CHIPS for America Update

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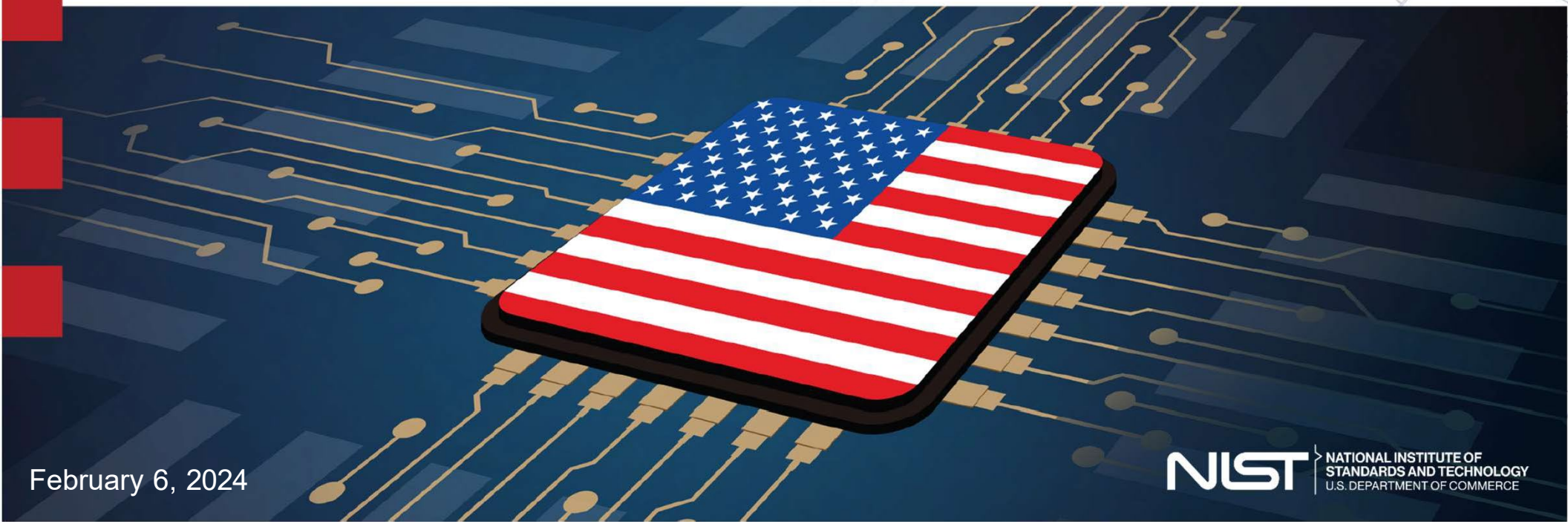


February 6, 2024

NIST NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY U.S. DEPARTMENT OF COMMERCE

CHIPS for America Programs

$39 billion for manufacturing	$11 billion for R&D
Components: 1. Attract large-scale investments in advanced technologies such as leading-edge logic and memory 2. Incentivize expansion of manufacturing capacity for mature and other types of semiconductors	• National Semiconductor Technology Center • National Advanced Packaging Manufacturing Program • Manufacturing USA institute(s) • National Institute of Standards and Technology measurement science

Workforce development

Together with CHIPS initiatives from other agencies, including DOD, State, NSF, and Treasury

CHIPS for America Vision

Economic Security

This act enables us to build more resilient supply chains for important components.

National Security

This act enables us to bring the most sophisticated technologies back to the U.S.

Future Innovation

Chips are key to the technologies and industries of the future, so we need to be at the forefront. This act will ensure long-term U.S. leadership in the sector.

CHIPS has made significant strides in the last year…

Strong Industry Response	On Track to Make Significant Impact on Leading Edge Capacity	Announced PMTs to Date
• Large and compelling set of opportunities, with 600+ Statements of Interest • Corresponding $200B in private investment catalyzed	• Anticipating **~20% leading-edge market share** in the U.S. by 2030 (up from 0% today) • **Surpassing the expectation** of two leading-edge clusters	GlobalFoundries™ MICROCHIP BAE SYSTEMS intel

With much more to come over the course of this year…

CHIPS Manufacturing Incentives

Vision for Success

By the end of the decade…

Leading-Edge Logic

- ✓ The U.S. will have at least **two new large-scale clusters of leading-edge logic fabs**
- ✓ **U.S.-based engineers** will develop the process technologies underlying the **next gen of logic chips**

Memory

- ✓ U.S.-based fabs will **produce high-volume memory chips on economically competitive terms**
- ✓ **R&D for next-generation memory** technologies for critical applications will be **conducted in the U.S.**

