Achieving STEMM Equity & Excellence: Learning Ecosystems Community of Practice 2023 Convening
Managed By The Teaching Institute for Excellence in STEM (TIES)
May 1, 2023 | 10:45 am - 11:45 am & 2:30 pm - 5:30 pm

Workshop Summary and Readout

At the recent STEM Learning Ecosystems Community of Practice 2023 Convening managed by the Teaching Institute for Excellence in STEM (TIES), the STEMM Opportunity Alliance (SOA) hosted a workshop centered around Achieving STEMM Equity and Excellence across the Education Ecosystem. The workshop brought together a diverse group of over 30 cross-sector partners representing regional STEM ecosystems from all around the country – including students, K-12 representatives, out of school programs, government stakeholders, philanthropy leaders, research institutions and more – to discuss the role of informal education organizations, K-12 educators, and postsecondary and research institutions in creating equitable STEMM learning opportunities.

Breakout Sessions

In breakout discussions, participants leveraged a draft discussion paper developed by SOA – a strawman framework for a National Strategy on STEMM Equity and Excellence – and collaborated with colleagues to discuss key goals, strategies, and opportunities across the STEMM ecosystem. These aimed to amend and iterate on this framework, while also enabling potential development of specific action plans for individual STEM ecosystems. Key themes and relevant ideas from each breakout session are captured below.

Breakout Session 1: Visioning Success
This conversation focused on identifying visions of success for what can be achieved across the STEMM education ecosystem. Participants were asked to reflect upon what they want the world and the STEMM education and workforce ecosystem to look like in 2050. Future potential successes shared by participants are outlined below.

Visions for 2050:
- Students have access to quality STEMM programs early in their education journeys, and are adequately prepared to succeed and thrive in postsecondary STEMM programs. Increasing access to a high-quality STEMM education for students from all

backgrounds closes the achievement gaps and enables everyone to flourish in STEMM fields.

- All students feel a sense of belonging in STEMM programs and careers and can "see themselves" in STEMM. Young people feel confidence in their ability to pursue their passions in the ecosystem, regardless of their background.

- A greater diversity of backgrounds and perspectives in the STEMM ecosystem unlocks innovations that will improve outcomes for the U.S. population at large. This includes greater representation of women and BIPOC in STEMM leadership roles as well as broad increases in the diversity of the STEMM workforce.

- Funding for advancing the STEMM ecosystem is targeted to systemic work and improvements, rather than discrete programmatic interventions. This approach enables organized cross-sector action in achieving goals.

- Communities work collaboratively to use STEMM for collective well-being and engage children from all backgrounds in informal STEMM education, paving the way for them to feel a sense of community and belonging in learning pathways.

Breakout Session 2: Goal Setting
This session sought to define key goals needed to achieve the desired outcomes defined in the visioning session. It also aimed to assess these goals against the existing STEMM equity and excellence national strategy framework draft. The ideas surfaced by participants coalesced around the goals noted below.

Key Goals:
- Ultimately, a central goal of this work should be achieving a STEMM workforce that is representative of the U.S. population at large.

- The STEMM ecosystem could benefit from placing a greater emphasis on informal education, outside of institutional education spaces, to enable young people to explore STEMM creatively. Lifelong STEMM learning should also be woven into the lifecycle of a person's engagement with the ecosystem.

- Improved connective tissue between the federal government and the STEMM ecosystem can strengthen progress towards equity and excellence in STEMM. This might include making federally collected data on the STEMM workforce publicly available and/or clarifying the connection between STEMM equity and excellence efforts and federal plans.

- Curriculum development and teacher professional development are currently siloed and disconnected, sometimes devaluing the experience and knowledge of educators. Bringing researchers, curriculum writers, educators, and scientists together to develop curriculum collaboratively should be a key goal in the advancement of STEMM equity and excellence.

- Providing educators and learners with the resources they need to succeed should be a central tenet of pursuing equity and excellence in the STEMM ecosystem. This might include, for example, defining and implementing quality mental health resources and ensuring access to all teachers and students.

Breakout Session 3: Developing an Action Plan
This conversation explored elements of the national strategy framework draft in order to identify what may be missing or what may need additional emphasis to successfully deliver the needed changes which were outlined by participants in the goal setting session.

Key Action Items:
- Extensive consideration should be given to acknowledging the importance of engaging workforce bound graduates in learning and earning pathways that keep them invested in STEMM and advancing towards good job goals.

- It is not enough to offer STEMM courses to a wider variety of students. Those courses must be taught in a manner that ensures each student feels valued and supported. Instruction should be culturally relevant and students should be encouraged to pursue any academic or career pathway they desire.

- Deadlines aren't realistic unless they are accompanied by step-by-step goals or plans. Efforts should be undertaken to ensure that well thought out plans are erected to meet the needs of underrepresented students to not only introduce them to STEMM, but to retain them.

- Better access to quality mental health resources should be developed to help retain underrepresented groups in the STEMM field. Various obstacles face these groups and it is imperative that work be done to mitigate any outside factors that may discourage them from pursuing careers and education in STEMM.