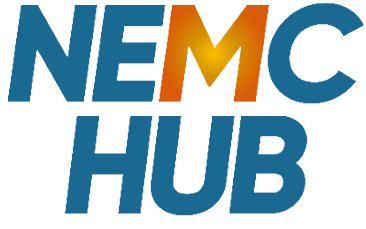
NEMC HUB

ONE YEAR OF COMMONS

The Northeast Microelectronics Coalition

A look into NEMC's role in **enabling, expanding,** and **accelerating** U.S. microelectronics innovation in the first year of Commons.


MICROELECTRONICS
COMMONS
BRIDGING THE GAP FROM LAB TO FAB


NEMC
HUB

"The Microelectronics Commons has made significant progress with the establishment of infrastructure and the recent award of 34 technical projects. The acceleration of lab-to-fab prototyping contributes to the advancement of DoD's technological capabilities, bringing the U.S. military closer to next-generation operational capabilities crucial for asymmetric advantage against adversaries. Close coordination between DoD and DoC on various CHIPS and Science Act investments ensures mutual leverage of investments and a 'multiplier effect' to benefit the DoD and the broader U.S. ecosystem in microelectronics."

Dr. Dev Shenoy
Principal Director for Microelectronics, Microelectronics Commons Executive Director OUSD(R&E)/ASD(CT)

A NOTE TO THE HUBS

A year has come and gone very quickly for all of us in the microelectronics and semiconductor community, whether you're in government, industry, or academia. We have seen the community come together at a national scale for the CHIPS and Science Act, culminating in over $500M of awards for Microelectronics Commons with a full first year of Hub execution, now being exercised with over 30 prototyping projects and a pilot for a cross-Hub enablement infrastructure. However, to me, the biggest success to date is the amount of cross-pollination and economic partnerships mobilized through these funds, and the relationships made that will last beyond the life of the legislation. Congratulations to the entire community for the accomplishments seen in year one of the Microelectronics Commons Hubs. I could never take for granted all the work you have done and the time you have committed to support the program. I am so thankful for the opportunity to engage with so many who have a passion for shaping where this can go.

"None of us is as smart as all of us." - Ken Blanchard

Stephanie Lin

Vice President of NSTXL, Microelectronics Commons

NEMC: A Vital Piece of the Commons Ecosystem

The Microelectronics Commons program is a network of innovation Hubs distributed across the United States, all working toward a common goal of advancing domestic microelectronics technology discovery, innovation, and transition.

The Northeast Microelectronics Coalition (NEMC) Hub was one of eight Hubs awarded in September of 2023 under the CHIPS and Science Act. Led by the Massachusetts Technology (MassTech) Collaborative, NEMC will carve a path for microelectronics innovation in the United States.

NEMC Hub Highlights

203

MEMBERS

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WORKFORCE DEVELOPMENT INITIATIVES

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HUB EVENTS

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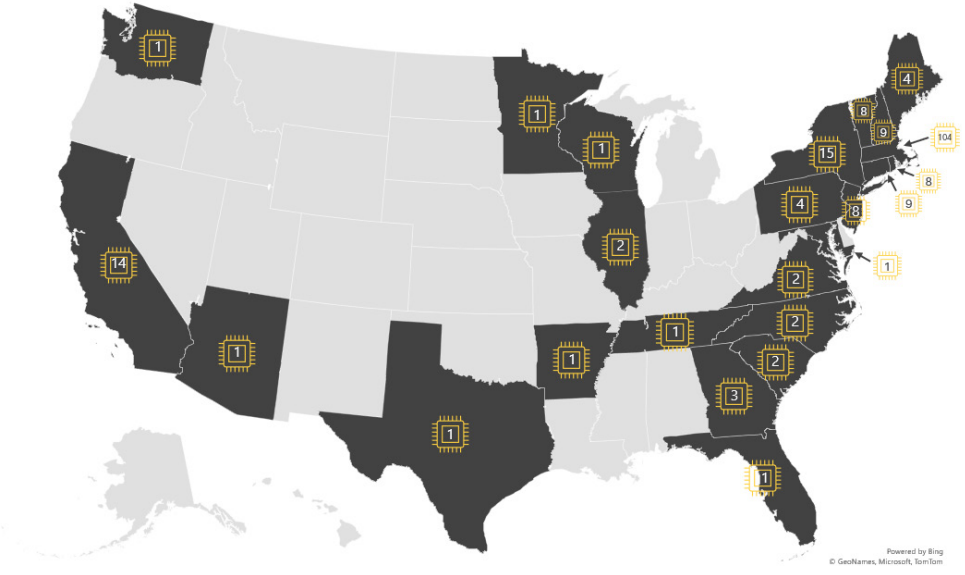
STATES REPRESENTED

**Member data is in accordance with member information provided by each Hub as of July 2024.*



The NEMC Hub is a network of over 200 organizations, including commercial and defense companies, leading academic institutions, Federally Funded R&D Centers (FFRDCs), and startups concentrated in eight Northeast states.

