



## Cross-Sector STEM Equity and Excellence Summit

Hosted by Lyda Hill Philanthropies and the National Math and Science Initiative  
October 24, 2023 | 1:00 pm - 5:00 pm

### Workshop Summary and Readout

The STEM Opportunity Alliance and its hosts Lyda Hill Philanthropies and the National Math and Science Initiative convened a group of leaders from academia, community-based and nonprofit organizations, private industry, philanthropy, and government for a cross-sector summit focused on equity and excellence in the U.S. STEM workforce. Participants heard from keynote speaker France Córdova, astrophysicist and president of the Science Philanthropy Alliance, about innovative strategies to promote equity and excellence in STEM sectors. The Summit also included an overview of new studies related to STEM equity and interactive group dialogues. During the Summit, participants engaged in three concurrent breakout sessions to connect with one another and advise on the implementation of 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 ecosystem. The session included remarks from philanthropy and nonprofits about the importance of gender equity and coordinated interventions in STEM.

#### Welcome and Opening Remarks

- *Lyda Hill, Entrepreneur and Philanthropist*, gave her appreciation for the audience's participation in the event and noted the importance of STEM equity and excellence. She uplifted that she's proud for Lyda Hill Philanthropies to be a partner of SOA, noting a strong alignment between the organization and the Alliance's missions.
- *Nicole Small, CEO, LH Capital Inc. and Lyda Hill Philanthropies (LHP)*, relayed how LHP and AAAS began the [If/Then Initiative](#) in 2019 - which included a creation of 120 3D printed statues of diverse women leaders in STEM as a way to showcase opportunities for women in science and technology fields. Small noted that LHP will continue to help drive dialogue via expansions of the If/Then initiative and continued

*Mission Unstoppable* programming, while also citing the need to collaborate with other organizations both nationally and in the Dallas community.

- *Jeremy Anderson, CEO, National Math and Science Initiative (NMSI)*, thanked the attendees and co-hosts for their time and raised the need for effective interventions. At NMSI, Anderson observed exciting [longitudinal studies](#) showing that NMSI-trained teachers double the chance a student pursues a STEMM degree in college. Moreover, NMSI-trained teachers created eight times better outcomes for students of color, girls, and students on free and reduced lunch.
- *Shirley Malcom, Senior Advisor to the CEO and SEA Change Director, American Association for the Advancement of Science (AAAS)*, focused on what SOA can do: a child born in 2023 will have the opportunity by 2050 to thrive through an equitable STEMM system shaped by these efforts today, not succeeding “in spite of what has happened.” She announced 8 new partners to SOA, showing the continued growth and momentum of the Alliance: Brown University, High Tech Kids, Project Lead the Way, the Scratch Foundation, Telos Learning, WestEd, Texas Girls Collaborative Project, and the UTeach Institute.

#### Panel on Data-Driven STEMM Equity and Excellence

Sam Gill, President and CEO of the Doris Duke Foundation, moderated a panel on new research in the STEMM ecosystem. Panelists included the following:

- *Madeline Di Nonno, President and CEO, Geena Davis Institute on Gender in Media*, elevated how storytelling impacts social justice issues and noted that knowing who and how someone is portrayed in media matters to systemic change. Di Nonno shared new research results, including how Americans are exposed to male scientists in TV and movies at a 2:1 ratio to female scientists, that the majority of women’s STEMM portrayals in media are doctors rather than other occupations, and that 40 percent of women know they’ll face sexism in the media industry for their work. Lastly, she shared about the need to do multi-faceted storytelling, not just in Hollywood, but everywhere, so that the public can envision the possibilities available to them within STEMM.
- *Nichole Austion, Vice President of Marketing Communications and Government Relations, NMSI*, noted that NSMI nearly achieved gender and racial parity in its 2023 cohort of 1,800 educators. After evaluating the success of these educators, NSMI found that both male and female teachers were better equipped to support the development of girls when they were given proper training and guidance. Austion also reflected how she once didn’t consider herself a “STEMM person,” but highlighted that children today need

to know how vital STEMM or STEMM-adjacent careers will be for solving the issues of today and tomorrow.

- *Shirley Malcom, Senior Advisor to the CEO and SEA Change Director, AAAS*, recalled that when AAAS and LHP launched the If/Then Ambassadors program, they initially set out to identify 40 female leaders in STEMM fields to be part of the program. But through the process, they identified 120 women from many geographies, points in their careers, and backgrounds to include – showcasing the large role women leaders are already playing in these fields, despite barriers. Since then, Dr. Malcom has seen the ambassadors grow in their confidence and form a network, and the public, especially parents, understand a more expansive STEMM narrative. Moreover, she emphasized the need to portray STEMM practitioners as having full lives while still taking on big, important challenges in their work.

