



“Education and Workforce Development for U.S. Microelectronics Industry – Innovative Approaches and Best Practices for Preparing and Expanding the U.S. Semiconductor Workforce”

Thursday, February 3, 2022
9:45 a.m. – 5:20 p.m. EST

Program Agenda

9:45-10:00 **Welcome and Opening Remarks: Robert Geer, Chair**

Session 1: EWD for Microelectronics Manufacturing and Packaging

10:00-10:25 **Keynote: Celeste Carter, PhD**, Advanced Technological Education Program Director, Division of Undergraduate Education, National Science Foundation
NSF Mission and Programs for Technician Education to support U.S. Semiconductor Manufacturing

10:25-11:35 **Session 1 Lightning Talks**

Time	F Name	L Name	Title	Affiliation	Lightning Talk Title
10:25-10:32	Ron	Olson	Director of Operations	Cornell NanoScale Science and Technology Facility	Workforce Training for New York State Semiconductor Industry
10:32-10:39	Gerhard	Klimeck	Professor and nanoHUB Director	Purdue University, nanoHUB.org	nanoHUB.org: immersive online semiconductor education and workforce development with broad academic adoption
10:39-10:46	Santosh	Kurinec	Professor	Rochester Institute of Technology	40 Years of Microelectronic Engineering Education at RIT: Impact, Lessons Learnt and Moving Forward
10:46-10:53	Anu	Agarwal	Principal Research Scientist	Massachusetts Institute of Technology	Hands-on photonics education (HOPE) for a diverse manufacturing workforce
10:53-11:00	Billie	Copley	Center Director	Micro Nano Technology Education Center (MNT-EC)	Micro Nano Technology Education Center (MNT-EC)
11:00-11:07	Robert	Geer	Professor	SUNY Polytechnic Institute	Education and Training Equipment and Content for Semiconductor Technicians
11:07-11:14	Sam	Samanta	Professor of Physics	Finger Lakes Community College	Sustainable & Scalable Technician Education for Microelectronics Industry

11:14-11:21	Kate	Alcott	Associate Director	NEATEC- SUNY Polytechnic	Recruiting Veterans for the Semiconductor Technician Workforce
11:21-11:28	Robert	Ehrmann	Managing Director	NACK Center at Penn State	The Military Focused Nanomanufacturing Certificate Program
11:28-11:35	Robert	Weinman	Director of Workforce Innovation	The National Institute for Innovation and Technology	The NIIT National Talent Hub - Connecting Educators, Talent and Employers in strategic, tech-based industries.

11:35-12:35 **Session 1 Panel: Best Practices and Innovative Strategies for Semiconductor MFG EWD: Opportunities and Challenges**

Moderator: Michael Fancher, Director, New York State Center for Advanced Technology in Nanomaterials and Nanoelectronics, SUNY Polytechnic Institute

Panelists:

- Clay Nagel, Senior Manager and Deputy Director for Technical Training, GlobalFoundries
- Nadia El-Masry, Program Director, Engineering Research Centers (ERC) Program Division of Engineering Education and Centers
- Mike Russo, President & CEO, National Institute for Innovation and Technology
- Jared Ashcroft, Principal Investigator NSF Micro/Nanotechnology Education Center, Pasadena City College
- Jennifer Braggin, Director of Technical Training, Entegris

12:35-12:45 **Break**

Session 2: EWD for Integrated Circuit and Heterogeneous Integration System Design

12:45-1:10 **Keynote: Tim Ansell, Software Engineer, Google**
Open Source IC Design

