



**Northwest STEMM Summit – Achieving Equity & Excellence**  
**Hosted by Micron Technology**  
**June 12, 2023 | 12:00 noon - 5:00 pm**

**Workshop Summary and Readout**

The STEMM Opportunity Alliance and our host Micron Technology convened STEMM leaders from industry, educational institutions, non-profits, and government for a summit focused on advancing equity and excellence in the American STEMM ecosystem. Additionally, Micron [announced two large initiatives](#): (1) the Northwest University Semiconductor Network, formed by 13 higher education institutions across 6 states, which will bridge industry with higher education by promoting fruitful partnerships and delivering a relevant and robust curriculum to STEMM students; and (2) a \$10 million partnership between the Micron Foundation and National Science Foundation intended to accelerate efforts to recruit, train, and retain K-12 science teachers. Both of these exciting initiatives will prove to be crucial in addressing current inequities in STEMM fields. Furthermore, participants provided feedback on the draft National Strategy for STEMM Equity and Excellence during three concurrent breakout sessions.

***Plenary Session 1:***

Participants heard from leaders in technology and higher education leading on diversity, equity, and inclusion in the STEMM field. The session included remarks from both Micron and SOA representatives, as well as a panel that underscored the need for accessible and inviting educational opportunities that provide relevant job training.

**Welcome and Opening Remarks**

- *Fran Dillard, VP and Chief Diversity Inclusion Officer, Micron Technology*: Dillard opened the session by reminding everyone that “diversity is the art of thinking independently together.” She also noted that the expansion of STEMM opportunities, especially diversity of thought, culture, and accessible facilities, is central to Micron’s operations and fuels their innovative process. She closed by challenging the audience to make strides to ensure children have rich, equitable opportunities.
- *Andrew Black, Chief of Staff and Chief Public Affairs Officer, AAAS*: Black discussed the power and promise of the current moment. He noted the history of work aimed at driving greater equity in STEMM fields – AAAS has been conducting extensive research on the

field since 1975 – while also stressing that the past three years has renewed focus and attention on these issues and further emphasized the need and opportunity for creating an equitable science and technology ecosystem. Black closed by explaining how the STEMM Opportunity Alliance will be integral in helping to construct and drive a new National Strategy for STEMM Equity and Excellence, and encouraged continued engagement by all partners.

#### Fostering Equity and Inclusion to Spur Innovation

- *Tsu-Jae King Liu, Ph.D, Dean and Roy W. Carlson Professor of Engineering, College of Engineering, University of California, Berkeley:* Dr. Liu accentuated the value of engineering, especially in semiconductor fabrications. She stated “engineers create solutions serving the welfare of humanity & needs of society,” but that we need inclusive engineering teams to accomplish this goal. Liu also noted that the semiconductor industry has potential to continually grow and flourish under the CHIPS Act, but that a diverse, equitable, talented, and inclusive team will be needed to foster success. Liu has been spearheading the American Semiconductor Academy Initiative in an effort to increase domestic talent for the US semiconductor industry. To maximize impact, Liu is coordinating with Micron and SEMI to target and reach underrepresented groups.

#### Building the Workforce of the Future

- *April Arnzen, Senior Vice President and Chief People Officer, Micron Technology:* Arnzen began by explaining how the CHIPS and Science Act is dramatically expanding Micron’s business and how this has contributed to the need for a broader talent pool. Arnzen also announced the formation of the Northwest University Semiconductor Network which will connect 13 members across 6 states to develop partnerships and curriculum for students. In addition, she spotlighted a \$10 million partnership between the Micron Foundation and the National Science Foundation to increase recruitment and retention of STEMM educators.

Arnzen then served as the moderator of a panel discussion centered around workforce development. Panelists included the following:

- *Erwin Gianchandani, Assistant Director for Technology, Innovation and Partnerships, National Science Foundation:* Dr. Gianchandani imparted that technology must meet people on their terms. He reflected on his experience restructuring the national AP Computer Science curriculum to include more computational thinking. This rework led to the largest course launch in the College Board’s history with a significantly more diverse pool of students than usual. Gianchandani then underscored the need for applied and culturally responsive education to accommodate students’ diverse career paths.

