PRELIMINARY SCHEDULE

Subject to Change

Events held at the David L. Lawrence Convention Center unless otherwise noted.
All times EDT.
Code of Conduct for ASTC Conferences, Events, Online Engagement, and Project Participation

The Association of Science and Technology Centers (ASTC) Annual Conference—and other professional meetings, events, webinars, and projects organized by ASTC—are dedicated to providing a harassment-free experience for everyone attending or participating. We do not tolerate harassment of people in any form, and we empower all participants in our community to actively engage in creating a friendly and safe environment for all.

This Code of Conduct is part of ASTC’s mission to champion and support science and technology centers and museums and the entire science engagement field—organizations that support lifelong science learning, connect science and society, engage diverse communities, and partner to tackle global and local challenges. ASTC is committed to advancing equity and social justice as foundational and essential values in all of our work. These values are essential to the practice of science, technology, and innovation which require seeking out and engaging a diversity of peoples, ideas, perspectives, life experiences, disciplines, knowledge systems, and approaches. ASTC values and celebrates contributions, discoveries, and novel solutions, regardless of their source. When all people are welcomed, respected, and included in our human pursuits, and when everyone has access and opportunity to pursue their aspirations, and when all people can participate fully and actively in creating and building the future, our association, members, and global society will be more equitable, prosperous, just, and resilient. Our world is rich in diversity, and ASTC embraces all diverse groups, including but not limited to, people of all races, colors, religions, political affiliations, sexual orientations, genders, ages, familial histories of education, physical and cognitive abilities, languages used, Indigenous status, and countries of origin.

As an attendee, presenter, exhibitor, sponsor, or guest at the ASTC Annual Conference and other events or programs organized by ASTC, I will:

- Conduct myself with integrity, respect, honesty, and credibility.
- Approach all events and interactions in accordance with the highest ethical standards of professionalism and personal conduct.
- Avoid all activities that will cause damage to or discredit my organization, ASTC, or myself.
- Embrace ASTC’s diverse community of professionals and learners, and be inclusive of all audiences in my presentations, demonstrations, and conversations.
- Seek help from ASTC staff if I do not know how to fulfill any of the stated actions.

This Code of Conduct is in place to protect the safety of all participants. Contact, language, or imagery of a violent, threatening, sexual, discriminatory, demeaning, or disruptive nature is not appropriate for any in-person or online conference or project venue, including talks, workshops, parties, and online forum or media. If you witness any misconduct of this code, please report it to any ASTC staff member:

- In-person through the conference facility, including at the front desk.
- Online by emailing ideas@astc.org.

Attendees or project participants asked to stop any harassing or discriminatory behavior are expected to comply immediately. ASTC leadership, at their sole discretion, may take action to redress anything disrupting the event or project making the environment unsafe for participants, including asking any individuals to leave the event or project at their own expense and without a refund of any fees paid.
SATURDAY, SEPTEMBER 10, 2022

6:00 pm

Registration: Early Satellite Pickup for Preconference Intensive Participants, Exhibitors, and Sponsors
Saturday, 6:00 PM - 7:00 PM
THE WESTIN PITTSBURGH

SUNDAY, SEPTEMBER 11, 2022

8:00 am

Registration
Sunday, 8:00 AM - 5:00 PM
PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)
Meaningful Makerspaces: Using Human-Centered Design to Create Mission-Driven Makerspaces from the Ground Up
STEM LEARNING, EDUCATION, AND PROGRAMS
Sunday, 9:00 AM - 5:00 PM
HELD AT THE CARNEGIE SCIENCE CENTER FAB LAB

In this session, participants will use human-centered design to develop a mission statement for their makerspace, rather than having technology be the main influence, and how to determine what kind of technology to use in their space.

Presenters: Alana Baliga, Education/Outreach, Science Spectrum; Jon Doctorick, Director of STEM Outreach Programs, Carnegie Science Center; Liz Whitewolf, K-12 Education Director, The Fab Foundation; Megan Galinsky, Science Spectrum; Stephen Luciano, Fab Lab Technical and Education Manager, Carnegie Science Center

Tags: DESIGN THINKING, MAKING AND TINKERING

PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)
Sustainability: Transforming Buildings in the Steel City to Provide High Quality Educational Experiences
OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT
Sunday, 9:00 AM - 1:00 PM

Through onsite visits to MuseumLab at the Children’s Museum of Pittsburgh, Carnegie Science Center, and Phipps Conservatory and Botanical Gardens, participants will learn about strategies for balancing historic preservation with energy conservation, best practices for creating a healthy high-performing learning environment, and examples of design for increasing inclusivity and inspiration.

Presenters: Bill Nichols, Director of Facilities, Children’s Museum of Pittsburgh; Christen Cieslak; Christine Koebley, Senior Director of Finance and Administration, Children’s Museum of Pittsburgh; Kim Amey, Deputy Director, Carnegie Science Center; Richard Piacentini, President and CEO, Phipps Conservatory and Botanical Gardens

Tags: DESIGN THINKING, SUSTAINABILITY

PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)
The Landscape of Education for Climate Action
STEM LEARNING, EDUCATION, AND PROGRAMS
Sunday, 9:00 AM - 1:00 PM

In this interactive session, participants will learn about climate change education in the United States and discuss their role within this system and how to engage in new efforts to address the climate challenges within their communities.
Presenters:  Deb Morrison, Climate Justice Learning Designer and Advisor, CLEAR Environmental; Don Haas, Director of Teacher Programming, Museum of the Earth at the Paleontological Research Institution; Frank Niepold, Education Coordinator, National Oceanic and Atmospheric Administration; Jane Heinze-Fry, Former Special Program Director, Wade Institute for Science Education; Sandra Ryack-Bell, Executive Director, Wade Institute for Science Education

Tags:  CLIMATE CHANGE  CREATING A BETTER FUTURE

10:00 am

PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)
Co-designing Deliberative Events to Advance Community Priorities
STEM LEARNING, EDUCATION, AND PROGRAMS
Sunday, 10:00 AM - 4:00 PM

Dialogue & Deliberation can help communities make decisions and take action on issues at the intersection of science, society, and policy. Learn from your peers' pilot collaborations, including how they attended to equity and navigated partnerships.

Presenters:  Amanda Fisher, Senior Manager of Programs, ASTC; Claire Dorsett, Associate Director of Strategic Content, Great Lakes Science Center; Courtney Breese, Executive Director, National Coalition for Dialogue & Deliberation; Laura Bartock, Community Science Fellow, ASTC; Naomi Wallace, Manager of Impact Initiatives, ASTC; Nicholas Felts, Associate, Kettering Foundation; Sophie Mueller, Innovation and Economic Development Coordinator

Tags:  COMMUNITY IMPACT  PARTNERSHIPS

Sponsored by the Chan Zuckerberg Initiative.

12:00 pm

PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)
Building Bridges to the Future: Addressing the Leadership Challenges of Today and Tomorrow
LEADERSHIP
Sunday, 12:00 PM - 4:00 PM
This highly interactive session for senior leaders (CEOs, Executive Directors, C-Suite leaders, etc.) will present some of the toughest issues leaders face today. Lively discussions, solution room challenges, and “safe spaces” will be established to allow

**Presenters:** Christian Greer, President and CEO, Michigan Science Center; Lucy Hale, Chief Business Officer, Michigan Science Center; Charlie Trautmann, Trautmann & Associates; Kirsten Ellenbogen, President and CEO, Great Lakes Science Center; Heather Norton, Chief Science Officer, Discovery Place; and others

**Tags:** MANAGEMENT

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**PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)**

**Bio-Tinkering Bootcamp: Systems and Strategies for Creating Experiences that Support Creativity and Making with Biology**

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Sunday, 2:00 PM - 6:00 PM

In this hands-on interactive session, participants will learn about and explore the emerging worlds of bio-making and biodesign; including opportunities to brainstorm with fellow participants and create using several different biological systems.

**Presenters:** Abbey Thompson, Director, The Tech Interactive; Anja Scholze, Program Director of Biology + Design, The Tech Interactive; Caitlin Nealon, Life Sciences Experience Developer, The Tech Interactive; James Wong, Content Specialist, The Tech Interactive

**Tags:** EMERGING TECHNOLOGY MAKING AND TINKERING

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**PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)**

**Designing for Empathy Lab**

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Sunday, 2:00 PM - 6:00 PM

This interactive workshop will provide an overview for the "Designing for Empathy" frameworks where participants will create tools to facilitate conversations and evaluate how they can be adapted to make empathy-building experiences in your museum.

**Presenters:** Anne Fullenkamp, Senior Director of Creative Experiences, Children's Museum of Pittsburgh; Camilo Rojas, Postdoctoral Research Fellow, MIT Museum; Elif Gokcigdem, Founder & President, ONE - Organization of Networks for Empathy; Jim Wharton, VP, Education, Mote Marine Laboratory; Tom Rockwell, Creative Director of Global Collaborations, Exploratorium

**Tags:** EXHIBIT DESIGN REBUILDING AND REIMAGINING
PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)

From Accommodations to Inclusion: Co-creating Maker Programs with and for Neurodiverse Youth
STEM LEARNING, EDUCATION, AND PROGRAMS
Sunday, 2:00 PM - 6:00 PM

In this interactive workshop, participants will gain a better understanding of how to develop maker programming that is inclusive of neurodiverse audiences, including those on the autism spectrum, through discussions and the development of materials.

Presenters: Ariana Riccio, Researcher, Education Development Center; Delia Meza, Manager of Family Learning & Community Partnerships, New York Hall of Science; Kavitha Murthi; Samantha Tumolo, Makerspace Coordinator, New York Hall of Science; Wendy Martin, Research Scientist, Education Development Center

Tags: ACCESSIBILITY MAKING AND TINKERING

PRECONFERENCE ASTC INTENSIVE (PREREGISTRATION REQUIRED)

Science Communication and Engagement with Faith Communities
STEM LEARNING, EDUCATION, AND PROGRAMS
Sunday, 2:00 PM - 6:00 PM

In this interactive workshop, participants will learn about the historical context of science engagement, how religion is relevant to public engagement with science, and programming on human origins that is inclusive of diverse faith perspectives.

Presenters: Briana Pobiner, Research Scientist and Museum Educator, National Museum of Natural History; Rachel Kline, Program Associate, American Association for the Advancement of Science (AAAS); Robert O'Malley, Project Director, DoSER, American Association for the Advancement of Science (AAAS)

Tags: COMMUNITY IMPACT DIVERSITY AND EQUITY

5:00 pm

INDEPENDENT EVENT (SIGN UP DIRECTLY WITH WALK THE BURGH TOURS)

Walking Tour: Best of the Burgh Science History
Sunday, 5:00 PM - 7:00 PM

Explore the heart of Downtown by foot and discover must-see cultural and historical landmarks as well as iconic buildings. Learn about Pittsburgh's renewal with its upcoming industries, focus on science and sustainability. Experience the implementation of community building strategies while walking down major avenues as well as hidden alleyways and crossing over beautiful squares in Downtown Pittsburgh.
Tour starts at the David L. Lawrence Convention Center and ends at Market Square. Walking distance is approximately 2 miles.

Price: Adults $28

6:00 pm

**Navigation and Networking Gathering**

Sunday, 6:00 PM - 7:00 PM  
THE WESTIN PITTSBURGH, CAMBRIA (2ND FLOOR)

Meet members of ASTC’s Conference Program Planning and Committee and others and get some tips and tricks for navigating the conference. This session is open to all, but first-time attendees are especially encouraged to attend. Prizes will be awarded.

7:00 pm

**Preconference Meet Up**

Sunday, 7:00 PM - 9:00 PM  
BACKYARD AT 8TH AND PENN

Join other attendees before the conference officially kicks off at this casual meet up at the Backyard at 8th and Penn. Grab yourself a drink and enjoy the outdoor space with colleagues as you familiarize yourself with Pittsburgh.
MONDAY, SEPTEMBER 12, 2022

7:30 am

Registration
Monday, 7:30 AM - 5:00 PM

8:30 am

Meet and Greet Breakfast
Monday, 8:30 AM - 9:00 AM

9:00 am

Opening Keynote Session
Monday, 9:00 AM - 11:00 AM

“Small Talks/Big Ideas”
Several world-leading Pittsburgh-based experts and innovators will share some of the cutting-edge work they are doing in science, learning, and social impact. These short, inspirational, TED-style presentations will remind us of one of our critical roles as science center, museum, and science engagement leaders—to provide people with inspiration and understanding that a more hopeful future is possible!

Bill Strickland, Founder and Executive Chairman, Manchester Bidwell Corporation

Aditi Gurkar, Assistant Professor of Medicine, Aging Institute, University of Pittsburgh
11:00 am

**Exhibit Hall Open**
Monday, 11:00 AM - 6:00 PM

**Picture Yourself: Headshots in the Exhibit Hall**
Monday, 11:00 AM - 5:00 PM

Attendees can get free photo headshots to update their LinkedIn profile or for other professional (or personal) use.

12:00 pm

**Lunch in the Exhibit Hall**
Monday, 12:00 PM - 1:00 PM
1:00 pm

**Beyond Science Lessons, Towards Science Experiences**
**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**
Monday, 1:00 PM - 1:45 PM

In this session, a cross-disciplinary team will provide a framework for designing powerful science-centered experiences that spark visitor curiosity, resist singular interpretations, and create space for discovery. Presenters will focus on two interactives from the soon to be opened MIT Museum as case studies.

**Presenters:** Benjamin Bojko, Tech Director, Bluecadet; David Nunez, Director of Technology, MIT Museum; Rob Hassler, Bluecadet; Wendy Evans Joseph

**Tags:** ADVANCED TECHNOLOGY, EXHIBIT DESIGN

**Building Collaborations Having Statewide Impact: Exploring Asset-Based Approaches to Partnering, Implementing and Funding Rural Communities**
**EXTERNAL GROUPS AND COLLABORATORS**
Monday, 1:00 PM - 1:45 PM

Two statewide initiatives will highlight strategies, challenges, and lessons learned through collaborative support of STEM learning and community engagement in rural counties. Interactive break-outs will focus on unique approaches to government support, asset mapping, and customization, and evaluation with application to those working with a range of stakeholders.

**Presenters:** Alissa Lange, Associate Professor, Early Childhood Education Director; Dale McCreedy, Vice President of Audience & Community Engagement, Discovery Center at Murfree Spring; Duke Johnson, Director, Clark Planetarium; Nicholas Hoffmann, Education Program Manager, Clark Planetarium; Tara MacDougall, Chief Executive Officer, Discovery Center at Murfree Spring

**Tags:** COMMUNITY IMPACT, PARTNERSHIPS

**Looking Back, Moving Forward: Reflections and Roadmaps for Rebuilding Our Field Together**
**LEADERSHIP**
Monday, 1:00 PM - 1:45 PM

Our field is at a crossroads. The pandemic exacerbated existing challenges while the racial equity reckoning centered the need to foreground equity. In this session, we will share and discuss implications of a landscape study, gap analysis, and draft recommendations for an agenda to advance leadership and field development.

**Presenters:** Amanda Fisher, Senior Manager of Programs, ASTC; Melissa Ballard, Director of Programs, ASTC; Preeti Gupta, Senior Director of Children and Youth Programs, American Museum of Natural History; Rena Dorph, Director, The Lawrence Hall of Science

**Tags:** INCLUSIVE WORKFORCE DEVELOPMENT, REBUILDING AND REIMAGINING
Power in the People: Community Engagement Perspectives in a Time of Crisis

STEM LEARNING, EDUCATION, AND PROGRAMS
Monday, 1:00 PM - 1:45 PM

Panelists will explore the importance of community engagement from diverse organizational perspectives, including outdoor education in schools and green spaces, neighborhood engagement at a historic national park, informal education at a national museum, and exhibition development. Participants are encouraged to bring questions, inspiration, and transformative success stories.

