

National Semiconductor
Technology Center
Workforce Center of Excellence

U.S. NATIONAL
SEMICONDUCTOR
TECHNOLOGY
CENTER

Natcast 

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NSTC Strategic Goals

1.

Extending tech leadership

- Jump-start research program
- Research agenda
- Long-term research program
- Convenings

2.

Reduce time and cost to prototype

- Facilities
- Design Enablement Gateway
- Silicon Aggregation Services
- Investment Fund

3.

Build a robust workforce ecosystem

- Scale proven workforce solutions
- Host programs and create needed infrastructure
- Provide technical assistance to members

Problem Statement

By 2030, it is estimated there will be a **gap of roughly 67,000 jobs across the domestic semiconductor industry**, including an estimated 27,300 engineers, 13,400 computer scientists, and 26,400 technicians. ¹

To support the semiconductor workforce of tomorrow, **we need to work urgently** to address:

- **Employer requirements** for forecasted industry roles
- The **lack of awareness** of the industry among individuals
- The **insufficient number** of individuals prepared by U.S.-based educational and training programs
- **Losing potential talent to other fields**, in terms of both attraction and retention

¹ Semiconductor Industry Association, *“Chipping Away: Assessing and Addressing the Labor Market Gap Facing the U.S. Semiconductor Industry”*, July 2023.

The NSTC Workforce Center of Excellence

The NSTC Workforce Center of Excellence (WCoE) will be the dedicated anchor institution that brings stakeholders together to better understand the nature of, and find solutions to, the workforce challenges facing the US semiconductor industry.

Provide services to promote workforce solutions for the U.S. semiconductor industry

- Lead collaborative efforts to increase industry access to talent
- Lead collaborative efforts to increase opportunities for individuals in the industry

