

# New Directions – Input into Manufacturing USA’s Future UIDPVirtual 2020

Mike Molnar, NIST  
March 23, 2020

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virtual

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MARCH 23-26



**Mike Molnar**  
**Manufacturing USA (NIST)**  
*New Directions: Input into  
Manufacturing USA's Future*

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# New Directions – Input into Manufacturing USA’s Future

March 23, 2020  
Mike Molnar, Director

Advanced Manufacturing National Program Office, NIST

An interagency team building partnerships with U.S. industry and academia

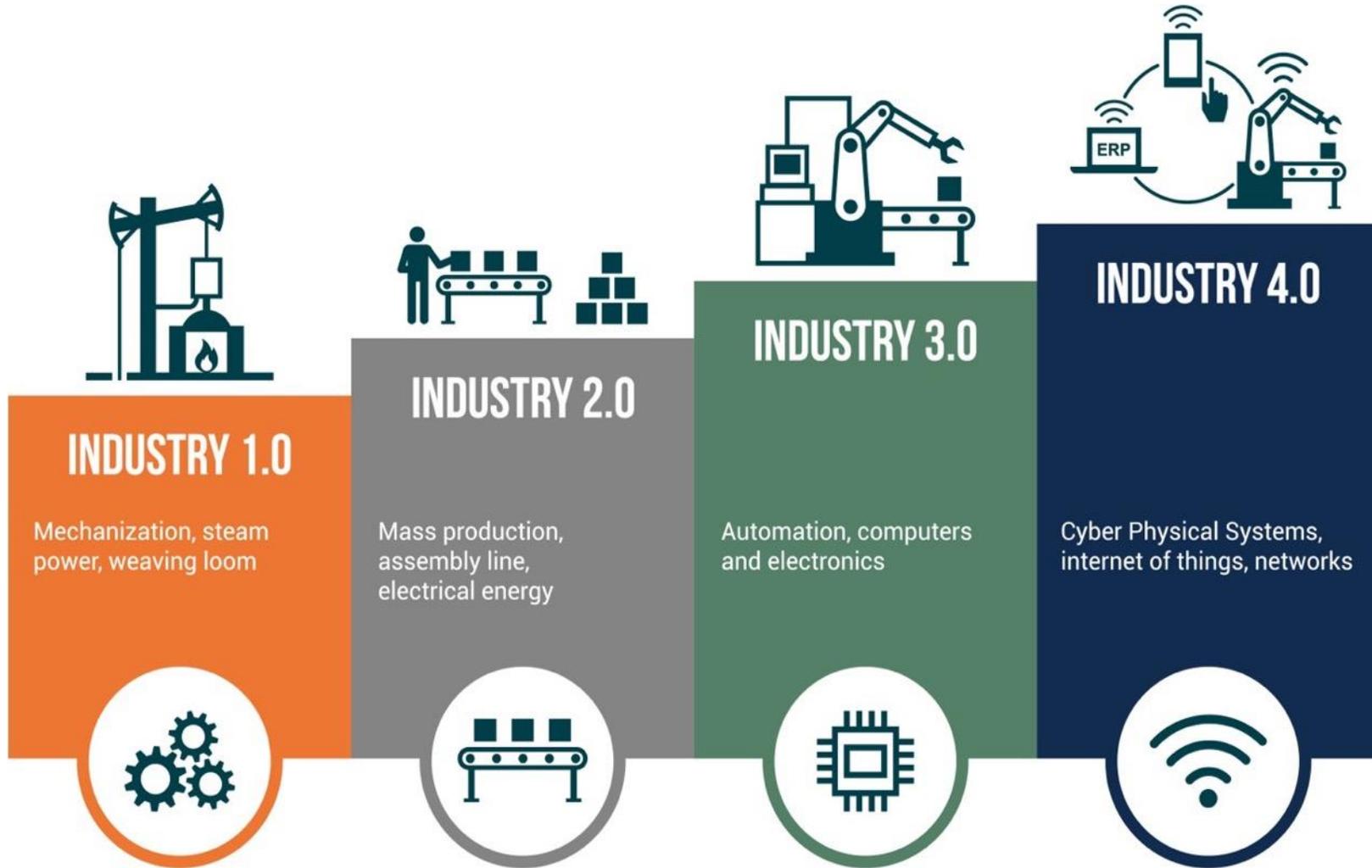


# Agenda

1. Executive Overview
2. Interactive Input Session



# Fourth Industrial Revolution



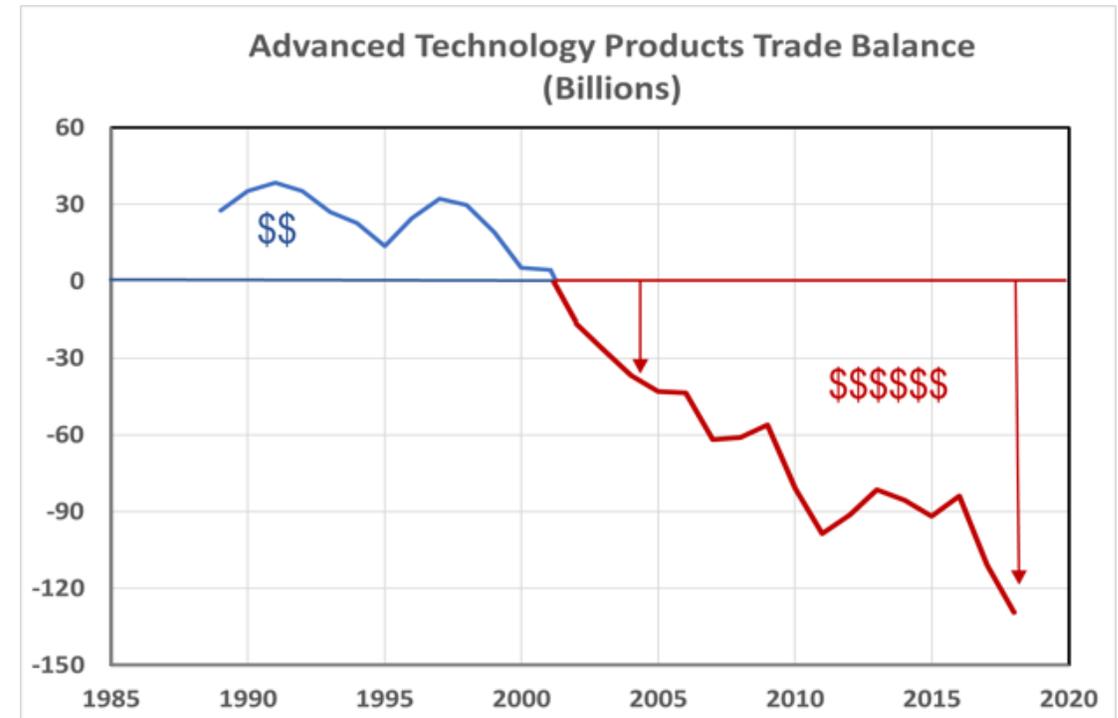
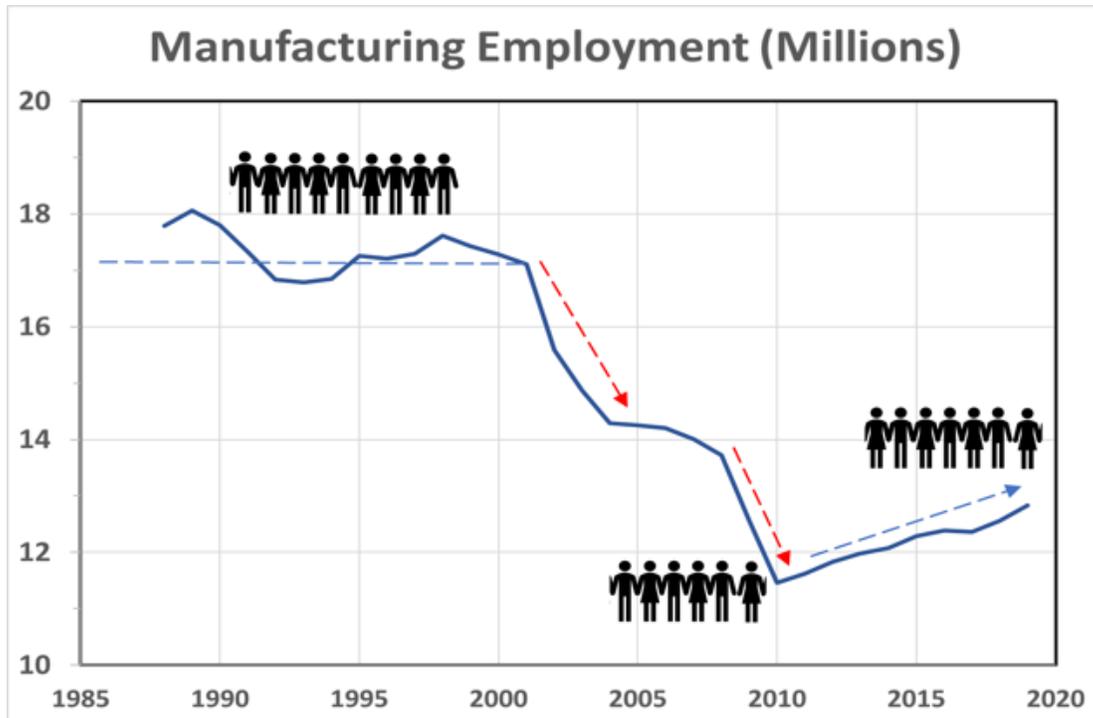
**Convergence of advancing technologies** together with **precision measurements** and **standards** enabling:

- Fourth Industrial Revolution
- Industrie 4.0
- Internet of Things
- Cyber-Physical Systems

# Advanced Manufacturing

Important for economic and national security and plays a key role in the U.S. innovation ecosystem

- Highest value manufacturing, supporting high wages
- Highest economic multiplier (4x to 12x)
- Greatest source of next innovation



# Manufacturing USA<sup>®</sup>: Securing U.S. Global Leadership in Advanced Manufacturing

**Mission:** Connecting people, ideas, and technology

- solve industry-relevant advanced manufacturing challenges
- enhance industrial competitiveness and economic growth
- strengthen our national security

# Purposes of Manufacturing USA



Competitiveness



Leadership



Scale  
Technology



Shared  
Resources



Workforce  
Development



Knowledge  
Transfer



Partnership



Manufacturing  
Employment



Innovation  
Ecosystems

# Partner Agencies and Programs



# Institutes

## Electronics



**AIM**  
photonics

**Integrated  
Photonics**  
Albany, NY  
Rochester, NY



**NEXT FLEX**

**Flexible  
Hybrid  
Electronics**  
San Jose, CA



**POWER AMERICA**

**Wide Bandgap  
Semiconductors**  
Raleigh, NC

## Materials



**affoa**

**Advanced Fibers  
and Textiles**  
Cambridge, MA



**iacmi**  
INSTITUTE

**Advanced  
Composites**  
Knoxville, TN



**lift**

**Lightweight  
Metals**  
Detroit, MI

## Bio Manufacturing



**NIMBL**

**Bio-  
pharmaceutical  
Manufacturing**  
Newark, DE



**biofabusa**

**Regenerative  
Manufacturing**  
Manchester, NH



**New – 2021  
Bioindustrial  
Mfg. Institute**

## Energy / Environment



**RAPID**  
Transforming Process Industries

**Modular  
Chemical Process  
Intensification**  
New York, NY



**REMADE  
INSTITUTE**

**Sustainable  
Manufacturing**  
Rochester, NY



**CLEAN ENERGY  
SMART  
MANUFACTURING**

**Smart  
Manufacturing**  
Los Angeles, CA

## Digital / Automation



**America Makes**

**Additive  
Manufacturing**  
Youngstown, OH



**ARM**  
ADVANCED ROBOTICS  
FOR MANUFACTURING

**Advanced  
Robotics**  
Pittsburgh, PA



**M X D**

**Digital  
Manufacturing**  
Chicago, IL



**New - 2020  
Cybersecurity in  
Mfg. Institute**

# Institutes Conduct Applied R&D and Workforce Projects

address advanced assist supply chain challenges community colleges  
U.S. competitiveness **development** engage improve industry  
innovation integration jobs large-sized  
**manufacturers** small and medium collaboration  
production projects applied research roadmapping  
**technology** universities **workforce**