Presenters: Elana Mintz, Educator, Urban Adventure Squad; Jennifer Collins, Manager in the Office of Education, Outreach, and Visitor Experience, National Museum of Natural History; Shannah Cumberbatch, Program Coordinator, Friends of Kenilworth Aquatic Gardens; Siobhan Starrs, Exhibit Developer, Smithsonian Institution

Tags: CLIMATE CHANGE COMMUNITY IMPACT

Reinforcing the Message: Weaving Climate Stories Throughout Galleries and Exhibits

EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Monday, 1:00 PM - 1:45 PM

Last year, the Bruce Museum and Carnegie Museum of Natural History both launched in-gallery experiences that seed climate change impact stories throughout multiple galleries. In this session, members from both project teams will share their approaches to kickstarting the climate conversation and inspiring visitor action every step of the way.

Presenters: Daniel Ksepka, Curator of Science, Bruce Museum; Laurie Giarratani, Director of Education, Carnegie Museum of Natural History; Sarah Crawford, Director of Exhibitions & Design, Carnegie Museum of Natural History; Valentina Miller, Production Lead, Night Kitchen Interactive

Tags: CLIMATE CHANGE EXHIBIT DESIGN

The Infodemic: Addressing the Global Crisis of Misinformation

STEM LEARNING, EDUCATION, AND PROGRAMS
Monday, 1:00 PM - 1:45 PM

Effective science communication to tackle misinformation is essential to a thriving democracy. Misinformation and disinformation destroy trust, can be linked to the global growth of populism, and are detrimental to personal and public health. This panel will explore effective strategies employed by CASC’s highly successful ScienceUpFirst (www.scienceupfirst.com) initiative, including social media activation, co-developing campaigns with community groups, and coordinating strategies across research, government, and civil society to address science misinformation.

Presenters: Marianne Mader, CEO, Canadian Association of Science Centres; Magda Byma, Director of ScienceUpFirst, Canadian Association of Science Centres; Amanda Fruci, President, Amada Fruci Communications

Tags: PUBLIC PROGRAMS COVID-19

This session has been organized by the Canadian Association of Science Centres.
Transforming Our Capacity for Inclusive and Authentic STEM Experiences for Latinx Audiences
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Monday, 1:00 PM - 1:45 PM

How can you spark change within your organization, and in relationship to Latinx communities and STEM? This session brings together CEO, evaluator, facilitation, and program development expertise from the National Science Foundation funded Cambio program to identify strategies, actions, and insights to sustainably engage your organization and your communities.

Presenters: Andres Henriquez, Director of STEM Education Strategy, Education Development Center; Cecilia Garibay, Principal, Garibay Group; Jenni Martin, Director of Strategic Initiatives, Children’s Discovery Museum of San Jose; Marilee Jennings, Executive Director, Children’s Discovery Museum of San Jose; Veronica Garcia-Luis, Director of Diversity, Equity & Inclusion, Exploratorium

Tags: DIVERSITY AND EQUITY  REBUILDING AND REIMAGINING

Lightning Session: Co-Creation
Monday, 1:00 PM - 1:45 PM

Co-Creating an Exhibition About Wildfires & Forests
EXHIBITS, EXPERIENCES, AND TECHNOLOGY

We will present and discuss the co-creation of this exhibition about wildfires and forests set to open in Portugal in 2023/2024. We will focus on the co-creation process with policy-makers, researchers, and local communities; the exhibition’s modularity and the exhibition as a town hall will trigger a nationwide discussion.

Presenters: Rosalia Vargas, President, Pavilion of Knowledge - Ciência Viva; Pedro Russo, Pavilion of Knowledge - Ciência Viva

Tags: EXHIBIT DESIGN  GLOBAL PERSPECTIVE

Co-Creating Exciting Educational Content With Research Scientists and Experts
STEM LEARNING, EDUCATION, AND PROGRAMS

As museums, we are often tasked with communicating science authentically and connecting our guests directly with subject matter experts. However, not all content experts are trained in science communication and not all educators are confident collaborating with scientists. Learn tips and tricks for recruiting and guiding scientists to co-create engaging learning experiences.

Presenters: Katie Wolfson, Science Education Specialist and Virtual Programs Coordinator, National Center for Atmospheric Research/UCAR; Tiffany Fourment, Science Education Specialist, National Center for Atmospheric Research/UCAR

Tags: SCIENCE EDUCATION  OUTREACH
STEM in the Burque: Career Pathway-Focused Exhibition for the Community by the Community

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Learn about Explora’s experience in developing a teen-focused exhibition that recently opened in the museum’s new youth workforce development center. Emphasizing teen involvement and community support in times of a pandemic, the session will also show how Explora used its “listen, welcome, and co-create” engagement strategy in all development stages.

**Presenters:** Amon Haruta, Director of Project Management and Exhibitions, Explora; Shane Montoya, Director of Exhibits, Floor Experience, and Operations, Explora

**Tags:** COMMUNITY IMPACT PROJECT MANAGEMENT

The Network Effect: Science & Technology Centers as Hubs of Innovation and Creativity

**LEADERSHIP**

We will discuss best practices in creating and reinforcing networks as a way to promote innovation and creativity. In our field of action, knowledge and innovation are increasingly produced in the context of networks, understanding how to develop and support these networks is essential for science & technology centers.

**Presenters:** Rosalia Vargas, President, Pavilion of Knowledge - Ciência Viva; Pedro Russo, Pavilion of Knowledge - Ciência Viva

**Tags:** FUTURE PLANNING COVID-19

1:30 pm

**ASTC INTENSIVE (PREREGISTRATION REQUIRED)**

**Day at MuseumLab: A Creative Track of Interactive Sessions Outside the Conference Center (Session One)**

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Monday, 1:30 PM - 3:30 PM

**THIS SESSION WILL BE HELD AT MUSEUMLAB**

Collaboration is at the heart of innovation at Children’s Museum of Pittsburgh. In this session, which will take place at MuseumLab, participants will choose from a suite of drop-in, interactive activities that showcase different ways of partnering with community members, artists, researchers, and more. Activities will cover topics from racial justice to immersive exhibits, metalworking, emotion and media- and technology-based research protocols.

**Presenters:** Bridget Kiger-Lee, Asst. Professor, University of Pittsburgh; Deborah Coppula, Professional Development Specialist, Children’s Museum of Pittsburgh; Mary Henjes, Metals
Assessing How Americans Want to Engage With Science: Research to Inform Public Engagement Initiatives

**LEADERSHIP**
Monday, 2:00 PM - 3:30 PM

Join us for a conversation about the key findings from a year-long study examining Americans’ appetite for science, motivations for participating in science-related activities, and the barriers that stand in the way—especially among marginalized communities.

**Presenters:** Eve Klein, LISTEN Network Weaver, ASTC; Rose Hendricks, ASTC

**Tags:** FUTURE PLANNING, MARKET RESEARCH

Being Okay With Not Being Okay: Thinking About Mental Health

**STEM LEARNING, EDUCATION, AND PROGRAMS**
Monday, 2:00 PM - 2:45 PM

Is it okay to not be okay? Join Explora staff for an interactive workshop based on their Thinking About Mental Health project, exploring the unique ways you can involve your communities in important conversations about mental health.

**Presenters:** Caitlin Everhart, Project Manager, Explora; Jeanette Ortiz, Youth Development Specialist, Explora

**Tags:** CREATING A BETTER FUTURE, TEEN PROGRAMS

Beyond STEM: Making and Tinkering Experiences That Center Social Emotional Learning, Literacy, and Identity

**STEM LEARNING, EDUCATION, AND PROGRAMS**
Monday, 2:00 PM - 3:30 PM

How can informal learning spaces respond to the emerging needs of children in a changing learning landscape? Team members from the Tinkering Studio and KID Museum will share their experiences using making and tinkering to support young people beyond STEM in the areas of literacy, social-emotional learning, and identity development.

**Presenters:** Jacqueline Eyl, Chief Program Officer, KID Museum; Maya Oliver, Program Manager, KID Museum; Dia Stone, Program Manager, KID Museum; Becky Zeisel, Program Manager, KID
Cultivating Youth Voice: Storytelling for a Purpose
STEM LEARNING, EDUCATION, AND PROGRAMS
Monday, 2:00 PM - 3:30 PM

How can storytelling be used as a tool to empower communities and enhance STEM programs? In this session, participants will hear how young people shared their STEM stories through the unCommission, they'll explore their own STEM stories, and they'll get concrete tools to apply storytelling to the communities they serve.

Presenters: Jen Elliott, Manager, Youth Leadership and Alumni Programs, Intrepid Sea, Air & Space Museum; Priya Mohabir, Senior Vice President Youth Development & Museum Culture, New York Hall of Science; Shihadah Saleem, Director of Youth Programs and Pathways, New York Hall of Science; Teresa Mooney

Tags: SCIENCE EDUCATION YOUTH DEVELOPMENT

Engaging Your Community on Difficult Topics: Lessons From Communities For Immunity
ADVANCEMENT AND PARTNERSHIPS/FUNDRAISING
Monday, 2:00 PM - 3:30 PM

Learn more about how museums (and libraries and tribal organizations) are leveraging their roles as trusted community hubs to advance progress on important challenges. We will draw from the Communities for Immunity initiative to increase vaccine confidence and uptake in their communities by working with partners and engaging their audience in locally-relevant ways. Get inspired by stories from museums across the United States and learn more about how to leverage your role and relationships in your community to engage your audience on critical social issues.

Presenters: Naomi Wallace Manager of Impact Initiatives, ASTC; Beth Demke, Executive Director, North Dakota’s Gateway to Science; Ime Edokpayi, Public Education Specialist, The Lawrence Hall of Science; Cassandra Williams Rush, C. Williams Rush Museum of African-American Arts & Culture; Dr. C. Stewart Darby

Tags: COMMUNITY IMPACT COVID-19

Equity in the UK: Science Centres' Efforts Towards Greater Diversity, Inclusion, and Access
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Monday, 2:00 PM - 3:30 PM

Join us to learn about initiatives that aim to advance equitable practice in science centers. We will interact in a safe space to discuss challenges, explore frameworks, try new tools, and share
inspiring (and uninspiring) practices, as we push our collective understanding, including how we might measure progress towards DEAI goals.

Presenters: Bethan Ross, International Centre for Life; Jennifer DeWitt, Senior Research Fellow, University College London; Shaaron Leverment, Deputy CEO, The UK Association for Science and Discovery Centres

Tags: DIVERSITY AND EQUITY PARTNERSHIPS

**Leveraging Artemis and the Return to the Moon to Engage New Learners**

EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Monday, 2:00 PM - 3:30 PM

This session will present highlights of hands-on interactive activities and programs in the NASA TEAM II program (Teams Engaging Affiliated Museums and Informal Institutions). Join awardees from the Carnegie Science Center, Fairchild Botanic Gardens, and the Space Science Institute for ideas to make your Artemis programs fun for all!

Presenters: Amelia Chapman, STEM Informal Education Specialist, Jet Propulsion Laboratory; Amy Padolf, Director of Education; Anne Holland, Education Project Coordinator, Space Science Institute; Leslie Lowes, Informal Education Specialist, Jet Propulsion Laboratory; Tina Seidelson, Director of Student Engagement, Carnegie Science Center

Tags: SCIENCE EDUCATION VISITOR EXPERIENCE

**Say Yes to the Mess: Our DEAI Journey Reflections and You Taking Action Going Forward!**

DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Monday, 2:00 PM - 3:30 PM

In this session, hear from three museums diversity, equity, access, and inclusion (DEAI) journeys from starting with having nicely written plans, guiding documents and strategies to the messiness of implementation, tensions, and working towards organizational change. Explore topic-specific questions, tools, and resources to identify next steps towards taking DEAI action.

Presenters: Robby Callahan Schreiber, Museum Access & Equity Director, Science Museum of Minnesota; Tifferney White, Chief Learning Officer, Discovery Place; Vanessa Avery, HR Manager, Exploratorium; Veronica Garcia-Luis, Director of Diversity, Equity & Inclusion, Exploratorium

Tags: DIVERSITY AND EQUITY HUMAN RESOURCES/STAFFING

**The Use of Mobile Informal STEM Labs for Bridging Educational Gaps in Rural Communities**

STEM LEARNING, EDUCATION, AND PROGRAMS
Monday, 2:00 PM - 3:30 PM

Rural communities often lack resources and access to informal STEAM education. Mobile STEAM labs have the potential to bridge educational access gaps by meeting students where they are!
This is especially vital and relevant in low income, geographically isolated communities which face compounding barriers to education.

Presenters:  Eliani Rubio, Lead Bisbee Science Lab High School Intern, Bisbee Science Exploration & Research Center; Jacquelyn Esteves, Program Director, Bisbee Science Exploration & Research Center; Thea Van Gorp, Bisbee Science Exploration & Research Center

Tags:  OUTREACH  SMALL MUSEUMS

Through an Indigenous Lens: Support and Advocacy of Science Centres and Museums Through Indigenous Advisory Committees

DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE

Monday, 2:00 PM - 3:30 PM

Through cultural competency training, working with local knowledge keepers, and including a multiplicity of Indigenous perspectives; science centers and museums can ensure Indigenous People are uplifted and their voices are amplified. Listen to stories of learning, relationships, and reciprocity with Science North’s Indigenous Advisory Committee members.

Presenters:  Cindy Crowe; Emily Kerton, Project Lead - Northwest Expansion, Science North; Julia Pegahmagabow, Indigenous Advisory Committee Member, Science North

Tags:  CREATING A BETTER FUTURE  INEQUITIES IN SOCIETY

Lightning Session: Fundraising, Community Outreach, Social Media Marketing & More!

Monday, 2:00 PM - 2:45 PM

This Is Your Moment: Service-Minded Funding and Innovative Public Funding Strategies in Post Pandemic Landscape

ADVANCEMENT AND PARTNERSHIPS/FUNDRAISING

As we traverse tomorrow together, public funding will be critical for our, for your, success. This lightening session will highlight several strategies on how you can create robust public funding opportunities, fueled by partnerships and programs that prioritize common good through servant leadership principles.

Presenters:  Stephen White, Chief Strategy Officer and Vice President of Partnerships and Business Development, COSI

Tags:  MAKING THE CASE FOR SCIENCE CENTERS  PUBLIC PROGRAMS

How a Capital Campaign Can Be the Organizing Tool to Achieve Your Future Vision

ADVANCEMENT AND PARTNERSHIPS/FUNDRAISING

A future vision needs an organizing force to make it a reality. In an era of rapid social change, local communities are in need for their science and technology centers to address
key issues now more than ever. A capital campaign is a relevant solution to fulfill that vision.

Presenters: Amy Pausche, Vice President of Development, Science Center of Iowa; Dan Raedeker, Vice President of Community Engagement, Science Center of Iowa

Tags: FUNDRAISING  FUTURE PLANNING

Zero Facebook Likes and Dire Web Traffic? Turn the Tide With Cost Effective Marketing Tools

OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT

From free tools available to nonprofits, such as Google Ads and Google Analytics, to more pricey options such as Facebook Ads and print advertisements, this session will investigate the tools which work - and those which in our case didn't - to get the word out about events and exhibitions.

Presenters: Heather Birchall, Tour Manager, Virtual Science Center

Tags: MARKETING  SOCIAL MEDIA ENGAGEMENT

Learn Effective Education and Community Outreach Strategies through the Principles of Servant Learning

LEADERSHIP

Developed during the pandemic and refined at the Harvard School Graduate School of Education Leading Learning program, this session will share the tenants of an innovative approach that science centers can use to address education equity in their community, which builds on the principles of Servant Leadership, called “Servant Learning.”

