CENTRAL STATE UNIVERSITY

2026 INTEL-SPONSORED SUMMER INTERNSHIP IN

SEMICONDUCTORS AND MICROELECTRONICS

Join the 2026 Intel-Sponsored Summer Internship in Semiconductors and Microelectronics offered through the Semiconductor Education and Research Program at Central State University.

This eight-week summer program provides hands-on training, mentoring, technical workshops, and laboratory experiences across seven training sites in six states. Participants will build skills in semiconductors, microelectronics, and related advanced technologies while preparing for future academic and workforce opportunities.

SCHOLARSHIPS

- $5,000 for stipend and food allowance.
- Paid housing is provided at the internship campuses.

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ONLINE APPLICATION

CENTRALSTATE.EDU/SEMICONDUCTORS/INTEL

JUNE 1 – JULY 24 2026

SEVEN INTERNSHIP SITES

Central State University
Wilberforce, OH

Clark Atlanta University
Atlanta, GA

Binghamton University, SUNY
Binghamton, NY

Fayetteville State University
Fayetteville, NC

North Carolina A&T State University
Greensboro, NC

University of Michigan
Ann Arbor, MI

Prairie View A&M University
Prairie View, TX

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Program Overview

This booklet provides an overview of the 2026 Summer Internship Program in Semiconductors and Microelectronics at Central State University, a signature summer initiative designed to strengthen education, research training, and workforce preparation in semiconductor and microelectronics fields. The 2026 program is an intensive eight-week experience scheduled from June 1 to July 24, 2026. Central State University (CSU) serves as the central coordinating institution through its Semiconductor Education and Research Program (SERP[1]). Intel's sponsorship continues to reflect its commitment to building a strong talent pipeline in support of the expanding semiconductor ecosystem in Ohio and across the nation.

Over the past three summers, the internship program has shown strong and steady growth in both participation and institutional reach. In 2023, the program served 20 interns representing 4 universities and 4 high schools. In 2024, participation increased to 39 interns representing 10 universities and 5 high schools. In 2025, the program grew further to 46 interns representing 14 universities and 6 high schools. This upward trajectory highlights the program's sustained momentum, increasing visibility, and growing impact as a pathway for students interested in semiconductor and microelectronics education and training. The 2026 cycle marked another major step forward for the program, growing from 309 applicants and 46 selected interns in 2025 to 560 applicants and 50 selected interns in 2026. The selected cohort also reflected expanded institutional representation, with 17 unique universities and 15 unique high schools. The program is open to undergraduate students currently enrolled in a degree program, as well as high school students. No prior experience in microelectronics is required, and a basic understanding of high school mathematics is sufficient preparation for participation. This structure allows students from a wide range of academic backgrounds to enter the program and gain exposure to semiconductors and microelectronics through a combination of daily lectures and extensive hands-on laboratory experience.

A defining feature of the 2026 program is the expansion of training sites. After operating with three in-person training sites in 2025, the program expanded in 2026 to seven in-person training sites across six states: Central State University (Ohio), Prairie View A&M University (Texas), Fayetteville State University (North Carolina), Clark Atlanta University (Georgia), North Carolina A&T State University (North Carolina), University of Michigan (Michigan), and SUNY-Binghamton (New York). This expansion significantly increases program capacity, extends geographic reach, and provides interns with access to a broader network of academic training environments.

The Summer Internship Program was launched in 2023 with Intel support through

[1] https://www.centralstate.edu/semiconductors

the Intel Semiconductor Education Program at Central State University (ISEP-CSU[2]), established in 2022, and Intel has continued to support the program through each summer offering from 2023 to 2026. This sustained support has been instrumental in the program's continued growth in scale, reach, and training capacity. It has also helped advance curriculum development at CSU, including a certificate in semiconductor processing, a minor in computer hardware technology, multiple technical micro-credentials, and foundational laboratory experiences in semiconductors and microelectronics. Building on this foundation, CSU now leads the NSF-funded Partnership for Advancing Research Capacity in Semiconductors at Historically Black Colleges and Universities (PARCS-HBCU[3]), a seven-HBCU consortium, and also serves as a collaborating institution in the Advancing Semiconductor Education through Expansion and Diversification (ASEED[4]) project. Together, these efforts have helped CSU broaden internship opportunities, expand its training network, and support the continued growth of the program in Summer 2026.

Program Objectives and Target Audience

The primary objectives of the Summer Internship Program are to provide students with intensive, practical, and hands-on training in semiconductors and microelectronics while strengthening their preparation for future academic and career opportunities in this rapidly growing field. Through a combination of lectures, laboratory activities, and site-based training, the program is designed to build foundational knowledge and practical skills in areas such as microelectronic design, fabrication, testing, and related technologies. While the program centers on semiconductors and microelectronics, it also includes hands-on activities in data analysis, machine learning, artificial intelligence, and quantum science. These complementary areas broaden the educational experience and align the program with national priorities in emerging technologies and technical workforce development. The program also supports workforce development goals by helping prepare students for future opportunities in the semiconductor industry in Ohio and across the United States. According to a Semiconductor Industry Association and Oxford Economics workforce study[5], the U.S. semiconductor workforce is projected to grow by nearly 115,000 jobs by 2030, and about 67,000 of those jobs could go unfilled if current education and training trends continue.

Participants in the Summer Internship Program will engage in an integrated training experience that combines daily lectures, hands-on laboratory activities, site-based training, and technical micro-credential learning. In addition to their in-person instructional and laboratory work, participants will complete at least two technical micro-credentials developed by or in collaboration with industry subject matter experts, including Intel and

[2] https://www.centralstate.edu/semiconductors/Intel
[3] https://www.centralstate.edu/semiconductors/PARCS
[4] https://www.centralstate.edu/semiconductors/ASEED
[5] https://www.semiconductors.org/wp-content/uploads/2023/07/SIA_July2023_ExecSummary.pdf

Siemens. These micro-credentials are designed to complement the internship's hands-on components by reinforcing technical concepts, broadening industry exposure, and helping participants connect practical training with recognized workforce competencies. The primary objectives of the Summer Internship Program are to provide students with intensive, practical, and hands-on preparation in microelectronics design, fabrication, testing, and related advanced technologies, while also strengthening their readiness for future academic and career opportunities in the semiconductor industry. Through this combination of classroom instruction, laboratory practice, industry-aligned micro-credentials, and applied technical activities, the program equips participants with foundational knowledge and workforce-relevant skills that are directly applicable in modern semiconductor settings. The program also contributes to workforce preparation aligned with the continued growth of semiconductor manufacturing in Ohio and across the United States. In particular, the internship helps build early talent pipelines connected to Intel's major investment in new Ohio semiconductor facilities, projected to begin operations in the 2030–2031 timeframe. At the same time, the program responds to broader national needs for a technically trained semiconductor workforce by preparing students with the practical experience, technical foundation, and industry awareness needed for future study, research, and employment in semiconductors and microelectronics.