Job Categories of Focus

Engineers

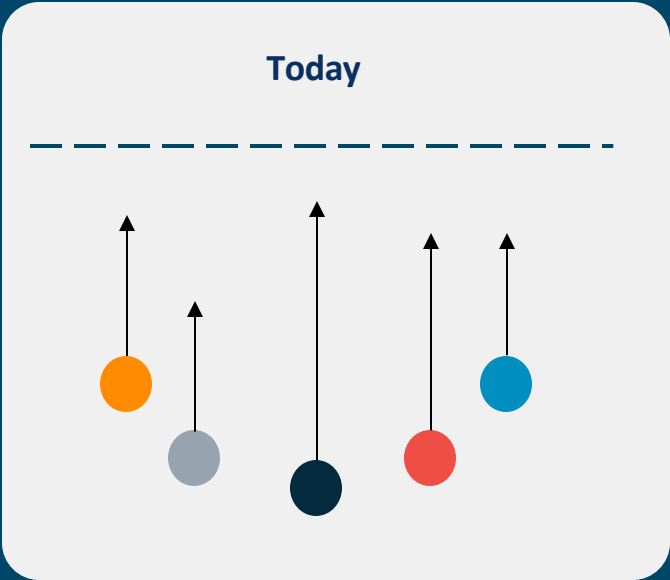
Researchers

Skilled technical workers, including technicians

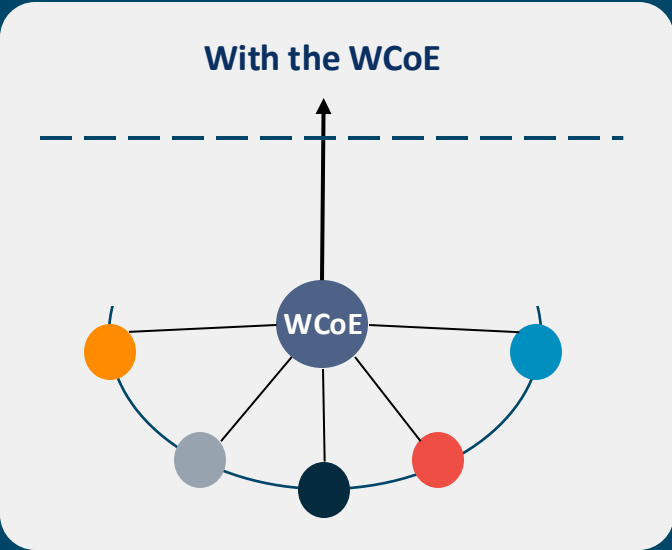


Our Theory of Change

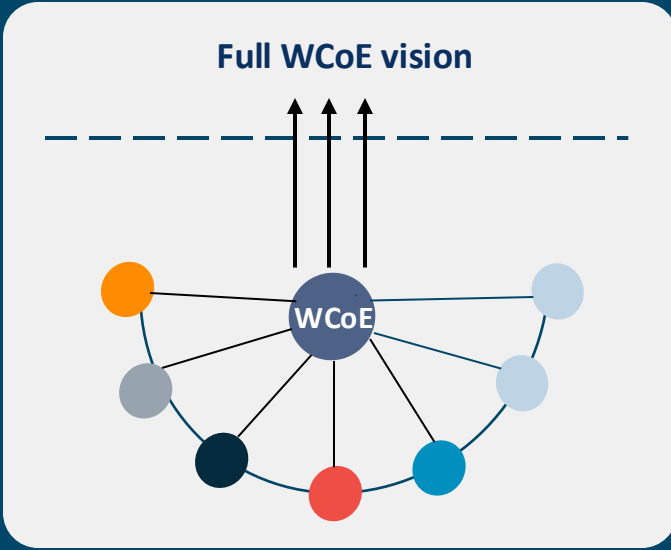
The WCoE will act as a **trusted, interconnected, and neutral 3rd party**, with access to data and a focus on improving workforce access for all, to help **reduce friction and spread the rewards of collaboration.**



While many **stakeholders share similar workforce goals**, information asymmetry and perceived risk can present **barriers to collaboration.**



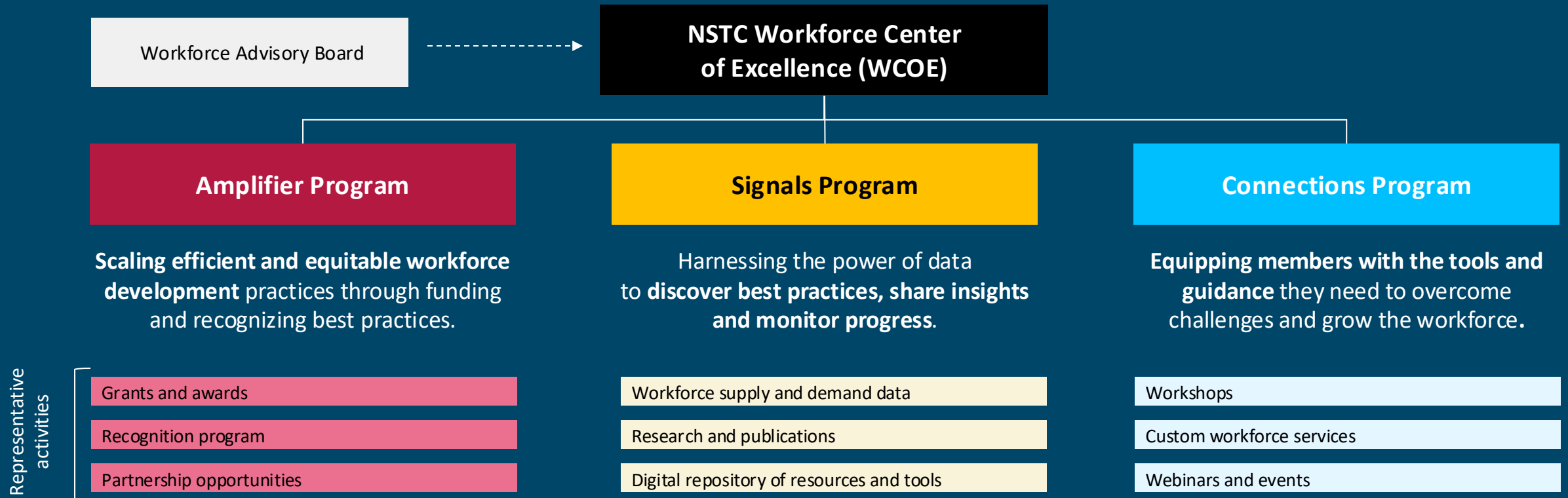
The WCoE will move the industry closer to its goals by **de-risking collaboration and creating shared resources**



WCoE will work to **align stakeholders to build collaborations that drive new initiatives**

Workforce Center of Excellence

Our Programmatic Capacities





NSTC Workforce Center of Excellence

Workforce Partner Alliance Program

WCOE Amplifier Program

Workforce Partner Alliance Program (WFPA)

The WFPA program is the first of several anticipated workforce program funding opportunities to be offered through the NSTC Workforce Center of Excellence focused on investing in training for careers in the semiconductor industry.

