

# SCALE STUDENT NEWSLETTER



## SCALE

Scalable Asymmetric Lifecycle Engagement

Developing the U.S. Defense Microelectronics Workforce

Issue 1, March 2024

[scalestudentsupport@purdue.edu](mailto:scalestudentsupport@purdue.edu)

### MISSION STATEMENT

Empowering students by fostering a connected and informed community within SCALE. This student-focused and student-led newsletter aims to:

- **Build the SCALE Community** by providing a platform for student voices, collaboration, and knowledge exchange.
- **Connect all SCALE partners** by facilitating communication between students, faculty, industry professionals, and government agencies.
- **Deliver relevant news** pertaining to microelectronics and the national defense industry.
- **Empower students** by sharing important resources.

Together, we strive to equip students with the knowledge, connections, and resources needed to excel in academic and professional pursuits within the SCALE ecosystem.



Back row left to right: Phenzi Blasio, Katie Ferro (both of IUB, REU students), Tim Kelley of Crane. Front row: Skyler Johnson (IUSoutheast). Photo Credit: Karin DuBois

### TRUSTED AI SEMI-ANNUAL EVENT: SUCCEEDING THROUGH TEAMWORK

On January 26, 2024, the SCALE Trusted AI technical vertical area held a semi-annual event at the Indiana University- Purdue University Indianapolis campus. The event included scientific poster presentations, a tour of the IUPUI Labs, and leadership presentations. Next steps include bi-weekly meetings with TAI Principal Investigators and a second semi-annual review in Fall 2024.

### WELCOME & STUDENT SPOTLIGHT

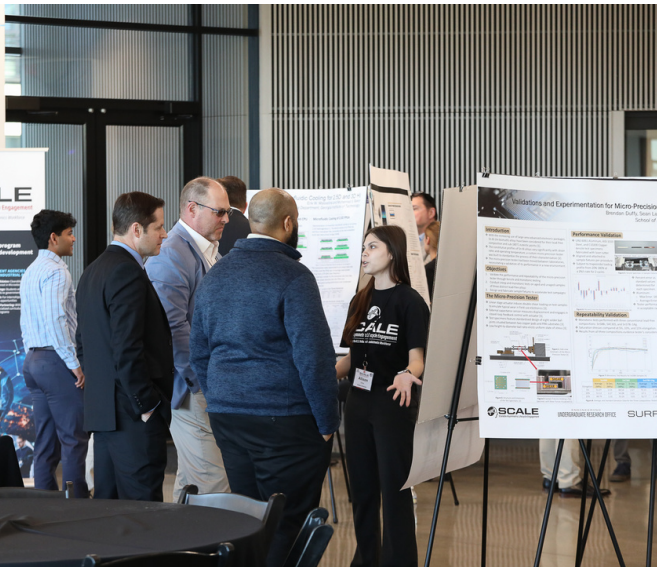
Welcome to the first issue of the SCALE Student Newsletter, written for and by SCALE students. The theme of this issue is Heterogeneous Integration and Advanced Packaging, commonly known as HI-AP. Our Student Spotlight for this issue is Parker Santo Domingo. Parker is a 4th year undergraduate student from Georgia Institute of Technology who works in the HI-AP technical area. At Georgia Tech, SCALE has allowed Parker to work on fabrication of a large glass package with Dr. Vanessa Smet. He says the program has allowed him to explore his interests while also gaining meaningful experience. Parker plans to pursue a Masters Degree at Georgia Tech after graduation. His advice for incoming SCALE students is to explore different topics to find your interests.

Below: Parker Santo Domingo, a GA Tech SCALE HI-AP student. Photo Credit: Parker Santo Domingo



### NEW STUDENT WELCOME PACKET

The New Student Welcome Packet is a valuable resource for both incoming and returning SCALE students. Incoming students can find information about the onboarding process and requirements of the SCALE program, and all members of SCALE can find more details about the different opportunities available through SCALE. The Welcome Packet and a recording of the Feb. 2024 Orientation Session are available through the nanoHUB; please see our LinkTree for access.