The program's design, which requires only basic high school math and no prior microelectronics experience, directly confronts a common challenge in STEM education: the perceived complexity or lack of early exposure to specialized fields. By providing a structured, hands-on learning environment, it aims to build foundational skills from the ground up. This approach effectively on-ramps students who might not have pursued microelectronics through conventional academic routes, directly addressing the "shortage of skilled workforce". This inclusive and foundational training model is essential for sustainable workforce development in a rapidly evolving industry, shifting the focus from simply selecting pre-qualified candidates to actively cultivating new talent, demonstrating a commitment to long-term human capital development that benefits both industry and the broader economy.

Internship Curriculum

The Summer Internship Program is structured as an intensive eight-week, mentor-guided training experience that effectively blends theory and practice. Participants attend daily morning lectures designed to establish essential theoretical foundations in microelectronics. These lectures are complemented by practical, hands-on laboratory sessions each afternoon, enabling interns to directly apply concepts learned and build tangible skills. The program's consistent, five-day-a-week structure facilitates deep immersion and continuous learning. This integrated theoretical and practical approach directly addresses industry demand for a skilled technical workforce, preparing interns with job-ready expertise. By aligning closely with industry requirements, particularly those of Intel, interns quickly

acquire competencies that significantly streamline their transition into manufacturing and research roles, making them immediately valuable to future employers.

Topics Outline: The curriculum is organized around a range of training topics that vary across the seven training sites, as listed below.

1.) Central State University – Wilberforce, OH

- **Semiconductor Simulation, 3D Printing Fabrication, and Testing:** This workshop is designed to provide students with foundational and practical experience in advanced engineering through hands-on training in semiconductor-related simulation, additive fabrication, and testing. Under the direction of Dr. Tahseen Al-wattar, participants will strengthen their technical skills, teamwork, problem-solving ability, and professional readiness through applied activities in computer-aided simulation, design modeling, 3D printing fabrication, post-processing, and material testing. The workshop emphasizes simulation-driven design using SolidWorks, enabling students to explore modeling, mechanics, and fabrication planning in a semiconductor and advanced manufacturing context. Participants will also gain practical exposure to 3D printing workflows, including fabrication setup, process parameters, post-processing methods, and evaluation of printed components. A key component of the training is testing and validation, where students examine material behavior, fabrication quality, and performance outcomes to connect digital design with physical implementation.

- **Arduino Programming and Smart Electric Vehicle Systems:** This workshop is designed to provide students with foundational and practical experience in Arduino programming, embedded systems, electric vehicle electronics, and smart mobility platforms through hands-on activities and applied system exploration. Under the direction of Dr. Tahseen Al-wattar and Dr. Mubbashar Khan, participants will strengthen their technical skills, problem-solving ability, and understanding of integrated hardware-software systems in emerging transportation technologies. The workshop emphasizes basic Arduino programming and embedded systems concepts, giving students an introduction to microcontroller-based design and control. Participants gain practical exposure to the Arduino IDE, including installation and setup, as well as ESP32-C3 configuration, helping them understand how programming environments interface with embedded hardware. A key component of the workshop is hands-on engagement with smart electric mobility systems, including the assembly and operation of electric scooters and electric skateboards. Through these activities, students explore how embedded electronics, control systems, and electric vehicle platforms work together in real-world applications.

- **Electric Transportation, Power Systems, and AI:** This workshop is designed to strengthen research, teaching, and curriculum development in electric transportation, power systems, and emerging computational technologies at Central

State University. Under the direction of Dr. Deng Cao, the project supports interdisciplinary educational and research activities involving faculty, undergraduate students, and collaborating institutions, with a focus on expanding student exposure to modern technologies through hands-on workshops and research-oriented learning. The workshop emphasizes foundational and applied topics in artificial intelligence, computer vision, game theory, electric transportation systems, and power systems. Participants are introduced to modern computational methods and intelligent infrastructure concepts that are increasingly important in electrified transportation and next-generation energy systems. Through lectures, demonstrations, and interactive activities, students gain exposure to both the technical foundations and broader applications of these interconnected areas. A key feature of the project is its interdisciplinary structure, which connects computing, engineering, transportation, and energy systems within a collaborative research and educational environment. The workshop also supports student mentoring, faculty collaboration, and the development of instructional resources that contribute to ongoing academic and research activities.

- **Python Programming and Machine Learning:** This workshop is designed to provide students with foundational and practical training in Python programming, data analysis, and machine learning through a combination of instruction and hands-on laboratory practice. Under the direction of Dr. Gopalakrishnan Krishnasamy, participants will build technical skills, computational thinking, and problem-solving ability through applied activities in programming, data handling, visualization, and machine learning methods. The workshop begins with core Python programming fundamentals, including variables, data types, operators, lists, conditional statements, loops, functions, and built-in functions. Participants also gain experience with key Python libraries such as NumPy, SciPy, Matplotlib, and Pandas, along with practical skills in file handling, spreadsheet processing, and data conversion using Python tools. A major focus of the workshop is the introduction to data analysis and machine learning. Students explore basic statistics, data distributions, and visualization techniques such as histograms and scatter plots, then progress to foundational machine learning concepts including train/test methods, confusion matrices, linear regression, polynomial regression, multiple regression, logistic regression, hierarchical clustering, and k-means clustering. The training also highlights applications of supervised and unsupervised learning for classification and feature detection.