Presenters: Stephen White, Chief Strategy Officer and Vice President of Partnerships and Business Development, COSI

Tags: COMMUNITY IMPACT  PARTNERSHIPS

3:30 pm

ASTC INTENSIVE (PREREGISTRATION REQUIRED)

Day at MuseumLab: A Creative Track of Interactive Sessions Outside the Conference Center (Session Two)

EXHIBITS, EXPERIENCES, AND TECHNOLOGY

Monday, 3:30 PM - 5:30 PM

THIS SESSION WILL BE HELD AT MUSEUMLAB

How can you infuse art and making into your work? Be inspired with creativity as you engage in hands-on, interactive activities and learn by doing at this session, which will take place off-site at MuseumLab. Split your time among a wide range of activities that will meld math, science, and
engineering with fashion, metalworking, fiber arts, animation, arts-based research, a tour of the museum (housed in the first commissioned Carnegie Public Library), and more.

**Presenters:**  
Elizabeth Kollmann, Manager, Research and Evaluation, Museum of Science; Gabrielle Rappolt-Schlichtmann, Executive Director & Chief Scientist, EdTogether; Kay Shabbaz, Youth Mentor, Children's Museum of Pittsburgh; Rebecca Grabman, MAKESHOP Manager, Children's Museum of Pittsburgh; Zainab Adisa, Learning & Research Associate, Children's Museum of Pittsburgh

**Tags:**  
SOCIAL JUSTICE   VISITOR EXPERIENCE

**Film: Not the Science Type**  
Monday, 3:30 PM - 4:00 PM  
EXHIBIT HALL STAGE

*Not The Science Type* highlights four brilliant minds, showcasing women who break down boundaries within their fields – biology, engineering and science and technology-based applications. (Also shown Tuesday at 3:30 PM)

**4:00 pm**

**Connecting on Climate: Tools for Action, Engagement and Connection Across Cultural Institutions**  
STEM LEARNING, EDUCATION, AND PROGRAMS  
Monday, 4:00 PM - 5:30 PM

Climate change demands urgent responses from science engagement institutions and presents an opportunity to share a unified voice on climate action. This session will explore climate education interests, needs, and concerns of museum educators. Participants will engage in interactive discussions and activities highlighting the importance of active listening and solutions-based approaches.

**Presenters:**  
Annie Shvach; Emily Hestness; Jen Kretser, Director of Programs, The Wild Center; Sarah States, Director of Research and Science Education, Phipps Conservatory and Botanical Gardens; Taiji Nelson, Senior Program Manager, Carnegie Museum of Natural History

**Tags:**  
CLIMATE CHANGE   CREATING A BETTER FUTURE

**Design Lab X Bootcamp: Community Co-creation for Impact, Change, and Leadership**  
LEADERSHIP  
Monday, 4:00 PM - 5:30 PM

In a moment where we are collectively dreaming, revisioning, and navigating the emergent future in what feels like a white-water environment, the museum field and its leadership are looking to better serve their little corner of the world. And to do it in ways that further impact, innovation, and equity.
Presenters: Bill Swaney, Holly Truitt Consulting; Holly Truitt, spectrUM Discovery Area; Sam Dean, Executive Director, Scott Family Amazeum

Tags: DESIGN THINKING REBUILDING AND REIMAGINING

Expanding the Universe: Building Partnerships in a COVID World and Beyond
STEM LEARNING, EDUCATION, AND PROGRAMS
Monday, 4:00 PM - 5:30 PM

Informal institutions help communities come together to learn in a space that builds trust and understanding. This session explores resources and best practices that unpack the process of community building and co-creation from the perspective of four science center’s growing unique partnerships with organizations representing diverse communities underrepresented in STEM.

Presenters: Bree Oatman, Education Director, South Dakota Discovery Center; Erika Wright, Center for Astrophysics | Harvard & Smithsonian; Irene Porro, Director, Christa McAuliffe Center for Integrated Science Learning at FSU; Lauren Butcher, School and Community Programs Manager, Explora; Yesenia Perez, Informal Education Specialist II, Space Telescope Science Institute

Tags: OUTREACH SCIENCE EDUCATION

Feeling "Art-Sci": An Upside-Down Look at Collaborations Between Performing Arts and Exhibiting Science
EXTERNAL GROUPS AND COLLABORATORS
Monday, 4:00 PM - 5:30 PM

Artists and science communicators are natural allies. Your local arts community holds rich potential for supporting the mission of science communication while bringing people together for shared experiences. This interactive session offers firsthand accounts of successful sci-art collaborations, and ideas on how to cultivate relationships with your local creative community.

Presenters: A Erik Stengler, Assistant Professor, Cooperstown Graduate Program; Ricky Coates, Co-Artistic Director, Matheatre; Sadie Bowman, Managing Director, Matheatre

Tags: COMMUNITY IMPACT OUTREACH

Getting Started in Community Science
EXTERNAL GROUPS AND COLLABORATORS
Monday, 4:00 PM - 5:30 PM

Through community science, community members collaborate to conduct and leverage scientific research and technological innovation to advance community priorities. In our session, we will explore how to find common ground and share leadership with community-serving partners, as well as how to assess your readiness to embark on new collaborative efforts.

Presenters: Laura Bartock, Community Science Fellow, ASTC; Melissa Ballard, Director of Programs, ASTC

Tags: COMMUNITY IMPACT SOCIAL JUSTICE
House of Commons: Let the Debates Begin!
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Monday, 4:00 PM - 4:45 PM

Come take a stand and win others to your side! In this session, all are invited to take part in debating the burning issues of the science center field where attendees can convince individuals to join their side, and at the conclusion the aye and no votes are tallied.

Presenters: Claire Pillsbury; Mikko Myllykoski, CEO, Heureka, the Finnish Science Centre
Tags: CREATING A BETTER FUTURE  REBUILDING AND REIMAGINING

NFTs: Exploring Blockchain and Education at the Cutting Edge
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Monday, 4:00 PM - 5:30 PM

Don’t let FUD (Fear, Uncertainty, Doubt) keep you from staying up to date with innovation! Non-fungible tokens (NFT)—part of the growing blockchain technology movement—already impact broad sectors of industry, daily life, and culture. In this session, build basic knowledge of the NFT ecosystem, how to build one, and how to use them!

Presenters: Audrey O’Connell, Co-Founder and Business Director, Horner Science Group; Barry Joseph; Jeremy Kenisky; Kirsten Ellenbogen, President and CEO, Great Lakes Science Center; Joseph Quinones, Vice President, Marketing, Phillip and Patricia Frost Museum of Science
Tags: EMERGING TECHNOLOGY  FUNDRAISING

Reflections on Equity: Holding Up a Mirror to Organizational Practices
Monday, 4:00 PM - 5:30 PM

Centering equity requires organizations to recognize the inter-connectedness of internal operations and externally-focused work; there also exists a critical need to examine underlying structures, policies, processes, and culture. Two organizations—CAISE, which conducted an internal Equity Audit, and NISE Network, which developed an equity-focused theory of change—will share their tools and frameworks, insights, and lessons learned from their process.

Presenters: Alexandra Jackson, Director of Programs & Partnerships, Sciencenter; Cecilia Garibay, Principal, Garibay Group; Jamie Bell, CAISE, Project Director, Center for Advancement of Informal Science Education (CAISE); Rabiah Mayas, Vice President, Education, Museum of Science and Industry; Rae Ostman, Associate Research Professor, School for the Future of Innovation in Society, Arizona State University
Lightning Session: Across Generations
Monday, 4:00 PM - 4:45 PM

Engaging Both Parents and Children Through Toddler Time
STEM LEARNING, EDUCATION, AND PROGRAMS

Toddler Time is not your typical early childhood museum program. It is a multifaceted program designed to instruct families on teaching children ages 3 and under through interactive play. Our primary goal is to involve parents in their toddlers’ development and learning by demonstrating developmentally appropriate activities and teaching techniques.

Presenters: Chad Fifer, Director of Education, Boonshoft Museum of Discovery

Tags: EARLY CHILDHOOD ADULT ENGAGEMENT

Measuring STEM Engagement and Advocacy of Older Adults (50+)
STEM LEARNING, EDUCATION, AND PROGRAMS

Older adults are a growing segment of the informal STEM learning (ISL) population, yet how best to engage this group is unknown. Our work developed novel measures of STEM Engagement and Advocacy for older adults. We share key findings to inform the design of ISL experiences for this underserved population.

Presenters: Sarah Olsen, Research Lead, Lawrence Hall of Science; Mac Cannady, Research Group Director, Lawrence Hall of Science

Tags: ADULT ENGAGEMENT IMPACT MEASUREMENT

Ramp Up Fellowship: An Educator Pathway for 18-24-Year-Olds
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE

What are the pathways for youth to become educators in their communities? Come learn about the Ramp Up Fellowship, a full-time program for individuals 18-24 years old who are interested in becoming teaching artists and prioritizes young adults who identify as BIPOC or LGBTQIA creatives.

Presenters: Nina Marie Barbuto, Executive Director, Assemble, Erin Perry, Executive Director, The Legacy Arts Project

Tags: 21ST CENTURY SKILLS ADULT ENGAGEMENT

Turning the Page on Storybook STEM: Diversity in Early Childhood Programs
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE

Diversity and inclusion begin with programs for the youngest museum visitors, who we hire to teach those programs, and how we welcome All families. Presenters will share how they address these questions in museum exhibits and outreach programs with hands-on techniques that help prepare children from diverse backgrounds for kindergarten.
7:00 pm

**Party at the Carnegie Science Center**
Monday, 7:00 PM - 11:00 PM  
**FEE: $12 (SUPPORTS ASTC NEW LEADERS PROGRAM)**

We welcome you to Pittsburgh and to the Opening Night Party for the ASTC Annual Conference.

Explore, be entertained, and enjoy our amazing Carnegie Science Center.

- Sing your heart out and be dazzled with brilliant colors and rockin’ music in our new Buhl Planetarium with laser jukebox karaoke.
- Take a journey through the human body with stops at the intestines, bones, and brain.
- Come aboard the *USS Requin* (SS 481) submarine to experience how 80 men used their expertise, humor, and ingenuity to carve out an adventurous life during defense and scientific missions.
- See live demonstrations and have an animal encounter with a special guest from Carnegie Museum of Natural History; try screen printing à la Andy Warhol; and play trivia in The Rangos Giant Cinema, which boasts a 70-by 38-foot Certified Giant Screen and a Dolby Atmos surround sound system with 45 speakers.
- See a tiny version of the region at one of the most treasured and beloved spots in the museum - the Miniature Railroad & Village®, featuring hundreds of wonderfully realistic animated scenes from Pittsburgh and Western Pennsylvania.
- Enjoy fabulous food and beverages from our chefs while you check out the best view in Pittsburgh from PointView Hall.
- Explore the science of music and sound in the *GUITAR: The Instrument That Rocked The World* exhibition.
- And don't forget to bring your dancing shoes to the Works Theater, where our DJs will keep the dance floor packed all night long.
The Carnegie Science Center XPLOR store is offering a 20% discount for ASTC badge holders throughout the conference, including Monday evening; the same offer is extended to conference badge holders from all four Carnegie Museums (The Andy Warhol Museum, Carnegie Museums of Art and Natural History, Carnegie Science Center) gift shops.

We look forward to seeing you at Carnegie Science Center for a great party.
### TUESDAY, SEPTEMBER 13, 2022

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<td>Alan J. Friedman Science Center Dialogues</td>
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#### “Preparing the Public for Future Pandemics: Fostering Collaboration Between Research and Engagement”

The vaccines for the SARS-CoV-2 virus represent a milestone in scientific history as the shortest time from the identification of a novel virus to the development, testing, and mass distribution of a vaccine. At the same time, the adoption rates for the SARS-CoV-2 vaccines have presented stark lessons in the need for greater public understanding of, and engagement around vaccine safety, efficacy, and impact.

Scientists around the world are building on this success to prepare for the next pandemic and are striving to have future vaccines in 100 days—or less—but this timeline will only help if public uptake quickly follows.

Therefore, as researchers, health professionals, and innovators are investing in the science and technology required to combat the next pandemic, it is equally important that science engagement professionals ensure that the public is empowered to learn about, participate in, critically evaluate, and ultimately benefit from, those medical advancements. This session will explore the collaboration that is possible between researchers and science engagement
professionals to ensure the scientific establishment, societal institutions, and individuals are all equally prepared for the next pandemic.

*The Alan J. Friedman Science Center Dialogues are conducted in memory and tribute to the founding director of the New York Hall of Science, Queens. The session is presented in the spirit of the commitment Alan had to the science-center field and the issues and interests that were reflected in his own writings and presentations over the years.*

**Erica Kimmerling** (dialogue moderator and discussion catalyst), *Senior Advisor for Science Engagement Policy, ASTC*

**Jayatri Das**, *Chief Bioscientist, The Franklin Institute*

**Paul Duprex**, *Director, Center for Vaccine Research, Jonas Salk Chair for Vaccine Research, and Professor of Microbiology and Molecular Genetics, University of Pittsburgh*

### 10:30 am

**Exhibit Hall Open**

Tuesday, 10:30 AM - 5:00 PM

**Picture Yourself: Headshots in the Exhibit Hall**

Tuesday, 10:30 AM - 5:00 PM

Attendees can get free photo headshots to update their LinkedIn profile or for other professional (or personal) use.
11:00 am

**Build (Your Community) Back Better: Discovering Your Museum Superpowers to Enhance Community and Urban Planning**

**EXTERNAL GROUPS AND COLLABORATORS**

Tuesday, 11:00 AM - 12:30 PM

Housing, transportation, climate resilience, and environmental justice are all part of your community's urban and regional plan. Great municipal planning requires robust community engagement and that's where we come in! In this session, learn about planning's flaws-and-all history and museum collaborations with planning agencies that literally reshape their communities' futures.

**Presenters:**  
Betsy Loring, Principal, exploring exhibits & engagement LLC; Brad Larson, President, Brad Larson Media, Inc.; Jeremy Hoffman, David and Jane Cohn Scientist, Science Museum of Virginia; Shawn Lani, Senior Artist: Curator of Outdoor Works, Exploratorium

**Tags:** Community Impact, Creating a Better Future

**Creating Volunteer Programs of Tomorrow: How Museums Are Improving Volunteer Support, Training, and Professional Development**

**STEM LEARNING, EDUCATION, AND PROGRAMS**

Tuesday, 11:00 AM - 12:30 PM

How are volunteer programs moving past the pandemic? Four institutions of different sizes and focus will show how they're revitalizing volunteer programs through equity, community, and technology. Then, through discussion groups, participants will explore volunteer development tools and brainstorm how we can build the volunteer programs of tomorrow together!

**Presenters:** Billy Ernest, Education & Volunteer Coordinator, ECHO, Leahy Center for Lake Champlain; Corrie Macneil, Director of Daily Play, Marbles Kids Museum; Kimberly Griffiths, Volunteer Program Manager, Sciencenter; Sarah Irizarry, Head of Volunteer & Intern Services, North Carolina Museum of Natural Sciences

**Tags:** Volunteer Management

**Developing Whole Institution Sustainability Projects for Science Centers and Museums**

**STEM LEARNING, EDUCATION, AND PROGRAMS**

Tuesday, 11:00 AM - 12:30 PM

This workshop will 1) highlight stories of successful sustainability efforts at museums, 2) describe the basics of planning a museum sustainability effort, including an introduction to the United Nations Sustainable Development Goals and successful strategies from research, and 3) allow participants to create sustainability project plans for their own institutions.

**Presenters:** Karen Dewhirst, Science Manager, Creative Discovery Museum; Marci Howdyshell, Senior Director of Scientific Content and Research, COSI; Nicholas Weller, Postdoctoral Research
Exploring U.S. Federal Funding Opportunities
ADVANCEMENT AND PARTNERSHIPS/FUNDRAISING
Tuesday, 11:00 AM - 12:30 PM

Representatives of several U.S. Federal agencies that support the science center and museum community will provide an overview of the funding opportunities available through their agencies and give tips and tricks for submitting a competitive funding proposal.

