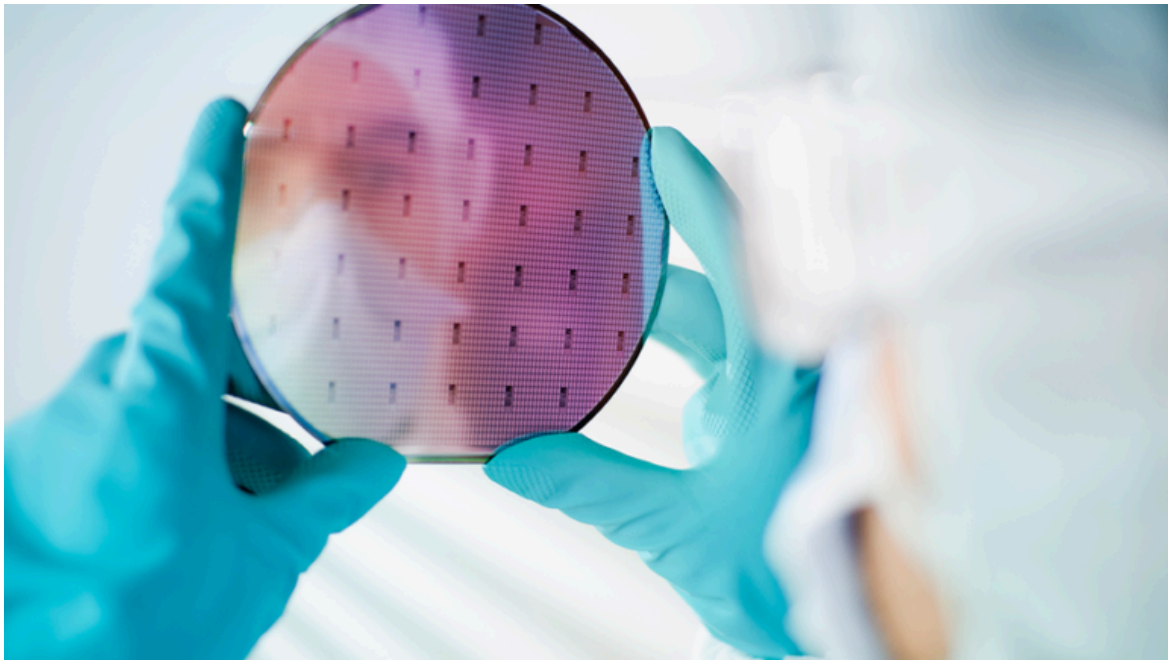
ARIZONA TECHNOLOGY COUNCIL

TSMC, ASU form partnership to boost student recruitment, faculty research



Phoenix Business Journal

Taiwan Semiconductor Manufacturing Co. and Arizona State University announced a partnership agreement on Thursday to boost student training, workforce recruitment and faculty research.

ASU and TSMC's partnership announcement comes on the heels of the Semiconductor Industry Association's warning this week that the U.S. could face a projected shortfall of

67,000 semiconductor industry workers — including technicians, computer scientists and engineers — by 2030.

The announcement also comes a week after TSMC announced it was pushing back the production start date at its new chip factory, or fab, under construction in north Phoenix to 2025 because it's lacking skilled workers to install specialized equipment at the site.

The partnership agreement is intended to leverage expertise through the Ira A. Fulton Schools of Engineering for research, development and innovation, according to an ASU announcement.

"We have been working closely for a couple of years to carefully define what TSMC needs from ASU and how we can deliver on that for the company and for the greater Phoenix community," Grace O'Sullivan, vice president of corporate engagement for ASU, said in a statement. "There is a lot more work to do, but we are learning how best to collaborate and we have built a foundation for long-term success."

TSMC and ASU are considering four sites to potentially co-locate the training center: TSMC's fab currently under construction in north Phoenix; ASU's West or Polytechnic campuses, or the university's MacroTechnology Works facility at ASU Research Park in Tempe.

TSMC and ASU's collaboration calls for additional lab courses, hands-on learning opportunities, undergraduate research programs, and expansion of the fab workforce pipeline, which includes student internships, master's fellowships and membership in the Corporate Affiliate Program through ASU's career centers.

TSMC will be connected to the university's Access ASU program, providing access to semiconductor career paths for high school and transfer students, according to the university.

In addition, TSMC will collaborate with ASU's CareerCatalyst team to develop nondegree professional and career education in microelectronics engineering, management and leadership.

TSMC and ASU faculty also plan to engage in joint research workshops, according to the university.

"When making the decision to expand in the U.S., one of the considerations was access to world-class engineering talent to help us operate the most sophisticated semiconductor manufacturing technology in the world," Brian Harrison, president of TSMC Arizona, said in a statement. "There's no doubt that the presence of Arizona State University, equally committed to a culture of innovation, was one of many reasons we chose Phoenix for our U.S. operation."

Industry's workforce needs increasing

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TSMC is building two semiconductor fabs totaling $40 billion in north Phoenix, one of the largest foreign direct investments in state and U.S. history. Simultaneously, Intel Corp.'s Ocotillo semiconductor campus in Chandler is in the midst of its own expansion and capital investment, with a $20 billion investment that will double its capacity.

A month ago, TSMC confirmed that the company and its suppliers were bringing in additional workers from Taiwan to Arizona in efforts to ramp up construction at its fabs. Because TSMC operates highly-sophisticated facility systems, temporary workers with unique expertise are required for some construction activities to accelerate the project, the company said at the time.

"Regional leaders listen to the needs of industry. They collaborate to bring ideas to fruition. They work to build programs that help all," Chris Camacho, president and CEO of the Greater Phoenix Economic Council, said in a statement. "This partnership between TSMC and ASU reflects the region's dedication to fulfilling the workforce needs of the entire semiconductor ecosystem as we become an international center for the industry."

Earlier this month, ASU and Applied Materials Inc. announced a partnership to create the Materials-to-Fab Center at ASU Research Park in Tempe. The research, development and prototyping facility is slated to be operational within two years.

While ASU does not currently have plans to create a similar research and development center with TSMC, discussions are ongoing and Thursday's partnership announcement is "one more step in building the relationship and understanding how to provide the talent resources and educational tools that TSMC needs," ASU spokesman Jay Thorne told the Business Journal.

The U.S. semiconductor industry workforce is projected to grow to 460,000 by the end of the decade, up from about the 345,000 currently working in the field. However, not enough people are graduating with the required credentials to meet the industry's increasing demands, according to SIA's report.

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