



Annual Conference

ASTC 2019

MOONSHOTS

2019 Schedule at a Glance

Thursday, September 19

9:00 a.m.–7:00 p.m.	ASTC Diversity and Leadership Development Fellows Opening Session*
----------------------------	--

Friday, September 20

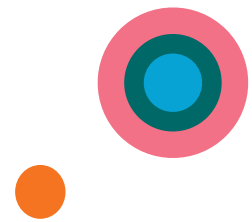
7:00 a.m.–5:00 p.m.	Registration Open
8:00 a.m.–2:00 p.m.	ASTC Diversity and Leadership Development Fellows Workshop*
9:00 a.m.–5:30 p.m.	Preconference ASTC Intensives^^
10:00 a.m.–2:00 p.m.	ASTC Board of Directors Meeting*
3:00–5:30 p.m.	CEO Forum^^
5:30–6:30 p.m.	First-timers Welcome Reception^^
6:45–7:45 p.m.	Welcome to Toronto Meet-ups
7:00–9:00 p.m.	Leadership Reception*

Saturday, September 21

7:00 a.m.–5:00 p.m.	Registration Open
7:30–8:30 a.m.	Meet and Greet Breakfast
8:30–10:30 a.m.	Opening Plenary Session
10:30 a.m.–6:00 p.m.	Exhibit Hall Open
11:45 a.m.–1:00 p.m.	Concurrent Sessions
1:00–2:00 p.m.	Networking Lunch in the Exhibit Hall
2:15–3:30 p.m.	Concurrent Sessions
3:30–4:30 p.m.	Exhibit Hall Refreshment Break
4:45–6:00 p.m.	Concurrent Sessions
7:00–11:30 p.m.	Saturday Night Party at the Ontario Science Centre^^

*For invited guests only

^^Denotes a paid and/or registration-required event



Sunday, September 22

7:00 a.m.–5:00 p.m.	Registration Open
9:30–11:30 a.m.	Networking Breakfast and Poster Palooza in the Exhibit Hall
9:30 a.m.–6:00 p.m.	Exhibit Hall Open
11:30 a.m.–1:00 p.m.	Alan J. Friedman Science Center Dialogues Luncheon
1:00–1:30 p.m.	Networking Break in the Exhibit Hall
1:45–3:00 p.m.	Concurrent Sessions
3:15–4:30 p.m.	Concurrent Sessions
4:30–6:00 p.m.	Networking Reception in the Exhibit Hall
5:30–7:00 p.m.	ASTC Governing Members Appreciation Reception

Monday, September 23

7:00 a.m.–5:00 p.m.	Registration Open
8:00–9:00 a.m.	Development Breakfast^^
9:15–10:30 a.m.	Concurrent Sessions
10:45 a.m.–12:15 p.m.	General Plenary Session and ASTC 2020 Preview
12:15–2:00 p.m.	Lunch on Your Own
12:45–2:00 p.m.	CEO/Trustee Luncheon^^
2:30–3:45 p.m.	Concurrent Sessions
4:15–5:30 p.m.	Concurrent Sessions

Tuesday, September 24

AT THE ONTARIO SCIENCE CENTRE, 770 DON MILLS ROAD

9:30 a.m.–4:00 p.m.	Science in the 6ix (Open House Day)
9:30–10:30 a.m.	Live Demo Hour at Ontario Science Centre
10:30 a.m.–1:15 p.m.	Big Screen Day

2019 ASTC Annual Conference

Code of Conduct

The Association of Science and Technology Centers (ASTC) Annual Conference, and other professional meetings and conferences organized by ASTC, are dedicated to providing a harassment-free experience for everyone in attendance. We do not tolerate harassment of conference participants 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 – institutions that support lifelong science learning, connect science and society, engage diverse communities, and partner to tackle global and local challenges. ASTC holds fundamental values to seek out and engage in diversity of ideas, perspectives, backgrounds, disciplines, knowledge systems, and approaches. Our world is rich in diversity, and ASTC embraces those differences, including in ability, age, color, ethnicity, race, family or marital status, sex, gender identity and expression, sexual orientation, pregnancy and related medical conditions, language, national origin, political affiliation, religion, socioeconomic status, veteran status, health status, and other dimensions of diversity.

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

- Conduct myself with integrity, respect, honesty, and credibility.
- Approach all events in accordance with the highest ethical standards of professionalism and personal conduct.
- Avoid all activities that will cause damage to or discredit to my organization, ASTC, or myself.
- Embrace our 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 attendees. Contact, language, or imagery of a violent, threatening, sexual, discriminatory, demeaning, or disruptive nature is not appropriate for any conference 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 who can be found throughout the conference facility, including at the front desk.

Attendees 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 making the environment unsafe for participants, including asking any individuals to leave the event at their own expense and without a refund of any fees paid.



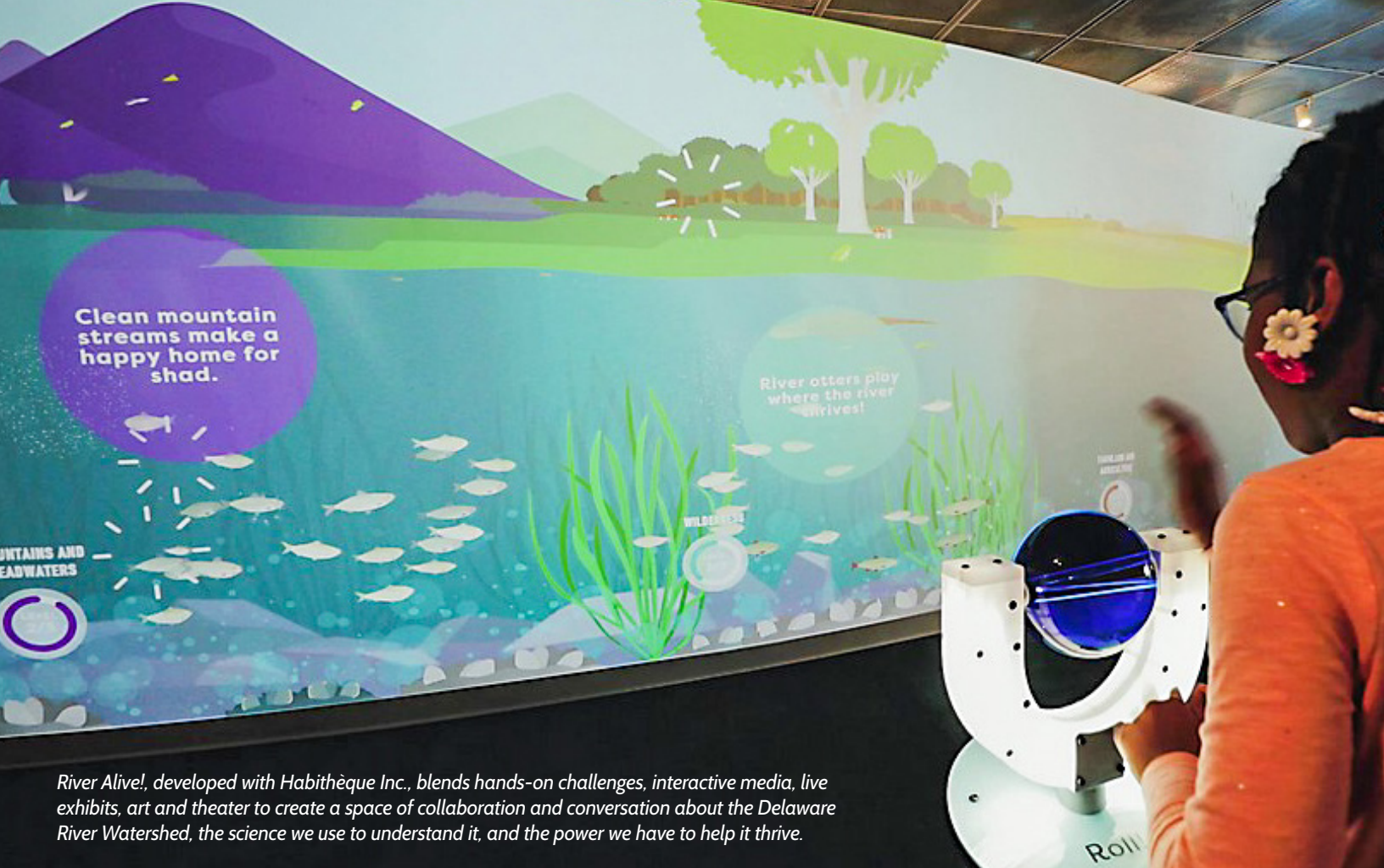
What's NEW

As we embrace the moonshots of today and tomorrow, champion public engagement with science, and set course together for new frontiers, the 2019 ASTC Annual Conference presents a stellar moment in time to connect with colleagues, forge new relationships, share ideas, and spark the big dreams that will propel us forward.

