Disrupting Ableism and Advancing STEM: A Year of Reflections and Actions – CART Transcript

>> Hello, welcome to the Disrupting Ableism and Advancing STEM: A Year of Reflecting and Actions Webinar. This is a lookback at the historic workshop series and changes that have followed over the past 12 months. We will open with videos, welcoming you all from Dr. Marsha McNutt, president of National Academies and Karen Marrongelle of the National Science Foundation.

>> Marcia McNutt: I'm president of the National Academies of Science. I'm a 70-plus years old white woman with short blonde hair and wearing a black jacket and scarf. It is my pleasure to be here to address this group that is assembled to hear a panel on people with disabilities in STEM. I'm sorry I can't be with you personally. As disruptive as the Covid-19 Pandemic was, one of the bright spots that emerged is the ease with which we all can convene virtually now, which I'm sure is of special interest to those with mobility challenges.

I remember last time I talked to this group, which was the Disrupting Ableism and Advancing STEM event we had previously. I comment there had are too many brilliant minds either being underemployed or unemployed because we haven't made the accommodations to actually take advantage of their skillsets, their enthusiasm and their brilliance in the science field.

Just as we have benefitted from virtual convening as a result of Covid, I feel confident further innovation will help us address issues of access and sustainability in the STEM ecosystem and drive us to see the future we can see and envision for ourselves in the near future; one where talents of people with disabilities are both valued and respected.

As we focus on creating this STEM workforce of the future, higher education needs to evolve to meet the needs of students more effectively. This includes reevaluating the mindset students are required to be on campus, a challenge for those with disabilities. Many are hindered due to limited resources of both time and money, even if they aren't disabled. The intentional design of accessible spaces is particularly important, not just for students with disabilities but particularly with students with disabilities.

All members of the STEM research ecosystem have a responsibility to ensure our STEM workplaces are inclusive and inviting. Leaders such as myself are responsible for reducing stigma and setting the example for how this can be achieved. Leaders can create an organizational culture in which individuals feel comfortable to self-disclose, as well as ensuring that necessary accommodations can be met. There's nothing worse than having someone turn down an opportunity because they feel reluctant to let the person who is organizing it know what sort of accommodations they would need in order to be successful.

In addition, leaders should intentionally work to create accessible environments. As a result of last month's critical update by the U.S. Department of Health and Human Services to section 504 Of Rehabilitation Act of 1973, we heard announced May 1st, we expect to see improved services and greater accessibility in a variety of areas. One of the areas mentioned, specifically important to the National Academies, is how we deliver our web constant and accessibility of our publications.

The disrupting Ableism and Advancing STEM Workshop series was unique in that it related to broad issues of STEM workplaces including academic and purely research settings. This is important for persons with disabilities and, more importantly, highlighted the success of many STEM professionals across a range of STEM workforce sectors, underscoring our need to improve our conformance with the web content accessibility guidelines. I'm pleased to report the National Academies website is currently undergoing extensive review for compatibility. In addition, our chief diversity and inclusion officer, Dr. Laura Castillo- Page will speak around prioritization of accessibility and inclusion for people with disabilities. Finally, as direct result of this conference series, the National Academies has made several changes to the way in which we execute our events, how we engage our volunteers and how we support our staff. In discussion with our members, we are investigating additional ways to make our physical environment more accessible for in-person events and more effectively translate what we are learning into broader policy and cultural change at the National Academies of Science.

I hope you all take away lots of good messages from today's event. I want to thank the staff for their great work in setting this up. Thank you very much. So long.

>> Karen Marrongelle: Thank you for inviting me to speak. Though I can't join in person I appreciate the opportunity to keep this critical conversation going. When we met last June, we knew it was just the beginning of a very long journey toward an equitable, accessible STEM community. The rewards for this demand we undertake this mission without hesitation. One of the most liberating aspects of STEM work is that ideas matter, not your race, gender, creed, or physical abilities. Except in practice there are barriers that keep great minds out of STEM, especially for people with disabilities. That isn't just unfair; it holds back our entire research enterprise.

Our different experiences provide insights and inspire breakthroughs and robs of insights and idea. Cultivating STEM minds is essential and applying that knowledge to better life in society. That is why NSF is excited to partner with National Academies on this conference on disrupting ableism and advancing STEM.

Last year I mentioned three key objectives to disrupt ableism. So how have we done in this past year? First, we are strengthening multiple pathways to STEM. People take unique paths to STEM sometimes by choice but often by necessity. Disrupting ableism means opening, recognizing, and welcoming every pathway. Through solicitations like the workplace equitable for persons with disabilities in STEM English education program NSF is bouldering pathways for students with disabilities. One project at the University of Mississippi is exploring how graduate students with disabilities identify as scientists. Researchers hope to create STEM graduate programs that better support persons with disabilities, increasing representation in advanced degrees.

At a Utah State University project, NSF is funding accessibility and engineering education, identifying systemic barriers to access in all academia and developing anti -ableist practices for the engineering community. These are just two examples of the great work going on already, but we

know that much more work is needed on this front. Second, we must build on the foundation of knowledge about how ablism can be disrupted and workplaces made to be more inclusive.

One key effort to build that knowledge base is through the NSF convergence accelerator for use-inspired solutions for persons with disabilities which has invested more than 11 million in the past two years. NSF is partnering with the University of Michigan-Flint for undergraduates focused on digital accessibility, an increasingly critical issue in the classroom and workplace. Another example is at the university of Cincinnati where NSF research is investigating how to restructure STEM workplaces to be more customizable, to increase access and inclusion for post-secondary students with disabilities.