Current-Generation and Mature

- ✓ The U.S. will have **strategically increased its production capacity** for current-gen and mature chips
- ✓ Chipmakers will also be able to **respond more nimbly** to supply and demand shocks

Advanced Packaging

- ✓ The U.S. will be home to **multiple high-volume advanced packaging facilities**
- ✓ The U.S. will be a **global leader in commercial-scale advanced packaging technology**

Supply Chain

- ✓ U.S. government will **reduce chokepoint risks** flowing from **geographic concentration**.
- ✓ U.S. will **advance technology leadership** and **support vibrant fab clusters,** while reducing risk of production disruptions.

Manufacturing

- ✓ U.S. semiconductor manufacturing equipment and materials suppliers will **increase their footprints in the U.S**.
- ✓ The **most advanced non-U.S. suppliers** will establish large-scale footprints in the United States **for the first time**.

Program Priorities

Economic and National Security Objectives

Commercial Viability

Financial Strength

Technical Feasibility and Readiness

Workforce and Community Investment

Slide 7

S(0 I think it would be worth expanding on these in additional slides - particularly where they differ from past program priorities we've outlined (that may only be in the 5th bucket?)

Maybe simplified version of slides 15-22 in original NOFO deck?
Stoneman, Jesse (Fed), 2023-09-19T21:53:08.653

MG1 [@Gaviria, Nelson P. (Ctr)] Update each slide for NOFO 2 details, using same template. Workforce development and broader impacts have been combined for this NOFO 2.
Mason Groff, 2023-09-22T14:37:43.670

MG1 0 Updated
Mason Groff, 2023-09-22T17:39:19.680

MG2 May be Nikita
Mason Groff, 2023-09-25T19:49:34.702

Vision for Success – Supply Chain for Success

Strengthen Supply Chain Resilience

- ✓ The **U.S. and its allies** will **reduce chokepoint risks** flowing from **geographic concentration**
- ✓ Supply chain participants will improve the **transparency of demand and supply** to **reduce the risks of production disruptions**

Advance U.S. Technology Leadership

- ✓ The U.S. will have **incentivized major U.S. equipment and materials suppliers** to **increase their footprints** in the U.S.
- ✓ **Non-U.S. suppliers** of the world's most advanced equipment, materials, and subsystems will also **establish large-scale footprints** in the U.S.

By the end of the decade…

Support Vibrant U.S. Fab Clusters

- ✓ Each **CHIPS-funded fab cluster** in the U.S. will be **supported by dozens of suppliers,** including many **investing in the U.S. for the first time**
- ✓ **State and local entities** encouraged to help **facilitate the expansion of these ecosystems**

Announced Funding Opportunities

February 28, 2023

For **commercial leading-edge, current,** and **mature node fabrication facilities**

June 23, 2023

For **large semiconductor materials** and **equipment facility projects $300M+**

September 29, 2023

For **smaller semiconductor materials** and **equipment facility projects under $300M**

The CHIPS Program Office has received over 600 statements of interest and over 170 pre-applications, full applications, and concept plans from 42 states.

Second Funding Opportunity Summary

Smaller Supply Chain Projects | tailored towards smaller projects and businesses…

Eligibility

- ❑ Semiconductor Materials Facilities
- ❑ Semiconductor Manufacturing Equipment Facilities

Capital expenditures below $300 million

Funding Instruments

Direct Funding

- ❑ Grants
- ❑ Cooperative Agreements
- ❑ Other Transactions

Streamlined Application Process

1. Concept Plan
2. Full Application
3. Due Diligence
4. Award Preparation and Issuance

Submission Deadlines

Concept Plan Submissions

- ❑ Dec 1, 2023 – Feb 1, 2024

Full Application Submissions

- ❑ Communicated individually upon notice of application advancement

Slide 10

AR0 Spell out - NOFO 2 quite diff from 1 & 2 - important to message that this is less complex and also different - to the stakeholders

Auyon Rahman, 2023-09-19T15:50:01.754

AR0 0 AL: show that it's easier/complex

Auyon Rahman, 2023-09-19T15:50:56.973

S(0 1 I would suggest having this be a closing slide that summarizes information - and instead introducing each of these topics one by one instead of trying to summarize it all here.

I would instead suggest a slide here that at a high level highlights the key distinctions between this NOFO and past ones (e.g., diff elig criteria, diff application process, diff funding instruments), including emphasizing how it's streamlined/tailored

then we walk through each element and then we use this slide to summarize the key points.

