

ASU joins Applied Materials' EPIC Center as inaugural university research partner

By Jay Thorne, ASU News
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When the United States made the strategic decision in 2020 to reinvest in domestic semiconductor manufacturing, it confronted an uncomfortable paradox baked into capitalism itself: How do you create the collaborative environment it will take to be a global leader when the American industry is made of companies structured as competitors?

This gradual conversion is coming together this year in Silicon Valley — and Arizona State University is right in the middle of it — in a facility designed from the ground up to make that kind of collaboration not just possible, but inevitable.

ASU has been named an inaugural university research partner at [Applied Materials'](#) new EPIC Center — short for Equipment and Process Innovation and Commercialization — the largest-ever U.S. investment in advanced semiconductor equipment research and development.

Joining ASU as academic partners will be Rensselaer Polytechnic Institute and Stanford University in a facility that counts Micron, Samsung Electronics and TSMC, among its industry participants.

"With the largest engineering school in the country, ASU is driven by our commitment to be of service to industry and to create partnerships that accelerate defining breakthroughs for future semiconductor technology," ASU President Michael Crow said. "Being a part of a high-velocity, high-creativity environment with the brightest minds in the industry builds upon the work we do with Applied Materials in our shared Materials-to-Fab Center at ASU, creating a seamless network for driving semiconductor excellence in America."

The EPIC Center introduces a structurally novel model to the semiconductor industry: For the first time, chipmakers can maintain dedicated space inside an equipment supplier's facility, effectively extending their own in-house pilot lines while gaining early access to next-generation tools and technologies — months or even years ahead of when equivalent capabilities could otherwise reach their own labs.

The center is designed to compress the timeline from early-stage research to full-scale manufacturing through faster learning cycles, greater accuracy and tighter collaboration across the entire innovation chain.

"The EPIC Center is designed to bring together the best minds from industry and academia in a high-velocity, manufacturing-relevant environment to dramatically accelerate the development and commercialization of next-generation semiconductor technologies that are foundational to AI computing," said Gary Dickerson, president and CEO of Applied Materials. "Welcoming ASU, RPI and Stanford as research partners at EPIC strengthens the U.S. lab-to-fab innovation pipeline and creates a powerful platform for developing future semiconductor talent."

For ASU, the EPIC Center partnership builds directly on an already deep relationship with Applied Materials. In October 2025, the two institutions jointly opened the \$270 million [Materials-to-Fab Center](#) at ASU's MacroTechnology Works facility in Tempe — a shared R&D and prototyping environment that brings industry-scale semiconductor manufacturing equipment into a collaborative university setting. The Materials-to-Fab Center already supports ASU research projects tied to the CHIPS and Science Act, including the Southwest Advanced Prototyping Hub and the SHIELD USA advanced packaging initiative.

"Being selected as one of three inaugural university partners at the EPIC Center reflects ASU's rise to national prominence in semiconductor research and innovation," said Sally Morton, executive vice president of ASU's [Knowledge Enterprise](#). "The largest U.S. semiconductor equipment manufacturer choosing to work with the top U.S. research universities is itself a statement. Our relationship with Applied Materials has strengthened through our collaboration in the Materials-to-Fab Center and our ability to deliver results. We expect industry partners to bring their hardest problems to this environment, and our researchers will be there to help solve them."

Morton noted that this alignment between real-world challenges and academic inquiry is a critical element to advancing U.S. competitiveness. The mission is to accelerate the development of high volume manufacturing.

ASU brings to the partnership the largest engineering school in the United States, with approximately 33,000 students, along with deep expertise that spans the full microelectronics ecosystem — from front-end materials innovation through advanced packaging and large-scale manufacturing. The university has emerged as a key recipient of state, federal and private sector investment in microelectronics, and its [SWAP Hub](#) is part of the national Microelectronics Commons created through the CHIPS and Science Act.

"What makes the EPIC Center genuinely different and ultimately of great value is that it brings together the entire ecosystem in one place — tool manufacturers, chipmakers, materials suppliers and universities all working in close proximity, with access to the most advanced equipment in the industry," said Jason Conrad, chief operating officer of the SWAP Hub.

"Right now, getting access to the latest technologies and, more importantly, getting access to the actual problems customers are trying to solve — that's extraordinarily difficult," Conrad said. "The EPIC Center changes that. It puts our researchers at the table alongside the people who are going to define what the next generation of semiconductor technology looks like, and it allows us to accelerate in ways that simply aren't possible when academia and industry operate in separate lanes."

EPIC Center will become operational later this year.

This story originally appeared on [ASU News](#).

Main image



ASU has been named an inaugural university research partner at Applied Materials' new EPIC Center, the largest-ever U.S. investment in advanced semiconductor equipment research and development. Photo by Emma Fitzgerald/Arizona State University