



Rensselaer
IEEE Student Branch



EPS/EDS Info Session

Fall 2026

Heterogeneous Integration Overview

GBM Attendance



Meet our EPS/EDS executive board

David King

Chair

- ❑ Class of '27
- ❑ Major: ECSE Dual
- ❑ Clubs/Affiliations:
 - ❑ Mercer XLabs
 - ❑ NanoTEC Lab

Evan Chen

Vice Chair

- ❑ Class of '27
- ❑ Major: ECSE Dual
- ❑ Clubs/Affiliations:
 - ❑ Mercer XLabs
 - ❑ RPI Esports
 - ❑ Photonics Lab

Joaquin Guzman

Secretary

- ❑ Class of '28
- ❑ Major: ECSE Dual
- ❑ Clubs/Affiliations:
 - RSEI
 - SHPE

Alexander Singer

Treasurer

- ❑ Class of '28
- ❑ Major: EE
- ❑ Clubs/Affiliations:
 - Mercer XLabs
 - Motorsports

WE NEED OFFICERS. WE WANT YOU!

What is IEEE EPS/EDS @ RPI?

IEEE – Institute of Electronics and Electrical Engineers

- IEEE Technical Societies:
 - EPS – Electronic Packaging Society
 - EDS – Electron Devices Society

We are a community for people interested in semiconductor technology.

- Chip Design
- Semiconductor Manufacturing
- Advanced Packaging





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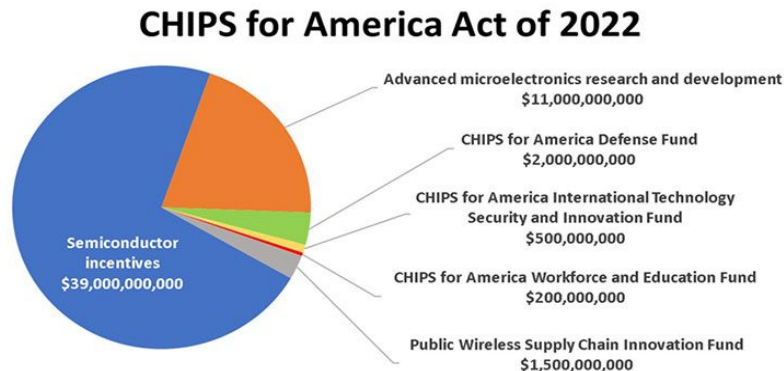


Why does EPS/EDS exist here and now?

A weirdly specific question

Government Support

- The CHIPS and Science Act of 2022 supports U.S. semiconductor manufacturing and research.
- Original allocations include \$39B for manufacturing incentives and \$11B for Commerce R&D.
- The original appropriations span FY2022–FY2026. Project construction and operation extend beyond that period.
- Announced investment and projected jobs are not the same as completed facilities or current openings.



Government Support Cont.

Project	Technology / role	Status and announced target
TSMC: Phoenix, AZ	N4 / N3 / N2 / A16 logic	Fab 1 producing since Q4 2024 Fab 2 target: H2 2027 Fab 3 target: end of decade
GlobalWafers: Sherman, TX	300 mm silicon wafers	Facility opened May 2025
Amkor: Peoria, AZ	Advanced packaging and test	Broke ground October 2025 Production target: early 2028
SK Hynix: West Lafayette, IN	HBM advanced packaging and R&D	Broke ground August 2026 Supply target: 2029
Micron: Clay, NY	DRAM manufacturing	Broke ground January 2026 First concrete poured July 2026

Future dates are company targets and may change.

State Incentives

- New York's semiconductor ecosystem
 - Green CHIPS offers up to \$10B in state incentives for eligible manufacturing and supply-chain projects.
 - Micron broke ground in Clay on January 16, 2026, on its planned memory manufacturing campus.
 - Albany NanoTech began receiving major High NA EUV system components in July 2026.
 - These are long-term investments. Construction milestones do not imply full production.