This year's conference features some not-to-be-missed new experiences and idea generators

- Talk with ASTC staff about ASTC's **new strategic direction** and what it means for you in the Exhibit Hall's ASTC Community Space, an inviting arena for networking, sharing, and connecting.
- Don't miss the **temporary exhibitions in the Exhibit Hall**, about rainforest animals and human endurance – or the **ASTC Launch Pad**, a space for pop-up programming like podcasts, book signings with authors, a chance to meet the 2019 ASTC Diversity and Leadership Development Fellows, and more.
- On Sunday in the Exhibit Hall you'll also find a **new showcase of climate-change exhibits and programs** along with the Networking Breakfast and Poster Palooza
- As you plan your agenda for sessions and poster presentations, be sure to use the **new content tags and audience codes** to help target exactly which opportunities are most relevant to your work and organization
- Enhance your ability to make the case for science centers and museums, engage communities in science, or support lifelong science learning in the all-new suite of basic and high-level **advocacy sessions**, as well as opportunities to **talk with program officers** from many U.S. Federal science-mission agencies
- LabEscape, a science-based escape room, will operate throughout Friday, Saturday, Sunday, and Monday – be sure to sign up online in advance (labescape.org/astc) for your personal escape time, and discover all the adaptable, open-source activities you can use in your own community.
- Tuesday events at our host institution, the Ontario Science Centre, will also feature some new twists during ASTC 2019, with the **Live Demo Hour staged in its natural science center environment** during the morning, and a **closing keynote presentation**, with Director X, offered during the afternoon.

Thank you for choosing to participate in the 2019 ASTC Annual Conference. The ASTC Board, Conference Program Planning Committee, and staff hope you enjoy all these new additions – and everything else about our time in Toronto!

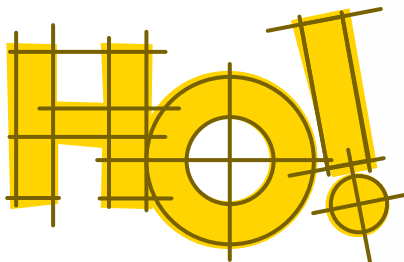


River Alive!, developed with Habithèque Inc., blends hands-on challenges, interactive media, live exhibits, art and theater to create a space of collaboration and conversation about the Delaware River Watershed, the science we use to understand it, and the power we have to help it thrive.



Meet our recent collaborators!

- Amazeum
- Children's Museum & Theatre of Maine
- Discovery Place Nature
- Independence Seaport Museum
- Kentucky Science Center
- Museum of Discovery, Little Rock
- Science North
- The Scientific Center of Kuwait
- Utica Children's Museum



Hands On! Studio
Curious Creative Collaborative

www.hostudio.net • (727) 824-8988

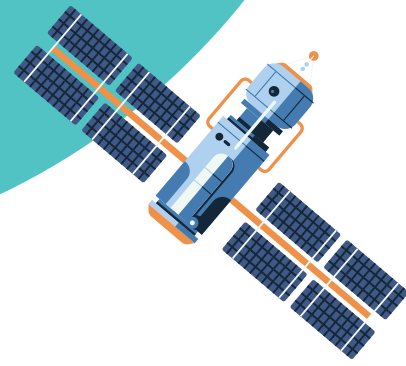
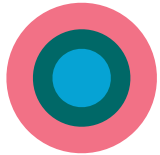


Table of Contents

Schedule at a Glance	2
Code of Conduct	4
What's New for ASTC 2019.....	5
Welcome from ASTC Chair.....	8
Welcome from ASTC President and CEO.....	9
Welcome from Conference Host	11
About Our Host.....	12
Welcome from the Prime Minister of Canada	15
Welcome from the Premier of Ontario	16
Welcome from the Mayor of Toronto.....	17
2019 ASTC Annual Conference Sponsors.....	19
General Conference Information	22
ASTC Community Meet Ups.....	25
Plenary Sessions.....	26
Featured Speakers.....	28
Conference Tracks.....	33
Content Tags.....	34
Audiences	35
Exhibit Hall Schedule and LabEscape Escape Room.....	36
Preconference Workshops and Events	37
Concurrent Sessions and Events.....	51
Product Showcases.....	127
ASTC Members in Canada	129
Sponsors and Exhibitors.....	131
Sponsors and Exhibitors by Category.....	141
Sessions and Posters by Content Tag Index	147
ASTC Board of Directors, Conference Program	
Planning Committee, and Staff.....	158
Maps of Toronto, Metro Toronto	
Convention Centre, and Hotel	161
Advertiser Index.....	169

Dear Colleagues:

On behalf of our Board and the amazing ASTC team, welcome to Ontario and to the 2019 ASTC Annual Conference!

Over the past 45 years, this yearly event has been a major source of learning, connection, and inspiration for the science and technology center and museum community. Our extended and ever-growing family has always had a spirit of collaboration at its heart, and I hope you are looking forward to expanding your professional networks and forging new partnerships over the coming days.

This past year has been busy as ASTC has developed a new strategic direction for the organization, and I want to thank President and CEO Cristin Dorgelo for the work that she and her team have done, as well as the members of our Board of Directors for their dedication and commitment to setting this new course for our future. Our path forward was born out of deep engagement with the diverse breadth of our members—listening, learning, and understanding how our association can better champion and support our member organizations, our teams, and our work. I encourage you to visit the ASTC Community Space in the middle of the Exhibit Hall to learn more about ASTC's new strategy, and I hope you will consider getting involved in our shared future direction—our association is truly only as strong as our collective commitment to each other!

Together, over the next few days we will take advantage of the many sessions, events, exhibits, and experiences that this year's conference offers. I know you will join me in thanking and congratulating Maurice Bitran and the team at the Ontario Science Centre, the ASTC Conference Program Planning Committee, and the ASTC team for what will be an amazing conference.

For many, this is the most important professional-development commitment you or your organization will make this year. It's important for our conference to meet and exceed your expectations. Please let us know what we can do to make it the best experience possible.

To our funders and sponsors, thank you for investing in this conference. For our partners who make the Exhibit Hall a rich arena of ideas and solutions, thank you for being here and for supporting our field. Your participation is an important piece of making this a successful event!

The role that each of you play in science engagement, science education, and helping to solve your community's pressing challenges has never been more important. I hope your participation in this conference gives you new ideas and new networks and motivates you to be even better at what you do—with the ultimate goal of benefitting your institutions, audiences, stakeholders, and ultimately our society.

Thank you again for supporting ASTC, and have a spectacular conference. Our Board and staff hope to speak to as many of you as we can.

Guy Labine

Chair, Board of Directors

Association of Science and Technology Centers



Dear ASTC Friends and Colleagues:

Welcome to Toronto for the 2019 ASTC Annual Conference! I'm excited that you've joined us and for the opportunity that the coming days offer us to be sparked by diverse ideas, build our professional networks, and forge new collaborations across our organizations.