The NEMC Hub is a division of the Massachusetts Technology Collaborative and was established with federal CHIPS and Science Act funding under the Microelectronics Commons program. The Hub fosters a vibrant, connected microelectronics ecosystem to provide sustainable lab-to-fab enablement, boost education and workforce development, and spur new jobs.

Artificial Intelligence (AI) Hardware

Commercial Leap-Ahead (CLA) Technology

Electromagnetic Warfare (EW)

Quantum

Secure Edge/Internet of Things (IoT)

5G/6G Technologies

THE EVOLUTION OF COMMONS

9.20.23

HUB AWARDS ANNOUNCEMENT

Under the CHIPS and Science Act, the Defense Department announced the award of nearly $240M to eight regional "innovation Hubs" around the United States to be a part of the Microelectronics Commons.

The Honorable Kathleen H. Hicks, Deputy Secretary of Defense, made a formal announcement at the Pentagon.

"These Hubs are not just vital to American scientific, manufacturing and economic competitiveness," Hicks said. "They will also directly contribute to this Department's national defense mission."

10.17.23

INAUGURAL COMMONS ANNUAL MEETING

This event, hosted in Washington, D.C., formally kicked off the Commons program.

12.18.23

FIRST CALL FOR PROJECTS (CFP) RELEASED

More than 50 topics were released for solicitation in the first CFP.

2.28.24

CFP CLOSES, RECEIVES MORE THAN 110 PROPOSALS FROM HUBS

Intensive government evaluation of proposals began with subject matter experts.

3.12.24

FIRST WORKFORCE DEVELOPMENT SUBCOMMITTEE MEETING

6.24.24

CALL FOR TOPICS (CFT) OPENS

The CFT is the first phase of the project lifecycle, during which Hubs have the chance to propose topics to the government to be evaluated and put forth as opportunities.

7.26.24

CFT CLOSES

The CFT closed, and evaluation of future project topics began.

8.9.24

TWO YEAR ANNIVERSARY OF THE CHIPS AND SCIENCE ACT

The White House released a fact sheet celebrating two years of accomplishments.

9.17.24

$271M OF PROJECTS FROM CFP AWARDED

A total of 34 projects have been awarded across the eight Hubs and six technology areas.

CA DREAMS
5G/6G (1), EW (1)

CLAWS
CLA (4)

MMEC
5G/6G (1), AI Hardware (1), EW (2), Secure Edge/IoT (1)

NEMC
5G/6G (1), AI Hardware (1), CLA (1), EW (2), Quantum (1)

NORDTECH
CLA (1), Quantum (3)

NW AI
AI Hardware (3)

SCMC
AI Hardware (1), EW (1), Secure Edge/IoT (2), CLA (1)

SWAP
5G/6G (2), AI Hardware (1), CLA (1), Secure Edge/IoT (1)

"In year one of Hub operations, NEMC has grown membership from 90 to over 200, with roughly 65% of our members identifying as non-traditional defense partners. We have established the NEMC Hub as the Northeast regional entry point for DoD-funded microelectronics projects, as demonstrated by receiving six Call-for-Project awards addressing the most diverse set of DoD critical technology execution areas of all eight Hubs. We leveraged a $7.7 million NEMC Hub grant to unlock more than $30 million of Applied Materials investment to add advanced nano-fabrication equipment and capabilities to the MIT.nano fabrication facility."

Mark Halfman
Director, NEMC Hub

COLLABORATIVE EVENTS TO FOSTER INNOVATION

INAUGURAL MICROELECTRONICS COMMONS ANNUAL MEETING

In October 2023, the newly established Microelectronics Commons Hub leads gathered in Washington, D.C. to celebrate Hub awards and discuss the path forward. There were over 700 in-person and 1,100 virtual attendees, including key Government and congressional leadership.

NEXTFLEX INNOVATION DAYS MEETING

The NEMC Hub presented during the NEXTFLEX Innovation Days conference in Santa Clara, California. The presentation highlighted the importance of members and government partners coming together to celebrate the latest collective achievements and plans for future collaboration in the field of hybrid electronics.

IEEE VISION | INNOVATION CHALLENGES SUMMIT

The NEMC Hub was a panelist at the 2024 Insititue of Electrical and Electronics Engineers (IEEE) Vision and Innovation Challenges Summit.

NEMC HUB SUMMER MEMBER MEETING

The NEMC Hub Summer Member Meeting was held on June 18, 2024, at the Nexus Center in Lincoln, Massachusetts.