Location

Examples across New York's semiconductor ecosystem:

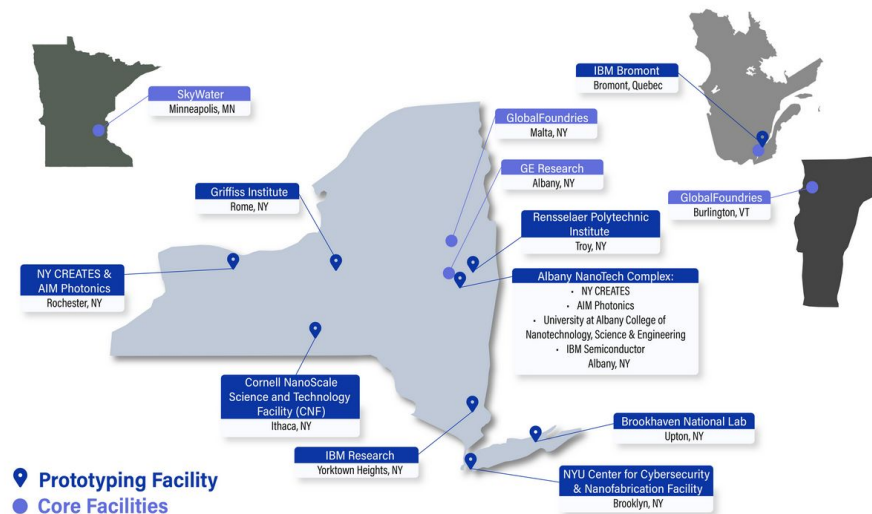
- IBM: research and hardware development
- Micron Technology: Clay fab construction
- Applied Materials: equipment and R&D
- Tokyo Electron: equipment and R&D
- ASML: lithography and customer support
- GlobalFoundries: Fab 8 in Malta
- NY Creates: R&D Hub in Albany

All of these are less than 20 minutes away.



Location Cont. – NORDTECH: Northeastern Region Tech HUB

- One of the Microelectronics Commons hubs supported by the CHIPS and Science Act.
- Connects research with domestic prototyping and fabrication for defense microelectronics.
- Founding members: NY Creates, RPI, Cornell University, University at Albany, and IBM.

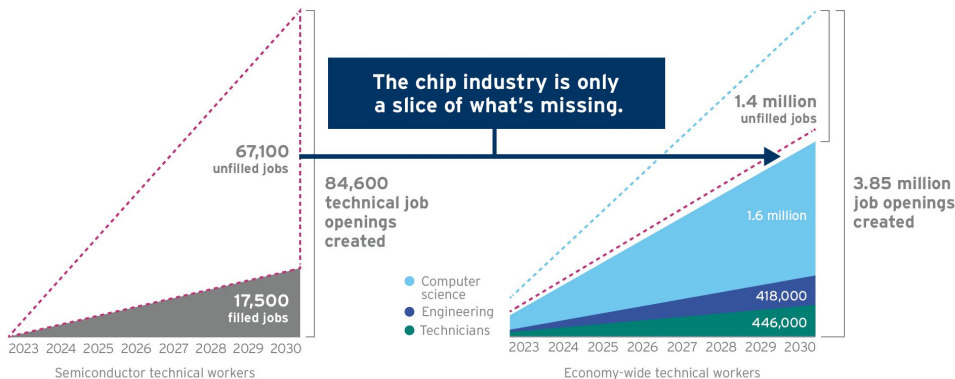


Talent Shortage

Semiconductor careers need specialized skills.

- A 2023 SIA / Oxford Economics study projected 67,000 U.S. technical jobs could go unfilled by 2030.
- The estimate covers technicians, engineers, and computer scientists, not only hardware designers.
- It is a long-term forecast, not a count of current vacancies. Hiring varies by company and specialty.
- Projects, internships, and lab experience help students build relevant skills.

FIG. 3: Projected technical worker supply gap affects semiconductor industry and the broader U.S. economy





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Why does EPS/EDS exist here and now?

It is the perfect time and place to start a career in the [semiconductor industry!](#)



