



Building an Equitable and Excellent STEM Workforce Summit

Hosted by 3M

August 3, 2023 | 1:00 pm - 5:00 pm

Workshop Summary and Readout

The STEM Opportunity Alliance and its host 3M convened a group of leaders from academia, community-based and nonprofit organizations, private industry, philanthropy, and government for a summit focused on advancing equity and excellence in the U.S. STEM workforce. Participants heard from cross-sector stakeholders including government representatives, local technology industry leaders, and the American Association for the Advancement of Science (AAAS) about the vitality of innovation and collaboration in reaching parity in the STEM workforce. Furthermore, participants engaged in three concurrent breakout sessions to connect with one another and advise on key issues in-depth to inform SOA's forthcoming National Strategy for STEM Equity and Excellence.

Plenary Session 1:

Participants heard from leaders spearheading diversity, equity, and inclusion in the STEM field. The session included remarks from both 3M and SOA representatives, as well as Congresswoman Betty McCollum (MN 4th District).

Welcome and Opening Remarks

- *John Banovetz, Chief Technology Officer, 3M:* Banovetz emphasized 3M's commitment to cultivating diverse teams, noting their commitment to providing 5 million STEM experiences to diverse individuals by 2035. Additionally, he gave thanks to the White House Office of Science and Technology Policy, the Doris Duke Foundation, and the American Association for the Advancement of Science for their partnership.
- *Sudip Parikh, CEO, American Association for the Advancement of Science (AAAS):* Dr. Parikh spoke to the long history of AAAS, noting the organization's vision of a world in which the scientific community is reflective of the broad diversity in the U.S. and a world in which all children will feel welcomed and nurtured by the STEM community. He described the promise and potential of SOA, as well as the

efforts of the alliance’s cross-sector partners working together to act as the vehicle for helping achieve equity and excellence.

Keynote Address

- *Betty McCollum, Congresswoman, MN 4th District:* Representative McCollum welcomed the audience to the 4th district, and emphasized her role as a “disruptor.” She noted that Minnesota has been at the forefront of creative innovation, and – given her role on the House Appropriations Committee and its Defense sub-committee – she underscored the importance of developing cutting edge technology to promote American national security. Representative McCollum mentioned that companies like 3M and local organizations like the Science Museum of Minnesota will work with the government to bring about success, break down barriers, and change culture. She closed by reminding the audience it’s imperative to take advantage of this historic moment with a creative mind and innovative spirit.

Breakout Sessions

Splitting into three breakout sessions, participants gathered to discuss cross-cutting issues to achieve equity in STEMM by 2050. In each discussion, conversations included developing short-, medium-, and long-term goals and key steps around a cross-sector topic. A summary of each breakout session is included below.

Breakout Session 1: Girls and Women in STEMM

This session concentrated on uplifting girls and women across the entire STEMM ecosystem. Participants noted that while strides have been made in gender equity, key goals and actions must revolve around representation, education, and collaboration in order to successfully shift narratives and connect women to quality work opportunities.

Key Goals

- Strong, inclusive representation across the STEMM ecosystem could inspire girls and shift the narrative around women. Ideas about the “perfect woman” can hamper diversity and build competition, while a broader portrayal of success can widely improve the field from pay equity to policy change.
- Parents, educators, and others should be given a more pointed space to reflect on supporting women. Educators should consider shifting away from harmful practices like “weed-out courses,” while parents should shift their expectations for children.
- Nonprofits, businesses, and government need to be well-connected to share goals and discuss strategies. Many STEMM sectors still need to recruit more women to reach parity, and should address other key issues affecting women in the workplace such as pay equity, healthcare, child and eldercare, and other needed flexibilities and supports.

Key Steps

- As a number of programs have already been successful raising gender equity, nonprofits, governments, businesses, and philanthropy should collaborate to scale high-impact initiatives. This may include scaling policies that support women in the workplace such as hybrid work, affordable childcare, and afterschool programs.
- Mentorship and allyship will be key to uplifting women and girls in STEMM. Programs aimed at supporting women through mentorship and allyship should be integrated into one's workday, rather than occurring in one's free time.
- To continue pushing for higher standards, further discussion and research should be done to identify gaps in career pathways and during career transitions. Unconventional career paths, especially trade careers for women, have not yet been successfully incorporated into programs, and raising girls and women's voices will be key to culturally-relevant and inclusive design.

Breakout Session 2: Industry and Higher Educations Partnerships

This session concentrated on the relationship between business and postsecondary education, focusing in on alternative pathways to accreditation and onramps to careers. Participants discussed key goals and actions to break down silos across institutions, recognize pathways other than four-year degrees, and widen the STEMM ecosystem narrative.

Key Goals

- Breaking down silos benefits the entire STEMM ecosystem. All stakeholders would benefit if industry played an active role in education and vice versa. Likewise, institutions can work together to blur their boundaries, connecting programs and helping talent to transition from one place to the next.
- More emphasis should be placed on opportunities other than 4-year degree programs, including by traditional institutions. Low-income, formerly incarcerated, and other disadvantaged communities could benefit most from alternative learning methods and learning platforms, in addition to having more flexibility like stackable credentials and credit transferability.
- STEMM needs to be reclaimed by a more diverse group of people, and should be inclusive of trade jobs. There should be a stronger presence across the STEMM ecosystem of individuals with diverse backgrounds and diverse careers.