### Setting the Scene

- *Travis York, Inclusive STEMM Ecosystems for Equity and Diversity, AAAS*, reflected on the importance of storytelling that came through in the panel discussion, and shared that as the son of a Native American man he has found storytelling as an important piece to belonging. To orient participants for the hands-on breakout discussions, York outlined SOA’s draft National Strategy for STEMM Equity and Excellence – the first of its kind to be co-created and to set national priorities for advancing STEMM equity. He laid out the five pillars of the strategy – driving STEMM equity via *Exposure* in early childhood, *Inspiration* through K-12 teaching, *Discovery* in higher education, *Innovation* in R&D, and *Opportunity* in the workforce – all set upon the foundation of *Accountability and Partnerships*.

### *Breakout Sessions*

In three concurrent breakout sessions, participants gathered to discuss potential needs and action plans for implementing the National Strategy to achieve equity in STEMM by 2050. In each discussion group, guests discussed each of the National Strategy’s five pillars in depth, while focusing on how implementation may play out in the unique context of their own regional STEMM ecosystems. A summary of each breakout session is included below.

#### Breakout Session 1: Developing and Sustaining Cross-Sector Partnerships

Participants sat down to discuss the five pillars within the National Strategy to achieve Equity and Excellence in STEMM by 2050 through the lens of cross-sector collaborations and partnerships. The group discussed how partnerships could be leveraged to fulfill the goals laid out by the strategy and what work must be done in order to achieve them.

### *Defining Success:*

Participants were encouraged to visualize what success would look like if the National Strategy were implemented in their region or sector, with an eye toward the role of cross-sector partnerships in that success. Key themes and discussion points included:

- Driving greater equity will require creating a working environment that makes educators feel safe and supported to promote retention and recruitment – and partnerships can be critical in helping identify and address current inadequacies. Achieving this requires first creating a clear definition of a supportive workforce. By clearly defining what makes a workplace a safe and inclusive space for individuals, employers will have the tools needed to increase employee retention and innovation.
- By mapping the teacher recruitment and retention cycle – nationally and for individual regions or communities – stakeholders can best identify the areas where educators are entering and leaving the system, and target interventions.
- Local communities should be fully aware of the various pathways available to individuals interested in pursuing STEMM education and work. Moreover, stakeholders in these communities must be keenly aware of how they interact with the STEMM field and ways in which to engage and interact with it.

### *Adding Context:*

Attendees were asked to contextualize the potential role of cross-sector partnerships and their implications for the draft National Strategy, including by considering key regional or sector-based assets or potential gaps. Key themes and discussion points included:

- It is imperative to find sustainable funding streams to ensure pandemic-era programs continue to function and engage individuals interested in pursuing opportunities in STEMM fields.
- Community partners can play a crucial role in ensuring that individuals are engaged in STEMM at every stage of life.

### *Action Planning:*

Guests were encouraged to consider the actions that should be taken to better build and sustain cross-sector partnerships that can help achieve the goals and metrics set forth by the draft National Strategy. Key themes and discussion points included:

- Well respected leaders and conveners can bring actors together across multiple interests and sectors can play an important role in laying the groundwork for sustainable work and policies to be enacted and widely accepted.

- While partnerships with corporate and industry actors seeking to solve problems can be important, they must include norms and guardrails. These norms and guardrails can set standards that become mainstream and widely recognized across the board.
- Efforts should intentionally target geographies and regions where research capabilities are lagging. Bringing these areas up to speed will help level the playing field and introduce these communities to the wide-ranging possibilities within the STEMM ecosystem.

### Breakout Session 2: Developing a Commitment to Contribute to STEMM Equity and Excellence

Individuals gathered to discuss the importance of shared commitments across industry, research, and academic sectors to address equity and inclusivity in the STEMM field. Participants were encouraged and supported in thinking concretely about what their organizations individually and collectively could commit to doing to help advance needed work outlined in the National Strategy.

#### *Defining Success:*

Participants were encouraged to visualize what success would look like if the National Strategy were implemented in their region or sector, with an eye toward their own organization or sector's role in helping to drive that success. Key themes and discussion points included:

- The diversity of teachers should reflect the racial and ethnic identities of the communities in which they teach. In order to achieve this, the STEMM ecosystem must support teachers in every way as they work to inspire and prepare students.
- Starting salaries for teachers should be increased to reflect their important role in society. Teachers should be paid reasonable and living wages that enable them to support themselves and their families.
- Individuals from historically excluded and marginalized communities should feel supported and encouraged to pursue STEMM careers and valued at the jobs available to them.