Presenters: Adam Fagen, Director of Communications, Advocacy, and Engagement, ASTC; Helen Wechsler, Supervisory Senior Program Manager, Office of Museum Services, Institute of Museum and Library Services; Carrie McDougall, Senior Program Manager, Office of Education, National Oceanic and Atmospheric Administration (NOAA); Meredith Hindley, Senior Program Officer, Division of Public Programs, National Endowment for the Humanities (NEH); Representative of National Science Foundation, National Aeronautics and Space Administration, National Institutes of Health

Leadership in the Science Center, Garden, and Office: Empowering BIPOC Community and Organizational Leaders
LEADERSHIP
Tuesday, 11:00 AM - 12:30 PM

Join program directors from three museums and a Los Angeles-based non-profit for a hands-on exploration of how STEM and garden programming can empower BIPOC youth leaders. Presenters will provide frameworks for planning and implementing programs that align with organizational DEAI priorities and for creating lasting and sustainable community partnerships.

Presenters: D’Nae Hearn, Education Specialist, Detroit Zoological Society, Lauren Patrick, Senior Educator, Saint Louis Science Center, Meghan Nealon, STEM Program Director, GrowingGreat, Molly Porter, Natural History Museums of Los Angeles County

Leveraging the "Ladder of STEM Engagement to Ownership" to Build More Equitable Outcomes
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Tuesday, 11:00 AM - 12:30 PM

Community-driven science is at the heart of equity and engagement. Reimagining what this work looks like is key to driving real systemic change. Join us to explore models for community
engagement to ownership, identify your organization’s current standing, and envision opportunities for deeper work towards equity.

Presenters: Caitlin Everhart, Project Manager, Explora; Eric Meyer, Assistant Director of Education, Fleet Science Center; Prinda Wanakule, Senior Director of Inclusive Research, Development and Impact Measurement, The Tech Interactive

Tags: COMMUNITY IMPACT  DIVERSITY AND EQUITY

Pay, Play, or Get Paid: What Role Should Teens Have in Museums?
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Tuesday, 11:00 AM - 12:30 PM

Many museums offer resume-building opportunities for teens, including fee-based programs, paid internships, and unpaid volunteer positions. What determines who gets paid for their time? Come explore guidelines for how to make ethical and financially sustainable choices that promote diversity, equity, inclusion, and access (DEIA), social justice, and career advancement for youth in teen programs.

Presenters: Juanita Juarez, Exhibit Coordinator, California Science Center; Kristen Denton, Manager of Community and Exhibit Programs, California Science Center; Laura Herszenhorn, Director of Expanded Learning and Youth Engagement, California Academy of Sciences; Nick Martinez, Assistant Director of Youth Initiatives, American Museum of Natural History; Rich Pennington, Project Lead/Asst KAYSC, Science Museum of Minnesota

Tags: INCLUSIVE WORKFORCE DEVELOPMENT  TEEN PROGRAMS

Prototyping With Pens, Paper, and Play: An Interactive Session on Testing Early Exhibit Designs
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Tuesday, 11:00 AM - 12:30 PM

It’s critical to know our that exhibit designs will engage our visitors before we build them. Playtesting experiences early in the design process allows us to check assumptions and uncover unexpected insights. In this session, we’ll explore this as participants step into the shoes of visitors and prototype an exhibit experience.

Presenters: Isabel Singer, Senior Exhibit Developer, Luci Creative; Justin Aglio, Senior Director; Sam Moore, Executive Director, Moonshot Museum; Tim Boutelle, Richard Lewis Media Group

Tags: K-12 SCHOOL COLLABORATION  PROTOTYPING AND PILOTING

STEM Teens: Engaging Teens and Visitors in STEM Learning Through Youth Programs
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 11:00 AM - 12:30 PM

Using Pecha Kucha style presentations, leaders from informal science learning sites in the United States and the United Kingdom will center the discussion on site-based youth educator programs.
Following these visual presentations, attendees will engage a speed networking event focused on topics related to sustainable youth programming.

Presenters: Hermonrne Shica Mcconner, EdVenture Children’s Museum; Laurence Butler, Education Officer; Leslie Clements, Equity, Community, & Learning, Virginia Aquarium and Marine Science Center; Marc Drews, Director of Operations, EdVenture Children’s Museum; Mengya Zhao; Myfanwy-Cerys Williams

Tags: PARTNERSHIPS SCIENCE EDUCATION

What Listening Looks Like
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Tuesday, 11:00 AM - 12:30 PM

How do you be a good listener? Two organizations share their efforts to advance diversity, accessibility, inclusion, and equity commitments by listening to both internal staff and external communities. Attendees will gain knowledge of the key elements of effective listening and discuss how to apply these elements at their organizations.

Presenters: Ann Hernandez, Education Leadership Program Manager, Space Center Houston; Gregory Germain, Associate Director of Individual Giving, Space Center Houston; Kristin Leigh, Deputy Director, Explora; Lauren Holley, Audience + Evaluation Manager, Space Center Houston; Shane Montoya, Director of Exhibits, Floor Experience, and Operations, Explora

Tags: DIVERSITY AND EQUITY PARTNERSHIPS

SPONSORED SESSION
Interactive STEM Traveling Exhibitions
Tuesday, 11:00 AM - 11:45 AM
EXHIBIT HALL STAGE

Join Scitech and Imagine Exhibitions to learn more about highly interactive, STEM-based exhibitions in a fun, interactive, and informative presentation. Discover how visitors can colonize a new home planet with Planet Pioneers, explore our changing planet with Earth Matters, and navigate the globe with Map It!

Sponsored by Imagine Exhibitions
Lightning Session: Youth & Technology
Tuesday, 11:00 AM - 11:45 AM

Dancing the Milky Way and Drawing Dinosaurs: Interactive Programming for Youth That Unites Scientists and Artists
STEM LEARNING, EDUCATION, AND PROGRAMS

Art is an incredibly powerful medium for making science relevant. Come explore how co-designing digital programs with artists and scientists around a theme can produce interactive and engaging programming that makes science more accessible and broadens the concept of who does science and how it connects in surprising ways.

Presenters: Jennifer Collins, Manager in the Office of Education, Outreach, and Visitor Experience, National Museum of Natural History; Nicole Webster, Manager of School and Youth Programs, National Museum of Natural History

Tags: PARTNERSHIPS SCIENCE EDUCATION

Leveraging New Research to Build Incredible STEAM Outreach Experiences for Girls and BIPOC Learners
STEM LEARNING, EDUCATION, AND PROGRAMS

Presenters: Alaina Rutledge, VP of Education R&D, National Inventors Hall of Fame

Tags: DIVERSITY AND EQUITY K-12 SCHOOL COLLABORATION

STEM Workforce Stories for Adolescents Who Are Deaf or Hard of Hearing (SWS)
STEM LEARNING, EDUCATION, AND PROGRAMS

This session will highlight innovative features of eight universally designed video career stories told by STEM professionals who are deaf or hard of hearing. It will use research-based findings to show how they benefit deaf or hard of hearing learners by expanding their STEM career knowledge and knowledge of STEM.

Presenters: Judy Vesel, Principal Investigator, TERC

Tags: DIVERSITY AND EQUITY INCLUSIVE WORKFORCE DEVELOPMENT

Youth Lead the Way: Museums Learning With and From Youth to Advance Climate Action
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE

This session will provide an overview of an exploratory research study that created and implemented an innovative Youth Advisory Research Board (YARB), a model that combines Youth Participatory Action Research and Youth Advisory Boards. The session will explore the empowerment theory-based model, the programming, and some results with youth input.
12:30 pm

Reconnect, Recharge, Refocus
Tuesday, 12:30 PM - 2:00 PM

Pick up your lunch in the exhibit hall and participate in one of the many activities from roundtable discussions—to opportunities to move and play—to a sneak peek of a new science film.

Birds of a Feather Conversations
Tuesday, 12:30 PM - 2:00 PM

Grab your lunch and join or start a casual conversation with like-minded individuals for around the following topics or suggest a new topic!

Conversations around conference themes:

- Addressing Inequities
- Confronting Climate
- Future Forward
- Evolving our Organizations
- Informal Learning

Other conversation areas:

- Early Childhood Community of Practice
- Independent Museum Professionals
- Community Science Fellow
- New Leaders Fellows
- Your topic!

ONLY CONNECT: Bridging Science, Art and Spirituality: an interactive presentation and film preview
Tuesday, 1:00 PM - 2:00 PM

Alan Lightman is an MIT astrophysicist and a best-selling novelist (Einstein’s Dreams) and science communicator. At ASTC he’ll preview (for the first time in public!) clips from SEARCHING: Our Quest for Meaning in the Age of Science, a mini-series premiering on PBS stations in 2023. SEARCHING
shows how both the humanities and science illuminate our place in the universe and dramatizes our connection to the stars and to all living creatures, on Earth and elsewhere. Along with Geoff Haines-Stiles (producer/director of Carl Sagan’s original COSMOS), Alan will share—via interactive polling—provocative insights into contemporary research and the public understanding of science.

Presenters:  Alan Lightman, Professor of the Practice of the Humanities, Massachusetts Institute of Technology; Geoffrey Haines-Stiles, Producer/Director/Co-writer, SEARCHING

Silent Disco
Tuesday, 1:00 PM - 2:00 PM
EXHIBIT HALL STAGE

Grab some headphones and shake it off! DJ Cake is spinning your favorite dance tracks to get the blood flowing and the body moving!

Sensory Withdrawal for Creatives: A Movement + Meditation Practice
Tuesday, 1:15 PM - 2:00 PM

Encourage balance to the nervous system during this 40-minute movement and meditation workshop for life’s busy moments. This all-levels class includes yoga asana and stillness practices to invite creativity on and off the mat. Guests are invited to be fully present in their bodies and explore the natural ability to cultivate intuition and creativity through sensory withdrawal. Prepare for this gentle session by coming as you are, wearing clothes that invite free movement. Mats will be provided.

Poster Palooza
Tuesday, 2:00 PM - 3:15 PM

See the list of posters beginning on page 52.
Meet the Moment – Sharing our Collective Work on Climate Change
Tuesday, 2:00 PM - 3:15 PM

Join your colleagues working on climate change education to share information, learn from each other and network. This is an informal opportunity supported by ASTC. We will have display-boards and 4-6 ft tables available for each museum/organization. Please bring a poster-size summary, handouts, small interactives, works in progress or anything else others may find useful learning about your work and sharing with colleagues.

This is a great opportunity to elevate our collective work in the ASTC community and invite others to join in the work. Feel free to share this with anyone who might be interested in participating/networking - everyone is welcome!

We need your participation! If you would like to join this effort, please RSVP HERE so we know you will participate so we can continue to plan with ASTC.

Conveners: Stephanie Ratcliffe, Executive Director, The Wild Center; Jen Kretser, Director of Climate Initiatives, The Wild Center

Tags: CLIMATE CHANGE

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3:30 pm

Building Lasting Community Partnerships
EXTERNAL GROUPS AND COLLABORATORS
Tuesday, 3:30 PM - 5:00 PM

Developing long-lasting and meaningful relationships with other organizations can be a daunting task. Learn from three successful partnerships with representatives from both the science center and their partner organization. Whether from urban, rural, or tribal communities, you'll take away helpful and replicable lessons for you to apply at your institution.

Presenters: Imani Vincent, Schoolhouse Teacher; Jessie Herbert-Meny, Director, spectrUM Discovery Area; Max Cawley, Associate Program Manager - Learning Philosophy & Evaluation, Museum of Life and Science; Peter Leipzig, Education Program Coordinator, Sciencenter; Yanet Lopez, Community Engagement Manager, Fleet Science Center

Tags: COMMUNITY IMPACT PARTNERSHIPS

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Does the Real Thing Matter? Making Sense of Authenticity in Informal Science Learning
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 3:30 PM - 5:00 PM

Does it really need to be REAL? Join us as we explore the role of authenticity in informal science learning via panel and small-group discussion, examining what research says about how the *the
real thing’ (vs. replica or virtual experience) may or may not influence learner attitudes, behaviors and understanding.

**Presenters:** Benjamin Dickow, President & Executive Director, Columbia Memorial Space Center; Evelyn Serrano, Educator, California Science Center; James Kisiel, Professor of Science Education, California State University, Long Beach; Marcie Benne, Engagement Research and Advancement Director, Oregon Museum of Science and Industry; Preeti Gupta, Senior Director of Children and Youth Programs, American Museum of Natural History; Kimberly Preston, Researcher, Oregon State University STEM Research Center; Martin Storksdieck, Director, Oregon State University STEM Research Center

**Tags:** EXHIBIT DESIGN SCIENCE EDUCATION

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**Dream It, Plan It, Evaluate It: Inspiring Equity in STEM Environments**

**STEM LEARNING, EDUCATION, AND PROGRAMS**

Tuesday, 3:30 PM - 5:00 PM

Organizations are focused now more than ever on prioritizing equity and inclusion; however, many are struggling to find time to adapt programming. This workshop provides the time and tools to envision more equitable and sustainable STEM offerings using the Equity and Inclusion Framework created by the National Girls Collaborative Project.

**Presenters:** Karen Peterson, CEO, National Girls Collaborative Project; Shihadah Saleem, Director of Youth Programs and Pathways, New York Hall of Science; Tara Cox, Assistant Director of Programs, National Girls Collaborative Project

**Tags:** DIVERSITY AND EQUITY SOCIAL JUSTICE

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**Forward to the Future: How Innovation Drove the Creation of the Museum of the Future**

Tuesday, 3:30 PM - 5:00 PM

Museum of the Future opened in Dubai 2-22-2022 to international acclaim and sold-out tickets. The founding team will show how they used the most innovative practices in the field to drive this success and build a truly unique organization. Areas of focus will be community building, co-creation, inclusion, diversity, sustainability, data, and fun!

**Presenters:** Lāth Carlson, Executive Director, Museum of the Future; Majed Al Mansoori, Deputy Executive Director and Head of Project Management, Museum of the Future; Sarah Sillow, Director of Operations, Museum of the Future

**Tags:** INCLUSIVE WORKFORCE DEVELOPMENT SUSTAINABILITY

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**Inspiring Youth to Climate Action with GenAction**

**EXTERNAL GROUPS AND COLLABORATORS**

Tuesday, 3:30 PM - 4:15 PM

With the support of the Canadian Federal Government’s Environmental Damages Fund, the Canadian Association of Science Centres along with partners Discovery Centre (Halifax, Nova Scotia) and the Science World Foundation, GenAction is empowering students to take action on climate change and to support their local communities. This session will showcase how educators have engaged over 1,000 students at 25 institutions across Canada in this movement. The event will feature keynotes, demonstrations, and a discussion of the educational resources available through GenAction’s Curriculum Library.
Scotia), Science North (Sudbury, Ontario) and Exploration Place (Prince George, British Columbia) have formed a network of over 29 science centres, museums, and outreach organizations to deliver the high impact Inspiring Youth to Climate Action project coined GenAction. Representatives from these organizations will present the national outreach program which will deliver hands-on, locally relevant activities grounded in community-based climate change research, while tracking expected change in awareness and behaviour modification of participants in every province in Canada.

In this session, you will gain insight into the sliding scale, flow-through grant mechanism established by the collective partnership, along with research tools and the community of practice developed specifically for the GenAction movement. Presenters will also have you exploring ways to engage youth in climate change programming and how to convert this education into ACTION.

Presenters: Stephanie Deschenes, COO, Canadian Association of Science Centres; Julie Moskalyk, Science Director, Science North; Jennifer Punch, Director of Marketing & Communication, Discovery Centre

Tags: CLIMATE CHANGE, YOUTH DEVELOPMENT

This session has been organized by the Canadian Association of Science Centres.

Prioritizing Equity: A DEAI Dialogue for All
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Tuesday, 3:30 PM - 5:00 PM

In this interactive session, museum professionals will discuss the current opportunities and challenges museums face on their equity journeys. Following initial framing by a national funder and results from a national survey, participants will collectively identify fieldwide needs and brainstorm potential resources to support diversity, equity, access, and inclusion (DEAI) efforts in the museum field.