There is still so much we need to learn about ableism and accessibility, but these projects show that there are great minds with great interests in the subject and we expect even more results to come.

Third and finally, communities must value and respect the contributions, experiences, and perspectives of people with disabilities. This is the longest task we have ahead of us. NSF is working to build that community through broad partnerships, like the Includes National Network for Disability and Accessibility In STEM. That makes this conference and your work so important. You are charting the part the toward a future where ableism is distinguished, and everyone has their chance to mark their park. Thank you to the National Academies for hosting this conference series. We can lead to careers where students don't just have access but thrive in them.

>> Thank you to. I'm Bonnie. I have the honor of chairing the committee that planned the Dismantling Ableism and Advancing STEM workshop series. I'm happy to turn it over to Dr. Laura, the National Academies Chief Diversity and Inclusion officer.

>> Laura Castillo-Page: Good morning. My name is Laura Castillo-Page at National Academies of Science. I'm she/her, Latina with medium-brown hair wearing glasses and pink shirt. I'm pleased to be part of this incredibly important work with you all here today. Many of you know that we must be very intentional about making progress towards advancing accessibility and inclusivity in our organizations and in our STEM fields overall. We all know this work doesn't happen automatically. We must move forward from just a simple focus on compliance. That is not sufficient. We know this makes our field stronger and benefits all. We have heard the numerous examples on how this can lead to better creativity, performance, and greater financial returns but unfortunately the unemployment rates for people with disabilities including in STEM fields is way too high. We are leaving so much untapped talent behind. We know individual who's neurodivergent and more are important.

More on specifics in how to disrupt this in our culture and work processes here at the National Academies. Let me first start by sharing two foundational steps we have taken. In March of 2023 the National Academies launched its first DEI action plan, a five-year plan organized by six overarching goals, covering one building and infrastructure and developing capacity to advance DEI, two foster inclusion and belonging for staff, academy members and volunteers. Third is to enhance DEI in hiring, advancement and compensation. Number four is to apply a DEI lens to our programs and initiatives. Five is to diversify academy member, volunteers, vendor, contractors and partners. The last goal is to increase accountability, data transparency and communication on DEI initiatives.

Within the plan you will find one action item which is to develop and implement a framework to advance accessibility. However, accessibility applies to every goal that I've mentioned, from fostering a culture of inclusion and belonging to applying the DEI lens throughout work so it is threaded throughout our plan. We are prioritizing this area, as Dr. Mc Nutt mentioned, not only in programmatic work but in respect to workplace, culture and climate. I would be happy to share examples of some of the initiatives underway and some of the additional work we'll be taking on.

The second foundational step we took was in October of 2023 when we launched an updated and expanded R D I statement and developed new guiding principles. Our new statement articulates we value diversity and recognize that talent is broadly distributed and that many perspectives enhance the quality of our work and drive innovation and impact but includes commitment to cultivate culture of inclusion, belonging, accessibility and anti -racism. Accessibility was not there before. It is now, front and center. The statement also ties our ability to fulfill our organizational mission to advise the nation on complex issues. I want to -- before I turn it back to Bonnie I want to thank the entire team that worked on this and all of the volunteers. We are looking at these promising practices. We are applying them to ourselves as a STEM organization. Thank you so much because it has helped us elevate significance and importance of this work internally.

>> Bonnie Swenor: Thank you Dr. Castillo-page and thank you for your work. I'm the director of the Johns Hopkins Disability Health Research Center. I'm a middle-aged white woman with shoulder-length blonde hair wearing a dark suit jacket and dark top. I use she/her pronouns.

I'm excited about this recap, celebrating the dismantling ableism series that just happen ed a year ago. That brought together so many disabled scientists and leaders from across fields and disciplines. We had much-needed conversations and honest discussions about why and how ableism has kept disabled people out of STEM far too long. We shared evidence, experiences about how disabled people are needed to accelerate the pace of scientific discovery. Disabled people are innovators, problem-solvers and it is time STEM values possibilities with E bring.

The workshop series felt like a reflection of a historic moment that was happening. As there has been much progress for the disability community in the past year, some of which we will discuss today. But even with those changes and increased awareness about ableism in STEM, we have so very far to go because we truly are starting at the bottom, at the beginning. There has been such little progress on these issues until now.

So as we reflect on this workshop I hope we recognize the ripple effect that conversations like this are having and that we continue to work together to bring change. I'm so very grateful to the committee that worked hard in planning workshop. Many of who are with us today. Emily Ackerman, Dave Caudel, Michele Cooke, Logan Gin, Andy Imparato, Mona Minkara, Jordan Rodriguez, Anita Marshall, and Rupa Valdez. Much thanks to the panelists who contributed to the workshop series and our presenters and the contributors along the way. Special thanks to the National Science Foundation who supported the workshop, especially Mark Leddy and Chris Atchison. And the staff at National Academies that made this possible, Kerry Brenner, Melissa Wynn, Andrea Dalagan, and Maria Lund Dahlberg

With that I want to turn it now to a panel discussion. I think first Maria has some comments to say.

>> Maria Lund Dahlberg: Thank you very much, Bonnie and thank you for joining us. My name is Maria. I'm here at the workforce development at National Academies and help oversee this wonderful project over the past almost two years now. I'm a white non-binary person with blue jacket and glasses and joined by a great panel of individuals who have participated over the past year. Last year at our events themselves. We have been thinking about different ways to reflect on the event and what is needed to move forward. One of the questions is what was the impact of the event itself about the event and wonder if folks have ideas. I could turn to some of the fellow committee members as they reflect on that question posed to the team.