#### *Adding Context:*

Participants were asked to consider what unique assets or challenges their region or sector may face, to serve as context for what type of new or expanded work key actors may need to commit to advancing in order to achieve the goals and metrics set forth in the draft National Strategy.

Key themes and discussion points included:

- There is a need to address gaps and stereotypes. Students should be informed that anyone can be a scientist. Moreover, students should be equipped with the tools needed to combat imposter syndrome.

- There must be significant investments on a regional level to reach communities. Investing in communities will help to elevate the STEMM field as a viable option for students.

*Action Planning:*

Guests were encouraged to consider what goals they have for their own organization's role in advancing equity in STEMM, and to brainstorm potential actions they or others might need to commit to in order to make progress against the National Strategy. Key themes and discussion points included:

- A shared vision of success, that is inclusive and encompasses many people from historically excluded and marginalized backgrounds as changemakers and successful STEMM practitioners, is an important precursor to action.
- It is crucial that strong partnerships be established with policymakers and other decision makers who can leverage their positions of power to create lasting change on the local and state level.
- There is a need for continued and targeted support for STEMM majors to ensure that they persist, complete their degrees, and matriculate into STEMM focused careers.

Breakout Session 3: Measuring Progress on the National Strategy

Participants discussed tangible ways to measure the success of the National Strategy's efforts to increase diversity and equity in STEMM. Through the lens of the strategy's five pillars, participants considered how to effectively achieve proposed goals and showcase progress over time.

*Defining Success:*

Participants identified what success would look like if the National Strategy were implemented in their region or sector, with an eye toward considering specific issues that might be solved and how progress could be measured. Key themes and discussion points included:

- There is currently a diverse pipeline of students graduating from college and going on to pursue graduate level education. There is a need for industry sponsorship and hiring to gainfully employ these individuals once they finish their educational careers. Ensuring they have full access to the workplace will help to alleviate stress on the employers' productivity and benefit the economy.
- There is no uniform way to spark curiosity in children, or how to measure such efforts. As a result, the means of engaging children and introducing them to STEMMs field will need to be diverse and flexible.

*Adding Context:*

Participants were asked to consider what unique challenges or gaps exist in their community, and what key metrics would be particularly relevant to track their own community or region's efforts to advance equity in STEMM. Key themes and discussion points included:

- There must be an intersection between workforce skills and higher education. Institutions of higher education must teach the skills employers are looking for in candidates to better prepare students for the careers they seek.
- Educators should track the time spent teaching K-8 science and math skills to effectively gauge students' exposure to these subjects. Moreover, setting a consistent curriculum could standardize the skills and concepts taught to students.

#### *Action Planning:*

Guests were encouraged to consider the actions that might need to be taken in order to make progress against the metrics identified, and what type of progress and timeline for impact might need to be considered for their community or region. Key themes and discussion points included:

- Improved mentorship and apprenticeship opportunities can familiarize individuals with STEMM in a more trusting environment. Connecting these opportunities with STEMM-based extracurriculars can further strengthen these linkages.
- Sharing internal and local success stories can help to show realistic examples of what careers in STEMM look like to individuals from historically excluded and marginalized groups.
- The STEMM ecosystem must support the families of individuals pursuing STEMM education and careers. STEMM fields can be grueling and time consuming, therefore making it necessary to provide ample opportunities for families to understand and support their STEMM professional relatives.

## *Plenary Session 2*

### Keynote Speech: Philanthropic View of Equity and Excellence

- *France Córdoba, President, Science Philanthropy Alliance*, began by expressing her happiness about the conversations at the Summit and reminded participants to remember where one comes from. As an astrophysicist, Dr. Córdoba likened the National Strategy to the creation of the James Webb telescope: carefully scientists had to align segments of the telescope to achieve the best possible outcome, much like aligning workflows and sectors of the STEMM ecosystem to achieve systemic change. Dr. Córdoba mentioned that the Science Philanthropy Alliance recently completed research where the organization learned that philanthropy contributed to 40 percent of funding for basic research, a core step to developing innovative findings. She emphasized that radical

collaboration is key to practical solutions. Additionally, Dr. Córdova strongly endorsed building scientific capacity at the state government level, to ensure state legislatures are armed with rigorous and excellent scientific information. Lastly, she shared a personal anecdote about the importance of science communication. As a young literature student, she was inspired to take up astrophysics because of a documentary about neutron stars. Because of those who were willing to take a chance on her, she felt like she could belong in science. In closing, Córdova urged the audience to use their laser focus, be creative, and pitch in on segments of the National Strategy that catch their attention.