Presenters: Cecilia Garibay, Principal, Garibay Group; Jenni Martin, Director of Strategic Initiatives, Children's Discovery Museum of San Jose; Laura Huerta Migus, Deputy Director, Office of Museum Services, Institute of Museum and Library Services

Tags: DIVERSITY AND EQUITY, REBUILDING AND REIMAGINING

The Future of Professional Learning: Brainstorming Solutions for Professional Development Problems in a Post-pandemic World
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 3:30 PM - 5:00 PM

Educators are facing some of the most difficult situations of their careers, who has time for professional learning? Join our panel of professional learning advocates for a future thinking brainstorm session around critical staff development and professional learning strategies that will support all education professionals in our communities.
Presenters: **Lynn Tran**, Program Director, National Science Foundation; **Megan Ennes**, Assistant Curator of Museum Education, Florida Museum of Natural History; **Nikole Sheaffer**, Senior Director of STEM Education, Carnegie Science Center; **Sarah Soule**, Teacher and Student Services Educator, California Academy of Sciences; **Sherry Burch**, Senior Manager of Education Resources, The Tech Interactive

**Tags:** Future Planning, Teacher Professional Development

**Under the Umbrella of Co-designing and Iteration**

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Tuesday, 3:30 PM - 5:00 PM

In this session, we will explore cross-departmental collaborative processes used with floor staff to co-design and iterate STEAM activities and exhibits at New York Hall of Science and The Tech Interactive. Participants will leave with strategies on how to incorporate co-design into their institution to create more robust experiences for visitors.

Presenters: **James Wong**, Content Specialist, The Tech Interactive; **Leah Persram**, Exhibit Associate, New York Hall of Science; **Michaela Yamashita**, R&D Specialist, The Tech Interactive; **Satbir Multani**, Exhibit Experience Manager, New York Hall of Science

**Tags:** Exhibit Design, Future Planning

**Unpacking Immersion in Museums**

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Tuesday, 3:30 PM - 5:00 PM

Presenters: **Cloe St-Cyr**; **Mike Lutz**, VP of New Business Development, Evans & Sutherland Computer Corporation; **Stacy Wakeford**, Director, Content; **Tim Porter**, Director, Exhibit Content & Project Management, Museum of Science

**Tags:** Emerging Technology, Exhibit Design


**DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE**

Tuesday, 3:30 PM - 5:00 PM

Impact. It’s a word that many of us look at with fear and trepidation. What counts as impact? Which stakeholders decide? How do we go about measuring it? Join us as we candidly discuss experiences of defining and measuring impact within organisations and across the field.


**Tags:** Impact Measurement, Program Evaluation
Lightning Talk: Exhibits & Programming
Tuesday, 3:30 PM - 4:15 PM

Full Bellies and Brains: STEM Programs and Food-Insecure Audiences
STEMLearning, Education, and Programs

Cincinnati Museum Center leads an NSF grant exploring cooking as a gateway to STEM learning for audiences that include those experiencing food insecurity. Learn what's worked (and not) and tips for working with food-insecure audiences.

Presenters: Whitney Owens, Chief Learning Officer, Cincinnati Museum Center
Tags: Creating a Better Future, Learning Research

Pop-Up Exhibits and Alternative Venues: Reaching New Audiences With Temporary Exhibition Spaces
Exhibits, Experiences, and Technology

Ready to reach out? We'll share lessons learned from Virtual Science Center's daring experiment--popping up our hands-on science exhibit in a Westfield Shopping Center in San Jose. We'll share hurdles encountered from building permits, hiring and stagnant weekday mall traffic to moments of sheer joy and reaching new audiences.

Presenters: Meghan Lee, Executive Director, Virtual Science Center
Tags: Rebuilding and Reimagining, Future Planning

Transforming Hands-On Exhibits to Intelligent Mixed-Reality Experiences to Enhance STEM Learning and Engagement
Exhibits, Experiences, and Technology

Intelligent Science Exhibits use an innovative Artificial Intelligence (AI)-based mixed-reality technology, to provide personalized interactive feedback to visitors as they do experiments and discoveries in the real world, improving STEM learning and engagement in the museum, while also encouraging 21st century skills like critical thinking, persistence and collaboration.

Presenters: Nesra Yannier, Senior Systems Scientist, Human-Computer Interaction Institute, Carnegie Mellon University, Christine Simonson, Director of Gallery Experiences, Carnegie Science Center
Tags: Advanced Technology (Augmented Reality (AR), Virtual Reality (VR), etc.), Exhibit Design

Film: Not the Science Type
Monday, 3:30 PM - 4:00 PM
Exhibit Hall Stage
Not The Science Type highlights four brilliant minds, showcasing women who break down boundaries within their fields – biology, engineering and science and technology-based applications. (Also shown Monday at 3:30 PM)

7:00 pm

Party at the Children's Museum of Pittsburgh and MuseumLab
Tuesday, 7:00 PM - 11:00 PM
FEE: $12 (SUPPORTS ASTC NEW LEADERS PROGRAM)

Explore the largest cultural campus for kids in North America and enjoy an evening of food, drink, and unique activities!

Try nontraditional artmaking in the Children’s Museum’s Art Studio - paint in the air, make prints with bikes and create a giant screen print.

Let your inner maker go big in MAKESHOP with a giant sewing machine, loom, and large geometric structures.

Check out the Kindness Gallery, the Garage (former home of the original Buhl Planetarium) and our latest traveling exhibit, Measurement Rules.

Next door at MuseumLab, dive into fashion and your identity in How You Wear It, and make your own enameled medallion in our Metals Studio. Then take a break under the stars in Buhl Community Park to make steamroller prints and dance in our silent disco.

Buses to the Children's Museum of Pittsburgh depart starting at 6:30 p.m. from the official ASTC Annual Conference hotels. Preregistration required for guests aged 21+.

Photo by Ed Massery
### Registration
Wednesday, 7:30 AM - 5:00 PM

### Wednesday Breakfast
Wednesday, 8:30 AM - 9:00 AM

### Wednesday Keynote
Wednesday, 9:00 AM - 10:15 AM

#### “When You Wonder, You’re Learning”

It wouldn’t be a trip to Pittsburgh without taking some time to learn from the legacy of Fred Rogers of the beloved television series *Mister Rogers’ Neighborhood*. Join the authors of *When You Wonder, You’re Learning*, Gregg Behr and Ryan Rydzewski, as they discuss how Fred Rogers’ inspiring lessons about curiosity, creativity, and collaboration—to name just a few—are celebrated in the work that science and technology centers, museums, and science engagement professionals everywhere do every day to help people wonder, learn, and create.

**Gregg Behr, Executive Director, The Grable Foundation**

**Ryan Rydzewski**
Presenting of Roy L. Shafer Leading Edge Awards

During the final keynote session, we will also highlight the work of our field over the past three years by announcing winners of this year’s Roy L. Shafer Leading Edge Awards that recognize some of the incredible work of ASTC members.

Hands-On Science Showdown
Wednesday, 9:00 AM - 1:30 PM
HELD ON THE RACHEL CARSON BRIDGE

See description at 12:00 pm

10:30 am

15 Years of Remaking Learning in Pittsburgh: How to Start, Scale, and Sustain Learning Ecosystems
EXTERNAL GROUPS AND COLLABORATORS
Wednesday, 10:30 AM - 12:00 PM

In a city known for reinventing itself, Pittsburgh and its Remake Learning network are forging a new kind of education—one in which the region is a classroom. This session will provide insights from 15 years of network building to support others in starting, scaling, and sustaining learning ecosystems.

Presenters: Andre Samuel, Pittsburgh Regional STE(A)M Ecosystem Lead; LaTrenda Leonard Sherrill, Working Group Strategist; Stephanie Lewis, Director of Relationships; Tyler Samstag, Director, Remake Learning Network

Tags: 21ST CENTURY SKILLS PARTNERSHIPS

Business Development + Experience Design: It’s Time to ACT!
OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT
Wednesday, 10:30 AM - 12:00 PM

The time is NOW! Please join us for a timely discussion focused on how science centers rebuild their reputations a valuable community resources post pandemic through innovative,
entrepreneurial approaches that result in a more engaging and revenue generating visitor experience.

Presenters: **Abigail Bysshe**, *Vice President, Experiences and Business Development, The Franklin Institute; Dan Picard*, *Principal Creative Director, Hotopp Associates; Kellen Nixon*, *Nixon & Co.*

Tags: **BUSINESS DEVELOPMENT**  **EXHIBIT DESIGN**

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**Care Circles: The Future of Governance & Engagement**  
*EXTERNAL GROUPS AND COLLABORATORS*  
*Wednesday, 10:30 AM - 12:00 PM*

Presenters: **Todd McMullin**, *Dir. Strategic Relations, VSysOne.com*

Tags: **21ST CENTURY SKILLS**  **ADULT ENGAGEMENT**

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**Go Where the People Are and Do What the People Do: Experimenting With Situated Engagement**  
*EXTERNAL GROUPS AND COLLABORATORS*  
*Wednesday, 10:30 AM - 12:00 PM*

From neighborhood gatherings to parades, open-air markets to fantasy conventions, communities always get together on their own terms. What would it look like if you put down your usual bag of science tricks and joined in? Learn about our experiences with prioritizing cultural context with the practice of situated engagement.

Presenters: **Becky Carroll**, *Senior Researcher; Ben Wiehe*, *Manager, MIT Museum; Benjamin Dickow*, *President & Executive Director, Columbia Memorial Space Center; Emily Rice; Paul Martin, Co-Director, Arizona State University - Center for Innovation in Informal STEM Learning*

Tags: **COMMUNITY IMPACT**  **REBUILDING AND REIMAGINING**

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**Imagination in STEM: Research, Practice, and Visions for the Future**  
*STEM LEARNING, EDUCATION, AND PROGRAMS*  
*Wednesday, 10:30 AM - 12:00 PM*

How can our work more intentionally spark imagination among learners and within ourselves? This panel discussion will present research on imagination in STEM, highlight case studies from informal STEM projects that leverage strategies for fostering imagination, and will invite attendees to envision imagination-infused STEM futures.

Presenters: **Rachel Fyler**, *Museum of Science; Karri Folks*, *Museum of Science; Sarah May, Evaluation Associate, Museum of Science; Amanda Krantz*, *Senior Research Associate, Kera Collective; Adrienne Testa*, *Director of Exhibits & Facilities, Sciencenter*

Tags: **DESIGN THINKING**  **LEARNING RESEARCH**
Organizational Structures and Processes for Achieving Your Goals

**LEADERSHIP**

Wednesday, 10:30 AM - 12:00 PM

Leadership roles in science centers demand creativity, responsiveness, and structures. Hear about the decision-making processes that allow leaders to navigate challenging situations and progress in key areas of personal and institutional importance. Use these examples to reflect on areas you want to improve. Leave ready to take the next steps.

**Presenters:** Catherine Horne, President and CEO, Discovery Place; Christian Greer, President and CEO, Michigan Science Center; Erica Barrueto, Assoc. Vice President, Learning Product Development, The Tech Interactive; Katrina Stevens, President and CEO, The Tech Interactive; Natalie Daring, Science Engagement Director, International Centre for Life

**Tags:** MANAGEMENT REBUILDING AND REIMAGINING

Reengineering Your Brand to Maximize Engagement

**OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT**

Wednesday, 10:30 AM - 12:00 PM

The objectives of a rebranding project are to reimagine and reengineer to transform your brand to grow brand equity, increase awareness, create an emotional connection with stakeholders and visitors, and ultimately enhance revenue and engagement. In this session you will explore the journey of two major recent rebranding projects.

**Presenters:** Erik Blanchard, Director of Communications and Marketing; Mara Naiditch, AVP Marketing and Enterprise, Natural History Museums of Los Angeles County

**Tags:** FUTURE PLANNING MARKETING

Working Across Dimensions: DEAI Tools and Practices

**DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE**

Wednesday, 10:30 AM - 12:00 PM

Actionable Insights from the Cultural Competency Learning Institute National Landscape Study grouped diversity, equity, access, and inclusion (DEAI) practices in museums into four dimensions: public facing, internal, foundational, and cross-functional. Presenters will share examples, tools, and resources aligned with the actionable insights. Attendees will take part in activities they can apply in their own organizations.

**Presenters:** Alexandra Jackson, Director of Programs & Partnerships, Sciencenter; Cecilia Nguyen, Senior Exhibit Developer, Oregon Museum of Science and Industry; Eric Buenrostro Azua, Vice President of People and Culture, Oregon Museum of Science and Industry; Kevin Perez, Camp Manager, Terry Lee Wells Nevada Discovery Museum; Michelle Mileham, Project Manager, Utah Division of Arts & Museums

**Tags:** DIVERSITY AND EQUITY
Lightning Session: Technology & Museums
Wednesday, 10:30 AM - 11:15 AM

Designing Augmented Reality That Supports Family Conversation
EXHIBITS, EXPERIENCES, AND TECHNOLOGY

Augmented Reality (AR) is an increasingly popular educational technology in museum spaces that blends virtual and real life experiences. We share key insights for developing “family-friendly” AR exhibits based on a review of prior work and our own development of an AR exhibit designed to promote family conversation - Bugtopia.

Presenters: Sarah Olsen, Research Lead, The Lawrence Hall of Science
Tags: ADVANCED TECHNOLOGY (AUGMENTED REALITY (AR), VIRTUAL REALITY (VR), ETC.) EXHIBIT DESIGN

Quantum Computers in the Museum? Introduction, Activities, & Why Your Visitors Will Care
STEM LEARNING, EDUCATION, AND PROGRAMS

How might quantum transform our lives? How can you bring these ideas to your museum audiences? We will introduce visual and auditory demonstrations of quantum ideas such as superposition and entanglement; zines introducing 15 quantum ideas; and hands-on activities on reversibility, exponential growth, one-way functions, destructive/non-destructive testing, and error correction.

Presenters: Alexandria Muller, Graduate Student Researcher, University of California, Santa Barbara; Randy Landsberg
Tags: SCIENTIFIC RESEARCH PUBLIC PROGRAMS

STEM Learning in the World of Metaverse
STEM LEARNING, EDUCATION, AND PROGRAMS

Presenters: Habib Ab Mukmin, Head of Digital Strategy & Planning, Petrosains, The Discovery Centre
Tags: ADVANCED TECHNOLOGY (AUGMENTED REALITY, VIRTUAL REALITY (VR), ETC.) EMERGING TECHNOLOGY

The Goggles, They Do Nothing! What Actually Works in the Overhyped World of Augmented Reality?
EXHIBITS, EXPERIENCES, AND TECHNOLOGY

VR/AR/IR exhibits tend to be complicated, expensive, staff-intensive, and underwhelming. Disentangling ourselves from the virtual reality marketing machine, I will find common threads in exhibits that work, and explore how more modest, homebrew exhibits are distinguishing themselves from better-funded boondoggles that dominate the market.

Presenters: Lucas Fredericks, Exhibit Fabricator, Sciencenter
Tags: ADVANCED TECHNOLOGY (AUGMENTED REALITY (AR), VIRTUAL REALITY (VR), ETC.) EXHIBIT DESIGN
12:00 pm

**Hands-on Science Showdown**
Wednesday, 12:00 PM - 1:30 PM
HELD ON THE RACHEL CARSON BRIDGE

A unique event that will engage hundreds of students from the Pittsburgh area.

Here's just some of what you can experience at this special event:

- Experience demonstrations by colleagues from around the country in the demo zone. Vote on your favorite!
- Explore activities by local Pittsburgh organizations who showcase making, tech, and more
- Performances by Squonk Opera at 11:00 AM and 12:30 PM
- Steamroller prints
- PNC Mobile Learning Adventure
- Food trucks for the best of Pittsburgh's cuisine

Lunch is included for conference participants from local food trucks at the Hands-on Science Showdown from 10:30 to 1:30.
1:45 pm

Centering Participant Voice: Research Approaches That Emphasize Co-creation, Agency, and Belonging

STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 1:45 PM - 3:15 PM

Participatory research can illuminate participant perspectives that might have otherwise gone unexamined. For this panel, researchers will discuss projects in which the participant voice is centered through non-traditional research methods. Attendees will gain an understanding of the implications of using participant-centered methodologies for data collected, inferences made, and participant-researcher relationships.