Our theme this year is "Moonshots," the ambitious yet achievable goals that you are setting for the future of your work and your institution to address local and global priorities and challenges. As you participate in sessions, meetings, and experiences over the coming days, we hope you are asking yourself how you can make progress in the pursuit your personal or institutional moonshot—whatever that moonshot may be. What skills might you and your team develop? What capacity might your institution and partners build? How might you collaborate to advance that moonshot with others' commitment to science engagement?

As we come together at this year's gathering of the ASTC community, we at ASTC are particularly excited to share our own ambitious yet achievable goals in the context of the launch of ASTC's new strategic direction. More than ever, we are committed to championing and supporting the full breadth of science and technology centers and museums. On pages 20–21 of this program, you can learn more about our plan to work collaboratively with our members and partners to advance our shared vision to increase understanding of—and engagement with—science and technology among all people. We invite you to stop by ASTC's Community Space in the Exhibit Hall to learn more about ASTC's strategy. I look forward to talking with you more throughout the conference about your ideas and feedback!

I want to offer sincere appreciation for the dedication and vision of our ASTC Officers and Board of Directors, who have provided key guidance and momentum to advance ASTC's new strategy and who consistently demonstrate a commitment to ensuring our community can thrive now and in the future. Particular thanks to our outgoing ASTC Board Chair Guy Labine, CEO of Science North in Sudbury, Ontario, for his visionary leadership and unfailing support for ASTC in his role as Chair, during this invigorating time. We look forward to working in the year ahead with incoming Board Chair Larry Dubinski, President and CEO of The Franklin Institute in Philadelphia—and with the entire Board and the members of all the ASTC Committees—on taking action that will bring our new strategy to life.

On behalf of the ASTC team, I offer my sincere gratitude to our 2019 conference host institution, the Ontario Science Centre. Its entire team has worked incredibly hard to ensure the success of this year's conference. I particularly want to thank Maurice Bitran, Ontario Science Centre's CEO and Chief Science Officer, and Karen Hager, the center's Director of Science Engagement, who serves as Co-chair of ASTC's Conference Program Planning Committee (CPPC). Thanks also to CPPC co-chair Kirsten Ellenbogen, President and CEO of the Great Lakes Science Center in Cleveland, Ohio, and to the entire committee, for all of the incredible work they do shape the conference program and ensure a successful event.

Enjoy these days together, and as you return home, please continue to reach out to me and our leadership team at ideas@astc.org.

Sincerely,

Cristin Dorgelo
President and CEO



Dimensions like you've never seen it before.



Announcing a new way to experience your award-winning *Dimensions* magazine.

The new digital edition offers a seamless, reader-friendly, responsive experience that adapts to any mobile device or computer screen. It also features engaging content you won't find on the printed page—including embedded videos, photo slideshows, podcasts, and more from science centers and related organizations around the world.

Free *Dimensions* subscriptions are available to all paid staff at ASTC-member organizations.

To subscribe, visit astc.org/publications/dimensions and spread the word!

ASTC Association of Science
and Technology Centers



ONTARIO
SCIENCE
CENTRE

CENTRE DES
SCIENCES
DE L'ONTARIO

C.E.O/Directeur général



Dear Colleagues:

It gives me great pleasure to welcome you to Toronto and to the Ontario Science Centre for the 2019 ASTC conference. This is a very special year; we celebrate 50 years since the moon landing, humanity's greatest adventure of discovery, and 50 years since the opening of the Ontario Science Centre, whose mission is: *To inspire passion for the human adventure of discovery.*

There is nothing better than sharing important milestones with friends and family, so we are delighted that you and the international science centre community are in Toronto to celebrate with us. We are looking forward to hosting you at our Centre for Saturday night's party and on Tuesday for our Open House 'Science in the 6ix' day. We have prepared special sessions and programming for this day, and are showcasing our brand new travelling exhibition *MindWorks* - don't miss it.

The ASTC 2019 conference and its theme *Moonshots* will give us the pulse of our exciting and evolving field and tools to help us navigate the next 50 years. Enjoy it, and enjoy our wonderfully multicultural Toronto!

Sincerely,

Maurice Bitran, Ph.D.
CEO & Chief Science Officer



About Our Host

Ontario Science Centre

An iconic cultural attraction, the Ontario Science Centre is a global leader in lifelong learning, welcoming more than 53 million visitors since opening its doors in 1969. As a convener of public dialogue on technology, science, and society, we provide collaborative experiences, support 21st-century learning, and spark youth innovation. The science centre conceives, designs, and builds world-class exhibitions. We are dedicated to community outreach and serve as a vital link in Ontario's innovation and education ecosystems.

Our vision: A more curious, creative, and resilient world.

Our mission: To inspire passion for the human adventure of discovery.

Our purpose: We believe science, technology, and innovation will help us shape a better future for society and our planet. We provide opportunities to explore, learn, and collaborate. We make a positive and enduring impact on the lives of individuals and communities.

Our ambition: Global leader in lifelong learning. Vital link in Ontario's innovation and education ecosystems. Convener of public dialogue on technology, science, and society.

As one of the world's first interactive science museums, the Science Centre contains an array of inspiring installations and exhibit halls. Celebration Way explores how several fields of science, from human biology to space exploration, have changed since 1969. The Hot Zone is a science hub for news and live stage presentations. The Weston Family Innovation Centre inspires visitors to take experimentation to a whole new level.



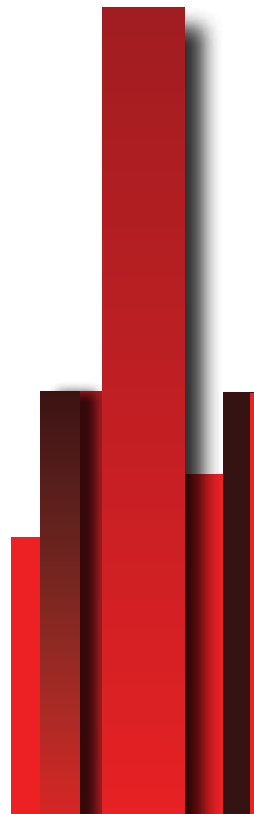


KidSpark, our extremely popular hall designed for children under eight, is a learn-through-play space that provides science fun for our youngest visitors. In the Space Hall, find the wonders of our galaxy, the quests of astronauts, and a state-of-the-art planetarium. A Question of Truth explores how beliefs and biases can influence scientific research. The Living Earth delivers an amazing natural science experience via a simulated tornado and a full rainforest environment. The Science Arcade is a favorite place to test levers, pulleys, and magnets; experience a shadow tunnel; or crank up the power.

The AstraZeneca Human Edge explores the potential and limits of the human body. The Cohon Family Nature Escape offers a unique outdoor experience in the heart of the Don River Valley ravine. And Forest Lane is filled with nature, art, and the science of forestry and trees.

Our live daily demonstrations bring science to life through fun, hands-on learning. Visitors can power up at The Energy Show, take in a papermaking demo, or plug-in to current science at the Science HotSpot. A rich variety of programming is also presented throughout the year. Plus we have Ontario's only IMAX Dome theatre – which is a reason in itself to visit.

This year, on our 50th birthday, we celebrate the many ways the Ontario Science Centre has enriched the lives of the science centre field, students, and visitors. We are very proud to have this opportunity to host the 2019 ASTC Annual Conference and its attendees in this milestone year.



Alan J. Friedman Science Center Dialogues Luncheon

Sponsored by THE  KAVLI FOUNDATION

JOIN US SUNDAY, SEPT 22 at 11:30AM
METRO TORONTO CONVENTION CENTRE HALLS F & G

The 2019 Friedman Dialogues will focus on the role of public engagement in science in addressing global and local challenges, including mitigating the worst impacts of climate change. Tackling today's challenges—and ensuring access and opportunity for all—calls for effective local approaches to public engagement in science and technology.

OPEN TO ALL REGISTERED ATTENDEES.