- **Foundations of Engineering and Modern Manufacturing:** This workshop is designed to provide participants with foundational and practical exposure to engineering and modern manufacturing through hands-on activities, demonstrations, and team-based projects. Under the direction of Dr. Saleh Almestiri, participants will strengthen their technical skills, creativity, teamwork, and problem-solving ability through applied learning in design, manufacturing, and engineering technology. The workshop emphasizes introductory engineering concepts and manufacturing

processes, helping students explore how ideas move from design to production. Participants gain experience with basic CAD design and 3D modeling, as well as introductory concepts in CNC machining, CAM, manufacturing simulation, and machine operation. The training also includes exposure to 3D printing and additive manufacturing, allowing students to connect digital design with physical fabrication. A key component of the workshop is hands-on, project-based learning, where students engage in engineering measurements, troubleshooting, and collaborative activities that reinforce practical understanding and teamwork. Instruction is supported through demonstrations, guided lab activities, and close supervision of equipment and design tasks.

- **PLC and Industrial Automation:** This workshop is designed to provide students with foundational and practical experience in programmable logic controllers (PLCs) and industrial automation through hands-on training in modern control systems. Under the direction of Dr. Akram Muntaser, participants will strengthen their technical skills, problem-solving ability, and professional readiness through applied activities in PLC programming, automation logic development, system integration, and troubleshooting. The workshop emphasizes industrial automation fundamentals, introducing participants to PLC architecture, input/output systems, safety procedures, and the role of automation in modern industrial environments. Students gain practical experience with Rockwell Automation PLC platforms and Connected Components Workbench (CCW) software, learning how to create, download, test, and monitor ladder logic programs. A key focus of the workshop is the development of control logic and applied automation skills, including ladder diagrams, logic functions, timers, counters, sequencing, debugging, and troubleshooting. Participants work with PLC trainer systems to build and test automation routines and to understand how software commands translate into real industrial control actions.

- **Introduction to Quantum Science, Quantum Computing, and 2D Semiconductor Materials:** This workshop is designed to provide high school and undergraduate students with a beginner-friendly yet engaging introduction to quantum mechanics, quantum computing, and two-dimensional semiconductor materials through guided instruction and hands-on activities. Under the direction of Dr. Mohammadreza Hadizadeh, participants will build conceptual understanding and computational problem-solving skills in quantum science, even with no prior background in the subject. The workshop emphasizes core quantum mechanics concepts, introducing students to topics such as the Schrödinger equation and quantum two-body bound states in one and two dimensions. These ideas are connected to modern semiconductor materials and quantum systems through simple model systems, including excitons in two dimensions. Students are also introduced to how these concepts relate to emerging areas such as quantum computing and advanced semiconductor technologies. A key component of the workshop is hands-on computational learning using Python in Google Colab, together with discussion of high-performance comput-

ing as an essential tool for modern quantum and materials research. Through guided exercises, participants gain introductory experience calculating binding energies and wave functions, offering a fascinating first look at how quantum science, advanced computation, and 2D semiconductor materials come together in the technologies of the future.

2.) Clark Atlanta University – Atlanta, GA

Computational Modeling of 2D Semiconductor Materials and Generative AI: This summer training is designed to provide undergraduate students with foundational and practical research experience in computational materials modeling, generative AI, and two-dimensional semiconductor nanomaterials. Under the direction of Dr. Dinadayalane Tandabany, with mentoring support from Dr. Dalia Daggag and Ms. Trinity Riggins, participants will build technical skills in modeling, visualization, and computational analysis of advanced materials relevant to semiconductor applications. The training emphasizes the study of graphene and transition metal dichalcogenide (TMD) materials, including MoS_2 and $MoSe_2$, with a focus on how doping, defects, and structural assembly influence electronic and transport properties. Students will explore topics such as nitrogen doping in graphene, adsorption and transport behavior in graphene-based nanomaterials, and the semiconductor-related properties of 2D materials. A key component of the training is the use of generative AI and density functional theory (DFT) to prepare structures, predict material properties, and investigate the behavior of nanomaterials. Participants also gain exposure to high-performance computing (HPC) and supercomputing resources for carrying out advanced simulations and electronic-structure calculations.

3.) Fayetteville State University – Fayetteville, NC

Semiconductor Materials, Optoelectronics, and Computational Modeling: This training at Fayetteville State University is designed to provide students with research experience in semiconductor materials, optoelectronics, and computational and experimental characterization methods. Under the mentorship of Dr. Zhiping Luo, Dr. Chandra M. Adhikari, Dr. Bhoj Gautam, and Dr. Sangeetha Balabhadra, participants engage in projects that explore the electronic, optical, and electrochemical behavior of advanced materials relevant to semiconductor and photonic applications. The training emphasizes the study of emerging semiconductor materials, including tantalum dichalcogenides, organic semiconductors, quantum-dot composites, and fluoride perovskites. Students investigate how material composition, structure, and doping influence key properties such as band structure, density of states, dielectric response, absorption, luminescence, carrier mobility, and electrochemical behavior. These topics connect directly to applications in solar energy conversion, light-emitting devices, optical sensing, photonic technologies, and semiconductor-related materials design. A key component of the training is exposure to both computational and experimental research methods. Participants work with first-principles density functional theory (DFT) to model electronic and optical properties, and they also gain experience

with optical spectroscopy, electrochemical impedance spectroscopy, cyclic voltammetry, and luminescence characterization to study material performance and structure–property relationships.

4.) North Carolina A&T University – Greensboro, NC

Semiconductor Manufacturing Training: The NCAT team supports the summer program through faculty leadership, postdoctoral coordination, and student mentoring in semiconductor manufacturing research and training activities. Planned activities include an 8-week summer hands-on training experience that provides students with practical exposure to advanced semiconductor manufacturing and nanoengineering concepts. The program is designed to build workforce-relevant skills in a high-demand STEM area by engaging participants in real-world technical challenges and strengthening their preparation in semiconductor-related technologies. The mentoring team includes Dr. Michael L. Curry, Dr. Jerald Dumas, and Dr. Demetrius A. Finley, with support from student mentors Kayla Morgan, Vanishnavi (Lisa) Kandula, and Sondai Riddick.

5.) Prairie View A&M University – Prairie View, TX

Semiconductors, AI, Broadband, and Professional Development Training: This summer training at Prairie View A&M University (PVAMU) is led by Dr. Suxia Cui, with support from Dr. Nabila Shamim, Dr. Lujun Zhai, and graduate students Abhitej Divi and Elizabeth M. Dada. The program provides students with a structured eight-week experience that combines technical instruction, professional development, and faculty-mentored research. It is designed to strengthen students' preparation in semiconductors, computing, and related engineering fields through a blend of workshops, laboratory engagement, and career-focused activities. The training includes a broad set of learning experiences in broadband technologies, STEM outreach, professionalism and career development, artificial intelligence and computer vision, semiconductor fundamentals, and high-performance computing. Students participate in technical workshops and guided sessions that build both subject knowledge and practical skills, while also gaining exposure to communication, workplace readiness, and career planning. A key component of the program is research project training, in which students are assigned to faculty laboratories and work with mentors on a variety of projects. This provides hands-on experience in research environments and allows participants to apply what they learn in workshops to real technical problems. The program concludes with research presentations, giving students an opportunity to share their work and strengthen their presentation skills.