Logan, Anita, other ones?

>> Anita: This is Anita. What struck me was staggering amount of work people with disabilities are doing to make things better not just for themselves but for the entire community of disabled folks in STEM. I was just -- like every panel, every group, I was just floored by the work and the thought and the effort that was being put in in so many different sectors and so many areas of stem. Sometimes we feel isolated and alone in our particular workplaces, but we are everywhere, every work stage and killing it out there. So I think that was really inspiring to me and kind of opened up this whole new network of people with disabilities all across, you know, STEM. So that was pretty cool.

>> Logan Gin: This is Logan. I would like to follow up by saying a bit of a meta reflection about how accessible the event itself was. I really think National Academies and partners did a great event with events and online series. Things like normalizing visual descriptions, for example. I'm a white male with short hair wearing black glasses and green polo. To the closed captioning and the sign language interpreters, just was a really nice piece to be added. Then that allowed us as scientists with disabilities to really connect in ways I feel like I haven't had the opportunity to do at all thus far in my career. But connections, community empowerment we have had during our time together and beyond that has just been unmatched for any event. Something, just a couple example, I I had the opportunity to visit Dr. Mona's lab this spring and participated on panel on Mental Health in disability In Chemistry with Michelle Cooke, part of the community. This is a start of many of these connections possible by getting everyone together in the same space whether it is virtually or physically.

>> Hey, earn. This Holden Thorp, a 60 -year-old with are gray hair and blue sweater and autistic but something I have never spoken about. Maybe this was naive but wasn't expecting neurodivergence to be part of this panel. I got my diagnosis about seven years ago go from a clinician who reported to me that someone had disclosed to her that I had Asperger's syndrome. Did she agree. She said we don't call it that anymore and yes, I agree you are on the autism spectrum. She made sure I wanted to know the answer to that. And I kind of filed that away. You know, when I was chancellor of University of North Carolina I dealt with a lot of the controversy around autism because that is where the wonderful teach center that was founded by Eric Schoepler was a place where great medical advances on autism were done so I met with parents and folks who had all kinds of disagreements about that. I always felt nervous about the fact that I had so many other advantages in life that I wasn't prepared to talk about it. Thanks to the encouragement I had the opportunity to learn more. If you are the editor of science you can get most to talk to you if they are scientists. That

was another advantage I had. I'm coming to you from Cambridge, where I spent a lot of time at the autism research center that Simon Barron Cohen runs here and just gave a talk Friday.

You know what, everyone on this screen persuaded me maybe you didn't realize you were doing it. That if I was open about this it would create space for other people to either feel comfortable in their identity or disclose themselves that they chose to do so. The only thing I really had to do was be screen play louse about the fact that I don't have some of the challenges that come. If you are from another marginalized group or if you haven't had support or resources and all the things I have had. But maybe by doing this I can help some that don't have those advantages have a safer place to be.

Since I have been doing this I have to say the response -- somebody asked me wife, people have been asking my wife frequently, are you surprised about all this? She said no, I have known him for 50 years. I'm not at all surprised; I'm just surprised at the outpouring of appreciation, which I think she wasn't really expecting. I can't thank y'all enough for changing my life. I hopefully time you see me talk about this, where I can do better, saying things differently or you want to talk about the details of this, please let me know. I'm on a journey, so thanks to all of you for being part of it.

>> Maria: Thank you. That is one of the ways to navigate to eliminate the stigma around identity and sharing, that we can help make the connections, the networks while getting people to learn and build their own level of understanding and engagement. Were there other thoughts, Bonnie, as you come off mute?

>> Bonnie Swenor: Thank you. This is Bonnie. I just am so grateful for the positive impact in people sharing that. When you do this work I think you get used to having a lot of doors closed and negative feedback. When you feel like this is positive and maybe people are benefit ing from things you are saying or doing, it is great. Much thanks to hold EN, to everyone, Dr. Castillo-page. It's been an amazing year. Understanding when we come together collectively, that just maybe we can maybe some good change.

>> Maria: Kate?

>> Kate: I was hoping to ask H olden.

>> This is they, androgynous, use they, them pronouns, white and brown hair. This is the first time I have spoken about this on a national stage. It's been about 13 years that I was first diagnosed with autism when I was a graduate student. I have been diagnosed twice more through total happenstance because I have kept it out of my medical record until recently. My question, a lot of us and especially you given your position, have had to mask, a term that means where we attempt to present as neuro-typical individuals and communicate in typical times. I want to un-mask but face a lot of backlash but face especially since pushing the boundaries. Have you been able to be more public. If so, what consequences or maybe not consequences. What positive consequences have you seen, if you have seen positive ones?

>> Holden Thorp: My first test-drive was my class. One of the things you can probably tell. I have a hard time modulating my vocal tone. Every year I would always get a teaching evaluation, Dr. Thorp

is a great professor, he cares, we love him but kind of monotone. I felt self-conscious. I got up in front of class, I'm Dr. Thorp, I have hard time modulating my vocal tones but will try to make up for it makes this class as interesting as I can. Didn't spend time emphasizing words which coaches have taught me and sounds unnatural. That was great. From there, the benefits -- that was kind of where I realized this was probably a good journey. Like I said, for women with autism or people who have different gender identities or disabled in other way, this is a lot harder. The best I can do is recognize that but hope for a day disclosing that is comfortable. I think if a lot of people I see unmasking are seeing the benefits. Dave is on here. He might have something else to add, or somebody else has been on this journey longer than I a.