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ELECTRON
DEVICES
SOCIETY®

Programs

Providing value to the student body

Driving Accessibility



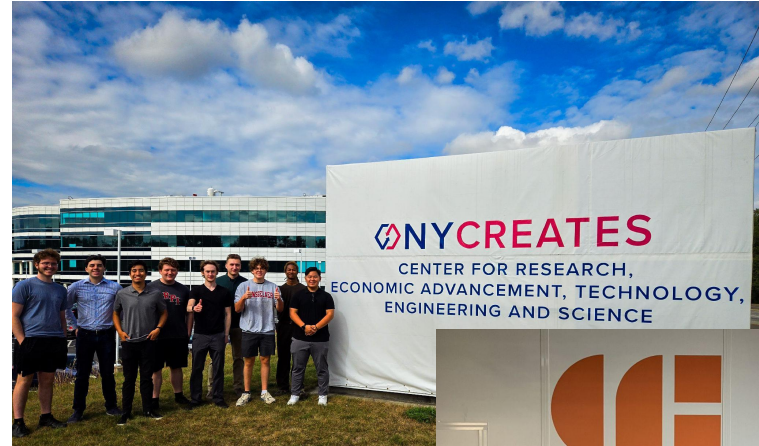
OPPORTUNITY



KNOWLEDGE

Opportunity – Industry Tours

- **Albany Nanotech Complex (tentatively Oct 21st)**
 - Collaboration with the Center for Materials, Devices, and Integrated Systems (CMDIS)
 - A cutting-edge research center that brings together industry leaders to develop next-generation chips.
 - Major Companies: IBM, Applied Materials, Tokyo Electron, Wolfspeed
- **GlobalFoundries Fab 8 (tentatively Nov 4th)**
 - Collaboration with American Institute of Chemical Engineers @ RPI (AIChE)
 - A world-class semiconductor fabrication facility specializing in differentiated chips.



Opportunity – Off-Campus Conferences

- CoLab Catalyst Seminar: September 15, 2026
 - 3–5 p.m., ZEN Building, Albany NanoTech. Silicon photonics design and packaging.
- 37th Electronics Packaging Symposium
 - Held September 9–10, 2026, in Binghamton.
- ASMC 2027: June 14–17
 - Hilton Albany. Check registration and student participation details.



Opportunity – On-Campus Colloquiums

- Colloquia bring invited speakers from industry and academia to RPI.
- Meet engineers and researchers and learn about their work.
- Fall 2026 topics, speakers, and dates will appear in chapter announcements.



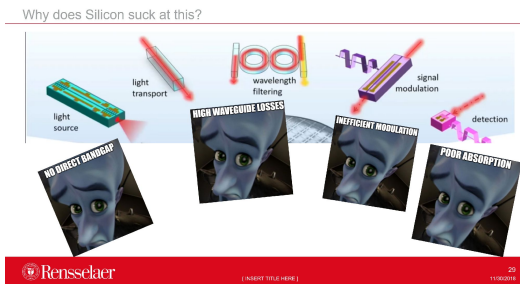
Semiconductor Summit

- Semiconductor Careers Summit occurring on September 30th, 2026.
- Great opportunity for high-level semiconductor industry awareness, workforce development, and career guidance
- Last year featured 10 companies:
 - Apple, Applied Materials, ASML, EMD Electronics, Entegris, GlobalFoundries, IBM, Marvell, Rapidus, Tokyo Electron



Knowledge – Seminar Series

- Officer-led presentation and discussion on topical issues in the semiconductor field
- Learn content that will prepare you for interviews & enable meaningful conversation with industry engineers
- Excellent way to learn and engage with the field
- Sometimes, there is pizza!



Architectural Issues

"The amount of compute needed to train Large Language models has recently grown at a rate of $750 \times / 2\text{yrs}$ "