- *Linda Clark, Idaho State Board of Education:* Dr. Clark prefaced her comments by acknowledging that Idaho is the only state with one board governing all education levels from kindergarten through graduate school – creating not just a unique context, but also unique opportunities for innovation and impact. She also noted that three-fourths of these students live in rural or hard to reach areas. She underscored the financial barriers to receiving an education, raising new community college support programs to support postsecondary attainment, and broadband expansion that impact rural learners.
- *Kim Burnett, Senior Manager of STEMM Programs, American Association of University Women:* Burnett emphasized the need for a sense of belonging, especially for women and people of color, in the STEMM education ecosystem. She noted how cohorts can support someone during difficult periods throughout their postsecondary education. As a STEMM educator, Burnett discussed the need to remind students that learning isn't linear.

#### Setting the Scene for SOA

- *Travis York, Director, Inclusive STEMM Ecosystem for Diversity and Equity, AAAS:* York welcomed guests joining both virtually and in-person to acknowledge and honor the rich history and deep sentimentality of the lands on which the convening took place and to reflect on the implications they have for SOA's mission. York, being of Indigenous descent, recalled how his own experiences of not feeling represented in STEMM ignited his passion for advocating for more diversity and inclusion in STEMM and how SOA is uniquely positioned to achieve that goal. He then prefaced the breakout sessions by conveying how the STEMM Opportunity Alliance's rapid growth, with commitments of up to \$1.6 billion in coordinated funds and upwards of 1155 partners. York closed by inviting audience members to participate in the workshop sessions, highlighting the unique chance to co-create a plan that guides this work going forward.

#### *Breakout Sessions*

During the breakout sessions, participants gathered to discuss SOA's draft national strategy framework for how to achieve equity in STEMM by 2050. The draft framework inspired conversations about having the talent and pipeline to educate and maintain a diverse and excellent STEMM workforce in both industry and higher education. Key themes and relevant ideas from each breakout session are included below.

#### Breakout Session 1: Equity and Excellence in Industry and Workforce

This session explored barriers and opportunities to advancing equity and inclusion in STEMM through changes in industry and workforce. Participants set goals around creating an inspiring and inclusive ecosystem and developed high-level actions for improving both national and regional workplaces.

### *Key Goals:*

- It will be important to have a national strategy that is flexible and responsive to local economic and cultural contexts. In Idaho specifically, almost four-fifths of the population is rural, meaning that many residents are physically distant from resources across the state, while also having a unique set of sectors and skill needs.
- The broader STEM narrative will need to incorporate greater visibility of sectors like agriculture and forestry, that may not often be thought of as part of STEM but which are especially critical to some local and regional economies and in which careers already require significant STEM skills and knowledge. To participate in STEM training programs, those in lesser-known industries will feel that they belong in STEM communities, comfortably participating in job training and industry associations.
- Employers will need to build a more positive work environment that will allow employees to bring their fullest selves to work. To enable more equitable access, this must include providing supports such as access to childcare, adequate compensation, and steady employment.
- To strengthen workforce opportunities, there must be more connectivity across organizations and more structures for developing cross-sector and public-private partnerships that can spur innovation. Often, collaboration is difficult to achieve in practice due to bureaucratic or legal barriers that can limit opportunities for shared value creation.

### *Action Planning:*

- To have greater impact, we can scale effective workforce programs, especially those teaching negotiation skills, accelerators and mentorship programs, and successful multi-employer programs and sector-partnerships. By reinforcing these positive developments, the group sought to use asset-based models that foster belonging and can share insights across industries.
- For greater transparency and accountability, we must collect and share data across the industry. This includes outlining and tracking well-defined metrics across organizations, celebrating DEI efforts and progress while holding peers accountable and inspiring more actors to make commitments.
- STEM can also be better marketed in an accessible way, especially to inspire children to pursue relevant careers. This can include public education and awareness efforts that can help make STEM careers tangible, especially at early ages.

### Breakout Session 2: Access to Quality Learning Experiences and Teacher Preparation/ Diversification

This group focused on developing both effective learning experiences for students and professional development for teachers. During their time together, the group created goals

around increasing the joy of education and creating alternative job pathways. This session also sought to develop policy actions to make workplaces more reflective of the American populace.