FEATURING

DR. ELLEN STOFAN

John and Adrienne Mars Director, National Air and Space Museum, and former NASA Chief Scientist

DR. JOHN HOLDREN

Teresa and John Heinz Professor of Environmental Policy at the Harvard Kennedy School of Government, former science advisor to President Obama, and former director of the White House Office of Science and Technology Policy

DR. KATHARINE HAYHOE

Professor in the Public Administration program at Texas Tech University and Director of the Climate Science Center at Texas Tech

The Kavli Foundation is dedicated to advancing science for the benefit of humanity, promoting public understanding of scientific research, and supporting scientists and their work.

 kavlifoundation.org

   @kavlifoundation



PRIME MINISTER • PREMIER MINISTRE

September 2019

Dear Friends:

I am pleased to extend my warmest greetings to everyone celebrating the 50th anniversary of the Ontario Science Centre.

Since 1969, the Ontario Science Centre has offered visitors of all ages engaging and enriching opportunities to learn more about science and technology. This milestone provides a wonderful opportunity to reflect upon the interactive museum's proud history, to celebrate its many accomplishments, and to set goals for the future.

I would like to thank everyone involved with the Ontario Science Centre for their commitment to inspiring a life-long journey of learning. I am certain that this unique cultural attraction will continue to inspire visitors for years to come.

Please accept my best wishes for a memorable anniversary celebration and for continued success.

Sincerely,

The Rt. Hon. Justin P. J. Trudeau, P.C., M.P.
Prime Minister of Canada





Premier of Ontario - Premier ministre de l'Ontario



September 21 – 24, 2019

A MESSAGE FROM PREMIER DOUG FORD

I want to extend warm greetings to everyone taking part in the 2019 Association of Science-Technology Centers Annual Conference.

Science centres play an important role in the community. They inspire young people to learn through discovery and to consider careers in the sciences. For adults, science centres also offer an enriching learning experience — one they can share with family, friends or community groups.

I'm proud that Ontario is a gathering place for people who wish to share knowledge and ideas. I am very pleased to welcome science centre and museum professionals from all corners of the globe to our province and to this outstanding professional development event. This is a great way to network with colleagues and learn about new trends, developments and best practices in your field.

I also want to commend the Ontario Science Centre for hosting this gathering. This is a wonderful way to mark the centre's 50th year of inspiring minds to explore the wonders of science.

With our government's renewed focus on STEM and on helping Ontario students gain the skills they need for the jobs of the future, I am confident that science centres will continue to be relevant to a new generation of educators and learners.

Best wishes for a productive and inspiring conference.

A handwritten signature in blue ink that reads "Doug Ford". The signature is written in a cursive, flowing style.

Doug Ford
Premier



Message from the Mayor

It is my pleasure to extend greetings and a warm welcome to everyone attending the Association of Science – Technology Centers (ASTC) annual conference hosted by the Ontario Science Centre.

I commend the Ontario Science Centre for being a leader in its field as it celebrates its 50th anniversary this year.

Best wishes to everyone taking part in this conference focusing on Moonshots to help advance the science field.


As Canada's largest city and the fourth largest in North America, Toronto is a global centre for business, finance, arts and culture and is dedicated to being a model of sustainable development. I welcome everyone to our city and encourage you to enjoy Toronto and learn about our vibrant neighbourhoods.

On behalf of Toronto City Council, please accept my best wishes for an informative and enjoyable event.

Yours truly,



John Tory
Mayor of Toronto



Cultivate *extraordinary* relationships.

Your organization holds its productions, exhibits, and facilities to the highest creative standards. We believe your technology should be just as *extraordinary*.

Blackbaud can help you build lifelong patron relationships—no matter the size of your team.

Blackbaud is a proud sponsor
of the Association of
Science-Technology Centers.
arts.blackbaud.com

blackbaud[®]
› power your passion

2019 ASTC Annual Conference Sponsors

(as of August 23, 2019)

We are extremely grateful to the following organizations for their generous support.

Host



Diamond Sponsors



Platinum Sponsor



Gold Sponsors



Silver Sponsors



Jade Sponsor



Bronze Sponsor



Supporting Sponsors





Our Strategic Direction 2019-2021



ASTC's strategy focuses on the meaningful participation of ASTC members and partners toward a positive shared future, as they engage their communities in science and technology.

Our Vision

Increased understanding of—and engagement with—science and technology among all people

Our Purpose

To champion and support science and technology centers and museums

Deep Engagement Informed Our Strategy

Ensuring access to opportunity for all—and tackling today's global challenges—calls for effective local approaches to public engagement in science and technology.

ASTC leadership engaged in an intensive, year-long process of listening to our members and partners about the opportunities and challenges they see in their work to support lifelong learning, connect science and society, and engage diverse communities. What we heard deeply informed ASTC's understanding of the aspirations and needs of our members, from case-making among stakeholders, to preparing for the future, to building capacity across the field and its workforce. In response, ASTC has developed a strategy to support our members to thrive now and in the future.

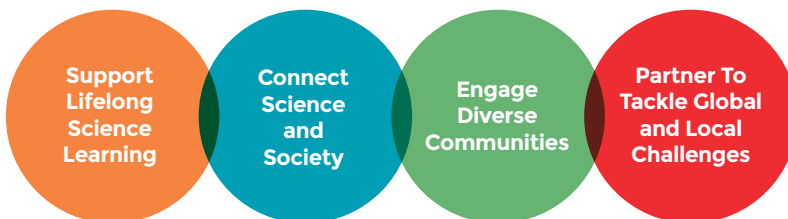
How We Will Work With Members

Our new strategic direction represents a pivot toward deeper ongoing collaboration with our members and partners.

We will work inclusively, collaboratively, humbly, and effectively with our members.

- +** We welcome a diversity of perspectives and aim to **build an inclusive organization and community** that supports and engages the full breadth of ASTC members.
- +** Recognizing that we **are more effective together**, ASTC will pursue mission-driven partnerships and collaborate with the global science-engagement community.
- +** We will **collect, share, and learn from data** to inform ASTC's work and adapt nimbly to changes in our—and our members'—environment and context.

The Work of Our Members



The Three Pillars of Our Strategic Direction

The strategy is focused on supporting members to thrive—now and in the future. This commitment runs through each of the three pillars of our new strategic direction:

1 Champion Public Engagement With Science

ASTC will do this by elevating the work of science centers and museums, forging new collaborations across the science-engagement ecosystem, and investing in communications and advocacy.

2 Set Course Together for New Frontiers

We will do this by supporting our members to prepare and lead with their communities, act on market and societal trends, and embrace effective approaches that advance equitable engagement in science and technology.

3 Support and Connect Members

We will do this by facilitating learning, catalyzing shared efforts, sharing data, and cultivating leadership and skills across the science-center workforce.

Our Guiding Principles

These principles define how ASTC works with the full breadth of our members and partners:

- + Support all types of science and technology centers and museums
- + Include diverse ideas, perspectives and backgrounds
- + Collaborate through mission-driven partnerships
- + Engage globally from North America
- + Make data-driven decisions and adapt to change

Benefits for Our Members

Successful implementation of ASTC's strategy will help our members build new capacity across science and technology centers and museums—and their workforce—to lead in and adapt to the future. We will work together with our members to nurture a future generation of leaders in the field.

How Our Strategic Direction Supports Your Work

- + Supports you in setting a **bold vision for the future of science and technology centers and museums**
- + **Better supports and engages** you and your team
- + Prepares leaders like you with the **knowledge, skills, and network** you need to **tackle today's global challenges and to co-create a positive future for your institutions**
- + Provides **inclusive support** of the entire science and technology center and museum field
- + Provides **greater opportunities for you to share knowledge, learn from, and collaborate** with your peers

Ongoing Engagement

ASTC is a network of nearly 700 science and technology centers and museums, and related organizations, engaging more than 110 million people annually across North America and in almost 50 countries.

We want to hear from you. Reach out to us any time at ideas@astc.org to share your thoughts on our strategic direction, and to let us know what more we can do to support your efforts.