Alliance Institutes would not need to meet all requirements

# New Authorities, New Directions



Ability to *renew* federal funding for any manufacturing institute, subject to a rigorous merit review



Emphasizes education and workforce development



Authority for pilot programs and public service grants supporting institutes



Encourages new advanced manufacturing institutes



Alliance pathway allows entities that are substantially similar to Manufacturing USA institutes to join the Network



# What is the Alliance Pathway?

## Manufacturing USA Reauthorization

Created a new pathway to broaden access to the Network

Can '**recognize**' entities as Institutes for 'purposes of **participation** in the Network'

Entities joining under this new pathway are being designated "Alliance Institutes"

The entity

- Must be '**substantially**' similar to Manufacturing USA institutes; and
- Must not be receiving financial assistance under Manufacturing USA authorization

# Benefits of Joining Manufacturing USA

Association with the **Manufacturing USA brand**, signaling participation in an important **national initiative**

Access to **alliance-specific funding**

Broader **networking opportunities** within each specific technical area

Awareness of and input into **policy and regulation discussions**

Collaboration with and awareness of other **emerging technical areas** and **trends in federal agencies**

Leveraging of **“whole of economy”** resources and advocacy

Broader grasp of **niche opportunities** and existing U.S. advanced **manufacturing gaps**

Communication across a **broader supply chain**  
Awareness of strengths & weaknesses within this supply chain

Opportunities to connect with efforts in **related technical fields**

Access to **collaboration mechanisms** and **shared services**

# Request for Information: Structuring the Alliance Path

We are seeking input on what *'recognize'*, *'participation'*, and *'substantially'* mean, such as:

- What should be the entry requirements?
  - Are some requirements more important than others?
- How should an entity apply?
- How should applications be evaluated?
  - By whom?
- Should all entities in the network be considered equal?
- Should there be other criteria?
- How should we define 'participating' in the Network? What should it require?

The RFI has 13 specific questions designed to get feedback regarding these definitions

# Eligibility: Entities

Who/what types of entities should be eligible to join the Manufacturing USA network using the “Alliance Pathway”?

*(RFI question #3)*

# Eligibility: Similar Protocol

Should all entities being brought into the network under an “Alliance Pathway” follow the same process?

If not, what should be the differences?

*(RFI question #2)*

# Eligibility: Accommodations

How might the Alliance Pathway be structured to ease entry to the network if the entity:

- Addresses underrepresented technology areas of importance to US manufacturers

- Increases the geographic reach

- Reaches underserved customers and communities

*(RFI question #9)*

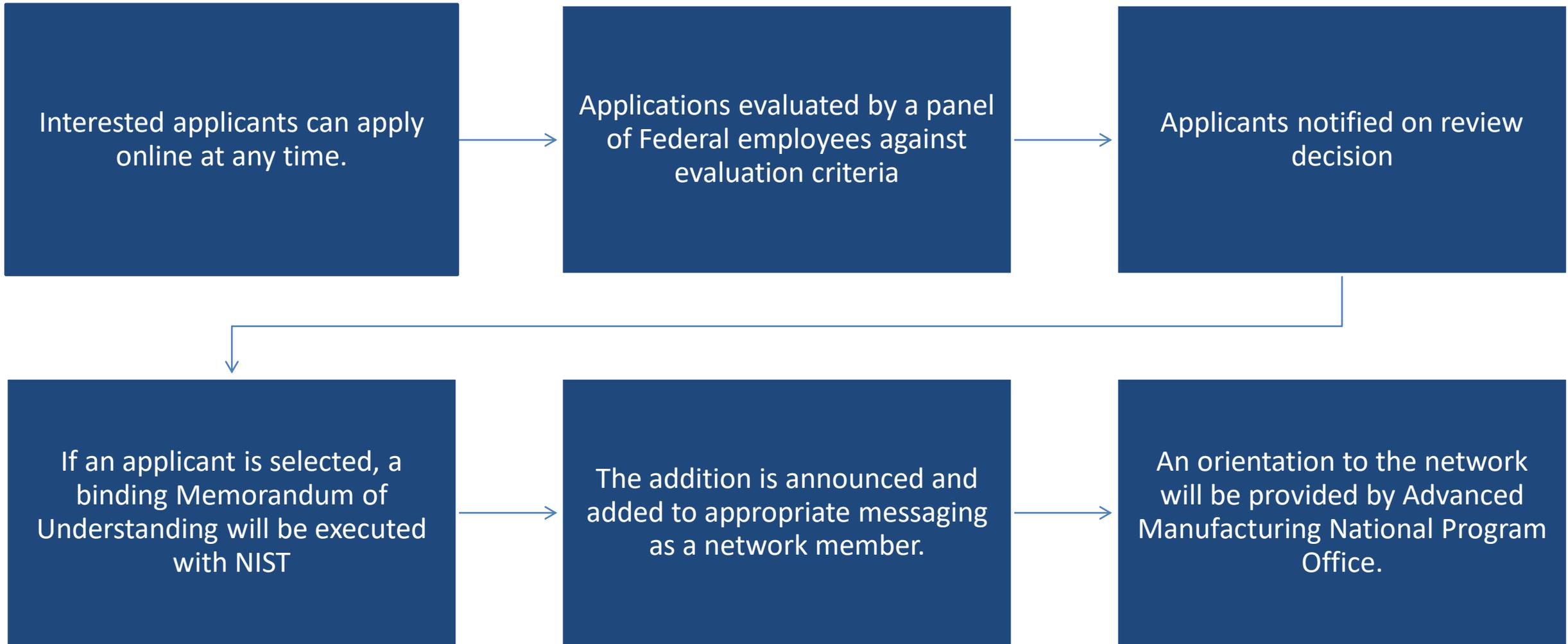
# Eligibility: Evaluation Criteria

Alliance Pathway applications will be evaluated by a panel using evaluation criteria

What are some relevant evaluation criteria?

*(RFI question #12)*

# Proposed Process for Alliance Institutes



# Eligibility: Process

Does the proposed process seem appropriate?

Any suggestions for changes?

