CHIPS for America: Creating Inclusive Opportunities for Minority Serving Institutions

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Today’s Speakers & Key Guests

Kylie Patterson  
CHIPS Program Office Chief  
Opportunity & Inclusion Officer

Jon Gant, PhD  
Director, DOC NTIA Office of Minority Broadband Initiatives

Melody Gonzales  
Executive Director, White House Initiative on Advancing Educational Equity, Excellence and Economic Opportunity for Hispanics

Naomi Miguel  
Executive Director, White House Initiative on Advancing Educational Equity, Excellence, and Economic Opportunity for Native Americans and Strengthening Tribal Colleges and Universities

Lena T. Rodriguez, PhD  
Senior Vice President for Policy and Government Relations, Hispanic Association of Colleges and Universities (HACU)

Ahniwake Rose  
American Indian Higher Education Consortium (AIHEC), Vice President of Congressional/Federal Relations
**CHIPS for America Programs**

<table>
<thead>
<tr>
<th>$39 billion for manufacturing</th>
<th>$11 billion for R&amp;D</th>
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<td><strong>Components:</strong></td>
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<td>1. Attract large-scale investments in advanced technologies such as leading-edge logic and memory</td>
<td>• National Semiconductor Technology Center</td>
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<td>2. Incentivize expansion of manufacturing capacity for mature and other types of semiconductors</td>
<td>• National Advanced Packaging Manufacturing Program</td>
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<td>• Manufacturing USA institute(s)</td>
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<td>• National Institute of Standards and Technology measurement science</td>
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Together with CHIPS initiatives from other agencies, including DOD, State, NSF, and Treasury

Workforce development
Funding Eligibility

For organizations that are...
- private
- non-profit
- consortia

that can substantially...
- construct
- expand
- modernize

a U.S. facility for...
- fabrication
- assembly
- testing
- packaging
- production

of...
- semiconductors

*More details available in the funding opportunity announcement*
Program Priorities

- Economic and national security objectives
- Commercial viability
- Financial strength
- Technical feasibility and readiness
- Workforce development
- Broader impacts
Opportunity & Inclusion Priorities

Diverse Workforce
Focus on the intentional recruitment, hiring, retention and promotion of economically disadvantaged individuals

Inclusive Business Opportunities
Inclusion of small businesses, minority-owned businesses, veteran-owned businesses, and women-owned businesses

Community Investment
Investments to build strong communities with active participation in the U.S. economy and facilitate job creation
Role of Opportunity & Inclusion

Commitments to opportunities and inclusion are critical to the success of the CHIPS program.
Workforce
Building the semiconductor ecosystem in the United States requires training and inspiring a new generation of talent.

- Construction
- Facilities workforce
- R&D
Building an innovation ecosystem

We need to attract, train, hire, and retain the best talent in America to ensure the success of the industry.

Applicants encouraged to:

- Use earn and learn models like Registered Apprenticeships
- Provide wraparounds that unlock barriers to economic participation
- Build partnerships across multiple partners & employers
- Leverage state & local investments in workforce and education

The Department expects applicants to work closely with stakeholders in local communities to develop a set of investments that is responsive to local needs, and, to commit to working to support long-term, cross-cutting initiatives – such as competency development, curriculum design, and credentialing.
Inclusive Business Opportunities
Inclusive Business Opportunities

Creating business opportunities that are inclusive for all, including small businesses, veteran-owned, minority-owned, and women-owned businesses.

Businesses can also help provide:

- Office and clerical support
- On-site or off-site childcare
- Maintenance support
- Accounting and site planning support
What are Small, Minority, Veteran, and Women-Owned Businesses?

- Small: At least 51% owned or 51% of stock is owned by minorities / veterans / women
  - Certified by federal government or recognized certifying bodies (not required)

- Minority: At least 51% owned or 51% of stock is owned by minorities / veterans / women
  - Certified by federal government or recognized certifying bodies (not required)

- Veteran: At least 51% owned or 51% of stock is owned by minorities / veterans / women
  - Certified by federal government or recognized certifying bodies (not required)

- Women: At least 51% owned or 51% of stock is owned by minorities / veterans / women
  - Certified by federal government or recognized certifying bodies (not required)

- Inclusive Opportunities: While not required, applicants can also consider LGBTQ+-owned businesses, disability-owned businesses, or businesses located in HUBZones or Opportunity Zones.
Community Investments
Community Investments

**Identify**
- Identify areas ideal for investment that align with greater regional investment

**Address**
- Address barriers to economic inclusion

**Drive**
- Drive impact and change in communities based on need
Examples of Community Investments

Philanthropic Investments

- K-12 Supports
- Health and Healthcare Access
- Transportation Access
- Affordable Housing

Creative Sources of Capital

- Minority Depository Institutions
- Community Development Financial Institutions (CDFIs)
- Diverse investment managers/ alternative investment managers
- Credit Unions
CHIPS Research and Development
CHIPS R&D Programs

- Metrology
- National Semiconductor Technology Center
- National Advanced Packaging Manufacturing Program
- Manufacturing USA Institute

Workforce Initiatives
Institute Partnership Model

Common Institute Design:

- Industry-led public-private partnership
- Typically $70-120M federal investment
- At least 1:1 match with private funds
- Neutral convening for collaborations
- Each institute develops a unique technology
- Institutes address the education and workforce skills gap for their technologies
Manufacturing USA Purpose: Accelerate Discovery to U.S. Production

Create an effective collaboration environment for applied industry research to "bridge the gap" from discovery to production.