  >> Maria: Go for it, Dave. Please.

  >> Dave: I'm Dave, 50 -year-old male, salt and pepper, short cropped hair and glasses. Comfort is king. He/him pronouns. Executive director for autism at Vanderbilt. Autistic adult and proud father of three young daughter adults on the spectrum. Holden, I love that story, every bit of it. Not that you are just advocating but really part of autism in particular is anxiety. Our anxieties are eating us up about a million things at a time. Something like that can really poison an experience over the course of a semester. So getting ahead of that, advocating for yourself. Being able to let that go is a great tactic for managing. I have always been out, when I found out what my weirdness was, I would share to get people to listen get people to better understand me. I could mask less, try to be more authentic. For myself personally, I have learned some masking is necessary. Part of the way the neuro-majority interact, the parts we emulate when masking. Some is protect feelings, some is to be -- there is a lot of reasons. Good social reasons so I try to match that. I haven't figured how to cross the line where I get to be my authentic self and at the same time being respectful and best ways to approach them. I have been searching for that middle ground ten years but the struggle is real and takes time.

  I love that as more and more people are able to advocate for themselves and disclose hey, this is part of my struggles, part of my journey, I'm sure a lot of students were appreciative and when they got up to write, oh yeah, he mentioned that. People as a general rule are accommodating if they understand what is going on. You know, if they understand -- they don't have to have perfect knowledge. People are naturally curious about why are you doing something different or what is off about this. To give them something to get context, oh, this is why this person behaves this way, is helpful in helping us to connect but like you touched on before every student is neuro divergent or not. Are seeing themselves in an examples and opens up the possibilities and normalizes the fact that we can come into these places and hold jobs and be successful, professional adults and be imperfect or have challenges we face and stuff. I think it is a particularly for autism because we have so many social disabilities because we have difficulty connecting and talking to people and learning things from one another and stuff and often feel isolated or al lone and feel I'm the only one going through this and some misunderstand our struggles as narcissism to see others and then think I can have a conversation and they disclosed to me, I can disclose to them, we had a conversation and maybe they can help me navigate things that I'm trying to wrap my head around. That is a beautiful thing. I absolutely, absolutely love that. The final thing I want to say then shut up because I'm in a ranty mood, I apologize, I get like this sometimes.

It is so great to see all you again. I feel like it is amazing because there are those of us in the panel and in the group that we have our own particular challenges and struggles that functionally look very different from like my struggles or another person's struggles. Like in so many ways like we are very different but unite ed in the same thing. Like our mission is the same. The goal is the same. What we are asking for is almost union VAERL. I love that. Absolutely love that. This is the work that before -- when I was asked into this committee I was looking at breaking outside and looking into expanding into disabilities and differences and my work on this panel super-charged that. So now I'm working in a lot of things that have nothing to do with neurodivergency or autism. I will always do a ton of that stuff. As I do this I keep feeling the sense it is all the same. At its core we are just asking people to recognize that some of us have different needs. Some of us have different accommodations and that society is structured around accommodating the neuro-majority. No matter what flavor of human and whatever accommodation you need, we as society should take an honest effort to accommodate you as much as reasonably possible.

So we broaden our horizons and allow more people to be connected to things, just like the neuro-majority are. That is such a rewarding and engaging thing to get involved with and stuff. So I owe huge debt to this group. Learned a lot to you guys and it was fun to geek out and see you guys like be the best versions of yourselves. I have no doubt I shamelessly stole a lot of things from you guys I use in my own efforts and stuff so thank you for that.

>> Holden: One crazy coincidence is I'm on the P B S board. We are rolling out our first P B S kids show where the main character is autistic. I'm putting link in the chat. It is beautiful. I have seen several episodes of it. I can't tell if it was great for those with autism or for their friends. It does both. Coming out in November.

>> Maria: That is wonderful. We will make sure that gets out onto the public-facing website.

>> Bonnie Swenor: This is Bonnie. Thank you. I love this conversation. I am also so happy to have this group back together and fighting for all of us to belong in science. I think that is the commonality, is we all do belong. We should feel that way all the time. So I want to move us to talking about also what has happened in the last year that is hopefully adding to those feelings of belonging and science. There has been conversations outside this conversation, policy changes and ask our panelists to discuss some of those changes that have occurred in the past year.

>> I didn't know if we were going in order.

>> Maria: Speak about -- go for it. You have been involved in some activities.

>> Anita: This is Anita Marshal. In some ways this isn't a big thing. In other ways it is. So field trips are a really big part of the geosciences, professional development networking. They are a big part of our conferences. Big reason people go to our conferences to do this -- these kinds of activities. The group that I work With, International Association For Geoscience Diversity has been running these years, along with the society of America's annual conference that. Is great. Those field trips are wonderful but we have been able to just this year push for a broader change where all the field trip leaders are required to submit access notes for their field trips and participants can filter excursions by their access needs. We have little symbols on each of the field trips, we have a filter

they can use to short-cut to field trips they know will work for them and access needs without having to guess or trying to contact a bunch of field trip leaders. This is now formalized policy that from now on, going forward, field trip leaders are going to have to submit an accessibility plan and have to answer all these access questions so people can know right away whether they can be included in those trips that. Is something I'm really, really excited about. It's been a long time coming. I'm pretty happy with that so --

>> Maria: That is really fantastic. Sometimes it is those little changes that can really help shift climate or culture in a way to become more inclusive, more sustainable or transparent in many ways.