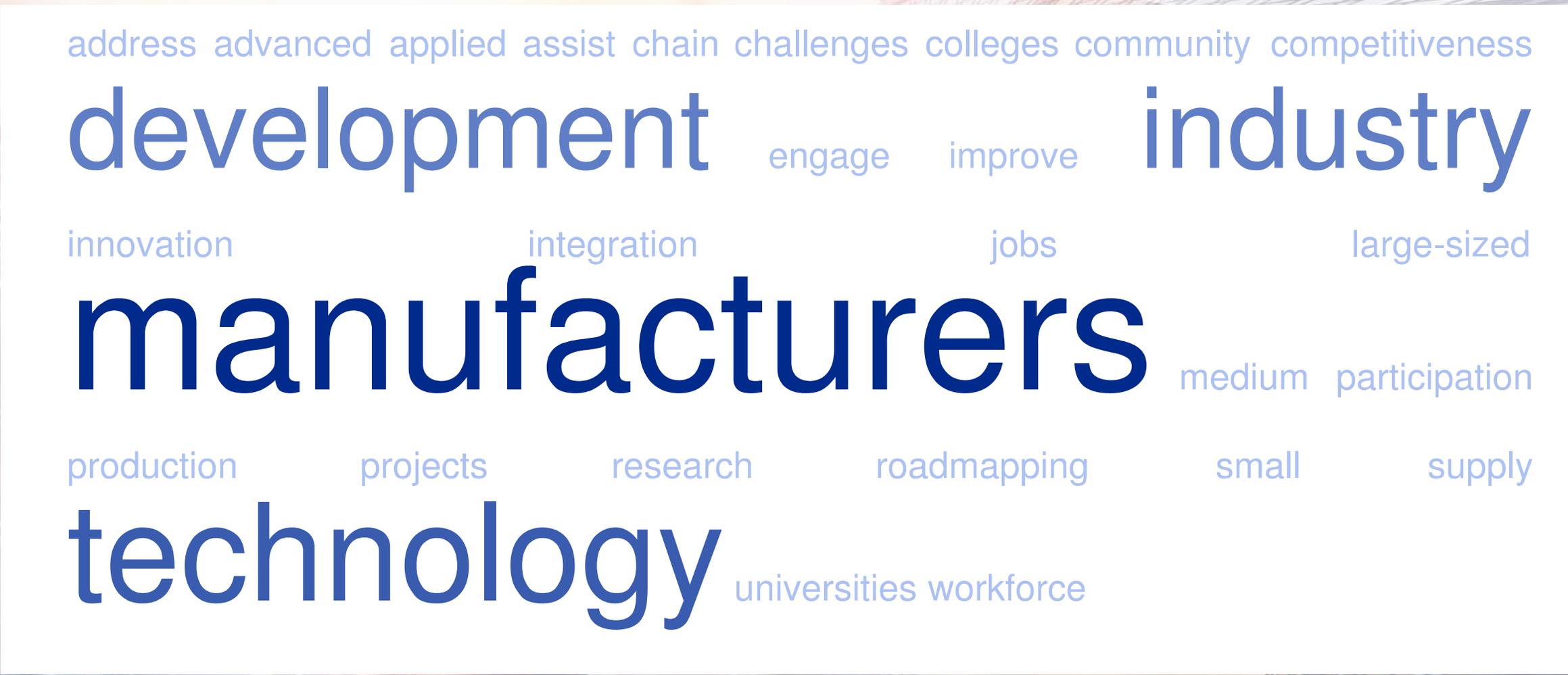
*(RFI question #11)*

# Alliance Membership: Requirements

Congress has specified goals and activities for federally-sponsored Manufacturing USA institutes. Which of these goals and activities should be minimal requirements for “Alliance Institutes”? *(see the following slide for reminders)*

*(RFI Question #1)*

# Institutes Conduct Applied R&D and Workforce Projects



Alliance Institutes would not need to meet all requirements

# Alliance Membership: Operational Changes

Should becoming an Alliance Institute change any aspect of how a current organization operates?

*(RFI question #5)*

# Alliance Membership: Responsibilities

What administrative, reporting (e.g., members/projects/\$), and meeting responsibilities should be required for Alliance Institutes?

For those responsibilities, what technical or other support should NIST provide to assist the alliance institutes (e.g., assigned program manager)?

*(RFI question #6)*

# Alliance Membership: Foreign Involvement

Should Alliance Institutes be able to accept projects or funding from foreign entities? If so, under what terms should foreign entities be able to participate?

*(RFI question #7)*

# Alliance Membership: Federal Sponsorship

Should Alliance Institutes be eligible to apply to be a fully funded institute under a competition sponsored by a federal agency?

*(RFI question #8)*

# Alliance Membership: Federal Programs

What types of relationships should exist, or be required, between Alliance Institutes and other federal programs?

(e.g., NIST's Manufacturing Extension Partnership (MEP) or the existing institutes)

*(RFI question #10)*

# Alliance Membership: Opportunities

What additional opportunities should be considered for Alliance Institutes?

Technical projects?

Education and workforce efforts?

Others?  
(e.g., funding, meetings, etc.)

*(RFI question #4)*

# Other Comments

Do you have any other comments or suggestions related to this proposed approach?

*(RFI question #13)*

# Next Steps

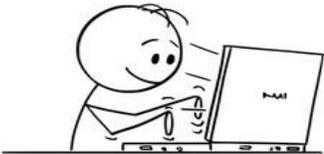
Future Webinars

Roundtable input sessions through June

Review and evaluate feedback

Announce findings and plans in September

Have a great thought after you leave



Let us know

Use our website: [ManufacturingUSA.com](http://ManufacturingUSA.com)  
Or email us: [manufacturingusa@nist.gov](mailto:manufacturingusa@nist.gov)

# Together We Are Securing America's Manufacturing Future



# Interested in U-I Partnerships?

Sign up for information about UIDP news, webinars, projects, and more at <https://uidp.org/listserv-signup/>.



Strengthening  
University-Industry  
Partnerships

Member  
Webinar

**WEDNESDAY,**

**APRIL 8, 2020**

**12 to 1 p.m. EDT**



Jim Bray  
Northwestern  
University  
**Moderator**



## How Companies Approach Academic Research Engagement in these Disruptive Times

[Join us](#) to learn how our industry members, in diverse sectors, are evaluating and reframing their current approaches to academic collaborations.

### Panelists



Gaylene Anderson  
Boehringer Ingelheim  
Pharmaceuticals, Inc



Kent Foster  
Microsoft



Austin Kozman  
PepsiCo