6.) State University of New York at Binghamton – Binghamton, NY

Microelectronics Packaging, Manufacturing, and Diagnostics: This summer training at SUNY Binghamton provides students with hands-on experience in microelectronics packaging, semiconductor materials, advanced manufacturing, and device diagnostics

under the leadership of Dr. Paul R. Chiarot and collaborating faculty. The program introduces students to areas such as interconnect technologies, thin-film manufacturing, reliability of microelectronics assemblies, flexible hybrid electronics, thermal management, 3D packaging, flip-chip bonding, and through-silicon vias. Through faculty-guided lab work and exposure to the Analytical and Diagnostics Laboratory, participants gain experience in fabrication, characterization, testing, and performance analysis. The training also includes professional development activities, helping students build a strong foundation in microelectronics packaging, manufacturing, diagnostics, reliability, and research readiness.

7.) University of Michigan – Ann Arbor, MI

Semiconductors, 2D Materials, and Sustainable Polymers Training: This training at the University of Michigan provides students with opportunities for hands-on learning and laboratory placement through the Center for Materials Innovation (CMI). Participants may be matched with research groups in areas such as Semiconductors and 2D Materials or Sustainable Polymers, depending on their interests and the summer training focus. The program is led by Dr. Rachel S. Goldman and supported by faculty colleagues Dr. Kevin Pipe, Dr. Anthony Waas, Dr. Veera Sundaraghavan, and Dr. Pierre Ferdinand Poudeu. Together, they provide a multidisciplinary environment that connects materials science, semiconductor technologies, sustainability, and advanced manufacturing. The training is connected to the broader mission of the Center for Materials Innovation, a National Science Foundation-supported Materials Research Science and Engineering Center that advances the design, discovery, and deployment of novel materials for the industries of tomorrow. These areas include advanced manufacturing, clean energy and sustainability, artificial intelligence, and future semiconductors. Students are introduced to interdisciplinary approaches that combine computational, statistical, theoretical, and experimental methods to study how processing, structure, and material properties interact in advanced materials systems. A key feature of the training is exposure to novel semiconductor heterostructures for advanced quantum information processing as well as reconfigurable and environmentally sustainable polymer materials. Through this environment, participants gain insight into how modern materials research supports future technologies and how collaboration across academia, industry, and national laboratories contributes to innovation.

Intern Selection & Participant List

Applicant Pool Overview

The 2026 Summer Internship Program marks a major advancement in the continued growth, visibility, and national reach of this initiative. The application period opened in November 2025 and remained active through the end of March 2026, with applications submitted through the program's online form: https://forms.cloud.microsoft/r/3xAzNPKsEd. During this cycle, the program received **560 applications**, compared with 309 applications in 2025. This increase of 251 applicants represents an approximate **81.2% growth** in one year and reflects the expanding reputation of the program as a competitive and attractive opportunity for students seeking summer research and training experiences. The program is open to all undergraduate students currently enrolled in a degree program, as well as high school students. This broad eligibility supports participation from students at different stages of academic preparation, including those who are exploring future pathways in STEM fields. Importantly, *no prior experience in microelectronics is required* to apply, making the program accessible to students who are new to the field. The only expected foundation is a basic understanding of high school mathematics, which helps ensure that students with interest, motivation, and academic potential can participate even if they have not previously had specialized technical training.

Selected Cohort Overview & School Distribution

The number of **selected interns** also increased, rising from 46 in 2025 to **49 in 2026**. While the increase in selected participants was more modest than the rise in applications, it reflects the program's commitment to maintaining a highly competitive and academically strong cohort while thoughtfully expanding participation. Based on the 560 applications received in 2026, the selection of 49 interns corresponds to an overall **acceptance rate** of approximately **8.8%**, underscoring the selectivity of the program and the high level of interest it generated. The disciplinary composition of the 2026 applicant pool also reveals important trends. Applicants were drawn primarily from STEM fields, especially engineering, computing, and the sciences. The largest grouped major category was Computing, Computer Engineering, and Cybersecurity, which accounted for 207 applicants (37.0%). The second-largest category was Electrical, Electronics, and Microelectronics, with 120 applicants (21.4%). Together, these two broad categories accounted for well over half of all applicants, highlighting especially strong student interest in computing-intensive, electronics-related, and emerging technology fields. Other major categories also contributed significantly to the applicant pool. Mechanical, Manufacturing, and

Industrial disciplines accounted for 66 applicants (11.8%), while Physics, Mathematics, and Biology accounted for 64 applicants (11.4%). Chemical, Materials, and Chemistry represented 50 applicants (8.9%). Smaller but still meaningful groups included Business and Other Non-STEM fields with 11 applicants (2.0%), and Environmental, Agricultural, and Water disciplines with 7 applicants (1.3%). In addition, 35 applicants (6.3%) were high school students, demonstrating strong interest in the internship among pre-college participants and reinforcing the program's role in introducing students to research and technical training early in their academic development.

The institutional profile of the selected 2026 cohort also expanded in a meaningful way. Among the **49 selected interns**, there are **17 unique universities represented** and **13 unique high schools represented**, for a total of **31 distinct institutions**. This compares with the 2025 cohort, which included participants from 14 unique universities and 6 unique high schools, for a total of 20 distinct institutions. The 2026 cohort therefore reflects not only an increase in the number of selected interns, but also a broader spread of participating institutions. This wider representation indicates that the program is continuing to reach students from a broader academic base and strengthen its national presence.