Applications for the Workforce Partner Alliance program were assessed on several factors, including, but not limited to:

- The likely effectiveness of the planned approach
- Alignment of the program with the needs of semiconductor employers
- Potential economic and quality-of-life impact on program participants
- Scale of impact
- Ability to foster partnerships with local community organizations
- Engagement of underserved communities

Key Principles



Alignment with employer needs



Scaled for meaningful impact



Integrated with regional ecosystems



Supported by industry

Workforce Partner Alliance (WFPA)

Supporting Employer-Aligned Efforts

WFPA supports programs that meet critical workforce needs of semiconductor employers through education, training, and retraining opportunities. WFPA encourages partnerships between programs and employers on:

- Cost-Sharing
- Hiring Commitments
- Work-Based-Learning Opportunities
- Advisory & Curriculum Development
- Mentorship & Student Engagement
- Raising Awareness

WFPA Anticipated Activities

1. Education



Program Highlight: The University of Illinois will expand a program with community colleges to provide cleanroom experiential learning

2. Capacity Building



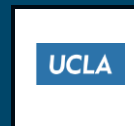
Program Highlight: RIT will leverage their extensive history in microelectronics to develop an online Microelectronics Engineering Certificate

3. Supportive Services



Program Highlight: The Idaho Technology Council will be providing up to \$2500 in per participant enrolled in one of 9 employer supported and led pathways

4. Outreach & Awareness



Program Highlight: UCLA will work with partners to recruit faculty from other higher educational institutions to engage in CEMiD programs

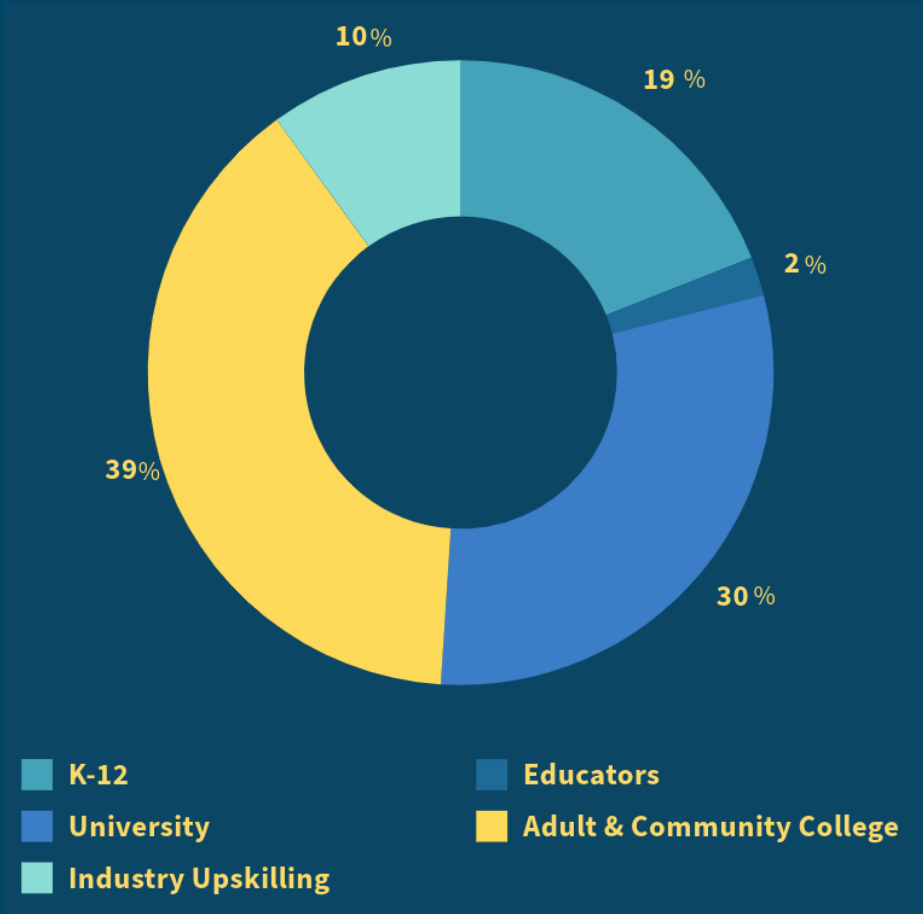
5. Employment



Program Highlight: Maricopa Community College will provide paid internships with regional semiconductor industry employers to provide pathways to employment