Presenters: Gabrielle Rappolt-Schlichtmann, Executive Director & Chief Scientist, EdTogether; Preeti Gupta, Senior Director of Children and Youth Programs, American Museum of Natural History; Sarah Lukwoski, Evaluation and Research Associate, Science Museum of Minnesota; Sarah May, Evaluation Associate, Museum of Science

Tags: DIVERSITY AND EQUITY  LEARNING RESEARCH

Connecting Museums and Libraries to Promote Community Engagement in Citizen Science

EXTERNAL GROUPS AND COLLABORATORS
Wednesday, 1:45 PM - 3:15 PM

Are you interested in partnering with your local library to increase engagement in citizen science? Join SciStarter, Arizona State University, and the National Girls Collaborative Project to learn about the National Citizen and Community Science Library Network, and the suite of free resources designed to broaden participation in science engagement.

Presenters: Darlene Cavalier, Director, SciStarter; Deron Ash, Assistant Director of Programs, Arizona State University - Center for Innovation in Informal STEM Learning; Lisa Lewis; Tara Cox, Assistant Director of Programs, National Girls Collaborative Project

Tags: COMMUNITY IMPACT  PARTNERSHIPS

Demystifying Engineering for Teachers, Parents and Preschoolers

STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 1:45 PM - 2:30 PM

Designing, building, and problem solving comes naturally to preschoolers, but calling it “engineering” often overwhelms the adults in their lives. Early childhood educators from Academy of Natural Sciences, Discovery Center Museum, Explora, and Sciencenter explore easy, bilingual hands-on activities that help adults stand back and empower children to take charge.

Presenters: Annie Gordon, Education Program Coordinator, Sciencenter; Brandon Barney, Explora; Jessica Williamson, Early Childhood Specialist, Berkshire Museum; Mariah Romaninsky, Director of Education, Learning, and Development, The Academy of Natural Sciences of Drexel University

Tags: EARLY CHILDHOOD  OUTREACH
Making Matches to Collaborate on Youth Program Alum Long-Term Impact Studies

STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 1:45 PM - 3:15 PM

In a rapidly changing environment, youth programs need a solid base of research and evaluation studies to support evidence-based decision-making. Explore strategies from a current long-term alum follow-up study and get matched with youth program leaders, informal learning researchers, and evaluators to explore your own future collaborations. Let's get matched!

Presenters: Carey Tisdal, Director; Kristen Denton, Manager of Community and Exhibit Programs, California Science Center; Laura Herszenhorn, Director of Expanded Learning and Youth Engagement, California Academy of Sciences; Linda Aaron, Youth Development Programs Coordinator; Priya Mohabir, Senior Vice President Youth Development & Museum Culture, New York Hall of Science

Tags: DIVERSITY AND EQUITY YOUTH DEVELOPMENT

Measuring Social Impact for Strategic Change

OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT
Wednesday, 1:45 PM - 3:15 PM

The Measurement of Museum Social Impact (MOMSI) study is creating a survey to help museums measure their social impact. Come explore social impact data, share your museum's needs to help shape a forthcoming toolkit, and hear the host museum perspectives on recruiting participants, the study, and using social impact data.

Presenters: Kari Ross Nelson; Michelle Mileham, Project Manager, Utah Division of Arts & Museums; Pameladell Hillestad, Vice President of Play & Learning, Glazer Children’s Museum; Ryan Auster, Manager, COVES & Learning Metrics, Museum of Science and The Collaboration for Ongoing Visitor Experience Studies (COVES)

Tags: COMMUNITY IMPACT SCIENTIFIC RESEARCH

On Board and on Mission: Focus on Culture for Recruiting and Retaining Great Staff

DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Wednesday, 1:45 PM - 3:15 PM

Does your organization's onboarding process put values and culture first? Attracting and building a quality team requires more than hiring skilled individuals, it involves meaningful, collaborative connections to culture and mission. This participatory session helps you create a flexible (often free) onboarding program that attracts, engages and retains staff.

Presenters: Chris Thatcher; Clint Stone, Vice President for Programs, Science Museum Oklahoma; Jasmin Gainey, Human Resources Director, Science Museum Oklahoma

Tags: HUMAN RESOURCES/STAFFING INCLUSIVE WORKFORCE DEVELOPMENT
Productive Tension: Advancing Research That Advances Institutions
STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 1:45 PM - 3:15 PM

Research in informal environments generates important findings but can create (un)productive tension. This session will use case examples to highlight the productive tensions of integrating research with program and exhibit planning. Through discussion, participants will apply the case situations and solutions to opportunities for conducting research in their institutions.

Presenters:  Anjylla Foster, Researcher and Project Manager, Museum of Science and Industry; James Liu, Research Associate, New York Hall of Science; Joyce Ma, Principal Researcher, Visitor Research & Evaluation, Exploratorium; Katie Culp, Chief Learning Officer, New York Hall of Science; Kim Koin, Director of Art and Tinkering Studios, Chicago Children’s Museum; Meredyth Sullivan, Senior Program Manager of LabVenture, Gulf of Maine Research Institute

Tags:  LEARNING RESEARCH  PROGRAM EVALUATION

Project Pragmatists: Navigating the New Normal
LEADERSHIP
Wednesday, 1:45 PM - 3:15 PM

Most of us are now comfortable building the plane while flying it. But what if we could learn how to design the plane while flying it too? Sounds crazy? Well, join four “project pragmatists” who will take you supersonic through project management and help you fly over today's project challenges.

Presenters:  Andrea Harp, Chief of Staff / Director of Culture and Community, Michigan Science Center; Christian Greer, President and CEO, Michigan Science Center; Donna DiBartolomeo, Senior Director of Exhibits, California Academy of Sciences; Kim Amey, Deputy Director, Carnegie Science Center

Tags:  DESIGN THINKING  PROJECT MANAGEMENT

What More Can We Find? How Sustaining Inquiry Impacts Museum Teams, Audiences, and Inclusivity
LEADERSHIP
Wednesday, 1:45 PM - 3:15 PM

In this experiential workshop, you will practice slowing down while collaboratively working together to look at and think through a discussion on the methodology of Visual Thinking Strategies (VTS). Learn how suspending judgment, paraphrasing, and staying in inquiry can positively impact museum workflow, design processes, educational programs, and self-awareness.

Presenters:  Dabney Hailey; Kerri Ziemann, Program Director, The Wild Center; Shannon Earnest, Gallery Manager, Saint Louis Science Center

Tags:  21ST CENTURY SKILLS  PROTOTYPING AND PILOTING
Why Artists Matter in Science Museums
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Wednesday, 1:45 PM - 3:15 PM

What happens if an artist creates a science exhibit? In this session, learn how putting art at the center of a science exhibit can lead you to think differently about how science can be experienced and taught, leading to more diverse and sustainable museum experiences that have broader appeal and impact.

Presenters: Anne Fullenkamp, Senior Director of Creative Experiences, Children's Museum of Pittsburgh; Anouk Wipprecht; Julie Eizenberg, Founding Principal, Koning Eizenberg Architecture; Marti Louw, Director, Learning Media Design Center; Sam Moore, Executive Director, Moonshot Museum

Tags: EXHIBIT DESIGN REBUILDING AND REIMAGINING

Lightning Session: DEAI & Organization Change
Wednesday, 1:45 PM - 2:30 PM

Bridging the Gap: Fortifying DEI Educational Theories by Engaging Science Museum Professionals
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE

In a giant game of “match-up”, ASTC members explore educational frameworks from formal K-12 research and connect those frameworks to informal science practices. This session moves toward the development of an educational model that is applicable to informal science settings to help transform those spaces into more inclusive learning environments.

Presenters: Mwenda O Kudumu, Doctoral Student, North Carolina State University; Lynn Chesnut, Doctoral Student, North Carolina State University

Tags: DIVERSITY AND EQUITY LEARNING RESEARCH

Empowering STEM-Based Inventive Identity Among Young Women, Black Youth, and People With Disabilities at Museums
STEM LEARNING, EDUCATION, AND PROGRAMS

Through the lens of research and evaluation underway for the Smithsonian Lemelson Center’s “Game Changers” project—prioritizing girls and Black youth ages 10-17, and people with disabilities—we will discuss how defining, fostering, and evaluating STEM-based inventive identity among diverse audiences could positively impact the wider informal science and education fields.

Presenters: Monica M. Smith, Associate Director, Smithsonian’s Lemelson Center for the Study of Invention & Innovation, National Museum of American History; Amanda Krantz, Senior Research Associate, Kera Collective

Tags: 21ST CENTURY SKILLS
Feeding Hungry Minds and Fufilling Human Services: Inspiring Underserved Youth in STEM Throughout the U.S.

**STEM LEARNING, EDUCATION, AND PROGRAMS**
Wednesday, 3:30 PM - 4:15 PM

What do Miss America 2020 and science centers have in common? A commitment to inspire in STEM, showcasing how science is everywhere and for everyone. This session will highlight a powerful case study of the groundbreaking “Her Royal Scientist” Learning Lunchbox STEM kit and you can join this effort.

Presenters:  **Camille Schrier; Gloria Iannucci; Stephen White, Chief Strategy Officer, COSI**

Tags:  **COMMUNITY IMPACT**  **OUTREACH**

Getting Started and Keeping Going: DEAAIJ Working Groups Within Museums

**DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE**
Wednesday, 3:30 PM - 4:15 PM

Diversity, equity, access, anti-racism, inclusion, and justice (DEAAIJ) are all words that have become important in our vocabulary. In this session, three unique organizations come together to share about how they have begun institution wide DEAAIJ initiative work via staff-led working groups and convene discussions on this critically important work.

Presenters:  **Brindha Muniappan, Senior Director of the Museum Experience, Discovery Museum; Justin Williams, Director of Team & Community Engagement, Carnegie Science Center; Teressa Black, Ontario Science Centre**

Tags:  **DIVERSITY AND EQUITY**  **RACIAL JUSTICE**

Leadership Lab: Road to Recovery Edition

**LEADERSHIP**
Wednesday, 3:30 PM - 5:00 PM

After two years of COVID and persistent uncertainty, mid-level and senior leaders may feel tired, discouraged, and lonely. Take fresh inspiration from peers with empathetic ears, candid perspectives, and gently challenging approaches. Bring your own insights and conundrums as we work through what it means to lead toward hopeful recovery.

Presenters:  **Christian Greer, President and CEO, Michigan Science Center; Holly Truitt, spectrUM Discovery Area; Joe Imholte, Executive Vice President, The Bakken Museum; Whitney Owens, Chief Learning Officer, Cincinnati Museum Center**

Tags:  **REBUILDING AND REIMAGINING**  **WOMEN IN LEADERSHIP**
Race and Unity: Let’s Create a Roadmap for Inclusive Programs and Exhibitions
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Wednesday, 3:30 PM - 4:15 PM

The DoSeum and The Witte explore topics of race, racism, and unity through programs and exhibitions. These topics have been challenged in our state’s formal education system. In this session, we will share our experiences in group discussions on partnerships, education, and guest experience and collectively develop a draft roadmap.

Presenters: Beth Stricker, Vice President of Exhibitions, Witte Museum; Chris Navarro, Public Program & Community Partnership Manager, The DoSeum; Meredith Doby, Vice President of Exhibits, The DoSeum; Richard Kissel, Chief Program Officer, The DoSeum; Ronald Davis, Co-Curator, Witte Museum

Tags: COMMUNITY IMPACT  RACIAL JUSTICE

ScienceNearMe.org: A New Infrastructure to Connect Audiences Across Silos of Informal STEM Engagement and Learning
STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 3:30 PM - 5:00 PM

Looking for ways to deepen STEM engagement for your community, and reach a broader audience in your museum? Learn about ScienceNearMe.org, a new innovative National Science Foundation funded resource that allows people to search STEM opportunities across the U.S. including science centers, science festivals, out-of-school time programs, and citizen scientists.

Presenters: Ben Wiehe, Manager, MIT Museum; Darlene Cavalier, Director, SciStarter; Kate Dickerson, Interim Executive Director, Maine Discovery Museum; Martin Storksdieck, Director, STEM Research Center, Oregon State University Center for Research on Lifelong STEM Learning; Steven Snyder, President & CEO, Fleet Science Center

Tags: ADULT ENGAGEMENT  COMMUNICATIONS

Seizing Opportune Moments: Stories From Museums Taking On Big Change in a Changing World
LEADERSHIP
Wednesday, 3:30 PM - 4:15 PM

As the world redefined itself amidst a pandemic, three museums took on transformative changes. Chabot Space and Science Center remained closed to build a partnership with NASA. The Museum of Science and History accelerated a literal name-changing strategic plan. The Discovery Center became a school. Come and hear their stories.

Presenters: Adam Tobin, Executive Director, Chabot Space & Science Center; Cara Dodge, NASA Headquarters; Kevin Thompson, Executive Director, Museum of Science & History; Rob Blevins, Executive Director, Discovery Center of Springfield

Tags: REBUILDING AND REIMAGINING  RE-OPENING
Simple Interactions: The Power of Positive Relational Practices Within Museums

STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 3:30 PM - 5:00 PM

Human interactions are the building blocks of healthy development for children, youth, and families. Understanding and enriching these interactions can have long-lasting impacts for visitors and professionals. This session will explore interactions in science centers and affirming the critical role that people in these spaces have on their visitors and colleagues.

Presenters: Annie White; Deborah Coppula, Professional Development Specialist, Children's Museum of Pittsburgh; Tom Akiva, EdD Program Director, University of Pittsburgh

Tags: ADULT ENGAGEMENT  TEACHER PROFESSIONAL DEVELOPMENT

The National STEM Gaming Network: Let’s Talk About Purposeful Gaming

STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 3:30 PM - 5:00 PM

Join the National STEM Gaming Network as we share our purposeful gaming initiatives designed to spark an interest in STEM education by using esports and video games as a platform to teach STEM-related skills. Purposeful gaming educational curricula can create 21st-century learning opportunities that are inclusive and accessible to all.

Presenters: Alyson Smith, Senior Vice President of Engagement, Arizona Science Center; Chris Demko, Omnitheater & Immersive Media Manager, Science Museum of Minnesota; Cliff Zintgraff, Chief Learning Officer, The San Antonio Museum of Science and Technology; Mike Harris, Manager of Cyber Security Education, Saint Louis Science Center; Ted Black, President & CEO, Whitaker Center for Science and the Arts

Tags: FUTURE PLANNING  SCIENCE EDUCATION

Working Together Toward Better Co-creation

STEM LEARNING, EDUCATION, AND PROGRAMS
Wednesday, 3:30 PM - 4:15 PM

What happens when we invite the public to share authority in the design and execution of science education initiatives? What should our goals be for co-created projects? How do we measure success? We'll share takeaways from two projects and invite problem-solving on how organizations can approach their own co-creation work.

Presenters: Claire Quimby, Senior Research Associate, Rockman et al Cooperative Inc; Elizabeth Kunz Kollman, Director, Research and Evaluation, Museum of Science, Boston; Leigh Ann Mesiti Caulfield, Senior Experience Researcher, Mad*Pow

Tags: COMMUNITY IMPACT  PROJECT MANAGEMENT
Lightning Session: Evaluation & Data Collection
Wednesday, 3:30 PM - 5:00 PM

60-Minutes for Youth Development: Cultivating Relationships, Relevance, and Youth Voice in Informal Learning Experiences
STEM LEARNING, EDUCATION, AND PROGRAMS

School groups are back in many museums! For one museum, this means resuming a mixed-methods, experimental study of adolescent students attending learning lab field trip. With a focus on ethnic identity and youth development, this session will explore the potential impact of and good practices for informal learning experiences.

