Congress of the United States

Washington, DC 20515

April 15, 2024

The Honorable Julie A. Su
Acting Secretary
U.S. Department of Labor
200 Constitution Ave. NW
Washington, DC 20210

Dear Acting Secretary Su,

The Biden-Harris Administration, at the direction of the bipartisan *CHIPS and Science Act*, is leading the way on revitalizing semiconductor manufacturing in the United States. However, none of these efforts to design, fabricate, and package chips in America will succeed if we do not simultaneously develop the domestic workforce capable of operating the new facilities. While the Department of Commerce (DOC), the Department of Defense (DOD), and the National Science Foundation (NSF) have started to implement vital new programs to support domestic semiconductor workforce development, the Department of Labor must also play a role if the programs are to be successful.

The U.S. share of global semiconductor manufacturing decreased from 37 percent in 1990 to just 12 percent in 2020.[1] With the decrease in U.S. manufacturing came a subsequent loss of the U.S. semiconductor workforce, especially the technical workforce. Today, many countries in Asia have a competitive advantage over the United States in terms of high-skilled workforce capacity for semiconductor manufacturing. As of 2021, the American semiconductor industry employed an estimated 277,000 people in a wide range of technical jobs with unique skills and educational backgrounds.[2] The semiconductor industry projects that the workforce will need to grow to nearly 460,000 jobs by 2030.[3] Current degree completion rates are not nearly sufficient to fill these projected jobs, and the supply of apprenticeships needed also does not meet the increasing demand.

The semiconductor industry is facing challenges in filling its workforce needs. These include high competition among technology industries for high skilled workers; low awareness of the semiconductor industry among graduate students in science, technology, engineering, and mathematics (STEM); too few academic programs supporting emerging technologies; not enough hands-on training to prepare graduates for work on the manufacturing floor; insufficient diversity in STEM; and retention issues due to cultural differences between young workers and the older workforce.[4]

The CHIPS and Science Act included several provisions to help industry get in front of these challenges. The legislation directs DOC to use its incentives and research programs to develop

and foster this workforce. The law further directs DOD to create a microelectronics commons, which in part seeks to develop a pipeline of talent to bolster local semiconductor economies and contribute more broadly to the growth of a domestic semiconductor workforce. Finally, the law included the bipartisan *CHIPPING IN Act of 2022* that directs NSF to make awards to develop, improve, and expand microelectronics education and workforce development activities, including by establishing a national network for microelectronics education. While these programs will be a positive step forward once they have been fully implemented, they will not be sufficient to overcome the gap.

The Department of Labor, through its authorities under *the National Apprenticeship Act of 1937* and *the Workforce Innovation and Opportunity Act*, is the nation's primary federal supporter of industrial workforce development, including apprenticeships. The Department of Labor must meet the moment and use its programs and authorities to support implementation of *the CHIPS and Science Act* and address the urgent national needs for semiconductor manufacturing workforce.

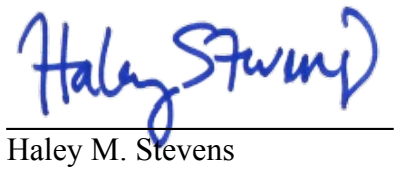
To accomplish this goal, the Department should consider the following actions:

- Issue guidance to states describing how various existing federal funding streams can support semiconductor workforce needs. The Department issued similar guidance in 2022 to support workforce needs associated with the *Infrastructure Investment and Jobs Act*.[5]
- Use the Apprenticeship Building America open competition[6] to support apprenticeship programs in semiconductor related fields, including by establishing an additional registered apprenticeship industry intermediary for semiconductor-related apprenticeships. DOL currently has two intermediaries designated for the information technology sector but only one in semiconductor-related sectors. An additional industry intermediary can help meet the spike in demand for apprenticeships as fabs are built and become operational.
- Use the State Apprenticeship Expansion Formula Grants to support state programs for semiconductor-related apprenticeships in states where CHIPS awards are announced. The Notice of Funding Opportunity outlines that this program will be used to foster jobs required to implement President Biden's Investing in America Agenda.[7] We applaud this effort and encourage you to focus on the urgent national needs described in this letter.

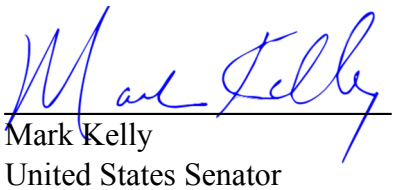
Finally, we urge the Department to coordinate closely with DOC, DOD, and NSF on their programs and investments focused on the semiconductor workforce. Program implementation across the agencies will be staggered and many awards are place-based. As such, close interagency coordination will be required if these programs are to yield outcomes greater than the sum of their parts.

We appreciate your dedication to addressing these important issues and look forward to working with you.

Sincerely,



Haley M. Stevens
Member of Congress



Mark Kelly
United States Senator

cc:

Dr. Sethuraman Panchanathan, Director, National Science Foundation

The Honorable Gina Raimondo, Secretary, The Department of Commerce

Dr. Laurie Locascio, Director, The National Institute of Standards and Technology

[1] Antonio Varas et al., "Government Incentives and U.S. Competitiveness in Semiconductor Manufacturing," Semiconductor Industry Association, September 2020.
[2] Chipping In: The Positive Impact of The Semiconductor Industry On The American Workforce And How Federal Industry Incentives Will Increase Domestic Jobs," Semiconductor Industry Association, May 2021.
[3] Dan Martin, "CHIPPING AWAY: Assessing and Addressing the Labor Market Gap Facing the U.S. Semiconductor Industry," Semiconductor Industry Association and Oxford Economics, July 2023.
[4] Current and Future Workforce Needs to Support a Strong Domestic Semiconductor Industry," Semiconductor Industry Association, comments to National Institute of Standards and Technology, August 15, 2018.
[5] https://www.dol.gov/sites/dolgov/files/ETA/advisories/TEN/2022/TEN%2010-22/TEN%2010-22%20%28Complete%20PDF%29.pdf
[6] https://www.dol.gov/sites/dolgov/files/ETA/grants/ABA2%20FOA-ETA-24-04.pdf
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