Training Site Assignments

The growth in applications was matched by a significant expansion in training capacity and institutional partnership. In 2025, the internship operated through 3 in-person training sites. In 2026, the program expanded to **7 in-person training sites located across 6 states**, enabling broader geographic participation and increasing the program's ability to serve a larger cohort of students. The 2026 in-person training sites are:

- Central State University — Ohio (16 interns)
- Prairie View A&M University — Texas (13 interns)
- Fayetteville State University — North Carolina (5 interns)
- Clark Atlanta University — Georgia (5 interns)
- North Carolina A&T State University — North Carolina (4 interns)
- University of Michigan — Michigan (3 interns)
- SUNY Binghamton — New York (3 interns)

This expansion is a notable milestone for the program. Moving from three to seven training locations not only strengthened institutional collaboration, but also enhanced access for students across multiple regions of the country. The addition of new sites reflects deliberate effort to broaden the internship's footprint, extend high-quality research training opportunities, and build a stronger multi-state network of partner institutions.

	Applications	Selected Applicants
	560	49 (8.8 %)
School Distribution		
The Ohio State University	81 (14.5 %)	1 (2.0 %)
Central State University	67 (12.0 %)	9 (18.4 %)
High School	35 (6.3 %)	14 (28.6 %)
Michigan State University	29 (5.2 %)	1 (2.0 %)
University of Toledo	17 (3.0 %)	1 (2.0 %)
Fayetteville State University	11 (2.0 %)	7 (14.3 %)
Clark Atlanta University	4 (0.7 %)	4 (8.2 %)
University of Texas (4 Branches)	6 (1.1 %)	1 (2.0 %)
Carnegie Mellon University	2 (0.4 %)	1 (2.0 %)
Fort Valley State University	2 (0.4 %)	1 (2.0 %)
Georgia Institute of Technology	2 (0.4 %)	1 (2.0 %)
Howard University	2 (0.4 %)	1 (2.0 %)
Jackson State University	2 (0.4 %)	2 (4.1 %)
Texas Southern University	2 (0.4 %)	1 (2.0 %)
Rice University	2 (0.4 %)	1 (2.0 %)
North Carolina A&T State University	1 (0.2 %)	1 (2.0 %)
Tuskegee University	1 (0.2 %)	1 (2.0 %)
Emory University	1 (0.2 %)	1 (2.0 %)
Wright State University	53 (9.5 %)	–
University of Cincinnati	40 (7.1 %)	–
Case Western Reserve University	23 (4.1 %)	–
Miami University	16 (2.9 %)	–
University of Dayton	16 (2.9 %)	–
University of Illinois Urbana-Champaign	16 (2.9 %)	–
Other U.S. Schools	105 (18.8 %)	–
International Schools	24 (4.3 %)	–
Major Distribution for Undergraduate Students		
Computing, Computer Engineering & Cybersecurity	207 (37.0 %)	
Electrical, Electronics & Microelectronics	120 (21.4 %)	
Mechanical, Manufacturing & Industrial	66 (11.8 %)	
Physics, Mathematics, & Biology	64 (11.4 %)	
Chemical, Materials & Chemistry	50 (8.9 %)	
Environmental, Agricultural & Water	7 (1.3 %)	
Business & Other Non-STEM	11 (2.0 %)	
High School	35 (6.3 %)	
Total	**560 (100.0 %)**	

List of 16 Interns Receiving Training at Central State University		
Jonathan Bellot	Central State University	Jbellot1.csu@centralstate.edu
Bisshoy Bin Razzak	Central State University	brazzak.csu@centralstate.edu
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Kaveesha Abeykoon	High School	kaveeshaabey813@gmail.com
Tanmay Adya[†]	High School	tanmaykadya@gmail.com
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Abinav Dinesh	High School	abi.s.dinesh@gmail.com
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Dwij Parikh	High School	dp1151@pleasantonusd.net
Azmain Arik Rayhan	High School	azmainian@gmail.com
Avyukt Satish	High School	avyukt.s1@student.fortbendisd.gov
Orion Sprinkle	High School	Orionnoel2009@gmail.com
List of 13 Interns Receiving Training at PVAMU		
Adeoluwa Adelana	Jackson State University	j00986783@students.jsums.edu
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Nana Kofi Annor	Rice University	na107@rice.edu
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Isaac Ianpejo	High School	isaac.lanpejo@gmail.com
Kristopher Lively	Fort Valley State University	klively@wildcat.fvsu.edu
Logan Rinehart	University of Toledo	lrineha@rockets.utoledo.edu
Alvin Wang	Carnegie Mellon University	alvinwan@andrew.cmu.edu
Lucy Zhang	Michigan State University	zhan2475@msu.edu
List of 5 Interns Receiving Training at Fayetteville State University		
Amanda Bartlett	Fayetteville State Univ.	abartlett1@broncos.uncfsu.edu
Melissa Daniels	Fayetteville State Univ.	mforney@broncos.uncfsu.edu
Adrienne Kirk	Fayetteville State Univ.	akirk2@broncos.uncfsu.edu
Zalika Smith	Fayetteville State Univ.	zsmith19@broncos.uncfsu.edu
Jett Wu	Fayetteville State Univ.	jwu1@broncos.uncfsu.edu
List of 5 Interns Receiving Training at Clark Atlanta University		
Sadeen Aboalsaud	Emory University	Sadeen.aboalsaud@emory.edu
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Aysia Jackson	Clark Atlanta University	aysia.jackson@students.cau.edu
Jayla Smith	Clark Atlanta University	Jayla.smith7@students.cau.edu
Nevaeh Spirling	Clark Atlanta University	nevaeh.spirling@students.cau.edu
List of 4 Interns Receiving Training at North Carolina A&T		
Nakil Gardner	N. Carolina A&T State Univ.	nigardner@aggies.ncat.edu
Cameron Lewis	Fayetteville State Univ.	clewis33@broncos.uncfsu.edu
Unkarabile Nare	Georgia Inst. of Technology	unare3@gatech.edu
Mia Thompson	Fayetteville State Univ.	Mthompson11@broncos.uncfsu.edu
List of 3 Interns Receiving Training at Univ of Michigan		
Shirleyah Mcintosh	Central State University	Smcintosh.csu@centralstate.edu
Camron Nesbitt	Central State University	cnesbitt.csu@centralstate.edu
Deontro Wright	Central State University	dwright4.CSU@centralstate.edu
List of 3 Interns Receiving Training at SUNY-Binghamton		
Davian Cartwright	Central State University	dcartwright.csu@centralstate.edu
Aigbokhai Kadiri	Central State University	akadiri.csu@centralstate.edu
Maki Moxey	Central State University	mmoxey.csu@centralstate.edu

Scholarship Benefits and Participant Support

The 2026 Summer Internship Program provides comprehensive financial and logistical support to participants across all seven training sites. Each selected intern will receive a $5,000 scholarship to help cover living and meal expenses during the eight-week program. Participants will also receive paid accommodation at their assigned training site, with housing provided across all seven in-person locations. Together, these benefits allow interns to focus fully on lectures, laboratory training, professional development, and site-based activities throughout the summer. As an Intel-sponsored initiative, this support structure also strengthens the program's role in preparing students for future opportunities in semiconductors, microelectronics, and related advanced technology fields.