NEMC HUB FALL MEMBER MEETING

The NEMC Hub Fall Member Meeting was held on September 25, 2024, at Gillette Stadium in Foxboro, Massachusetts.

COMMONS HUB BOARD SUMMITS

NEMC attended two Commons Hub Board (CHB) Summits hosted by NSTXL to bring together Hub leadership to discuss workforce development initiatives, program success, and contracting best practices. The events were held in Washington, D.C. and Indianapolis, Indiana.

PROJECT AWARD ANNOUNCEMENTS

DoD and White House senior officials traveled on a roadshow across the nation, visiting three regional Microelectronics Commons Hub locations to announce the first round of project awards and discuss the program's milestones.

The NEMC Hub is spearheading four innovative workforce development initiatives aimed at enhancing skills and opportunities throughout the Northeast. Each initiative represents a strategic effort to address specific workforce needs and foster talent in younger communities and the Veteran workforce.

WORKFORCE DEVELOPMENT

EMBEDDED CAPTURE-THE-FLAG

NEMC expanded the MITRE Corporation's Embedded Capture-the-Flag (eCTF) competition to attract students and develop their skills in secure microelectronics. The program leverages gamification to bridge the educational gap in embedded systems security and microelectronics and prepare students to work in this critical field. The eCTF program is designed as a hands-on, project-based learning experience that caters to participants of various skill levels.

VETERAN TRANSITION ACCELERATOR

NEMC invested in a "Veteran Transition Accelerator" that will support the Headlamp SkillBridge Fellowships program, which will provide a structured pathway to provide Veterans with general education about the microelectronics industry and employer-specific training, concluding with a fellowship at a member company within the NEMC Hub.

NORTHEAST MICROELECTRONICS SUMMER INTERNSHIP PROGRAM (NMIP)

NEMC expanded the Northeast Microelectronics Summer Internship Program (NMIP), which provides internships at microelectronics companies in the Northeast to more first and second-year undergraduate students. Massachusetts Institute of Technology (MIT), in partnership with the NEMC Hub, matches students with paid internships at microelectronics companies and organizes bi-weekly field trips that educate the students on the local microelectronics ecosystem, the opportunities that exist, and potential mentorship opportunities.

MAKERS OF A BETTER FUTURE CURRICULUM

NEMC worked on expanding the existing Makers of a Better Future awareness curriculum in partnership with the Center for Advanced Manufacturing at MassTech to include a new, robust microelectronics K-12 module.


Keynote
#eCTF2024
WELCOME
Stephanie Lin
Director, Microelectronics Commons
National Security Technology Accelerator
NSTXL
NATIONAL SECURITY TECHNOLOGY ACCELERATOR
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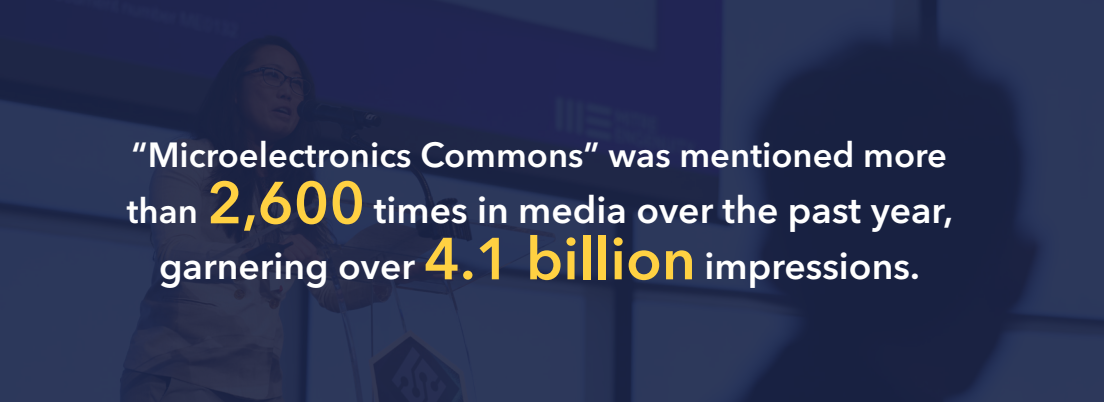
MICROELECTRONICS
COMMONS

**Data is in accordance with information collected by NSTXL as of September 2024.*

The NEMC Hub garnered national attention following their award in September of 2023. Highlights include recognition from congressional leadership and myriad defense technology outlets, including Defense Daily, Inside Defense, and Executive Biz.