Stoneman, Jesse (Fed), 2023-09-19T21:47:33.930

L(1 can be cut.

Lalwani, Nikita A. (Fed), 2023-09-25T23:11:10.884

SJ(1 0 Let's discuss

Stoneman, Jesse (Fed), 2023-09-26T01:19:04.138

Defining Consortia and Clusters

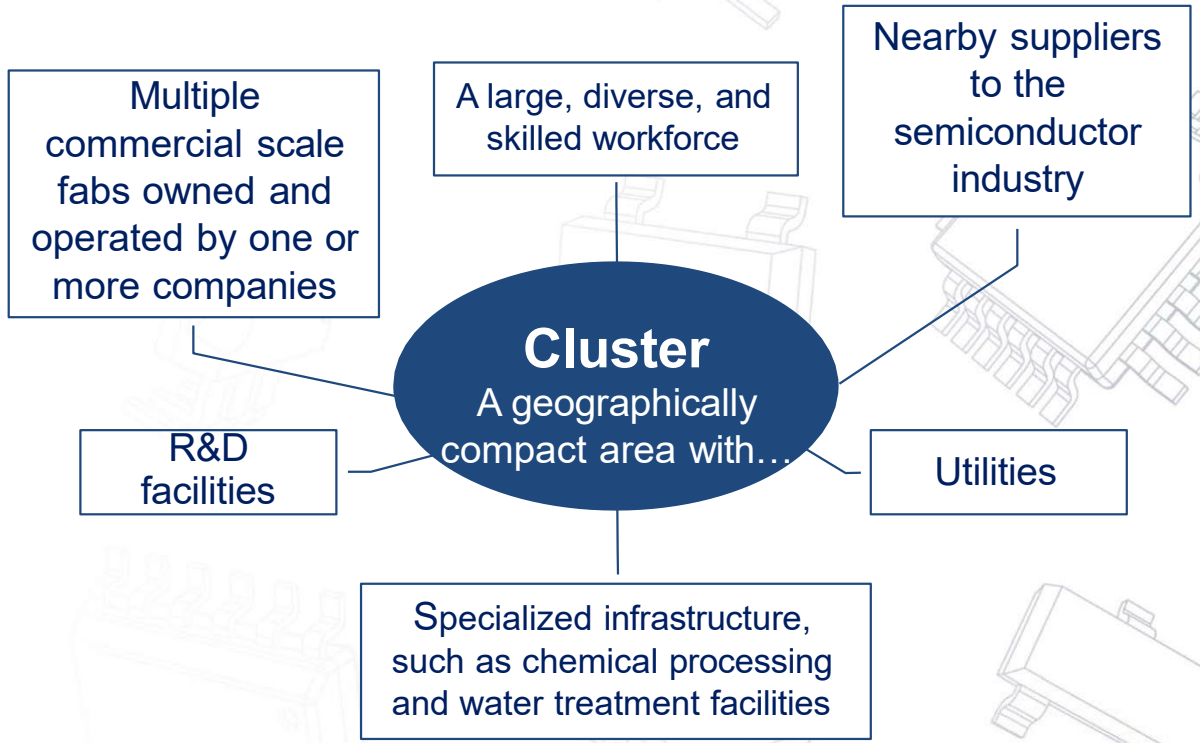
Consortium
A collection of…

- ❑ **Private**
- ❑ **Non-profit**

and/or

- ❑ **Public**

…entities working together to build vibrant U.S. semiconductor fab clusters.



Slide 11

MG0 New slide
Mason Groff, 2023-09-22T14:48:38.745

S(1 from Tough Q&A: Consortium is a formal partnership that entities can form to file an application with the CHIPS Program Office, working together to demonstrate how their coordination will support vibrant clusters.
Clusters are a broad reference frame. Clusters are geographically compact areas with multiple commercial scale fabs owned and operated by one or more companies. Within those regions, there is a large, diverse, and skilled workforce, nearby suppliers and utilities, and specialized infrastructure.
Secretary Raimondo has outlined a vision to make the U.S. home to at least two clusters that produce advanced chips. Entities can apply together as a consortium and ultimately support a broader cluster.
Stoneman, Jesse (Fed), 2023-09-25T14:39:09.658

MG2 Jesse will update
Mason Groff, 2023-09-25T19:52:41.209

SJ(3 Nikita, better phrased as "private, nonprofit, and public entities" or keep as is?
Stoneman, Jesse (Fed), 2023-09-25T21:15:04.729