1:10-2:00 **Session 2 Lightning Talks**

Time	F Name	L Name	Title	Affiliation	Lightning Talk Title
1:10-1:18	Bill	Chen	Fellow & Senior Technical Advisor	ASE Group	Heterogeneous Integration Roadmap initiative
1:18-1:25	Stefan	Preble	Professor	Rochester Institute of Technology	PIC Education Kits
1:25-1:32	David	Burnett	Assistant Professor	Portland State University	Lessons from UC Berkeley's "Tapeout Class"
1:32-1:39	Boris	Murmann	Professor	Stanford University	Democratizing IC Design: The IEEE SSCS PICO Program
1:39-1:46	Pavan	Hanumolu	Professor	University of Illinois, Urbana-Champaign	Curricular innovations to expand the IC design workforce
1:46-1:53	Mohammad	Alhawari	Assistant Professor	Wayne State University	A public, private partnership for microelectronic workforce training: the Wayne State Experience

1:53-2:00	Tong	Zhang	Professor	Rensselaer Polytechnic Institute	Bring Computer Science into Semiconductor Manufacturing and Hardware Design Workforce Development
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2:00-2:50 **Session 2 Panel: Best Practices and Innovative Strategies for Integrated Circuit and Heterogeneous Integration System Design**

Co-Moderators:

Anu Agarwal, Principal Research Scientist, Massachusetts Institute of Technology

Sajan Saini, Education Director, AIM Photonics Academy, Massachusetts Institute of Technology

Panelists:

- Boris Murmann, Professor of Electrical Engineering, Stanford University
- Stefan Preble, Professor of Engineering, Rochester Institute of Technology
- David Burnett, Assistant Professor of Electrical and Computer Engineering, Portland State University
- Kanad Ghose, Professor, Department of Computer Science, Binghamton University

2:50-3:00 **Break**

Session 3: Expanding and Diversifying the Semiconductor Workforce

3:00-3:25 **Keynote: Valinda Kennedy, PhD**, IBM Global University Specialty Programs Manager (Medical, Legal, and HBCUs)
USA Semi-conductors and HBCU's—A Better Opportunity for Connections to Change the World

3:25- 4:21 **Session 3 Lightning Talks**

Time	F Name	L Name	Title	Affiliation	Lightning Talk Title
3:25-3:32	Nihar	Pradhan	Assistant Professor	Jackson State University	Research Activities towards Semiconductor/Microelectronics at Jackson State University
3:32-3:39	Alison	Driscoll	Project Manager	CAST	MNTfolio - An Eportfolio to Support Diverse Learners in Micro Nano Undergraduate Research
3:39-3:46	Milan	Begliarbekov	Research Assistant Professor, Nanofabrication Facility Director	Advanced Science Research Center, CUNY	Using Productive Failure to Teach Laboratory Sciences and Emulate the Workforce Environment
3:46-3:53	Laura	Nelson	Offering Leader, New Collar Program Experience	IBM	New Collar and Skills First Hiring Strategies at IBM
3:53-4:00	Katie	Sweeney	Development Programs, Manager	Entegris, Inc.	Diversity & Intern/Co-Op Programs the Entegris Way
4:00-4:07	Nina	Maung	Associate Vice President for Research	Stony Brook University	Bridging Research and Practice to Maximize STEM Engagement and Success at Stony Brook University

4:07-4:14	Kevin	McComber	CEO	Spark Photonics Foundation	SparkAlpha: Making Tomorrow's Makers
4:14-4:21	H	Moo-Young	VP and Dean of Undergraduate Education	Rensselaer Polytechnic Institute	The Arch @ Rensselaer: A Microelectronics Workforce Accelerator

4:25-5:15 **Session 3 Panel: Enlarging and Diversifying the Semiconductor Workforce - Strategies and Approaches**

Moderator: Valerie P. Dent, Deputy Chief Operating Officer and Interim Chief Diversity Officer, SUNY

Panelists:

- Loria Gordon, Associate Dean Jackson State University
- Maria Tamargo, Professor of Chemistry, City College of New York
- Josh Brumberg, Dean of the Sciences, CUNY Graduate Center
- Wei Yin, Associate Dean for Diversity and Outreach, College of Engineering and Applied Sciences, Stony Brook University

5:15-5:20 **Closing Remarks: Robert Geer, Chair**