Main Memory



Interconnect



Compute



Knowledge – Distinguished Lecturer Seminars

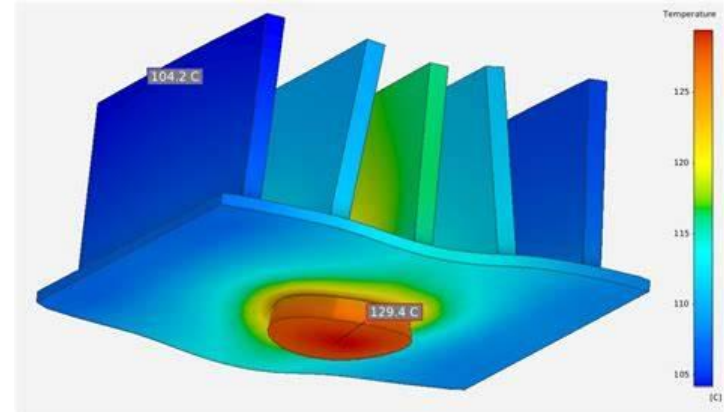
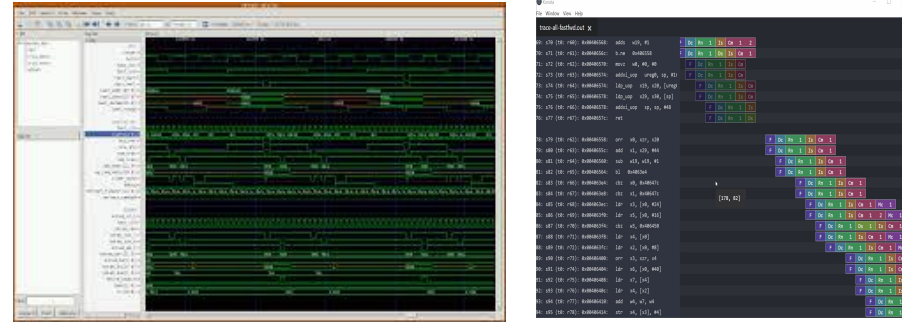
- EPS/EDS Distinguished Lecturers from industry and academia
- Opportunities to learn about cutting edge research and connect directly with engineers and researchers from industry
- Dr. Jain,
 - Hardware Developer at IBM Research
- Dr. Farooq
 - Topics on semiconductor reliability
- There will be pizza!



Knowledge – Mentorship

Project-Based Learning: Emphasizing hands-on experience, the program allows students to engage directly with real-world design challenges.

Tool-Focused: Focused on teaching well-known open-source or widely-used industry tools, the program provides students with a solid understanding of their functionality and practical applications.



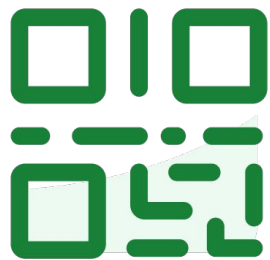


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Before we end...

A few questions for you



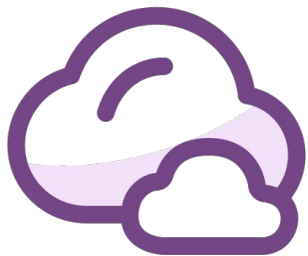
Join at slido.com
#41348900





How familiar are you with semiconductor devices?





What's the first semiconductor-related company that comes to mind?



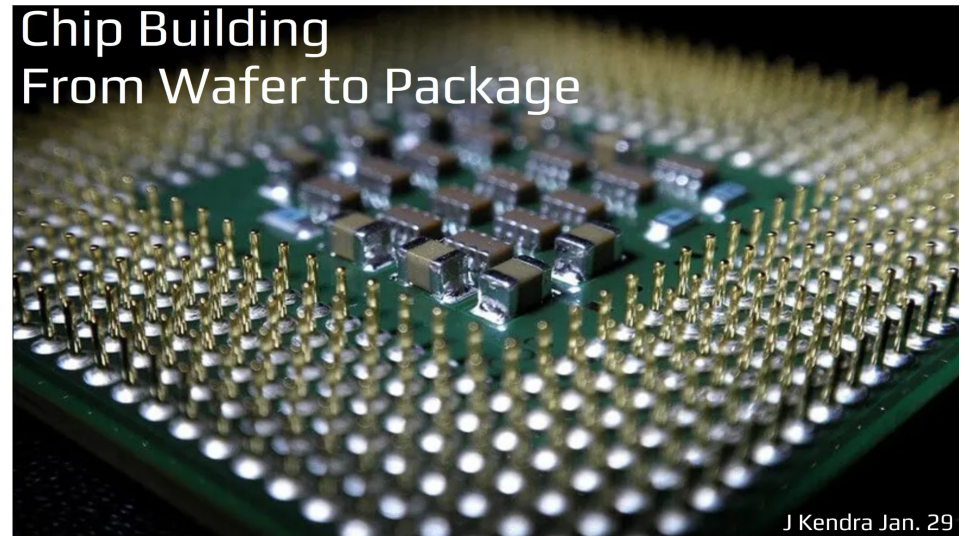


Did you know you can get a IEEE EPS/EDS membership at a student discount?



Next Week's Presentation

Dr. Kendra PhD will be presenting on the amazing world of transistor fabrication.





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Any questions?

Get Involved!

EPS/EDS Officer Interest Form
2026



Join our Discord!