Key Steps

- The educator profession needs improved support to be able to implement more creative learning spaces. More educators should be recruited by creating financial incentives like loan repayment agreements or easing licensing with alternative teaching certifications.

Moreover, professionals can be more connected to industry through externships and science fairs.

- More emphasis should be placed on career navigation among individuals both internal to and external to learning institutions. Students should be able to access robust counseling early in their education to begin thinking about their strengths and later, to think about their potential role with local STEMM businesses. Businesses, government, and nonprofits should feel present within education through science and career fairs, helping to build social capital and inspire careers.
- Education should become less rigid, especially blurring the high school-college connection that many future STEMM professionals currently take on. However, other experiences like apprenticeships and trade careers should also be accredited learning experiences given importance to building knowledge and skills in applied fields.

Breakout Session 3: Rural Education and Workforce Development

This session focused on barriers and opportunities to connect rural populations to good education and job prospects. During the session, participants created goals and key steps to increase the cultural relevance and capacity of rural institutions and to inspire creativity among youth. Moreover, participants used a systems-level approach to consider issues like accreditation, sustainability, and teacher shortages.

Key Goals

- All solutions should be fit to a rural context. In Minnesota, towns have been experiencing “brain drain” where talent leaves to go to larger cities, and Tribal communities have been sidelined. Instead, there must be a rural sense of belonging where diverse people know the value of where they live, and they see themselves reflected in the opportunities available to them.
- There must be an asset-based and capacity-building lens applied to the STEMM ecosystem. Across Minnesota, there have been successful programs to promote STEMM equity, but communities have to be aware of those opportunities and readily share them with one another. Especially in rural communities, many schools are significantly under-resourced and could benefit from more active rural-urban exchange.
- Growing up, many participants felt that they participated in a “tinkering culture” where they could experiment without too much risk. Over time, rigid assessments and pathways have crowded out the ability to be creative, learn applied skills, and forge unique career pathways. Young people should be connected to STEMM assets like businesses or maker spaces to widen STEMM career pathways and ensure they are more inclusive of trades and entrepreneurship.

Key Steps

- More project-based and applied-learning models can help to integrate work experiences and standards into the classroom. Teachers can take the opportunity to integrate student interests to inspire curiosity and effectively assess how a student wants to direct their lives. When paired with career counseling, these approaches can help students visualize their STEMM pathway early on.
- To combat the teacher shortages faced in rural areas, more pathways to becoming a teacher should be created. Alternative licensing could help reinstate courses that have been lost over the years, such as trades, and communities could identify and employ experts already living in the areas as educators. Additionally, alternative licensing could enable more mid- or late-career professionals to be able to access on-ramps to teaching.
- Any and all programs at the rural-level need to be sustained. While affordability continues to be a challenge, some programs can cultivate trust and a connection to STEMM at little or no cost (e.g., science fairs or class visits). Participants sought to ensure that such actions are repeatedly executed during a student’s education to affirm their belonging in STEMM.

Plenary Session 2:

Following the breakout sessions, participants heard from 3M leadership. The session also included a panel that underscored the importance of partnerships in achieving STEMM equity and excellence.

Driving STEMM Equity and Excellence at 3M

- *Jayshree Seth, Corporate Scientist and Chief Science Advocate, 3M:* Seth recalled that her science advocacy began five years ago when an internal survey revealed 40% of people thought their lives would be no different without science. A later poll, following the COVID-19 pandemic, revealed that people have begun to connect science to health, sustainability, and future generations’ talent development. Seth emphasized that she and 3M find it paramount to diversify science, lift stigma, and increase innovation. She closed by reminding participants that advocacy is “an authentic act of passion.”

Panel on Partnerships in STEMM Equity and Excellence

Mai Chong Xiong, District 6 Commissioner for Ramsey County, introduced the panel. She noted that while Ramsey County has a diverse population, there are intense income and opportunity disparities. Before closing, Chong Xiong emphasized that investments in young people are necessary and vital.

Ling Becker, Director of Workforce Solutions for Ramsey County, moderated a panel on partnerships in the STEMM ecosystem. Panelists included the following:

- *Eric Jolly, President & CEO, St Paul & MN Foundation:* Jolly shared that education is a liberating force in human development, noting that he was the first high school attendee in his family. He underscored the importance of logical alliance in pursuit of a shared goal in pursuing cross-sector collaboration for STEMM equity, and highlighted that achieving change will require the courage to reject the system as it is and to stand for ethics.
- *Joe Gothard, Superintendent, St Paul Public Schools:* Gothard stated that every child has the ability to learn at the highest level, and described the importance of adopting a generational approach to STEMM equity and excellence. He also noted that while K-12 is slow to change, industry can change more quickly. This makes partnerships between K-12 and industry even more important to advancing change.
- *Deidra Peaslee, President, St Paul College:* Dr. Peaslee described how development makes things possible, and noted the power of rethinking education to add design thinking and problem solving in achieving change. She shared that we must be “patient yet urgent” in our pursuit of change.