*Key Goals:*

- Funded pathways are needed to usher teachers into STEMM careers. Educators from marginalized backgrounds often face undue barriers that hinder their ability to pursue teaching and acquire the appropriate certifications to teach STEMM subjects.
- Educators should be encouraged to teach in a manner that is culturally relevant. Coursework should not be based on prior knowledge but rather curiosities should be nurtured.
- Traditional methods of teaching can take the joy out of learning. Teachers should be encouraged to teach in a manner that sparks excitement. This, however, should not come at the cost of accountability and reaching measurable goals.

*Action Planning:*

- Efforts should be undertaken to uncover alternate routes to licensure for teachers. This would enable more educators from marginalized groups to enter the field and acquire necessary credentials by removing many of the barriers associated with traditional pathways.
- Family support is needed to support students as they travel along their STEMM journey. Students may feel apprehensive about their STEMM skills and turn to their parents for guidance. Parents should be empowered in their own STEMM skills so as to instill generational beliefs and confidence in their children.
- Advocacy is needed to encourage the federal government to change its policies in a manner that reflects the value add of teaching as a profession. Policy change will be necessary to facilitate systems changes.

Breakout Session 3: Equity and Excellence in STEMM R&D and Higher Education

This conversation looked at improving R&D infrastructure. Participants set goals to reinforce community-industry relationships, develop actions to improve support to minority serving institutions, and grow STEMM literacy so that children can achieve their fullest potential.

*Key Goals:*

- K-12 programs will need to be viewed as a top priority and diligent action will need to be taken to strengthen them. The rigor and validity of K-12 education in the U.S. needs to be viewed as crucial to ensuring the success of the U.S. overall.
- Support must be given to MSIs to aid them in building capacity to deal with infrastructure as well as financial compliance. Moreover, this support could enable them to navigate funding structures and receive additional grants from the federal government.

- Additional marketing and promotion of the STEMM legacy should be pursued as a priority that encourages STEMM literacy. Hearts and minds will need to be changed to make STEMM more appealing and viewed not as a daunting field, but rather an inviting and supportive one.

*Action Planning:*

- Partnerships with communities may be essential to ensuring that efforts to bring marginalized groups into STEMM are sustainable and tangible. Without input from target communities, attempts to reach them may fall flat.
- There must be a shift from the “weed out” mentality that is currently prevalent in STEMM to a more supportive mindset. Individuals will thrive when they feel their needs are being met and nurtured.
- Cohort based programs should be implemented so as to leverage scores of resources, networks, and experiences that can contribute to a more inclusive experience.

*Plenary Session 2:*

Following the breakout sessions, participants heard from local leaders in education. They stressed the comprehensive role of educators, businesses, and policymakers in ensuring children’s future success and local economic development.

Panel on STEMM Equity in Education

*Robert Siemons, Head of Social Impact and STEM Programs, Micron Technology* moderated the panel discussion on STEMM programming across the education ecosystem. Panelists included:

- *Tanya Eastman, Director of Partners for Education & Business, Manufacturers Association of Central New York:* Dr. Eastman discussed the need to connect children to experiential and alternative learning opportunities, with an emphasis on career training, two-year degrees, and certificate programs. She underscored the need for “on-ramps” that enable children and adults to envision themselves in or pivot into advanced technical careers.
- *Erin Seymour, Education Manager, Discovery Center Idaho:* Seymour described that when children have strong STEMM experiences, they continue to engage with the sector. At the center, she sees how their accessible programs facilitate ongoing, full-family engagement with science. Seymour also emphasized the need for cross-sector action, stating that “being part of something like this and seeing the strategic plan [gives way to] hope” and notes that the issues we face as a society cannot be solved in siloes.
- *Sonia Galaviz, Boise Public Schools:* Dr. Galaviz highlighted the need for businesses like Micron to partner with and support educators. Referencing her time as an educator, she

gave examples of fruitful partnerships between businesses and educational institutions that contributed to positive impacts on STEMM education. She closed by reminding the audience that Idaho needs this cross-sector economic and community development to continue determining their own future.

- *Donna Llewelyn, Executive Director, Institute for Inclusive and Transformative Scholarship, Boise State University:* Dr. Llewelyn discussed how she contextualizes the cultural context of Idaho’s population and uses it to inform effective program design. She also advocated for the creation of job pipelines that will support STEMM workers holistically in both research and industry settings, noting that one can be “nurture[d] to excellence, but not beaten to it.”