Program Growth, Reach, and Training Capacity

As shown in Figure 1, the Summer Internship in Semiconductors and Microelectronics has grown steadily in scale, reach, and training capacity over the past four years. The program expanded from 20 interns in 2023 to 49 interns in 2026, while the number of training sites increased from 1 in 2023 to 7 in 2026. Over the same period, institutional representation broadened substantially, with participating students coming from an increasing number of universities and high schools. The figure also highlights the combined contribution of Intel-funded and other-funded scholarships, which together supported 154 students from 2023 through 2026, each receiving a $5,000 scholarship along with housing support.

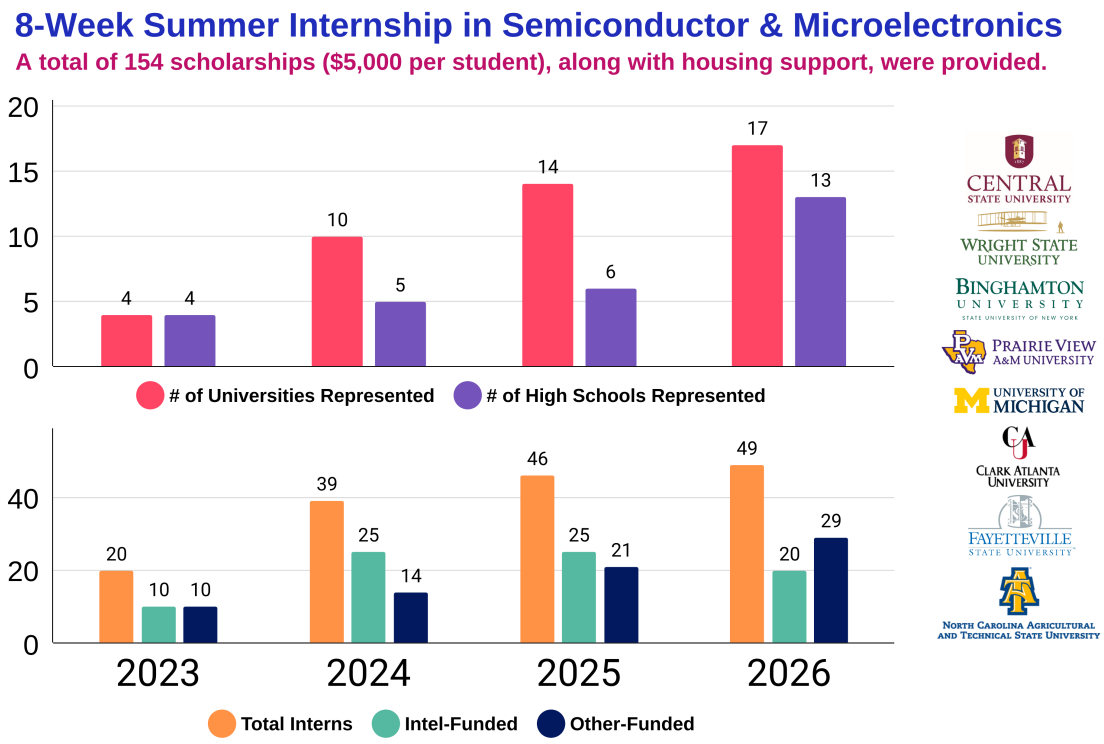


Figure 1: Growth and expanded institutional representation of the 8-Week Summer Internship in Semiconductors and Microelectronics from 2023 to 2026. Across the four summer offerings, a total of 154 scholarships valued at $5,000 per student, together with housing support, were provided. The number of training sites increased from 1 in 2023 to 2 in 2024, 3 in 2025, and 7 in 2026. The top panel shows the number of universities and high schools represented among participants by year: 2023 (4 universities, 4 high schools), 2024 (10 universities, 5 high schools), 2025 (14 universities, 6 high schools), and 2026 (17 universities, 13 high schools). The bottom panel shows the yearly number of interns by funding source: 2023 (20 total: 10 Intel-funded, 10 other-funded), 2024 (39 total: 25 Intel-funded, 14 other-funded), 2025 (46 total: 25 Intel-funded, 21 other-funded), and 2026 (49 total: 20 Intel-funded, 29 other-funded).

Organization Teams & Mentors

The 2026 summer internship is organized through a collaborative effort involving teams from Central State University (OH), Clark Atlanta University (GA), Fayetteville State University (NC), North Carolina A&T State University (NC), Prairie View A&M University (TX), SUNY-Binghamton (NY), and the University of Michigan (MI).