General Conference Information

What You Will Experience During ASTC 2019

More than 100 concurrent educational sessions on topics as diverse as leadership, education and programming, exhibits and environments, development and member relations, innovations in science and technology, community engagement and outreach, and applications of research and evaluation

- An inspiring keynote presentation on Moonshots and Grand Challenges by NASA's **Jenn Gustetic** on Saturday morning
- A fascinating discussion of role of public engagement in science in addressing global and local challenges—including mitigating the worst impacts of climate change—during the Alan J. Friedman Science Center Dialogues Luncheon on Sunday, sponsored by The Kavli Foundation, with **Katharine Hayhoe, John Holdren,** and **Ellen Stofan**
- Plenty of opportunities to network and forge connections with your fellow attendees from across the globe, including Friday-night meet-ups; the networking breakfast and lunch on Saturday; and the networking breakfast, break, and reception on Sunday
- Two full days of the Exhibit Hall, jam-packed with a wide range of products and services
- Exploration, networking, and party time during Saturday night's festivities at our host, the Ontario Science Centre
- An inspiring talk about the role that science centers and museums can play in building “community science capital,” with **Raj Pandya** during the General Plenary Session and ASTC 2020 Preview on Monday
- ASTC Community Meet-ups
- The captivating performances of the Live Demo Hour at the Ontario Science Centre on Tuesday morning
- Behind-the-scenes exploration of the Ontario Science Centre during Tuesday's Science in the 6ix (Open House Day) and the day's keynote presentation with **Director X**
- The latest films at Tuesday's Big Screen Day at the Ontario Science Centre, sponsored by the Giant Screen Cinema Association

ASTC Communities Meet-ups

ASTC Communities are groups of informal education professionals who share a concern or a passion for something they do and learn how to do it better as they interact regularly. Many will meet during the conference for brainstorming, planning, and networking (see page 25). These meet-ups are open to all conference attendees, whether or not you have previously been involved with any ASTC Communities.

ASTC Community Space

In the center of it all in the Exhibit Hall, you will find this inviting arena for conversation, networking, and building and strengthening community.

Bus Transportation

Please check the ASTC 2019 app for the most up-to-date bus schedule.

Friday, September 20

For preconference ASTC Intensives at the Ontario Science Centre, buses will depart at 8:00 a.m. from the Metro Toronto Convention Centre, South Building, Level 500.

For the Intensive at the Royal Ontario Museum, the bus will depart at 12:30 p.m. from the Metro Toronto Convention Centre, South Building, Level 500.

For the Leadership Reception at the Corus Quay Atrium, buses will depart at 6:30 p.m. from the Metro Toronto Convention Centre, South Building, Level 500.

Saturday, September 21

For the Saturday Night Party at the Ontario Science Centre, buses will begin departing at 6:00 p.m. from the official ASTC Annual Conference hotels. Return buses will drop off at the official ASTC Annual Conference hotels.

Tuesday, September 24

For Outreach Live, the bus will depart at 7:45 a.m. from the Metro Toronto Convention Centre, South Building, Level 500.

For Science in the Six (Open House Day), buses will begin departing at 8:15 a.m. from the official ASTC Annual Conference hotels. Return buses will drop off at the official ASTC Annual Conference hotels.

Business Center

Copying, printing, and other services are available in the business center on Level 800, South Building, Metro Toronto Convention Centre. Open 8:30 a.m. to 4:30 p.m., Monday-Friday; closed Saturday and Sunday.

Certificate of Attendance

If your institution or professional organization requires you to have a certificate of completion, please contact us at conference@astc.org after the conference.

Conference App

To download the app, with all the most up-to-date information and schedules, search for “ASTC Events” in the Apple and Android App Stores.

Diversity Fundraiser

Since its launch in 2001, ASTC’s Diversity and Leadership Development Fellows Program has made it possible for more than 200 science center professionals from more than 100 science centers and museums in the United States and Canada to participate in the ASTC Annual Conference. The fellowship exemplifies ASTC members’ commitment to reflecting the diversity of the audiences they serve. It supports the development and advancement of science center professionals from ethnic/racial minority backgrounds; those with disabilities; and those who identify as lesbian, gay, bisexual, transgender, queer, intersex, or asexual (LGBTQIA). Fellows receive free conference registration and a stipend of up to \$1,500 to cover expenses. Support for this growing program is provided by a \$12 contribution for admission to the Saturday Night Party at the Ontario Science Centre.



Evaluations

Your feedback on sessions and posters is a critical tool in helping ASTC's Conference Program Planning Committee to assess the ASTC 2019 event and plan for future years. Please share your evaluation of sessions and posters through the conference app.

First Aid

First aid services will be available on Level 800 in the South Building of the Metro Toronto Convention Centre beginning Friday. If you require assistance, please stop by the Registration Desk.

Flash Sessions

Flash Sessions are a collection of short (10-minute) presentations on various but often related topics, given by several people. One group of Flash Sessions will be presented each day on Saturday, Sunday, and Monday; check the program listings for more details.

Internet Access

ASTC offers complimentary WiFi in the convention center (network: ASTC2019; password: emgroup!).

Sponsored by



Job Bank

The Job Bank is located in the ASTC Community Space in the Exhibit Hall. Come by to browse job opportunities or check out the online listings on the ASTC website, www.astc.org/job-bank.

Mothers' Room

This quiet space is located in Room 802a, South Building, Metro Toronto Convention Centre and available daily 7:00 a.m. to 5:00 p.m., Friday, September 20, through Monday, September 23.

Photography

ASTC captures photographs, video, and audio during its meetings and events for use in educational materials, newsletters, and other promotional materials, whether in print, electronic, or other media, including the ASTC websites. By participating in this conference, you grant ASTC the right to use your name and likeness for such purposes. Please contact ASTC staff if you have any concerns.

Poster Palooza in the Exhibit Hall

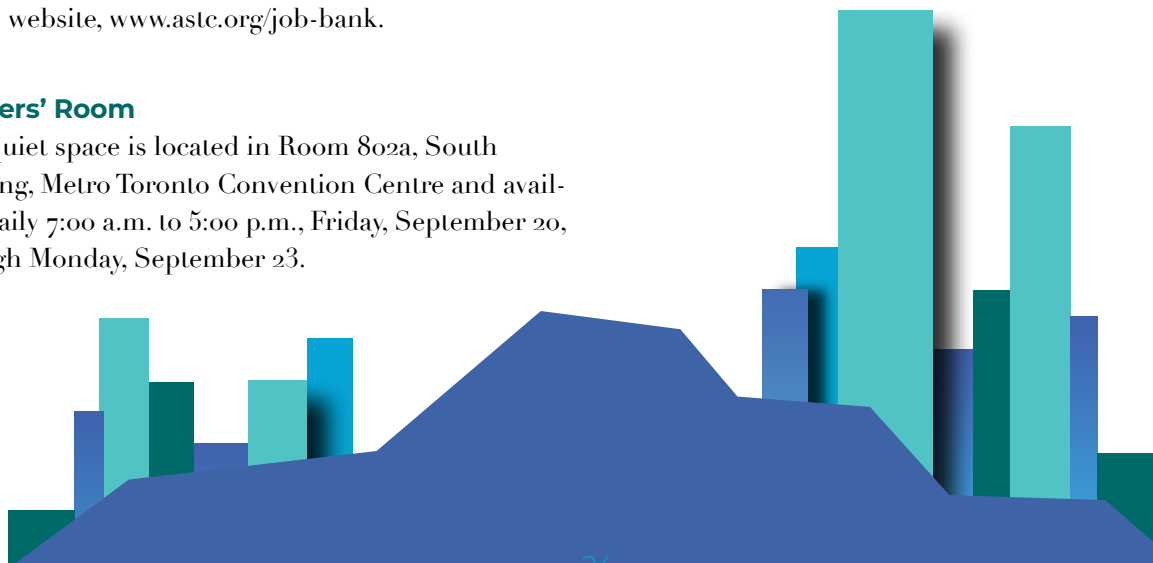
On Sunday, September 22, 9:30–11:30 a.m., presenters will share enticing displays of their work in STEM engagement and talk with you about findings and possible collaborations. Check the program listings for more details on individual posters, projects, and presenters.