Other shifts or changes people have noticed over the past year? I saw Kate's happened up and then you --

>> Just went back on mute.

>> Kate Mittendorf: This is Kate speaking. I was going to reflect after Anita. I actually think mine is sort of like a counterbalance to her points. So I think at the very beginning Dr. Mc Nutt mentioned a bit about the Covid pandemic, how it created accessibility opportunities for instance, the ability to have virtual conference, the ability to have hybrid meetings the same way that we are having this meeting same way we had the meeting last year so there were people in person actually as people virtually. I was one O testify people virtually. Also in the last year the Covid-19 was declared quote unquote over for majority of people. But there are some of us, myself included, autism is not my only disability, I'm highly immune suppressed and don't necessarily respond to vaccines. Covid, for some of us, is not over. What we find actually -- or what I have found is a lot of conferences have removed hybrid option, lot of training in the workplace have removed hybrid options, lot of speaker series in the workplace have removed hybrid option s so you wind up requesting this back. That can be frustrating and you can be met with people who don't want to give you that access because it is now extra work stop that they didn't plan on having. Also if I do travel, which I sometimes do for certain areas for specific things wearing a mask actually can be met with I have found some harassment from the public pause it is such a politicized topic. I have met with almost -- certainly verbal aggression and that can be uncomfortable.

>> Maria: I agree. It is too bad both we have lost some of the accommodations and accessibility mechanisms that became very normalized and that we haven't maintained some of the opportunities in the same way that would be desirable. Also as immunocompromised individuals who prefer that safety level with masking, not accommodated or accepted for many people in this world. Yvette's hand is up and Jordan as well. Yvette.

>> Yvette Pearson: I'm a middle aged woman wearing a glasses and braids and I too am disabled. I have mobility restrictions and visual restrictions from a medical challenge I incur ed a few months ago. Speaking of Covid, Kate, I also traveled with my mask and I'm at home with Covid so yeah, even with the mask. I want to chime in on some of the things that we have been doing at the University of Texas at Dallas. Back in 2022 we made a decision to bring our accessibility services and accommodations under the umbrella of what was my office, which was diversity, equity and inclusion before Texas passed a law that banned our office, effective this year.

In doing that we had rolled out plans to bring employee accommodations under the umbrella because we had seen a lot of support for student accommodations and certainly we had some data from a climate survey that really confirmed the need for more emphasis on employee accommodations. We were able to transition during the past year our employee accessibility service under the umbrella of our office. When we did so we saw a substantial increase in requests for accommodations from faculty and staff members. Now that the office has now been closed, we have to -- we've had to go back and separate out employee and student accessibility functions so I think it is going to be important to keep our eyes on making sure that needs are met and met fully for all the people impacted there. Part of it gets to preparing faculty to meet student needs and a huge part is preparing employers or supervisors to meet employee's need. One of the reasons we were excited to see the NSF's workplace people with disabilities program, the call, solicitation last year which we were excited to apply for because it gave us an opportunity to get folks thinking about things they hadn't necessarily thought about and thinking about them in ways that they hadn't thought about before. So as I mentioned we had conducted both employee and student climate survey that had given us insights to how peoples were experiencing the campus so we were able to incorporate those perspectives includes nuances that showed up in data with respect to intersections. I think it might have been Harold with things like socioeconomic status and disability and other identities with disability, access to resources and diagnosis.

The other thing that particular pursuit did for us was gave us an opportunity to engage folks like our staff and accessibility resource center who typically would not be included on an NSF proposal to be able to be part of this type of project. So bring them together with researchers so that evidence-based approach that we have always taken to doing things in our office, this particular solicitation gave us a way to do that front-and-center with all the expertise both through work experience and lived experiences because most of our team members for that project are disabled. We were able to bring that knowledge base together in an effective way. And I will say one more thing. Beyond U.T. Dallas, this was something already in the works, but within the past year ABET, the initials stand For Accreditation For Engineering and Technology though they don't use it because they accredit other programs globally. They adopted a definition of accessibility in the past year. In addition to definitions of diversity, equity and inclusion and some revisions that rolled out with their pilot criteria on diversity, equity and inclusion in the past year or so, they adopted definition of accessibility. One benefit is looking at that in conjunction with what everybody is doing and to place people as engineers and scientists with disabilities front-and-center in the conversation.

>> Maria: Thank you. Jordan?

>> Jordan: This is Jordan, the lead of persons with disabilities. I'm early 30s white man with short hair and maroon button-down shirt. Kind of related -- partially due to the conference but not completely, excited to say Stantec is doing corporate rebranding. One of the things they are changing is our color scheme and front for accessibility reasons. It was definitely partially created due to my involvement on this committee, everything that came out of this committee. I'm just so excited that they are making that change and it should go live I think on June 24th.

>> That is fantastic news. Thank you for sharing, Jordan. This is Maria again. I wonder if there are any other hidden local or national policy updates that anyone on the panel wants to share. I know Bonnie, for example, you tend to have your finger on pulse of national policy. Don't want to put you in the hotseat but anything you think we should be paying attention to in that space? Otherwise I see Yvette has raised her hand again as well.