FUNDING & INVESTMENTS

GOVERNMENT & UNIVERSITIES

PRIVATE SECTOR

MANUFACTURING INNOVATION PROCESS

1. Basic Research
2. Proof of Concept
3. Production in Laboratory
4. Capacity to Produce Prototype
5. Capacity in Production Environment
6. Demonstration of Production Rates

GAP

$ $$ $
Manufacturing USA Network: 17 Institutes and Growing

**ELECTRONICS**
- **AIM Photonic**
  - Integrated Photonics
    - Albany, NY
    - Rochester, NY
- **Nextflex Electronics**
  - Flexible Hybrid Electronics
    - San Jose, CA
- **PowerAmerica**
  - Wide Bandgap Semiconductors
    - Raleigh, NC

**MATERIALS**
- **Affinia**
  - Advanced Fibers and Textiles
    - Cambridge, MA
- **IACMI Institute**
  - Advanced Composites
    - Knoxville, TN
    - Detroit, MI
- **LIFT**
  - Advanced Materials
    - Detroit, MI

**ENERGY/ENVIRONMENT**
- **RAPID**
  - Modular Chemical Process Intensification
    - New York, NY
- **REMAN**
  - Sustainable Manufacturing
    - Rochester, NY
- **CESMII**
  - Smart Manufacturing
    - Los Angeles, CA
- **EPX**
  - Industrial Process Decarbonization
    - Tempe, AZ

**DIGITAL/AUTOMATION**
- **America Makes**
  - Additive Manufacturing
    - Youngstown, OH
    - El Paso, TX
- **ARM Institute**
  - Advanced Robotics & AI
    - Pittsburgh, PA
- **MxD**
  - Digital Manufacturing & Cybersecurity
    - Chicago, IL
- **CyManII**
  - Cybersecurity in Manufacturing
    - San Antonio, TX

**BIO-MANUFACTURING**
- **BiofabUSA**
  - Regenerative Manufacturing
    - Manchester, NH
- **NIMBL**
  - Biopharmaceutical Manufacturing
    - Newark, DE
- **BioMADE**
  - Biomedical Manufacturing
    - St. Paul, MN

+ New CHIPS Manufacturing USA institute
Upcoming NIST competition for another new institute

ManufacturingUSA.com
CHIPS Manufacturing USA
Institute Notice of Intent

Establish one institute with the potential for significant impact on semiconductor manufacturing

Topic: Digital twins

Minimum expected NIST commitment ~$200 million over a five-year period

Anticipate a greater than 1:1 cost share

Analysis of RFI responses, industry feedback, listening sessions across 15+ engagements, and technology opportunities across the CHIPS R&D portfolio
Digital Twin Institute Objectives

- **Reduce** the time and cost for chip development and manufacturing
- **Accelerate** the adoption of semiconductor manufacturing innovations
- **Increase** access to semiconductor manufacturing training through the adoption of digital twin-enabled tools
- **Expand** access to digital twin tools, solutions and frameworks
Digital Twin Institute Links

• Information about Manufacturing USA can be found at manufacturingusa.com.

• Check out our video ‘Increasing Diversity in Advanced Manufacturing Careers.’
Questions
Frequently Asked Questions

What are the opportunities or pathways for HSIs and TCUs to directly engage with the CHIPS Program?

How can HSIs and TCUs get a better sense of what companies are participating in the CHIPS program or looking for partnerships as well as what regions across the country could see the earliest investments?

Are there any other partnerships or activities other MSIs have developed that can serve as a roadmap for HSIs and TCUs on the call today looking to take action now and in the future?
Next Steps
Next Steps

• Visit CHIPS.gov for resources, including:
  • Notice of Funding Opportunity
  • Vision for Success paper
  • Applicant guides and templates
  • FAQs and fact sheets
  • Webinar schedule (and recordings of prior webinars)
• Join our mailing list
• Contact us
  • apply@chips.gov – application-related inquiries
  • askchips@chips.gov – general inquiries
The teaming partner list enables entities to share information and foster collaboration

- Entities that may not be eligible to apply can share contact information and capabilities
- Potential applicants reach out to entities on the list to facilitate potential partnerships and collaboration

https://www.nist.gov/chips/chips-america-teaming-partner-list
Thank you