[R4] Reflect + Relax + Recharge + Reconnect = A Quiet Space for Rebalancing

Need a peaceful sanctuary away from the crowd? [R4] is a space for conference participants to meditate, pray, or just sit for a while. [R4] is open daily, 8:00 a.m.–5:00 p.m., Friday–Monday, in Room 802B of the Metro Toronto Convention Centre.

Restroom Policy

All are welcome to use the restroom that best fits their identity.





ASTC Community Meet-ups

ASTC Communities are a constant source of idea exchange, learning, and collaboration for staff at ASTC-member organizations – nurturing the ongoing development of the workforce in the science center and museum field and facilitating collaboration and collective impact in ASTC members. They are co-created of, by, and for staff members at science centers and museums to facilitate information exchange, asking questions, sharing wisdom, forging collaborations, inspiring new dreams, and taking collective action.

Use this time to meet with members of some of ASTC’s many Communities, and to plan a lasting project for the year ahead – a webinar, online chat forum, or even a conference session-focusing on improving practice.

Saturday, September 21

2:15–3:30 p.m.

MEETING ROOM 705, METRO TORONTO
CONVENTION CENTRE

**ASTC Early Childhood Community
Meet-up**

Sunday, September 22

9:30–10:30 a.m.

MEETING ROOM 709, METRO TORONTO
CONVENTION CENTRE

**ASTC STEM Ecosystems
Community Meet-up**

4:30–5:30 p.m.

MEETING ROOM 709, METRO TORONTO
CONVENTION CENTRE

**ASTC NASA’s Universe of Learning
Community Meet-up**

5:30–7:00 p.m.

MEETING ROOM 705, METRO TORONTO
CONVENTION CENTRE

**ASTC Adult Engagement
Community Meet-up**

Monday, September 23

1:00–2:00 p.m.

MEETING ROOM 705, METRO TORONTO
CONVENTION CENTRE

**ASTC Advocates for Diversity
Community Meet-up**

MEETING ROOM 709, METRO TORONTO
CONVENTION CENTRE

**ASTC Museum Hospital
Partnerships Community Meet-up**

1:30–2:15 p.m.

MEETING ROOM 709, METRO TORONTO
CONVENTION CENTRE

**ASTC National Educators
Outreach Network (NEON)
Community Meet-up**

Plenary Sessions

Saturday, September 21

8:30–10:30 a.m.

Opening Plenary Session and Keynote Presentation

HALLS F&G, METRO TORONTO CONVENTION CENTRE

Jump-start your 2019 ASTC Annual Conference experience in this opening session featuring a welcome from ASTC and the Ontario Science Centre leadership and an inspiring look at today's moonshots, including how individuals and organizations are pursuing grand-yet-achievable challenges.

Keynote Speaker **Jenn Gustetic**, Program Executive for Small Business Innovation Research at NASA Headquarters, will share how NASA uses cross-sector collaboration to advance its own bold missions and imagine how science centers and museums can increase impact. How might we realize our ambitious goals for the future? What are some ways to work together and connect your efforts to larger initiatives? Get ready for launch in this powerful keynote talk and riveting question-and-answer session. The opening session will also feature presentation of some of the 2019 Roy L. Shafer Leading Edge Awards:

Business Practice (Small Institution): Mid-Hudson Children's Museum, Poughkeepsie, New York

Business Practice (Large Institution): Ciência Viva, Lisbon, Portugal

Overcomer: American Museum of Science & Energy, Oak Ridge, Tennessee

Now in their 15th year, the "Edgie" awards commemorate the late Roy L. Shafer, a former science center director, ASTC President, organizational coach, and mentor to many in the science center field.

Roy L. Shafer Leading Edge Awards sponsored by

DELPHI

Sunday, September 22

11:30 a.m.–1:00 p.m.

Alan J. Friedman Science Center Dialogues Luncheon

HALLS F&G, METRO TORONTO CONVENTION CENTRE

These annual discussions are conducted in memory and tribute to the founding director of the New York Hall of Science in Queens, New York. Sponsored by The Kavli Foundation, they connect science-center professionals, science educators, and science communicators to timely and thought-provoking issues emerging in science and society. 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.

The 2019 Friedman Dialogue will focus on the role of public engagement in science in addressing global and local challenges, including mitigating the worst impacts of climate change. Tackling today's challenges and ensuring access and opportunity for all calls for effective local approaches to public engagement in science and technology. Dialogue participants include **Katharine Hayhoe**, Director of the Climate Science Center at Texas Tech University (participating virtually); **John Holdren**, Teresa and John Heinz Professor of Environmental Policy, Harvard Kennedy School of Government and former Science Advisor to U.S. President Barack Obama; and **Ellen Stofan**, John and Adrienne Mars Director, Smithsonian National Air and Space Museum, and former NASA Chief Scientist. Regarding public engagement in response to the climate crisis, specifically, Katherine Hayhoe has noted that the most important thing each of us can do about climate change is talk about it. And John Holdren once said, "We basically have three choices: mitigation, adaptation, and suffering. We're going to do some of each. The question is what the mix is going to be. The more mitigation we do, the less adaptation will be required, and the less suffering there will be."

Sponsored by



Monday, September 23

10:45 a.m.–12:15 p.m.

General Plenary Session and ASTC 2020 Preview

HALLS F&G, METRO TORONTO CONVENTION CENTRE

Raj Pandya, who directs the American Geophysical Union's Thriving Earth Exchange, will share the importance of community science and the role that science and technology centers and museums can play in building community science capital. He will talk with 15-year-old **Stella Bowles** from Upper LaHave, Nova Scotia, Canada, who recently received the Weston Youth Innovation Award from the Ontario Science Centre for her research and work with local, provincial, and federal governments to eliminate the dumping of raw sewage into waterways where kids play. Preview the 2020 conference with the team from Carnegie Science Center, and meet these 2019 Roy L. Shafer Leading Edge Award winners:

Leadership in the Field (CEO):

Maribel Ibarra Lopez, Sietecolores Ideas Interactivas, Mexico City, Mexico

Leadership in the Field (Non-CEO):

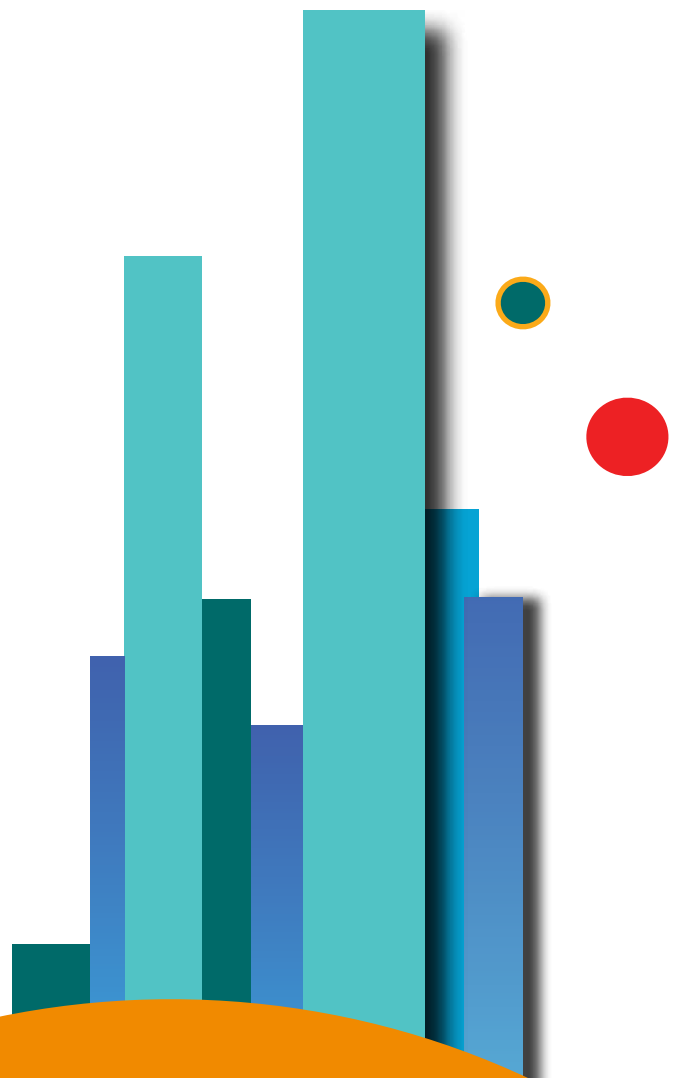
Paul Martin, ASU School for the Future of Innovation in Society, Tempe, Arizona

Visitor Experience (Small Institution):

spectrUM Discovery Museum, Missoula, Montana

Visitor Experience (Large Institution):

The Tech Interactive, San Jose, California



Featured Speakers

Jenn Gustetic

Keynote Speaker, Opening Session

Saturday, September 21

8:30–10:30 a.m.