>> Bonnie Swenor: Thanks, Maria. This is Bonnie. Happy to highlight the important designation of people with disabilities as a health disparity population by the national institutes of health. Not too long after our workshop series last year that became a hot topic and many of us were tracking that issue and have been advocating for that designation for some time. I'm really grateful to many who were involved in the advocacy. It took a community effort and lot of writing campaign to steer to that designation. What that designation means is there are now opportunities for funding from the NIH that weren't there previously. That includes research to advanced health equity for people with disabilities but also to include people with disabilities in research and the workforce. I have been shocked and surprised in a very positive way by the positive consequences that have already happened from that designation. I hope it continues. Examples include funding opportunity announcements from NIH to address ableism in health care and requirements that people with disabilities are part of the research team. Those are changes that really haven't happened before the designation.

>> Maria: This is Maria again. Those are some pretty fantastic changes and hopefully there will be some more to come as well.

I would like to switch gears and ask y'all if you have ideas about what we should be aiming for, right. These various shifts and alterations in policy or programs people are setting up. What do we want the future for people with disability in STEM to look like? What are your aims and dreams in this space?

>> Holden: Well, the journals need to do better with accessibility for people with visual impairment. Mona is on here. She and I have been talking about this. She of course is a great advocate. She is not going to let us off the hook so we are going to do what we can but I think that is something we should all commit ourselves to.

>> Maria: Thank you, Holden, yeah.

Other suggestion, other movements we should be taking in the space? Yvette, you did have your hands raised previously.

>> Yvette Pearson: Being an engineer I gravitate toward accreditation. I'm on the commission but do not speak on behalf of the commission so these are my words and thoughts. One thing going back to the previous conversation was that effective for the first time this year the civil engineering program criteria requires curriculum and civil engineering include application of principles of diversity, equity and inclusion in civil engineering and problem solving. Although accessibility and disability are not mentioned because ABET is never prescriptive about how programs do this, one thing that is an opportunity that I see is to look at how we can reenvision how we approach different classes to make sure that this is a part of how we are teaching design. Someone said earlier, this is one of my soap boxes, compliant is not necessarily accessible. When we think of data nationally

that shows us that wheelchair users are 36% more likely to be killed in traffic pedestrians than pedestrians walking, it has to do with design and awareness of drivers and whole bunch of pieces that move together. How are we incorporating that into how we are teaching our students to be better engineers? So my dream would be to move from that mindset of compliance, to one that enacts accessibility so changing everything from our approach to the design of our learning and workplace environments so they are -- that meet the needs of people physically and the sensory needs, quite frankly. Thinking about education and professional development, as I mentioned earlier, a lot of our barriers are attitudinal especially with disabilities like neurodivergent, people think they are trying to game the system because they are requesting accommodation or people with immunodeficiencies needing to work at home is me saying it is extra and giving an advantage that others don't have. How can we start to educate people to if not shift their mindset, which we hope but we know is not possible because some people are just going to be people but certainly shift the behaviors, which requires a shift in policies and practices around evolving language related to disability and accessibility. The one that gets me is when you have that person that says providing an accommodation for a student is not preparing them for the quote-unquote real world. In the real world we have accommodations in the workplace so how can we start to change those sorts of things? Thinking about how we overcome the negative impacts of those attitudinal barriers because that affects people. One of the things -- I won't go into all of them because I want others to have time to speak. One of the things that has come to mind quite a bit is this -- I call it a double-edged sword. I know certainly the flexibility of work from home has helped me because of some of the challenges that I face physically. By the same token we have to be careful those benefits, flexibility that is needed to accommodate for various disabilities isn't causing disadvantage in terms of the professional and social networks people have to build to thrive. I think about the workplace in particular. Getting back to those quote-unquote water cooler conversations and how spaces are navigated that help people learn about opportunity opportunities when people are not physically in those spaces, how can we make sure when working at home how can we make sure they are not missing out on important engagements.

The final thing I will say again is going back to the piece I mentioned earlier about intersectionality. So many people, it is hard for people to acknowledge the marginalized identities that many of us hold. Whether it is disability, our gender, our race or ET necessity or whatever. Not only acknowledge those identities but acknowledge that holding intersectional marginalized identity often exacerbates the challenges we face. As a black disabled woman Ien counter things that I'm questioning is that because I'm black, a woman or disabled? But I can't un-bake -- as someone presented, intersectionality as a cake. I love it. Once you mix the ingredients, flour, sugar, milk, eggs for a cake, you are not going back and separating those. You are all those things. We are all these things. So the acknowledgment of all the isms we face and not only acknowledgment. But acknowledgment is the first step to dealing with them. Beyond acknowledging them, then getting to dealing with policies and practices that cause those to thrive. That is my dream. You asked for a dream, Maria.

>> Maria: I did in fact, ask for a dream. This is Maria again speaking. Kate, you put up your hand around the time Yvette started speaking. Have been patiently waiting. But I suspect you have had similar hopes and dreams of what Yvette just shared. I will let you share as well.

