute – select competitively – fit within agencies missions

President Obama at Rolls-Royce Crosspointe
Petersburg, VA – March 9, 2012

www.manufacturing.gov
**America Makes – The National Additive Manufacturing Innovation Institute**

Est. August 2012; Hub location: Youngstown, OH  
Lead: National Center for Defense Manufacturing and Machining (NCDMM)

Regional location: “TechBelt” Cleveland to Pittsburgh Corridor

**Vision:** Accelerate additive manufacturing innovation and widespread adoption by bridging the gap between basic research and technology development/deployment.

- Headquartered in Youngstown, OH with a satellite center at the University of Texas, El Paso
- Consortium of >169 member organizations
- Technology Portfolio: X projects, $XM combined public and private funding

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Digital Manufacturing and Design Innovation Institute (DMDII)

Est.: February 2014
Lead: UI LABS
Hub location: Chicago, IL
Federal Funding: $70M
Cost Share (UILabs): $248M

**Mission:** Digitize American Manufacturing

Over 3:1 Industry Cost Share
LIFT: Lightweight Innovations for Tomorrow
(Lightweight and Modern Metals Manufacturing)

Est. February 2014
Lead: ALMMII (American Lightweight Materials Manuf. Innovation Institute)
Hub location: Detroit Metro, Michigan
Regional location: I-75 Corridor
Current number of members: 78
Federal Funding: $70M

Mission: Provide the National focus on expanding US competitiveness and innovation, and facilitating the transition of these capabilities and new technologies to the industrial base for full-scale application.

Positioned to expand the US Industrial base for new products and technologies for commercial and USG demands that utilize new, lightweight high-performing metals

Government POC: Johnnie Delaoch, johnnie.delaoch@navy.mil
Institute POC: Larry Brown, lbrown@almmii.org
Website: http://lift.technology/
American Institute for Manufacturing Integrated Photonics (“AIM Photonics”)

Est. July 2015
Lead: RF SUNY
Hub location: Albany and Rochester, NY
Federal Funding: $110 M

Objective
Develop and demonstrate innovative manufacturing technologies for:
• Ultra high-speed transmission of signals for the internet and telecommunications
• New high-performance information-processing systems and computing
• Sensors and imaging enabling dramatic medical advances in diagnostics, treatment, and gene sequencing

This Institute will focus on developing an end-to-end photonics ‘ecosystem’ in the U.S., including domestic foundry access, integrated design tools, automated packaging, assembly and test, and workforce development.

Government POCs: Neil Supola, Neil.d.supola.civ@mail.mil,
Nick Usechak, nicholas.usechak@us.af.mil
Institute POC: Michael Liehr, mliehr@sunypoly.edu
Website: http://www.aim photonics.com/

All these developments will require cross-cutting disciplines of design, manufacturing, packaging, reliability and testing.
**Flexible Hybrid Electronics**

Highly tailorable devices on flexible, stretchable substrates that combine thinned CMOS components with components that are added via “printing” processes. This technology is identified as flexible-hybrid due to integration of flexible components such as circuits, communications, sensors, and power with more sophisticated Silicon based processors.

### Commercial

- **Wearable Technologies**
- **Internet of Things**
- **Medical prosthetics, medical sensing**

### DOD Applications

- Warfighter information devices and sensors
- Unattended sensors, vehicle borne sensors
- Warfighter Training and performance monitoring. Soldier medical care

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**NextFlex – Flexible Hybrid Electronics Manufacturing Innovation Institute**

Est. August 2015

Lead: FlexTech Alliance

Hub location: San Jose, CA

Federal Funding: $75 M

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### Government POCs:
- Dr. Eric Forsythe, eric.w.forsythe.civ@mail.mil
- Ben Leever, ben.leever@us.af.mil

### Institute POC:
- Dr. Malcolm Thompson, malcolm.thompson@flextech.org

Website: http://manufacturing.gov/fhe-mii.html

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Distribution Statement A: Approved for Public Release
Revolutionary Fibers and Textiles

Advances in fiber science have created fibers with extraordinary properties of strength, flame resistance, and electrical conductivity. These ‘revolutionary’ fibers are composed of specialty fabrics, industrial fabrics, e-textiles, and advanced textiles. They are built upon a foundation of synthetic and/or multi-material fibers that have a wide-range of applications in both the defense and commercial sector that go beyond traditional wearable fabrics.

Objective:

• Serve as a public-private partnership between government, academia and industry to address manufacturing challenges from design to end products

• Support an end-to-end innovation ‘ecosystem’ in the U.S. for revolutionary fibers and textiles manufacturing and leverage domestic manufacturing facilities to develop and scale-up manufacturing processes

• Provide rapid product realization opportunities, based on robust design and simulation tools, pilot production facilities, a collaborative infrastructure with suppliers, and workforce development opportunities through targeted training and curriculum programs

Government POC: Steve Luckowski, stephen.l.luckowski.civ@mail.mil
Website: http://manufacturing.gov/rft-mii.html

Transportation – Covers and Airbags  Geosynthetics – Construction

Military and Commercial Shelters

Military and Commercial Smart Clothing