Above: Allison Scher presents her research at the HIAP Workshop. Photo credit: ImageSourcePhotographic

## SCALE ATTENDS NSBE CONVENTION

In March 2024, SCALE sent four graduate students and faculty members from Purdue, Arizona State, and the University of Tennessee-Chattanooga to the 50th National Society of Black Engineers (NSBE) Convention in Atlanta, Georgia. The SCALE team hosted a booth in the NSBE Career Fair to recruit interested students, faculty, and university representatives. The team was also invited to a special Semiconductor workshop titled "Forging Partnerships and Envisioning Tomorrow: Innovative Collaborations to Advance US Semiconductor Manufacturing." NSBE was founded in 1975 at Purdue University by John Logan, Edward Coleman, George Smith, Stanley Kirtley, Brian Harris, and Anthony Harris. The group's mission statement is "to increase the number of culturally responsible Black Engineers who excel academically, succeed professionally and positively impact the community." NSBE currently has over 600 chapters and 24,000 members in multiple countries.

Below: Shauna Adams, Imani Adams, Dr. Donald Reising, and Dr. Tracee Jamison-Hooks represent SCALE at the 50th NSBE Annual Convention. Photo credit: Shauna Adams



## STUDENTS PARTICIPATE IN HI-AP WORKSHOP

On February 28th and 29th, students from four different universities traveled to Purdue University to partake in the first SCALE HI-AP Workshop. Students were given the opportunity to expand their networks and learn about technology and careers in the semiconductor packaging industry through the scheduled events throughout the day. The two-day workshop focused on the identification of KSAs and training needs in Advanced Packaging. The Student Track included presentations by the Purdue Semiconductor Student Alliance and tours of facilities like the Birck Nanotechnology Center. Day 1 of the workshop was highlighted by the student poster session, where students shared their research with peers from the four HI-AP partner universities, faculty, and experts from government and industry. Dinuk de Silva, a student from Georgia Institute of Technology, said, "I was able to get valuable advice for my project. It was a really beneficial and positive conference." The workshop highlighted SCALE's leadership in training and developing a future workforce in Advanced Packaging. We look forward to seeing the work and accomplishments of SCALE students in future conferences, especially after such a promising start. Please see the LinkTree for a Purdue Today article on HI-AP workforce development workshop.



Above: HIAP students at the Workshop's Poster Show held in the Discovery Park Convergence Center in West Lafayette, IN. Photo credit: ImageSourcePhotographic





## PI SPOTLIGHT: SHUBHRA BANSAL

ASSOCIATE PROFESSOR OF THE SCHOOL OF MECHANICAL ENGINEERING AND THE SCHOOL OF MATERIALS ENGINEERING, PURDUE UNIVERSITY

Dr. Shubhra Bansal earned her doctorate and master's degrees in Materials Science and Engineering from Georgia Institute of Technology and a bachelor's degree in Metallurgical and Materials Engineering from the Indian Institute of Technology-Roorkee. She is an alumni of the pioneering Packaging Research Center at Georgia Tech. She joined Purdue University in January 2023 and has been a SCALE PI since July 2023. She came to Purdue with strong industry and policy experience from General Electric Global Research and the U.S. Department of Energy. Dr. Bansal's research at Purdue focuses on materials sustainability and reliability for advanced packaging and renewable energy. She currently advises and works with 6 Ph.D. students, 1 Masters student, and 5 undergraduate students. Dr. Bansal is a senior member of IEEE, a member of MRS and has received prestigious awards including a 2021 NSF CAREER Award, 2022 NASA Glenn Faculty Fellowship, and 2021 U.S. DOE Visiting Faculty Fellowship. She is an Associate Editor of the IEEE Journal of Photovoltaics and Elsevier Solar Energy Journal. She also serves as an Advisor for the IC Assembly & Reliability thrust of the India Semiconductor Mission.