>> Kate Mittendorf: Yeah, mostly reacting to everything. Because I do share a lot of those same hopes and dreams. I think a lot about when Yvette started speaking she started speaking by framing in our lens. Her own professional lens, how to think about it in that lens. I'm thinking from my professional lens, in helm of health services research, implementation science research. I think one of the things that, you know, everything Yvette are saying are things I want to implement. I will ask questions and maybe provide answers. The answers if we can answer them together, are kind of my dream, I think. So, you know, in implementation science we think about things like how do we -- like let's say we have a good intervention we know works. For instance, like mammography. It helps detect breast cancer. How do we roll that out in a way that everyone has access to it. In this case my question is together we came up with lots and lots of dreams and ideas and recommendations last year. Things that can make workplaces more accessible. Things that can make educational spaces more accessible. We identified barriers that make places inaccessible and barriers we need to tear down creating ableism in workplaces and in education setting and as Yvette was talking about. Like our outer environments and street crossings. So how do we tear down those barriers and do it in a way each individual institution. Even in my workplace we have all these little DEI committees that are department-based. How do we make this so that everybody is not doing the exact same work in isolation? How do we come together and roll out something that is more universally accessible to all so we can create not just one institution that gets this one NSF grant. How do we make these things so that everyone is getting the benefit of this. So, you know, I guess I'm thinking about like not only thinking about the reach, thinking about also the effectiveness and, you know, in my own paper I kind of railed against checklists a bit while also providing checklists. What do we do in terms of policy, resources we provide? Because let's say you get a new project manager on. From an outside institution, maybe industry where they weren't train ed in accessibility. You can't expect them to come into a workplace even if they have a great accessibility cultural and know from day one because the rest of the world doesn't teach this. Like, you know, so how do we build this into our workplace trainings? How do we build this into -- how do we give people resources and frameworks that are starting places and teach them, hey, here is this checklist. You should at least do everything on the checklist but it is the starting place to build your thinking from. So how do we make these things sustainable over time, you know, how do we build accommodations and accessibility so it is not like every time someone needs this accommodation we're having to invest in them individually. Can we make broader invest Ps that make things more universally accessible?

>> Thank you Kate. I suppose if you ask an implementation scientist you get an implementation-focused answer. (Maria speaking) but it is key. Mona, I want to give you a chance to speak as well. If we have time b moving into our closely call on you, Dave. I do see your hand is raised as well. Mona, would you like to join?

>> Mona: Yes, hello. Am I audible?

>> You are.

>> Mona: I have two things I want to share. I want to share how grateful I am for this community and to everybody since the workshop last year. And all the different people I have connected with. Like I have actually stayed in touch with like a few of you and actually was able to like progress certain things forward. For that I'm deeply grateful. I think that sometimes like being a blind person myself

in STEM can sometimes feel isolating so want to take a minute and express my gratitude. The other thing that happen ed this past year was I served as a -- what do you call when you serve, like a panel, review panel for a grant. That particular program had never had procedures for an individual who needed accommodations to review grants. I need that so there is an entire procedural claim they are trying to implement within NSF. I don't know, thank you to all of you. I just wanted to say that.

>> Maria: Thank you for sharing. Thank you for pushing the NSF in some ways to shift and move. One of the things we were excited about with this particular project was not just using this as a place to share information and gather individuals, which is one of the key things we did. We are excited to have built community and connections and learn from each other but also use it as an activity to leverage change within other institutions and our own. With that not-so-subtle lead-in, I will ask Laura to come back on. I talk a little more about what the institution did learn through our work together. I'm going to see if Melissa Nguyen if you can join us on having a conversation about what did you learn and how did this shift is what is done at the National Academies recognizing we are still on the journey and haven't gotten it right.

>> Laura: Thank you. There's been a lot of movement, which is great. I want to provide a few updates. Let's think about it in three areas. One around assessment and day collection. We have had movement around educating our staff there have been a number of initiatives and work processes and product. So we have decided to continue on this work. So we will engage an external firm to assess other parts of our organization from an accessibility lens so that was part and will continue this work and apply the less sons, so we are grateful for all the great recommendations that came out in the report. We are looking at that closely and thinking about how it applies to us. You may also be aware last year we launch ed a new demographic process for staff, members and volunteers. We are now collecting data on disability status and have added a question for people who register. As we all know, collecting the day a is critically important. In terms of staff education, there are a number of initiatives that have taken place and underway. My office develops tools and resources to help our staff understand certain topics more closely and how relates to their work. We are currently developing a resource on -- which we are calling accessibility workplace tool kit so that will help educate staff further on this topic and pull some of those best practices that we know that were highlighted in the report and other work we have done. You may be aware we do have a DEI speaker series for our staff. We offer sessions on a monthly basis. We try to cover accessibility and ableism in STEM from perspective of scholars with disabilities STEM as often as we can. We have had Dr. Bonnie Sweener and Dr. Ackerson, a great way.

>> We have the Learning Innovation Spotlight Series and we had advancing accessibility in programmatic activities. We had staff from program side and operation side discuss best practices and opportunities for improvement in this space . So the work this group did was highlighted in that spotlight session and shared with staff across the National Academies. We have a language guide that includes important definition and terms and we continue to update that as language evolves. We know it is constantly evolving. We most recently now have a DEI category for goal setting so this is an opportunity for staff about advancing accessibility on teams or projects and also supervisors and managers to support this work so we just launched our performance new year so that is an option for staff to select. I'm pleased to share though we are in early stages of launching employee resource groups, we have three, we are looking to launch a group for people with disabilities and

allies. We know how critically important that is to bring change to organization and move this topic forward so we are pleased that is currently in works.

In terms of work processes and products, I know my colleague will chime in, we are working to engage our ITS, technology unit, facilities and communications colleagues from across the organization to enhance accessibility practices for meetings and products. So building off this work and additional assessments we will be able to create a comprehensive guide on making meetings accessible including standard set of practices for meetings and options making available for accommodations so we are working across the organization to pull that resource guide, based on the best practices.