Central State University	
Mohammadreza Hadizadeh, PhD	Professor of Physics and Director, ISEP-CSU
Emdad Ahmed, PhD	Assistant Professor of Computer Science
Abayomi J. Ajayi-Majebi, PhD	Professor of Manufacturing Engineering
Saleh Almestiri, PhD	Associate Professor of Manufacturing Engineering
Tahseen Al-wattar, PhD	Project Manager in Semiconductor Technology
Tina A. Castonguay	Director of Post-Award, OSP&R
Deng Cao, PhD	Chair & Professor of Computer Science
Mubbashar A. Khan, PhD	Research Assistant Professor of Electronic Engineering Technolog
Gopalakrishnan Krishnasamy, PhD	Associate Professor of Computer Science
Morakinyo A.O. Kuti, PhD	President
Akram Muntaser, PhD	Assistant Professor of Manufacturing Engineering
Arunasalam Rahunanthan, PhD	Professor of Mathematics, Director of Graduate Studies
Clark Atlanta University	
Dinadayalane Tandabany, PhD	Professor of Chemistry, Director of TEEPS and CDS
Dalia Daggag, PhD	Scientist/Computational Specialist
Trinity Riggins	Graduate Research Assistant
Fayetteville State University	
Zhiping Luo, PhD	Professor of Materials Science & SENCR-MIC Director
Chandra M. Adhikari, PhD	Assistant Professor of Physics
Sangeetha Balabhadra, PhD	Research Associate
Bhoj Gautam, PhD	Associate Professor of Physics
North Carolina A&T State University	
Michael L. Curry, PhD	Professor of Nanoengineering & Graduate Program Coordinator
Jerald Dumas, PhD	Associate Professor of Nanoengineering
Demetrius A. Finley, PhD	Postdoctoral Researcher
Vanishnavi (Lisa) Kandula	Graduate Research Assistant
Kayla Morgan	Graduate Research Assistant
Sondai Riddick	Graduate Research Assistant
Prairie View A&M University	
Suxia Cui, PhD	Professor of ECE, Graduate Program Coordinator
Elizabeth M. Dada	PhD Candidate in Electrical Engineering
Abhitej Divi	PhD Candidate in Electrical Engineering
Nabila Shamim, PhD	Associate Professor of Chemical Engineering
Lujun Zhai, PhD	Postdoctoral Researcher
State University of New York at Binghamton	
Paul R. Chiarot, PhD	Professor and Chair of Mechanical Engineering
Leana Testani	Assistant to the Dean
University of Michigan	
Rachel S. Goldman, PhD	Director, CMI; Professor of MSE, Physics, and EECS
Akesha Moore	Education and Outreach Coordinator
Kevin Pipe, PhD	Professor of Mechanical Engineering
Pierre Ferdinand Poudeu	Professor of Materials Science and Engineering
Veera Sundaraghavan, PhD	Professor of Aerospace Engineering
Anthony Waas, PhD	Professor of Aerospace Engineering

Useful Information

Kickoff Agenda and Location at Central State University

- **Location:** University Student Center (Room 210), Central State University.
- **Address:** 1400 Brush Row Rd, Wilberforce, OH 45384.
- **Google Maps link:** https://maps.app.goo.gl/ztuUiBeHZrqs9sC38

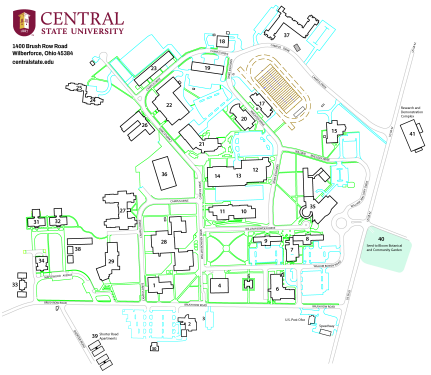
10:00 – 10:30	Registration
10:30 – 10:50	Welcome and ISEP-CSU Overview (Dr. Mohammadreza Hadizadeh)
10:50 – 11:00	Dean's Remarks (Dr. Ramanitharan Kandiah)
11:00 – 11:30	Internship Overview and Mentors (Dr. Mohammadreza Hadizadeh)
11:30 – 11:50	Safety and Conduct Orientation (Dr. Mubbashar A. Khan)
11:50 – 12:00	Group Division and Lab Placement
12:00 – 13:00	Lunch
13:00	Start of Lecture and Lab Activities

Internship Location at Central State University

- **Location:** Carl C. Jenkins Technology Education Building, Central State University.
- **Address:** 1400 Brush Row Rd, Wilberforce, OH 45384.
- **Google Maps link:** https://maps.app.goo.gl/c42F4qtfGkGsNTT96

The following image shows an overview of the Central State University campus map, including the visitor parking lot in front of the Lionel H. Newsom Administration Building, identified as number 1 on the map.

- **Visitors Parking Lots:** Visitor parking lot in front of the Lionel H. Newsom Administration Building (See #1 on the CSU campus map)
- **Parking Address:** 1400 Brush Row Rd, Wilberforce, OH 45384.
- **Google Maps link:** https://maps.app.goo.gl/ggscfaCg1WPKgenQA



Dining Options

As part of the internship program, lunch will be provided on campus each day from 12:00 PM to 1:00 PM at the University Dining Facility in the Student University Center.

Interns may also choose to make other lunch arrangements if they prefer. We encourage participants to use this lunch period not only to enjoy a meal, but also to engage with the campus community, make new friends, and fully experience their time at Central State University. For those who wish to step off campus during lunch, a variety of nearby restaurants offering diverse cuisines are listed below.

- **On-Campus Dining Option:**
  - Student University Center: 12:00 pm – 1:00 pm
- **Off-Campus Dining Options:**
  - Taco Bell, 231 W Main St, Xenia, OH 45385
  - Domino's Pizza, 17 N Allison Ave, Xenia, OH 45385
  - Wendy's, 363 W Main St, Xenia, OH 45385
  - Roosters, 400 W Main St, Xenia, OH 45385
  - Skyline Chili, 217 Progress Dr, Xenia, OH 45385
  - One Bistro, 87 E Main St, Xenia, OH 45385

Remember, lunchtime is your own time - enjoy it as you wish!

WiFi Accesses

Free WiFi will be available during the internship. To access Wi-Fi on campus as a guest or visitor, first connect your device to the *CSU-Connect* wireless network. This applies to Windows, Apple, and Android devices. Once connected, a browser window should open automatically with several connection options. Select Guest Wi-Fi, accept the Terms of Use, and then click Log In to complete the connection.

- **WiFi: Public Domain (CSU−Connect)**

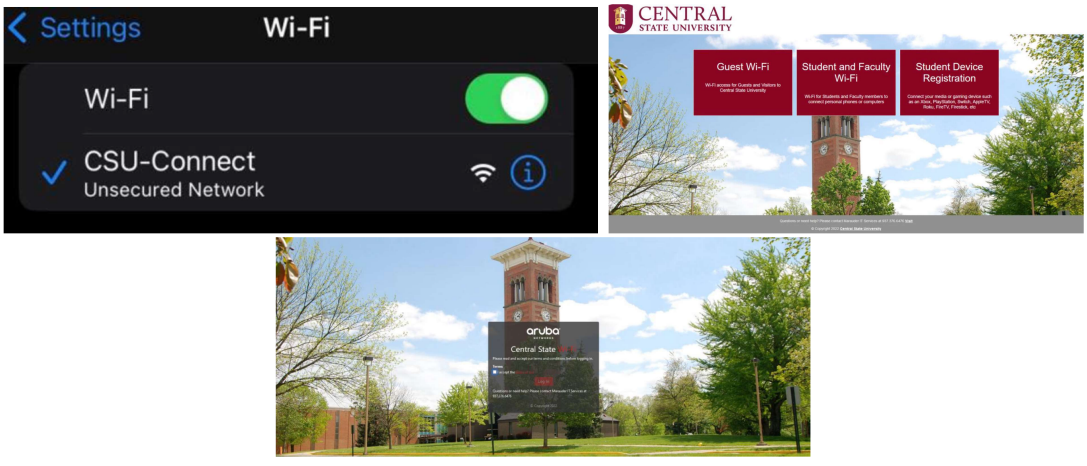


Figure 1: Guest Wi-Fi Access at Central State University.