During her first year with SCALE, Dr. Bansal has launched the new HI-AP Scholarship Program, which will provide students with hands-on training and professional development opportunities in electronics packaging. She is currently working with industry and academic partners to create a 9-credit concentration in Heterogeneous Integration and Advanced Packaging. If you have any questions for Dr. Bansal about her work, please send them to [scalestudentsupport@purdue.edu](mailto:scalestudentsupport@purdue.edu)

## JOB BOARD PROVIDES TEMPORARY AND FULL-TIME OPPORTUNITIES

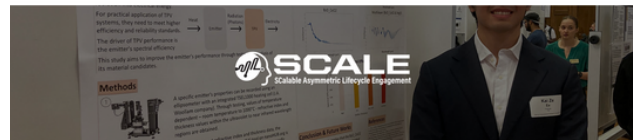
Explore the [SCALE Job Board](#) for access to exclusive internships and full time job opportunities from leading companies such as NSWC Crane, Taiwan Semiconductor Manufacturing Company (TSMC), and other SCALE partners. To begin, create a NanoHub account and then email [scale-web-list@ecn.purdue.edu](mailto:scale-web-list@ecn.purdue.edu) to request account setup for job board access.

Although the link directs you to a Purdue University site, please note that this job board is available to all SCALE students, regardless of their university affiliation. The job board offers filtering options by academic year and SCALE specialty, providing tailored opportunities for each student. Be sure to check the job board regularly, as new opportunities are posted daily. Don't miss out on your chance to connect with top companies and advance your career through SCALE!



ABOUT OPEN POSITIONS ORGANIZATIONS FAQ CONTACT EDIT PROFILE

LOG OUT



### OPEN POSITIONS

Filters

CREDIT HOURS	CAREER PATHWAY	ORGANIZATION NAME	ORDER BY
- Select -	- Select -	- Select -	- Select -

APPLY FILTERS FILTER RESET

## WHITE HOUSE OFFICE OF SCIENCE TECHNOLOGY AND POLICY MENTIONS SCALE

On March 15, 2024, the White House Office of Science Technology and Policy released its national strategy for microelectronics research. As requested through the CHIPS Act, the strategy highlights key initiatives and plans for the next five years. SCALE was mentioned in Goal 3.4: Build and drive microelectronics research and innovation capacity. In particular, SCALE's approach to recruiting and retaining students in the microelectronics ecosystem from K-12 through Ph.D. was explained. Please see our LinkTree to read the article and download a copy of the strategy. Thank you, Dr. Mike Alles (Vanderbilt) for sending this out!

## OUR TEAM

- Gabriella Torres, SCALE Student Experiences Lead, [gmtorres@purdue.edu](mailto:gmtorres@purdue.edu)
- Erica Corbeels, SCALE Writer & Purdue Student, [ecorbeel@purdue.edu](mailto:ecorbeel@purdue.edu)
- Parker Santo Domingo, SCALE HI-AP & GA Tech Student, [psantodomingo2024@gatech.edu](mailto:psantodomingo2024@gatech.edu)
- Alex Tauriainen, SCALE SoC & Purdue Student, [atauria@purdue.edu](mailto:atauria@purdue.edu)
- Satish Patel, SCALE HI-AP & Purdue Student, [pate1903@purdue.edu](mailto:pate1903@purdue.edu)
- Matthew Pung, SCALE SoC & Purdue Student, [mpung@purdue.edu](mailto:mpung@purdue.edu)

## GET INVOLVED

Please use our Social Media Request Form (in the LinkTree) to:

- Nominate a student, faculty member, or government/industry partner for upcoming spotlights
- Share your SCALE stories and accomplishments
- Request stories or content about a specific topic
- Express your interest in joining our newsletter team

## LEARN MORE

Check out our [LinkTree](#) to find the resources mentioned in this newsletter.

