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## Unique Commons Hub Initiatives Nurture Workforce Development

July 2, 2024 - The [Microelectronics Commons](#) ecosystem ensures that emerging technologies are nurtured from conception to market readiness by providing a solid workforce development pipeline. As a "lab to fab" regional ecosystem, Commons plays a critical role in laying a solid foundation for future DoD innovation in microelectronics and beyond, and of the larger DoD goal of re-onshoring microelectronics production. Below are recent examples of Hubs' initiatives focused on creating a solid workforce that impacts U.S.-based microelectronics industry.

Under the [Northeast Microelectronics Coalition \(NEMC\) Hub](#), led by the Massachusetts Institute of Technology, partner MITRE utilized state funding to implement an [Embedded Capture-the-Flag \(CTF\)](#) competition to entice students to develop their skills in secure microelectronics. The program leverages gamification to bridge the educational gap in embedded systems security and microelectronics, preparing students to work in this critical field.

The [California Defense Ready Electronics and Microdevices Superhub \(DREAMS\) Hub](#), led by the University of Southern California (USC), is conducting a pilot Cleanroom Gateway this summer for specialized learners and undergraduate students with the goal of kickstarting a new pipeline of inspired and qualified workers by giving them their first experiences in a cleanroom setting.

"As a nation we have not maintained our skills in hardware development, outsourcing them instead. Our program addresses each educational stage with specific solutions. We are developing a complete approach to ensure that we have the needed capabilities in one year, five years and 10 years," Andrea Belz, Viterbi Vice Dean of Transformative Initiatives and DREAMS Director of Translational Strategy said.

The [Silicon Crossroads Microelectronics Commons \(SCMC\) Hub](#), led by the Applied Research Institute (ARI), has enacted many workforce development initiatives, including the notable CASCADE program. Administered by Innovate in America in partnership with Synopsys, SEMI Foundation, Purdue University, and MNT-EC, the CASCADE (Commons-Accelerated Silicon Crossroads Apprenticeships for Demands in Engineering) program is pioneering a first-of-a-kind apprentice program to build a chip design talent pipeline.

All eight Hubs of Microelectronics Commons have implemented, or are involved in, unique programs centered around workforce development. By providing a comprehensive industry and workforce development pipeline, these ecosystems ensure that emerging technologies are nurtured from conception through to market readiness. [Click here](#) to learn more about the eight Hubs of the Microelectronics Commons and their focus areas.



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## About Microelectronics Commons

The [Microelectronics Commons](#) program was awarded in 2023 after Congress passed the CHIPS and Science Act to strengthen American manufacturing, supply chains, and national security. By investing in this network of 8 regional prototyping Hubs with a focus in 6 main technology areas - 5G/6G, AI Hardware, Commercial Leap-Ahead, Electromagnetic Warfare, Secure Edge/IoT Computing and Quantum Technology - the United States is safeguarding our critical microelectronics supply chain. The Microelectronics Commons was awarded through the [Strategic & Spectrum Missions Advanced Resilient Trusted Systems \(S²MARTS\)](#) OTA, managed by [NSTXL](#), which is the premier rapid OT contracting vehicle for the Department of Defense (DoD) in trusted microelectronics, strategic & spectrum mission, and other critical mission areas.