Workforce Partner Alliance

Anticipated Reach of Programs



K-12 Program Highlight

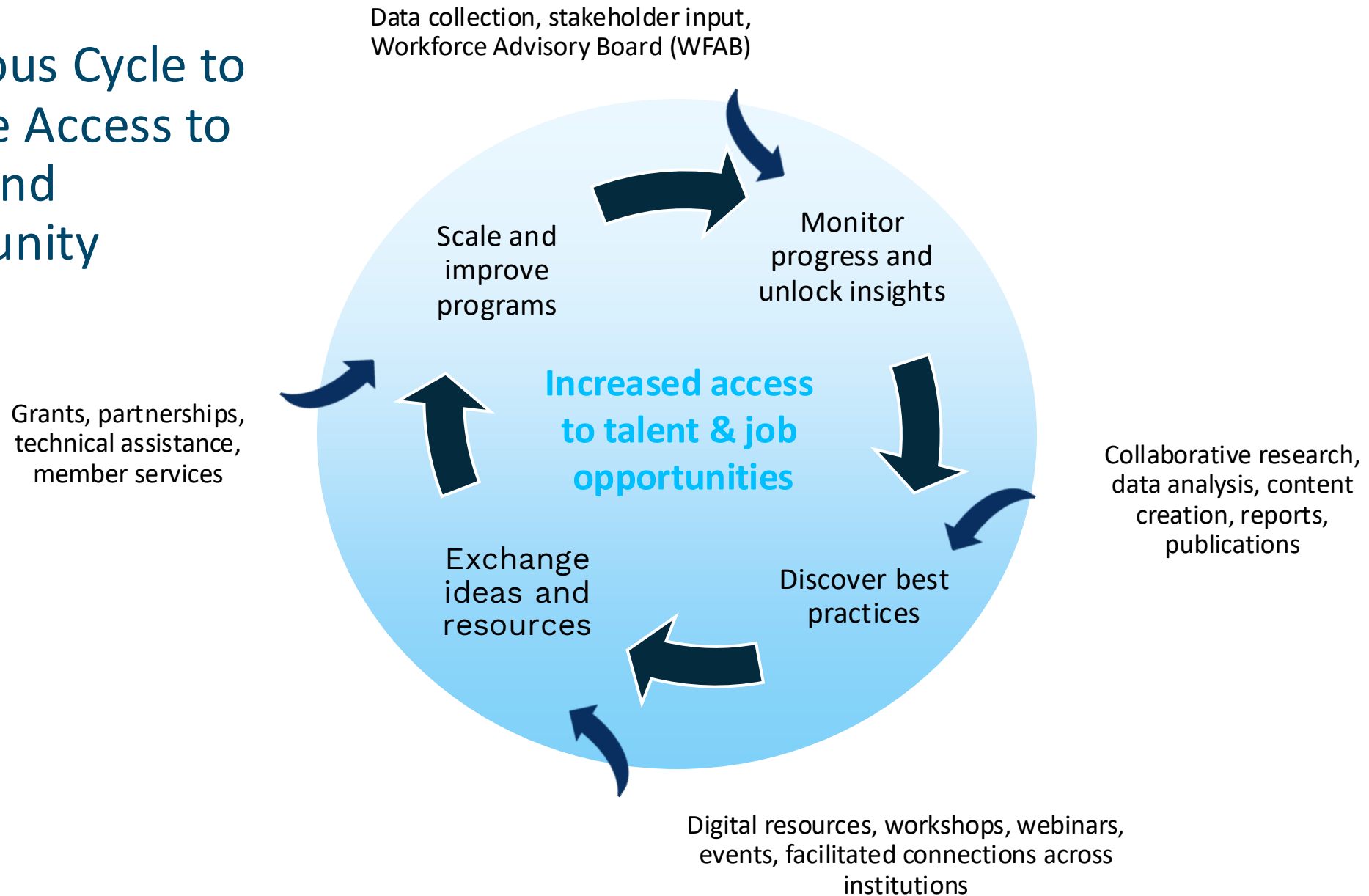
The American Federation of Teachers will develop and deploy of an advanced technology framework to high school students in three states



Educator Program Highlight

Texas A&M will train Community College and University instructors on the latest standards in hardware verification

A Virtuous Cycle to Increase Access to Talent and Opportunity



How to Stay Engaged

- Sign up for our newsletter by visiting Natcast.org/newsletter
- Nominate candidates for the NSTC Workforce Advisory board at Natcast.org/workforce
- Attend our NSTC Symposium in person or virtually on October 28th. For more details visit the events page on Natcast.org
- Questions can be submitted to workforce@natcast.org