Presenters: Anjylla Foster, Researcher and Project Manager, Museum of Science and Industry; Aaron Price, Director of Research and Evaluation, Museum of Science and Industry

Tags: YOUTH DEVELOPMENT IMPACT MEASUREMENT

Curiosity WINS: Model to Manage and Inspire for Sustainability and Literacy
LEADERSHIP

From Curiosity to Literacy to Sustainability. The NSM’s “Curiosity Spark Model” seamlessly links curiosity to science literacy through various museum activities and services. Coupled with partnerships and the “Sufficiency Economy Philosophy”, this model will become a new lifelong learning process of Thai people.

Presenters: Rawin Raviwongse, President, National Science Museum, Thailand

Tags: PARTNERSHIPS MANAGEMENT

Evaluating Digital Engagement: What Should Transformative Museums Expect From Digitization and Online Approaches?
EXHIBITS, EXPERIENCES, AND TECHNOLOGY

We present a rubric for the assessment of proposals of digital projects in museums created by the Transformative Museum initiative. This rubric is meant to be used at the proposal stage, but it has proven to be helpful in many different ways, such as preparing funding applications.

Presenters: A Erik Stengler, Assistant Professor, Cooperstown Graduate Program

Tags: PROGRAM EVALUATION SUSTAINABILITY

Measuring a Sense of Belonging at Museums and Cultural Institutions
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE

We will present a model for thinking about how guests feel a sense of belonging (or not) at science museums along with an easy-to-use survey instrument and data analysis toolkit free for anyone to use.
Presenters:  Aaron Price, Director of Research and Evaluation, Museum of Science and Industry
Tags:  DIVERSITY AND EQUITY  MEASUREMENT

Responding Obstacles That Impacts on Strategy of Enhancing Museum Management in a Mid-Size Science Museum
OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT

The COVID-19 pandemic has long lasting implications for all organizations. National Science Museum, Thailand strives not only to respond to short-term crises, but also to build flexibility to protect against future disruptions. This presentation outlines how we develop a robust framework for risk management while maintaining our long-term vision.

Presenters:  Suwarong Wongsiri, Vice President, National Science Museum, Thailand
Tags:  MANAGEMENT  ADMINISTRATION

Using Out-of-the-Box Evaluation Methods to Capture Evidence of Broader Program Impacts
STEM LEARNING, EDUCATION, AND PROGRAMS

Everyone is tired of surveys. This talk will share two examples of alternative, participatory approaches to evaluation – Ripple Effect Mapping and an adaptation of Visual Thinking Strategies – and how they helped us more authentically capture evidence of community-level impacts in a multi-disciplinary, four-year community resilience education project.

Presenters:  Jessica Sickler, Principal, J. Sickler Consulting
Tags:  CLIMATE CHANGE
Join us for a special event on the rooftop of the David L. Lawrence Convention Center. Enjoy sweeping views of Pittsburgh and the Allegheny River, have a drink, and connect informally with other conference participants.

This event, for all conference participants, will include several themed “neighborhoods” to help you to find your community on the roof.

Each conference participant will receive one drink ticket. Additional drinks may be purchased using the convention center’s cash-less experience.

*Sponsored in part by Levy.*
THURSDAY, SEPTEMBER 15, 2022

9:00 am

Museum Experience Day at Carnegie Science Center and Children’s Museum of Pittsburgh
Thursday, 9:00 AM - 1:00 PM
BUSES WILL LOOP FROM THE OFFICIAL ASTC ANNUAL CONFERENCE HOTELS TO THE TWO HOSTS

Sci-Yinz in the 412
Explore the most visited museum in Western Pennsylvania before you head home! Enjoy special behind the scenes access to featured Carnegie Science Center experiences such as the Miniature Railroad & Village®, Buhl Planetarium, and the living collection. Try your hand at making in the BNY Mellon Fab Lab or solve a mystery as you try to Escape USS Requin. Experience live science in one of our three demonstration theaters, take in a planetarium show, marvel at a movie on a Certified Giant Screen, and more!

Don’t miss a chance to visit the host organization, Children’s Museum of Pittsburgh, while in Pittsburgh!

Join us in MAKESHOP to do some weaving with unconventional materials, try to stay dry in Waterplay and don’t miss the Garage, featuring an interactive art piece projected on the vaulted dome of the former Buhl Planetarium. Check out Measurement Rules, our latest traveling exhibit, and explore the lessons of Mister Rogers and Daniel Tiger messages in the Kindness Gallery.

In MuseumLab, explore the fashion exhibit, How You Wear It, as well as hands-on activities in Make Lab and Tech Lab including a collaborative metal collage. Then have a one-of-a-kind immersive experience in Gymlacium, a hand-woven laced rope sculpture built around the former Carnegie Library steel bookshelves, and meet the artist who built it, Manca Ahlin.

All programs at the Children’s Museum end by 4:00 pm and are all ages. Show your badge at the café for a free entrée and beverage thanks to Bean Sprouts!

For all ages. Complimentary admission for ASTC Annual Conference participants with badge. ASTC participants who show their badge will receive 20% off in Carnegie Science Center’s Riverview Café during the entirety of the conference.

Sci-Yinz in the 412 (Museum Day) programs will be offered from 9 AM – 1 PM.
Poster Palooza

Join us for Poster Palooza in the Exhibit Hall on Tuesday, September 13, 2022, from 2:00 PM to 3:15 PM.

**POSTER**

**A Rising Tide Lifts All Boats: A Post-pandemic Education Framework Powered by Partnerships**

**STEM LEARNING, EDUCATION, AND PROGRAMS**

Tuesday, 2:00 PM - 3:15 PM

Traversing tomorrow together requires bold ways to connect with each other, other museums, cultural institutions, and public/private partners. As we consider how COVID-19 has impacted informal learning, we must act as community anchors. This poster will showcase a new formula for how you can engage in a community-centric manner.

**Presenters:** Andy Aichele, Senior Director of Education Engagement, Organizational Learning & Development, COSI; Jessimi Jones, Executive Director, Springfield Museum of Art; Johnna McEntee, Executive Director, Ohio History Connection; Kat O'Malley, Education Specialist, Ohio History Connection; Stephen White, Chief Strategy Officer, COSI

**Tags:** Partnerships, Science Education

**POSTER**

**A Systematic Review and Case Study for Multidisciplinary Projects Between the Arts and Sciences**

**EXTERNAL GROUPS AND COLLABORATORS**

Tuesday, 2:00 PM - 3:15 PM

Our collaboration engaged young scholars in multidisciplinary pedagogy on matters of scientific truth, the construction of race, and current manifestations of institutional racism in STEM. Through the lenses of art, art history, the history of science, and science communication, this project explores the nested nature of race and scientific knowledge.

**Presenters:** Janet Mariadoss, Neuroscience Student, Vanderbilt University; Kendra Oliver, Assistant Professor, Vanderbilt University

**Tags:** Project Management, Racial Justice
POSTER
Assessment Interactive Multimedia Exhibition to Learning Food and Drug Safety: A Practical Experiment
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

The program uses interactive multimedia (animation and images) to learn and raise the level of knowledge among children on the main causes of food poisoning, as well as the safety of dealing with medication. This study was conducted through an awareness exhibit in Saudi Arabia.

Presenters: Ali Alwabel, Director of Corporate Communication, Interactive Awareness Center; Meshal Alajmi

Tags: CREATING A BETTER FUTURE  TEEN PROGRAMS

POSTER
Beyond Museum Walls Prototyping: Strategies for Virtual Testing of a Digital Game Online
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

The New York Hall of Science will share insights into how museums can virtually develop and test outreach programs using digital platforms to garner feedback from diverse audiences, specifically focusing on the formative work conducted on the digital game "The Pack."

Presenters: Nicholas Hartmann, Research Assistant, New York Hall of Science

Tags: COVID-19  SCIENCE EDUCATION

POSTER
Beyond the Whiz-Bang: Embedding Evaluation Into Science Shows
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

The poster will illustrate how the storyline of planning what foods the NASA planning team will recommend for inclusion on the next shuttle. It will show the changes and the evaluation based on findings, conclusions, and recommendations for both shows and evaluation of shows will be offered.

Presenters: Bradley Morris, Associate Professor; Jacob Cason, Food Scientist, Cincinnati Museum Center; Joseph Heimlich, Senior Director of Research, COSI; Kristen St Clair, Culinary Education Director, La Soupe Inc.

Tags: LEARNING RESEARCH  SCIENCE SHOWS
POSTER
Broadening Participation in ISE: Inclusion, Diversity, Equity, and Access in Science Centers
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Tuesday, 2:00 PM - 3:15 PM

The results of this survey study help fill the gap in what we know about efforts in informal science education to better understand the current state of IDEA (inclusion, diversity, equity, and access) practices in informal STEM learning environments with the goal of attracting more diverse participants.

Presenters: Lynn Chesnut, Doctoral Student, North Carolina State University
Tags: DIVERSITY AND EQUITY RACIAL JUSTICE

POSTER
Business Development: Saudi FDA Establishing Interactive Science Center With Entrepreneurship Center to Innovate, Develop and Implement Exhibitions
OPERATIONS, MARKETING, AND BUSINESS DEVELOPMENT
Tuesday, 2:00 PM - 3:15 PM

Reviewing our experience at Saudi Food and Drug Authority (FDA) to create an environment for developing interactive applications with the latest technologies. Our aims are to develop young ideas and turn them into promising projects in the interactive center, based on sensory interaction, visual interaction, edutainment, virtual reality, and augmented reality application.

Presenters: Ali Alwabel, Director of Corporate Communication, Interactive Awareness Center; Meshal Alajmi
Tags: BUSINESS DEVELOPMENT COMMUNITY IMPACT

POSTER
Collaborative Inquiry: Best Practices in Creating STEM Learning Partnerships
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

In this poster we will discuss best practices for effective program development between museum and library educators as well as STEM experts from the community. Qualitative and quantitative data will show how experts incorporated partner suggestions and researcher feedback during debriefs and present patterns in suggested changes.

Presenters: Catherine Haden, Professor, Loyola University Chicago; Graciela Solis, Postdoctoral Research Fellow, Loyola University Chicago; Kim Koin, Director of Art and Tinkering Studios, Chicago Children's Museum
Tags: DIVERSITY AND EQUITY SCIENCE EDUCATION
POSTER
Creating a STEM Program for Teens Using Engineering and Technology Artifacts From World War II
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
This poster will explore how educators from The National World War II Museum have used the museum’s STEM Innovation Gallery and the World War II artifacts it contains to create an escape room experience focused on technology and engineering innovations from World War II and how it impacts our lives today.
Presenters: Kelly Goodner, Student Program Specialist (STEM), The National WWII Museum
Tags: COLLECTIONS TEEN PROGRAMS

POSTER
Creating Cross-Curricular Content Using Math in Social Studies
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
It is more important than ever before to find ways to get kids interested in math and science. By linking mathematics to different subject areas like history, we can create cross-curricular experiences to pique interest early on.
Presenters: Taylor Olsen, Teacher Librarian, Harlowton Public Schools
Tags: K-12 SCHOOL COLLABORATION TEACHER PROFESSIONAL DEVELOPMENT

POSTER
Developing a Combination of Immersive Technology for Planetarium Content in Informal Learning Context
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Tuesday, 2:00 PM - 3:15 PM
In this interactive session, I will discuss how informal learning and 3D technology integrated in the design and development process more effective. Participants will learn how to bring benefits to school or museum partnerships to promote education and digital technology.
Presenters: Sathit Lapvutirat, Division Director of Strategy and Risk Management, National Science Museum, Thailand
Tags: ADVANCED TECHNOLOGY
POSTER
Discovering Partnerships: Discovery Lab + Tulsa Public Schools STEM Center
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
The new Tulsa Discovery Lab has embedded the local public-school STEM Center inside the museum as part of its architecture and programming solution. This presentation will discuss the formation of this unique partnership, explore goals of each entity, and plans to make the long-term partnership successful.

Presenters:  Jim Boulware, Principal, KKT Architects, Inc.; Raymond Vandiver, Executive Director, Discovery Lab

Tags:  MAKING THE CASE FOR SCIENCE CENTERS  PARTNERSHIPS

POSTER
Engaging Visitors With Biology Through Bio-Tinkering: Impacts on Learner Engagement, Interests, and Attitudes
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Tuesday, 2:00 PM - 3:15 PM
In this poster, participants will learn about findings from the Biotinkering Lab that support the perspective that there is value in applying making, tinkering, and design challenge learning approaches to biology. In addition, this poster will offer new opportunities for community institutions to engage the general public and broaden access to these fields.

Presenters:  Abbey Thompson, Director, The Tech Interactive; Anja Scholze, Program Director of Biology + Design, The Tech Interactive; Caitlin Nealon, Life Sciences Experience Developer, The Tech Interactive; James Wong, Content Specialist, The Tech Interactive

Tags:  MAKING AND TINKERING  PROGRAM EVALUATION

POSTER
Engineering Together: ISE Professionals Collaborate to Champion Youth and Family Engineering Practices in ASEE Framework
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
Join colleagues who want to collaborate on long-term plans to synthesize and communicate key engineering learning findings from informal science and engineering education, particularly in ways that constructively add value to the American Society of Engineering Education's 2020 framework of guidelines for pre-college engineering.

Presenters:  Christine Cunningham, Vice President of Research, Museum of Science; Dorothy Bennett, Director of Creative Pedagogy, New York Hall of Science; Hoda Ehsan, Director of Engineering and Design, The Hill School; Marcie Benne, Engagement Research and Advancement Director, Oregon Museum of Science and Industry

Tags:  21ST CENTURY SKILLS  DESIGN THINKING
POSTER

Examining Trends in Natural History Science Museums and Aligning With K-12 Teacher & Learner Needs

STEM LEARNING, EDUCATION, AND PROGRAMS

Tuesday, 2:00 PM - 3:15 PM

This poster presents recent trends in natural history science museums and K-12 teaching and learning, and a vision for how culturally responsive-sustaining education can be a strategy to improve student achievement and support teacher needs while aligning museum trends and goals related to science education and redressing colonial histories.

Presenters: Colleen Popson, Educator, National Museum of Natural History; Margaret Benson, Distance Learning Manager, National Museum of Natural History; Nicole Webster, Manager of School and Youth Programs, National Museum of Natural History

Tags: CREATING A BETTER FUTURE  FUTURE PLANNING

POSTER

External Groups and Collaborators for Exhibitions

EXTERNAL GROUPS AND COLLABORATORS

Tuesday, 2:00 PM - 3:15 PM

After the pandemic, circumstances, capabilities, and priorities in the science center field are changing rapidly. With a refined vision of the future, exhibition planners and directors need to collaborate with diverse groups. The exhibitions in the 21st century will enhance the innovative role of science centers making the use of local human and physical infrastructure, reflecting the needs of citizens, taking the initiative in the community, fostering cooperation-based professional human resources, and communicating effectively with government agencies.

Presenters: Jihye Lim, Assistant Director, National Science Museum of Korea

Tags: ADULT ENGAGEMENT  CLIMATE CHANGE

POSTER

Floor Facilitators and Their Role in Learning Conversations Among Visitors

STEM LEARNING, EDUCATION, AND PROGRAMS

Tuesday, 2:00 PM - 3:15 PM

In this poster, participants will learn about a new training created to address issues of equity and access. Participants will learn about specific techniques used to train facilitators and have access to study findings on the impact of the experience on both the facilitator and the visitor.

Presenters: Karen Knutson, Associate Director, UPCLOSE, Children's Museum of Pittsburgh; Kevin Crowley, Professor of Learning Sciences and Policy, Director UPCLOSE, Children's Museum of Pittsburgh; Nick Martinez, Assistant Director of Youth Initiatives, American Museum of Natural History; Preeti Gupta, Senior Director of Children and Youth Programs, American Museum of Natural History

Tags: DIVERSITY AND EQUITY  HUMAN RESOURCES/STAFFING
POSTER
Green Strategies for Traveling Exhibitions
EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Tuesday, 2:00 PM - 3:15 PM

Presenters: Elizabeth Frerichs, Operations Manager, The Shipping Monster and The Storage Monster; Robert Aspinall, Founder/CEO, The Shipping Monster and The Storage Monster

Tags: CLIMATE CHANGE TEMPORARY AND TRAVELING EXHIBITS

POSTER
How to Design Successful Hands-On STEAM Activities for At-Home Learners
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

Recently, museums have been driven to refine materials for at-home learners. Howtosome.org gathered a consortium of NISE Network museums to document and share this knowledge through a new At-Home Activities Framework and curated collection. We will discuss the framework, provide exemplars, and ask attendees to reflect on their at-home programming.