I think Dr. Mc Nutt mentioned we are building a new website and we are looking to identify a vendor that will have expertise on accessibility so that will be a great opportunity to improve in that space. Lastly in terms of products, I'm noticing an increase in staff wanting to do more work, exploring topics related to disability. So I know this team and others are exploring hopefully potentially a consensus study on this topic so there is a lot of discussion internally about more work in this space because there is certainly more we can be doing.

Before I turn it over to Melissa to sum things up, we are working across, my office, across the organization to collaborate and improve practices, policies and products and are taking a systemic approach and ensuring it is baked in, not just a number of one-off projects here and there. I think if we are going to see that change, it has to be a systemic approach.

Melissa, I will turn it over to you now.

>> Melissa: Thank you, I'm Melissa Wynn on the board for higher education workforce. I'm African-American woman, shoulder-length hair and have on a black top today. One of the benefits at the Academies is the staff is very willing to reach beyond their comfort zone and learn new things. So they have been interested in our work, a lot have attended our conference and a lot of ongoing discussions on how they can integrate accessibility into their practices and their events. One of the things we did early on was have Swoogo come in, one of our event management software companies at the Academies and asked about accessibility. It was amazing. The CEO came in himself, brought in a team and said what are your needs? What do you need? How can we help you? One of the things we needed was, as you see with the screen, screens are only so big. When you need an ASL interpreter and a block, you need CART interpretation and speakers, and if you have multiple panelists you need space so they brought in engineers and changed some of the templates and stuff we use to be more accessible. Also it is about expanding our belief system. We have certain things we normally do. It is not necessarily always that someone is not willing. It is just you have to give them the information and let them know how. Give them the instructions.

One of the things we have on our website and on our OAN page in addition to proceedings, I hope you will look at our commission papers. We have a paper that specifically was on the design and delivery of accessible events so breaks down how we went through this event and provides a lot of informational link, so I hope you will access that. Maria.

>> Maria: I'm not sure I have too much more to add, other than to say through Laura's office and through advice and support of members of this team and other groups across the National

Academies we are reviewing policies and trying to understand where there are baked-in ableism and accessibility, intentional or otherwise, ways to move around it and ways we can shift our thinking so we are as inclusive and accessible as possible, taking in universal design lens from gotgo to have this not just be element considered for events that are focused. And sort of core for folks with people with disabilities or topics highly related to disabilities but across all the topics that span all the STEMZ disciplines so excited to know this is fundamental that they are building in and excited to see how we move it forward and how we can keep translating to this journey. Now I will turn it over to the chair, Bonnie, for closing remarks.

>> Bonnie Swenor: Thank you, Maria. This is Bonnie. Thank you all for a wonderful recap. So when our committee convened to plan, it was clear we wanted this to be about big change. We had lots of discussion about how to shoot for the moon with these conversations. We wanted to be bold, draw on leaders and people from across the science ecosystem who don't normally come to conversations ability ablism or accessibility. I think we can safely say that thanks to all of you, thanks to everyone who participated that we hit that mark. I am grateful. It is clear there are more changes to come. Thank you to the panelists who joined us. The National Science Foundation, the Academy Staff and everyone joining in for this fantastic anniversary event for the workshop series. I hope we find ways to connect and work together and push for progress, because we all belong in science. With that, I will turn it over to the amazing Chris Hutchinson from the national science foundation.

>> Chris: Thank you, Bonnie. Good morning, good afternoon, Chris Atchison fork workplace equity, for persons with disability in STEM and division for excellence at STEM and director for the national science foundation STEM. Thank you for the conversation we have had today. Thank you all members of the committee for your time and effort in doing this important work. Thank you to the National Academies for managing this conversation series.

The awareness of the need for more accessibility research and inclusion and inclusive programs is at a high. Through scholars addressing chronic and systemic ableism. We need to push ourselves beyond this awareness stage. Awareness -- everybody is aware of the problem. Now we need to move to creating and implementing policy, accessible STEM training which lead to degrees in STEM and pathways to careers and workplaces that enable and engage talents of every teacher, scientist and engineer.

What can each of you do? Connect with people that you've met or heard from during this conversation series. Pursue the topics you are most passionate about and collaborate with someone. Remember that none of us have arrived to this point today without the help and guidance of others. When you learn something new, don't hold onto it. Share it and pay everything forward

You all should know NSF is paying attention and amplifying policies particularly in response to the series. Let the National Science Foundation partner with you. There are opportunities to submit your research, development and implementation ideas. Specifically in the area of disability studies. Two in particular, NSF23-593, workplace equity for persons with disabilities in STEM and STEM education and NSF dear colleague letter 23-160, STEM access for persons with disabilities. Check these out and reach out to any one of us to discuss your ideas. Don't just stop is there, consider funding and partnership opportunities for all federal agencies in the U.S. As well as private foundations that specifically support accessibility studies, research, program development and

implementation. Reach out, share the conversation and ideas you learn from everyone. Thank you, pass it back to you, Maria.

>> Maria: Thank you again. I have the daunting task of the final word. Thank you. This has been more impactful than I think I imagined when we launched it going on two years ago now. It's been an absolute joy to work with all of you and I look forward to continuing our work in this space, to continue to build beyond awareness into implementation to figure out how we can build those partnerships and launch into the next round of engagement in this space. It is a critical group of people we cannot leave behind if we are going to actually have fully functioning and engaged STEM workforce. I recommend everyone goes to our website and finds the proceedings that documents series that we held last year as well as the four-commission paper and document on how we have our workshops series.

So thank you again for joining us for this short conversation. Thank you for joining us last year for our series On Disrupting Ableism and Advancing STEM.