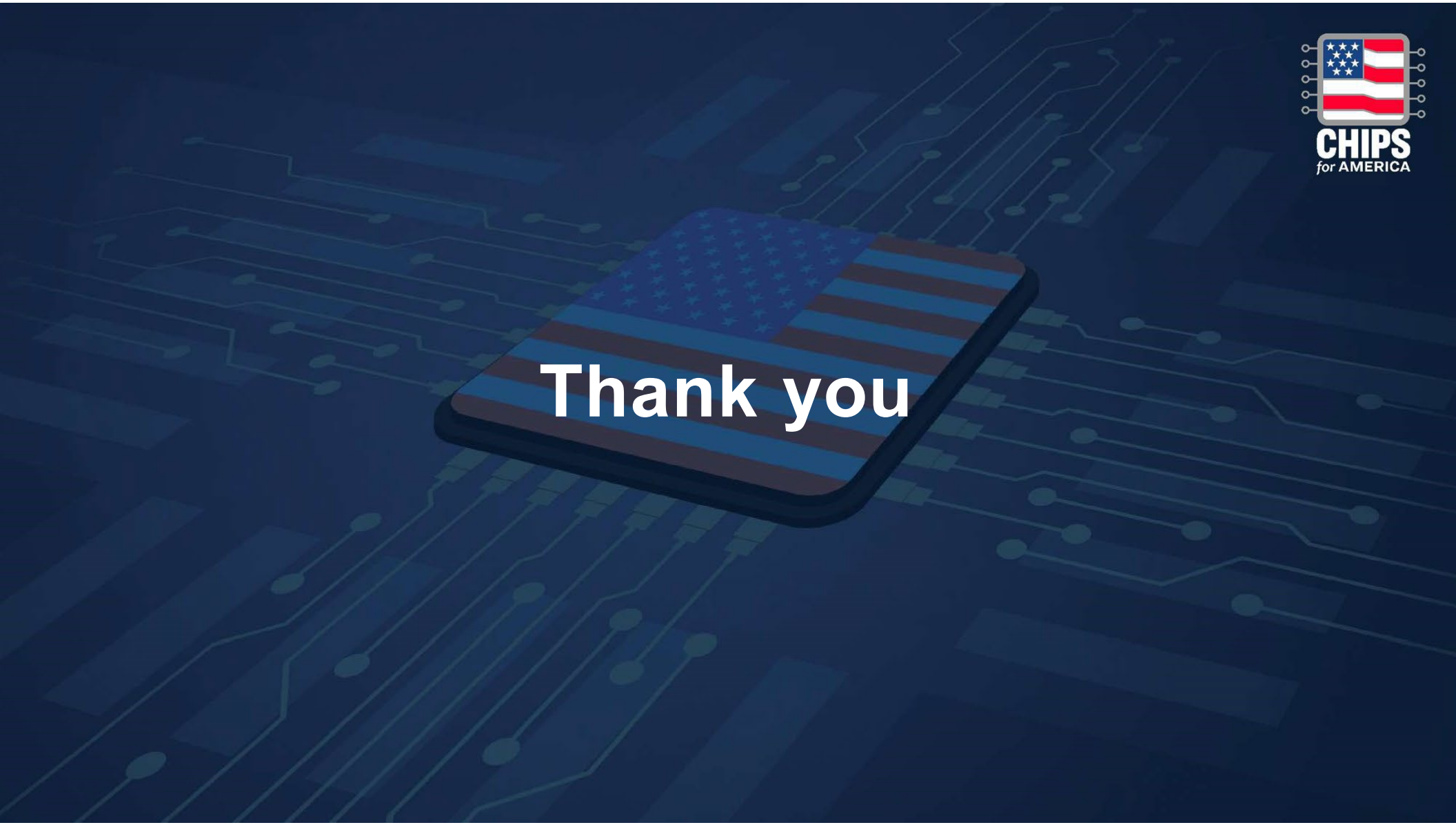
L(3 0 cut this slide.
Lalwani, Nikita A. (Fed), 2023-09-25T23:08:31.179

SJ(3 1 Let's discuss - this is a tough Q&A and actually something I think is pretty confusing for people
Stoneman, Jesse (Fed), 2023-09-26T01:00:12.878

SJ(3 2 Move definition of cluster into the vision/program priorities talking points
Stoneman, Jesse (Fed), 2023-09-26T15:33:32.290

Next Steps

- Visit CHIPS.gov for resources, including:
  - Funding Updates List
  - Funding Opportunities
  - Vision for Success papers
  - Applicant Guides and Templates
  - FAQs and fact sheet
- Join our mailing list
- Contact us
  - askchips@chips.gov – general inquiries
  - apply@chips.gov – application-related inquiries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Thank you