HALLS F&G, METRO TORONTO CONVENTION CENTRE



Jenn Gustetic is the Program Executive for Small Business Innovation Research (SBIR/STTR) at NASA Headquarters. The NASA SBIR and STTR programs fund small businesses with about \$200 million annually for research, develop-

ment, and demonstration of innovative technologies that fulfill NASA needs and have significant potential for successful commercialization.

She is an experienced innovator and policy entrepreneur, having served as the Assistant Director for Open Innovation at the White House Office of Science and Technology Policy, the Program Executive for Prizes and Challenges at NASA, Co-chair of the Partnership for Public Service's Innovation Council, and Co-chair of the U.S. National Science and Technology Council's inter-agency working group on making.

Gustetic holds a bachelor's degree in aerospace engineering from the University of Florida and a master's degree in technology policy from the Massachusetts Institute of Technology. She has published numerous writings on innovation including in the journals *Space Policy* and *Issues in Science and Technology* and with the MIT Press.

Katharine Hayhoe

Dialogue Participant, Alan J. Friedman Science Center Dialogues Luncheon

Sunday, September 22

11:30 a.m.–1:00 p.m.

HALLS F&G, METRO TORONTO CONVENTION CENTRE



Katharine Hayhoe is an atmospheric scientist studying climate change and helping engineers, city managers, and ecologists quantify its impacts and Director of the Climate Center at Texas Tech University.

She is also the founder and CEO of ATMOS Research, which bridges the gap between scientists and stakeholders to provide relevant, state-of-the-art information on how climate change will affect people for a broad range of nonprofit, industry, and government clients. With her husband, Andrew Farley, she is co-author of *A Climate for Change: Global Warming Facts for Faith-Based Decisions*, which untangles the complex science of climate change and tackles many long-held misconceptions.

Hayhoe's current research focuses on establishing a scientific basis for assessing the regional- and local-scale impacts of climate change on human systems and the natural environment and developing better ways of translating climate projections into information relevant to agriculture, ecosystems, energy, infrastructure, public health, and water resources. Her work has been presented before the U.S. Congress, highlighted in briefings to state and Federal agencies, and used as input to future planning by communities, states, and regions across the United States.

She holds a bachelor's degree in physics and astronomy from the University of Toronto and master's and doctoral degrees in atmospheric science from the University of Illinois at Urbana-Champaign.

John Holdren

Dialogue Participant, Alan J. Friedman Science Center Dialogues Luncheon

Sunday, September 22

11:30 a.m.–1:00 p.m.

HALLS F&G, METRO TORONTO CONVENTION CENTRE



John Holdren is the Teresa and John Heinz Professor of Environmental Policy at Harvard University's Kennedy School of Government and Co-Director of the School's Science, Technology, and Public Policy program. He is also Professor of Environmental

Science and Policy in Harvard's Department of Earth and Planetary Sciences and Faculty Affiliate in the Paulson School of Engineering and Applied Science.

For eight years, he served as U.S. President Barack Obama's Science Advisor, and Director of the White House Office of Science and Technology Policy, where he advised the President on all science and technology issues and their role in economic competitiveness and job creation, biomedicine and public health, energy and climate change, the oceans and the Arctic, the U.S. space program, and national and homeland security.

Holdren was also responsible for coordinating research and development strategy and budgets across Federal departments and agencies; overseeing interagency S&T programs, including the U.S. Global Change Research Program; developing initiatives in STEM education; advancing scientific integrity and openness in government; and representing the U.S. government in interactions with the U.S. and global science and engineering communities.

He earned bachelor's and master's degrees from the Massachusetts Institute of Technology and a doctorate in aerospace engineering and theoretical plasma physics from Stanford University.

Ellen Stofan

Dialogue Participant, Alan J. Friedman Science Center Dialogues Luncheon

Sunday, September 22

11:30 a.m.–1:00 p.m.

HALLS F&G, METRO TORONTO CONVENTION CENTRE



Ellen Stofan is the John and Adrienne Mars Director of the Smithsonian's National Air and Space Museum, the first woman to lead the institution, which welcomes more than eight million visitors annually.

A planetary geologist, she was

previously chief scientist at NASA, where she served as principal advisor on NASA's strategic planning and programs; helped guide the development of a long-range plan to get humans to Mars; worked on strategies for NASA to support commercial activity in low Earth orbit; and supported NASA's overall science programs in heliophysics, Earth science, planetary science, and astrophysics.

Prior to NASA, Stofan was vice president and senior scientist at Proxemy Research, a consulting firm specializing in planetary research, and worked at the Jet Propulsion Lab (JPL) as a post-doctoral fellow and then deputy project scientist for the Magellan Mission to Venus. She became JPL's chief scientist for the New Millennium Program, where she managed a team of about 100 scientists working on new technologies.

Stofan's research focuses on the geology of Venus, Mars, Saturn's moon Titan, and Earth. Her favorite mission was Cassini, primarily because of her interest in Titan. She earned her bachelor's degree in geology at the College of William & Mary, and her master's and doctoral degrees at Brown University, both in geological sciences.

Raj Pandya

Keynote Speaker
General Session

Monday, September 23

10:45 a.m.–12:15 p.m.

HALLS F&G, METRO TORONTO CONVENTION CENTRE



Raj Pandya directs the Thriving Earth Exchange at the American Geophysical Union (AGU), which connects scientists and communities—including historically marginalized communities—so that they can work together to design and lead science that

addresses community priorities.

His work focuses on how the sciences can be more engaging, how inclusivity contributes to scientific innovation and societal relevance, and how the sciences can be allies in advancing equity in society.

Pandya helped launch the Resilience Dialogues, a public-private partnership that uses facilitated online dialogues to advance community resilience, chaired the U.S. National Academies' committee on "Designing Citizen Science to Support Science Learning," and was a founding board member of the Citizen Science Association.

Before joining AGU, he led education, engagement, and diversity programs connected to the U.S. National Center for Atmospheric Research (an ASTC member, which includes a small science museum), led an international research and development project that used weather data to better manage meningitis in Africa, and held a faculty position at West Chester State University. He received his Ph.D. from the University of Washington, exploring how large thunderstorms grow and persist.

Stella Bowles

Featured Speaker
General Session

Monday, September 23

10:45 a.m.–12:15 p.m.

HALLS F&G, METRO TORONTO CONVENTION CENTRE



Stella Bowles prompted action for the cleanup of the LaHave River in Nova Scotia, Canada, which contains alarmingly high levels of fecal contamination. Because of her work, three levels of government have allocated \$15.7 million dollars to address

the problem of illegal straight pipes that still drain raw sewage from more than 600 homes along the river.

Three years since her initial research, Bowles continues to be an advocate for the elimination of illegal straight pipes throughout Nova Scotia. She has teamed up with the Coastal Action Foundation, and together they have started a campaign training other kids to become citizen scientists and test their own waterways.