NATIONWIDE INTEREST



DOD Names 8 Locations to Serve as New 'Microelectronics Commons' Hubs

Sept. 20, 2023 | By C. Todd Lopez, DOD News |

Under the CHIPS and Science Act, the Defense Department today announced the award of nearly $240 million dollars to eight regional "innovation hubs" around the United States which will be a part of the Microelectronics Commons, and which will benefit both the department and the United States by spurring development of a domestic microelectronics manufacturing industry.

On September 20, 2023, the Department of Defense officially released its announcement of the eight Hub awardees under Microelectronics Commons.

PRESS RELEASE

Massachusetts Wins Proposal to Host Northeast Microelectronics Hub through Federal CHIPS and Science Act

> *"This is a once-in-a-generation opportunity for Massachusetts to be at the forefront of innovation and this cutting-edge sector. The Northeast Microelectronics Hub will result in new jobs and workforce development opportunities, groundbreaking research development, and resources for business – all right here in Massachusetts."*
>
> **Gov. Maura Healey**
> *Massachusetts*

businesswire
A BERKSHIRE HATHAWAY COMPANY

MITRE's 2024 Embedded Capture the Flag Competition Concludes with Record Participation from Future STEM Workforce

This article, republished on Yahoo! Finance and multiple other Tier 1 outlets, highlighted the eCTF workforce development competition implemented by the NEMC Hub with partner MITRE in 2024.

> "Providing hands-on experiences to attract and educate the future cybersecurity workforce helps ensure U.S. microelectronics competitiveness in critical areas, including secure embedded systems. The eCTF competition demonstrates a commitment to important investments in our nation's future workforce."
>
> **Mark Halfman**
> *Director, NEMC Hub*

MIT News
ON CAMPUS AND AROUND THE WORLD

MIT, Applied Materials, and the Northeast Microelectronics Coalition Hub to bring 200mm advanced research capabilities to MIT.nano

MIT and Applied Materials, Inc. announced an agreement today that, together with a grant to MIT from the NEMC Hub, will commit more than $40 million of estimated private and public investment to add advanced nano-fabrication equipment and capabilities to MIT.nano, the institute's center for nanoscale science and engineering.

The Boston Globe

TALKING POINTS

Millions in Department of Defense funds to be distributed

Following the distribution of the first round of Call for Project awards in September 2024, The Boston Globe released an article on the DoD funding, spotlighting local NEMC Hub. The article, which garnered over 4.3 million impressions, mentioned the Hub awards and Governor Maura Healey's comment on its innovative impact on microelectronics in the United States.

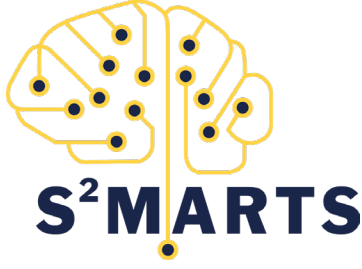
> *"The first round of technical project awards under the Microelectronics Commons marks a significant milestone in DoD's implementation of the CHIPS and Science Act. We look forward to expediting lab-to-fab prototyping of leading-edge microelectronics hardware in the coming months and years, as these efforts move us towards domestic prototyping capabilities in the U.S."*
>
> **Dr. Dev Shenoy**
> *Principal Director for Microelectronics, Microelectronics Commons Executive Director OUSD(R&E)/ASD(CT)*

MOVING FORWARD

As we close out the second fiscal year and move into the third year of the Microelectronics Commons program, I couldn't be more excited for what's to come! Commons aims to accelerate U.S. leadership in semiconductor innovation. We anticipate breakthroughs in microelectronics that will drive advances in DoD technologies across Quantum, Artificial Intelligence Hardware, Secure Edge/Internet of Things, 5G/6G, Electromagnetic Warfare, and Commercial Leap-Ahead Technologies. Collaboration across industry, academia, and government will create new opportunities for talent, infrastructure, and supply chain resilience. This pivotal year will help secure the U.S. as a global leader in semiconductor production, fostering national security and economic growth in a rapidly evolving technological landscape. I want to thank you personally for attending the Microelectronics Commons Annual Meeting in 2024, and we look forward to another great year! Stay positive, avoid resistance, and keep conducting greatness like a good semiconductor.

Bryan Smith

Microelectronics Commons Execution Advisor, NSWC Crane



The Microelectronics Commons program was established through the Strategic & Spectrum Missions Advanced Resilient Trusted Systems (S²MARTS) Other Transaction Agreement (OTA) established by the Naval Surface Warfare Center (NSWC) Crane Division and managed by the National Security Technology Accelerator (NSTXL).

To learn more about S²MARTS, visit www.s2marts.org.

Get involved with Microelectronics Commons by visiting www.microelectronicscommons.org.

MICROELECTRONICS COMMONS

BRIDGING THE GAP FROM LAB TO FAB

GET INVOLVED WITH COMMONS

www.microelectronicscommons.org