Presenters: Alberto Lopez, Youth Outreach Coordinator, Florida Museum of Natural History; Brad Peroney, Carnegie Science Center; Darrell Porcello, Director of National STEM Networks, Children's Creativity Museum and NISE Network; Marci Howdyshell, Senior Director of Scientific Content and Research, COSI; Victoria Mitchell, Director of Exhibits and Programs, Exploration Place, The Sedgwick County Science and Discovery Center

Tags: PUBLIC PROGRAMS SCIENCE EDUCATION

POSTER
Levels of Engagement for Autistic Individuals at Zoos and Aquariums: From Sensory Tolerance to Inclusion
DEAI, HUMAN RESOURCES, AND ORGANIZATIONAL CULTURE
Tuesday, 2:00 PM - 3:15 PM

Across the Informal STEM Learning (ISL) field, there are different practices and approaches to access and inclusion for autistic individuals with varied definitions and applications. This poster will share a framework that outlines and defines levels of engagement in ISL ranging from sensory tolerance to full inclusion for autistic individuals.

Presenters: Amy Rutherford, Director, Professional Development & Education; Blaire Donnelly-Mason, Program Manager, Vanderbilt University Medical Center; Kelly Riedinger, Senior Researcher, Oregon State University Center for Research on Lifelong STEM Learning; Lauren Weaver, Director of Community Engagement, Vanderbilt University Medical Center; Victoria Bonebrake, Freelance Research and Evaluation Assistant, Oregon State University Center for Research on Lifelong STEM Learning

Tags: AUDIENCES WITH SPECIAL NEEDS DIVERSITY AND EQUITY
POSTER

Making Do: Community Makerspace Partnerships to Support STEM Programs

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

This poster highlights key elements of the steps the NASA Wallops Flight Facility Visitor Center team took to evaluate program offerings, reduce the use of single-use activity materials, and establish a partnership with the local makerspace. Audiences will be able to access the program evaluation rubric, best practices for establishing community makerspace partnerships, and digital files of products that can be used in their own institution.

Presenters: Amy Barra, Visitor Center Director, NASA - Goddard Space Flight Center
Tags: IMPACT MEASUREMENT  MAKING AND TINKERING

POSTER

Making With a Mission: An Interdepartmental Collaboration Between a Museum Box Office and Fab Lab

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

In this poster, learn about how Carnegie Science Center Admissions Team and BNY Mellon Fab Lab Carnegie Science Center created a unique partnership by integrating makerspace technology into our Box Office. Explore how the partnership has benefited the overall visitor experience, expanded to other areas of museum operations, and furthered the mission of the institution.

Presenters: Brad Peroney, Carnegie Science Center; Emily Tremain, Admissions Manager, Carnegie Science Center; James Kappas, Senior Representative, Admissions, Carnegie Science Center; Stephen Luciano, Fab Lab Technical and Education Manager, Carnegie Science Center
Tags: MAKING AND TINKERING  VISITOR EXPERIENCE

POSTER

Mission to Mars: The National Air and Space Museum’s in Person & Virtual STEM Camp

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

Join the Smithsonian National Air and Space Museum on a Mission to Mars! See how the museum facilitated a hands-on STEM camp for students K-6 in both virtual and in-person settings. This poster presentation will demonstrate how the museum pivoted its practices to accommodate different school settings.

Presenters: Julia Orr, Education Program Specialist, National Air and Space Museum; Laura Blanton, Holt Scholars Coordinator, National Air and Space Museum; Nichole Thomas, Aerospace Educator, National Air and Space Museum
Tags: COVID-19  K-12 SCHOOL COLLABORATION
POSTER

Museum Labs 2.0: Measuring the Impact of Public Participation in Scientific Research

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

Does Public Participation in Scientific Research (PPSR) really enhance engagement in science learning? Come find out! A museum social science exhibition sent (or didn't) visitors' gameplay data to social scientists. We'll show the results of a quasi-experimental study comparing people who contributed their data to science to those who didn't.

Presenters: Joshua Gutwill, Director of Visitor Research, Exploratorium; Tom Rockwell, Creative Director of Global Collaborations, Exploratorium

Tags: EXHIBIT DESIGN  LEARNING RESEARCH

POSTER

Museum Networks Across the State

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

This poster will share the work of two networks: the Wisconsin Children's Museum Collaborative and the Arkansas Discovery Network. These networks connect museum educators within the state to share expertise, resources, and encouragement to strengthen everyone's practice.

Presenters: Bill Pariso, Manager of Maker Programming, Betty Brinn Children's Museum; Britney Kugler, Discovery Network Director, Museum of Discovery; Peter Wardrip, Assistant Professor of STEAM Education; Pody Gay, Chief Education Officer, Museum of Discovery; Tarah Connolly, Graduate Student, University of Wisconsin-Madison Science Constellation

Tags: PARTNERSHIPS

POSTER

NASA Resources for You!

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

NASA drives advances in science, technology, aeronautics, and space exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of Earth. Learn how science museums and centers can work collaboratively with NASA STEM Engagement and other organizations to engage your visitors and community.

Presenters: Amelia Chapman, STEM Informal Education Specialist, Jet Propulsion Laboratory; Beverly Girten; Leslie Lowes, Informal Education Specialist, Jet Propulsion Laboratory

Tags: SCIENCE EDUCATION  VIRTUAL ENGAGEMENT
POSTER
NASA's Neurodiversity Network (N3): Co-designing NASA Resources With Neurodiverse Youth in Formal and Informal Spaces
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
NASA's Neurodiversity Network (N3) provides a pathway to NASA participation and STEM employment for neurodiverse learners, with a focus on those on the autism spectrum. This poster will show the participatory co-design process and share access to finalized NASA activities for use in schools and museum settings.

Presenters: Ariana Riccio, Researcher, Education Development Center; Georgette Williams, Program Manager, Education Services, New York Hall of Science; Laura Peticolas, Principal Investigator, Heliophysics Forum; Lynn Cominsky, Director of EdEon STEM Learning, and Professor in the Department of Physics & Astronomy, EdEon; Wendy Martin, Research Scientist, Education Development Center

Tags: ACCESSIBILITY SCIENCE EDUCATION

POSTER
Noticing and Supporting Families’ Agency As STEM Learners in Science Center Environments
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
This poster presentation will provide opportunities for science center professionals to 1) learn about facets of agency that are relevant and visible in science center experiences; 2) discuss the intersection of agency and inclusion in their own work in informal STEM environments; and 3) suggest future directions for this work as the project evolves.

Presenters: Dana Schloss, Associate Vice President of Exhibits, New York Hall of Science; Suzy Letourneau, Senior Research Associate, New York Hall of Science

Tags: DIVERSITY AND EQUITY LEARNING RESEARCH

POSTER
Project PLANET: Working Together to Bridge Student Learning Between Formal and Informal Learning Environments
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM
Explore the integration of literacy strategies, hands-on inquiry-based investigations, and planetarium experiences in an instructional sequence to support student learning of astronomy. This poster will present results from a two-year study of the implementation of two instructional sequences co-developed by teachers and planetarium educators, focusing on how they bridged learning from formal to informal learning environments.
Presenters: Alison Allen, Senior Research Associate/Research Manager, Rockman et al Cooperative Inc; Brian Kruse, Lead Formal Educator, Astronomical Society of the Pacific; Karen Schwarz, West Chester University; Kristin Bass, Director of Research Development, Rockman et al Cooperative Inc; Nicole Jarvis, Research Assistant, Rockman et al Cooperative Inc

Tags: EARLY CHILDHOOD PARTNERSHIPS

POSTER
Race to Zero: Insights Gains Along the Science Museum of Minnesota’s Path Toward Carbon Neutrality
LEADERSHIP
Tuesday, 2:00 PM - 3:15 PM

The Science Museum of Minnesota is committed to 100% carbon neutrality by 2030. This poster will highlight progress toward this goal, how it supports the museum’s climate change statement and its directive that the institution conduct an annual review of its climate initiatives and make this information publicly available.

Presenters: Patrick Hamilton, Director, Climate Change, Energy & the Environment, Science Museum of Minnesota

Tags: 21ST CENTURY SKILLS ADMINISTRATION

POSTER
Rebounding Through Making and Tinkering: Activities to Support the Emotional Needs of Children
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

Making and tinkering activities that can be used to help children understand and cope with strong and traumatic weather events will be presented. The activities can be used in professional development settings for teachers to use in the classroom and on the museum floor.

Presenters: Alexandra Pearson, Maker Manager, Knock Knock Children's Museum

Tags: EARLY CHILDHOOD MAKING AND TINKERING

POSTER
Rubrics for Researching Depth of Implementation: Creating Tools Practitioners Can Use for Teen Science Cafés
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

Teen Science Cafés are programs that result in informal STEM education events that bring together scientists with teens; designed for a teen audience and led by teens. This poster will share researchers’ process and outcomes in the creation of this tool as well as have full copies available for attendees as a take-home resource.
STEP Outside: Engaging Students and Teachers in Outdoor Learning

Presenters: Jessica Sickler, Principal, J. Sickler Consulting; Michelle Hall, President and CEO, Institute for Science Education New Mexico

Tags: 21st Century Skills

STEP Outside was created to address teacher-identified barriers to outdoor learning and we co-created professional development and facilitated programs with teachers to develop a unique experience for schools. Our co-creation evaluation tool measures the pre- and post-program level of comfort the teachers have with outdoor learning, their learning objectives, and the outdoor space the school provides.

Presenters: Stepheny Hine, Social Justice Educator, Museum of Life and Science; Tomara Gee, Program Manager of Group and School Programs, Museum of Life and Science

Tags: K-12 School Collaboration, Teacher Professional Development

Striking a Playful Balance: Understanding How Exhibits Can Afford Playful STEM Engagement for Young Learners

Presenters: Jen Rehkamp, Director of Research, Association of Children’s Museums; Kelly Hoke, Researcher, Oregon State University Center for Research on Lifelong STEM Learning; Kelly Riedinger, Senior Researcher, Oregon State University Center for Research on Lifelong STEM Learning; Martin Storksdieck, Director, STEM Research Center, Oregon State University Center for Research on Lifelong STEM Learning

Tags: Early Childhood, Science Education

The Impact of Informal Museum Programs on STEM Career Awareness, Interest, and Engagement: A Meta-Synthesis

The goal of this study was to perform a meta-synthesis of research on youth participants of informal STEM programs. In a review of over 500 informal science education studies, we found that...
long-term participation in informal STEM programs were effective strategies for attracting and retaining students in STEM trajectories. Our findings suggest that informal STEM programs play an important role in fostering equity and persistence in STEM trajectories.

Presenters: **Bobby Habig**, American Museum of Natural History
Tags: **TEEN PROGRAMS**  **YOUTH DEVELOPMENT**

**POSTER**

**The Long Game: Using Games to Transform Science Center Experiences**

STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

The Moon Adventure Game is an open-source collaborative game created to incorporate games into program offerings. This poster provides an opportunity to look at design thinking for museum experiences in the form of escape rooms and other role playing games that are more portable and versatile than traditional escape rooms.

Presenters: **Catherine McCarthy**, Project Manager Senior - NISE Network, Arizona State University - Center for Innovation in Informal STEM Learning; **Jeannie Colton**, Project Coordinator, NISE Network; **Max Cawley**, Associate Program Manager - Learning Philosophy & Evaluation, Museum of Life and Science
Tags: **DESIGN THINKING**  **PROTOTYPING AND PILOTING**

**POSTER**

**The Perceptions and Practices of Informal Science Educators Regarding Culturally Relevant Education in Science Centers**

EXHIBITS, EXPERIENCES, AND TECHNOLOGY
Tuesday, 2:00 PM - 3:15 PM

This poster explores research about culturally relevant education (CRE) in science centers and informal contexts to offer the field recommended practices and ideas on how best to support people working in these positions. The poster describes the research design, data collection, project results, and recommendations for the field.

Presenters: **Mwenda Kudumu**, Doctoral Student, North Carolina State University
Tags: **DIVERSITY AND EQUITY**  **SCIENCE EDUCATION**

**POSTER**

**The Story of Kapa: Indigenous Cultural Practice Translated to Hands-On STEM Learning Experiences**

Tuesday, 2:00 PM - 3:15 PM

An interactive exhibit that focuses on “indigenous knowledge” and directly displays the concepts of native Hawaiian science in the process of making kapa (Hawaiian bark cloth), to demonstrate
that a Hawaiian Culture-Based framework can be utilized to design STEM exhibits that increase learner engagement and depth of knowledge of STEM concepts.

POSTER

**To Be Entertained and Informed: The What, How and Why of Science Documentary Viewership**

**EXHIBITS, EXPERIENCES, AND TECHNOLOGY**

Tuesday, 2:00 PM - 3:15 PM

What makes documentaries effective forms of science communication? Based on a survey of science documentary film viewers, find out what viewers expect and enjoy in film content and hosting, how they watch, and why they keep coming back to science documentary films!

Presenters: **Nicole Jarvis**, Research Assistant, Rockman et al Cooperative Inc

Tags: Adult Engagement, Science Shows

POSTER

**University Partnerships for Stability and Continuity in Times of Change**

**EXTERNAL GROUPS AND COLLABORATORS**

Tuesday, 2:00 PM - 3:15 PM

As our museum has coped with leadership change, employee turnover, COVID, and other changes, our institutional liaison with the nearby research university has been critical to maintaining collaborations and contributing to institutional knowledge. This poster discusses the benefits and challenges of having a liaison in place during a time of change.

Presenters: **Mary Roberts-Baako**, Executive Director, Science Museum of Western Virginia; **Phyllis Newbill**, University Liaison, Science Museum of Western Virginia

Tags: Partnerships, Small Museums

POSTER

**Visitor Data in the COVID Era: Looking Back to Move Forward**

**LEADERSHIP**

Tuesday, 2:00 PM - 3:15 PM

This poster will provide information made possible through the Collaboration for Ongoing Visitor Experience Studies (COVES) project and community. It features two elements 1) data we learned about visitors and the visitor experience over the course of the pandemic, and 2) diverse perspectives about how this learning has changed different museums' goals and plans moving forward.

Presenters: **Alexander Lussenhop**, Research Associate, Museum of Science and The Collaboration for Ongoing Visitor Experience Studies (COVES)

Tags: Rebuilding and Reimagining, Visitor Experience
POSTER

We Bee-long: Making Connections in Our Community
STEM LEARNING, EDUCATION, AND PROGRAMS
Tuesday, 2:00 PM - 3:15 PM

We Bee-Long is an outdoor exhibit space at Muse Knoxville, in Knoxville Tennessee. Through this inclusive space, we will engage visitors in learning about honeybee basics while helping to eliminate the culture of fear surrounding honeybees. This exhibit space had been designed through the lenses of belonging and sustainability.

Presenters: Karla Pitcher, Programs Manager, Muse Knoxville; Lee Robinson, Director of Education and Exhibits, Muse Knoxville

Tags: SCIENCE EDUCATION SUSTAINABILITY
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Founded in 1973, ASTC champions and supports more than 500 science centers, technology museums, natural history museums, children's museums, and other STEM-rich, place-based institutions, such as nature centers, aquariums, planetariums, zoos, and botanical gardens throughout North America and in nearly 50 countries—as well as nearly 200 other organizations that share an interest in science learning and engagement. In an average year, ASTC-member science centers and museums engage more than 110 million people around the world annually.

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