Acknowledgment

The organizing team of the 2026 Summer Internship in Semiconductors and Microelectronics gratefully acknowledges Intel for its generous sponsorship and continued support of the Semiconductor Education and Research Program at Central State University (SERP-CSU). Intel's support has been instrumental in sustaining and expanding this important initiative across its four summer offerings from 2023 through 2026. We sincerely thank the Program Directors for Intel University Research & Collaboration—**Gabriela Cruz Thompson**, **Melinda Murdock**, and **Lisa E. Depew**—as well as **Dr. Chanaka Munasinghe** from Intel's Advanced Technology Group for their guidance, encouragement, and contributions to the continued success of the program. Their support has been essential in shaping the experience and outcomes for our interns.

We gratefully acknowledge Dr. Marc Cahay, Professor and Department Head of Electrical and Computer Engineering at the University of Cincinnati, for his support in making the OASiS microcredential, developed through the OASiS Intel-funded project, available to interns. We also thank the Siemens team—Dr. Mohsen Rezayat, Chief Solutions Architect at Siemens, Shannon O'Donnell of Siemens Digital Industries Software, and Nicole Lukach, Project Manager—for their support in making Siemens's "Expedite – Skills for Industry" microcredential available to all interns.

We extend our heartfelt appreciation to the faculty leaders across the 2026 training network—Dr. Mohammadreza Hadizadeh at Central State University, Dr. Dinadayalane Tandabany at Clark Atlanta University, Dr. Zhiping Luo at Fayetteville State University, Dr. Michael L. Curry at North Carolina A&T University, Dr. Suxia Cui at Prairie View A&M University, Dr. Paul R. Chiarot at the State University of New York at Binghamton, and Dr. Rachel S. Goldman at the University of Michigan—together with all partner institutions, for their leadership in organizing, hosting, and strengthening this program. With the support of Intel and NSF, their commitment to hands-on education, mentoring, and workforce preparation has been essential to the success and continued growth of the 2026 Summer Internship Program. We further acknowledge the many faculty members, postdoctoral researchers, graduate students, and mentors at each training site whose efforts contributed to the quality and breadth of the 2026 program. Their dedication helped provide students with meaningful exposure to semiconductors, microelectronics, advanced materials, manufacturing, computing, artificial intelligence, quantum science, and other emerging technology areas across the seven-site training network.

In addition to Intel's ongoing support since 2022, we acknowledge funding support from four National Science Foundation projects that contributed to the 2026 internship program. At Central State University, these include: i.) *Partnership for Advancing Research Capacity in Semiconductors at Historically Black Colleges and Universities (PARCS-HBCU)* (NSF Award No. 2430293), ii.) *Advancing Semiconductor Education through Expansion and Diversification (ASEED)* (NSF Award No. 2436204), and iii.) *Enhancing Efficiency and Sustainability in Electric Transportation and Power Systems through Interaction-Aware*

Management (NSF Award No. 2431551). We also acknowledge support at Prairie View A&M University from iv.) *Collaborative Research: Advancing Semiconductor Education through Expansion and Diversification (ASEED)* (NSF Award No. 2436203). Thanks to Intel's sponsorship and NSF support, the 2026 internship program expanded to seven in-person training sites across six states and provided hands-on training to 50 interns selected from a highly competitive pool of 560 applicants. This growth reflects the program's continued expansion, national reach, and increasing impact. Each intern received a $5,000 scholarship to support participation in the eight-week program, along with housing accommodations at the respective training sites. This combined support made it possible to provide a comprehensive and immersive experience across a broad multi-site network.

Finally, we extend our appreciation to all 2026 interns for their enthusiasm and commitment to joining the program. We look forward to welcoming them this summer and to supporting their growth in semiconductors, microelectronics, and related advanced technology fields.

Semiconductor Education & Research Program at Central State University (SERP-CSU)

The Semiconductor Education & Research Program at Central State University (SERP-CSU) is a growing academic and workforce development initiative dedicated to advancing education, training, and research in semiconductors, microelectronics, and related emerging technologies. Established with support from Intel in 2022, SERP-CSU has become an important platform for building student pathways into one of the nation's most critical and rapidly evolving technology sectors. SERP-CSU is designed to strengthen student preparation through a combination of curriculum development, hands-on laboratory training, summer internships, faculty-led research, industry engagement, and collaborative partnerships. The program supports students at multiple levels, including high school students, undergraduate students, and faculty mentors, and introduces them to foundational and applied topics in semiconductor processing, microelectronics, advanced materials, manufacturing, artificial intelligence, quantum science, and related fields. A central goal of SERP-CSU is to help prepare the next generation of talent for the growing semiconductor workforce in Ohio and across the United States. Through classroom instruction, practical training, and direct engagement with industry-aligned experiences, the program gives students opportunities to explore technical careers, strengthen research skills, and build the knowledge needed for continued study and future employment in advanced technology areas. Building on Intel's support, Central State University has expanded its academic and training infrastructure in semiconductors and microelectronics. These efforts include the development of a certificate in semiconductor processing, a minor in computer hardware technology, multiple technical micro-credentials, and foundational laboratory experiences that support student learning and workforce preparation. SERP-CSU also connects with broader collaborative efforts supported by the National Science Foundation, including multi-institutional initiatives that further strengthen semiconductor education, research capacity, and training opportunities. Through SERP-CSU, Central State University continues to expand its role in semiconductor education by connecting students, faculty, industry, and partner institutions through meaningful and forward-looking learning experiences. The program reflects CSU's commitment to academic innovation, technical workforce preparation, and national leadership in an area of growing strategic importance.

For more information, please visit:
https://www.centralstate.edu/semiconductors