Bowles has won many awards including the Meritorious Service Medal from the Governor General of Canada, the 2019 Weston Youth Innovation Award presented by the Ontario Science Centre, and the Canada's Walk of Fame Community Hero Award. In a completely separate project, she has also recently become the youngest-ever published micropaleontologist.

Bowles hopes her story will inspire other youth to become advocates for issues they care about. "I've learned that kids do have the power to make change," she says, "and I'm just getting started."

Director X

Closing Keynote Speaker
Science in the 6ix (Open House Day)

Tuesday, September 24

1:30–2:30 p.m.

ONTARIO SCIENCE CENTRE

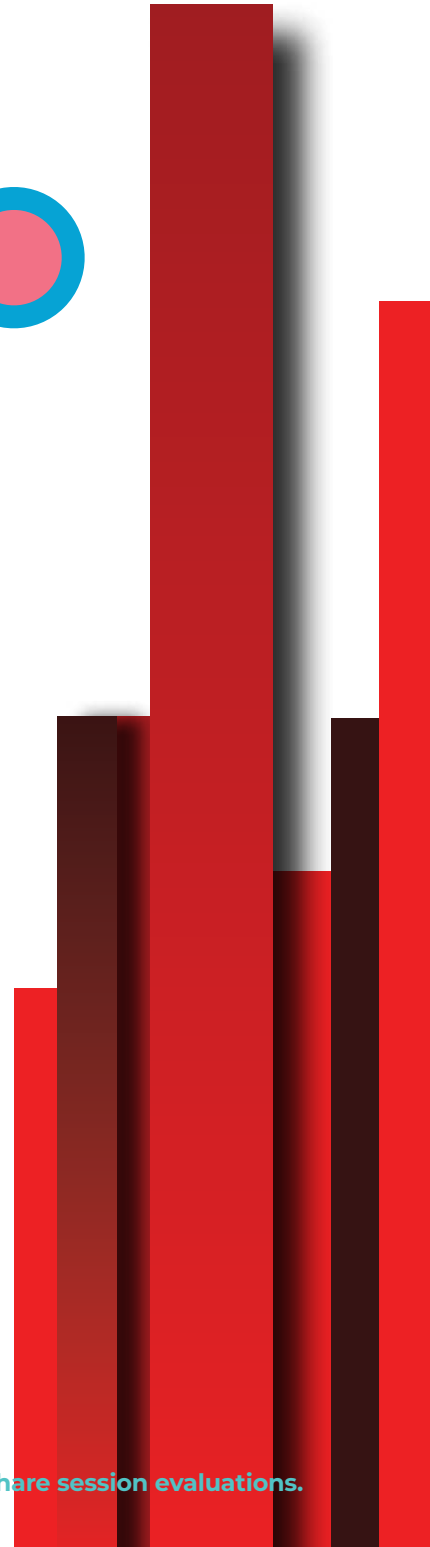
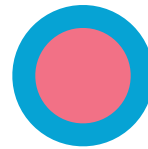


Director X (formerly known as Little X) is a Canadian film and music video director and producer who founded Operation Cerebral Cortex, a project that seeks to stop gun and mass violence through meditation.

He is celebrated for directing high-budget, visually distinctive videos for popular artists, including Drake, Kendrick Lamar, Rihanna, Jay-Z, Kanye West, Fifth Harmony, Wiz Khalifa, Usher, John Mayer, Korn, Iggy Azalea, Sean Paul, and many more.

His work has been nominated and awarded by the MTV Music Video Awards and Much Music Video Awards. X has directed commercials for Apple Music, Ebay, Virginia Black, and Gap's noteworthy "Meet Me in The Gap" campaign.

As a film director, X made his directorial debut in 2014 with an edgy drama called *Across the Line*, which won Best Feature at the Atlantic Film Festival 2015. He was born in Toronto and became the protégé of pioneering director Hype Williams in New York City.



Panasonic partnership program for cultural institutes

Panasonic is proud to support cultural institutes for their technology requirements as part of its social responsibility and commitment to make contributions to the society and culture.

The program covers all cultural institutions including science centers, museums, art galleries, theatres, libraries and any other organizations that contribute to art and culture.

In support of this program, Panasonic's dedicated R&D team has conducted extensive research to understand the requirements and needs in the Art and Entertainment sector and has developed customized Audio-Visual solutions to address the specific needs of cultural institutes.

For more information about the partnership program, please contact Behnaz.Fard@ca.panasonic.com (Canada) or Joseph.Conover@us.panasonic.com (USA)



PARTNERSHIP BENEFITS

- Panasonic preferred pricing
- Access to demo unit pool for special exhibition
- Access to Panasonic international Media Kit including case study creation and social media activities promoted on a global basis
- On-site consultation services through Panasonic AV product experts
- Sales and after sales support from Panasonic
- Direct access to service and repair centre
- Installation Services through trusted local integrators

Conference Tracks

At the 2019 ASTC Annual Conference, concurrent sessions and poster presentations align with particular thematic content tracks, which are described below. Look for coding throughout the program to find learning and networking opportunities, according to this key:

Business Operations, Development, and Marketing

Sessions in this track emphasize the essential components of a successful organization. Topics are related to administration; buildings and operations systems; communications, public relations, and marketing; development, fundraising, and member relations; volunteer engagement; community relations; business models and revenue generation; and human resources management.

Content and Design

This track includes sessions about the content and design of audience-directed activity: exhibits and environments, immersive media and experiences (planetariums, large-format films, stereoscopic theaters, simulators, etc.), program content, outreach and engagement, research and evaluation, and demonstrating impact.

External Collaborations and Co-Creation

This track includes sessions that give compelling examples of ways that science centers and museums engage and partner with their communities, put community goals and aspirations at the forefront of their work, reach learners where they are, and connect through collaboration and co-creation. These can include examples from different structures like partnerships, collaborations, collective-impact initiatives, networks, ecosystems, and alliances, as well as public events like community-science programs, science fairs, festivals, or creative spaces outside of a museum's building.

Informal Education and Learning

Sessions in this track focus on the role that science centers and museums play in educating their audiences, driving learning outcomes, and working within and improving the educational landscapes of their local communities and regions through relationships with K-12 schools and districts, out-of-school-time organizations, institutions of higher education including learning research, and industry.

Leadership and Professional Development

Sessions in this track focus on developing skills and expertise in the field. They include topics like leadership capacity, institutional staff diversity and inclusion, organizational governance, career development, cultural competence, strategic planning, change management, capacity for innovation, and future directions for the field.

Content Tags

New for ASTC 2019, tags are content topics that describe what is featured in a session or poster. Look for these tags throughout the program and refer to the tag index in the back of this program.

- 21st Century Skills
- Accessibility
- Administration
- Adult Engagement
- Advanced Technology (AR, VR, etc.)
- Board Management
- Business Development
- Business Intelligence
- Career Development
- Communications
- Community Impact
- Customer Service
- Design Thinking
- Diversity and Equity
- Early Childhood
- Emerging Technology
- Exhibit Design
- Facilities Operations
- Fundraising
- Future Planning
- Global Perspective
- Grant Writing
- Impact Measurement
- Inclusive Workforce Development
- K-12 School Collaboration
- Leadership
- Learning Research
- Making and Tinkering
- Making the Case for Science Centers
- Management
- Marketing
- Member Engagement
- Outreach
- Partnerships
- Pricing and Sales
- Program Evaluation
- Project Management
- Prototyping and Piloting
- Public Programs
- Science Shows
- Small Museums
- Social Justice
- Social Media Engagement
- Talent Management
- Teacher Professional Development
- Teen Programs
- Temporary and Traveling Exhibits
- Visitor Experience
- Volunteer Management
- Working with Higher Education
- Youth Development



Audiences

Also new this year, these indicators describe who the content of the session is best designed for and can help you determine which ones are most relevant to you. Look for coding throughout the program, according to this key:

U Universal (all audiences)

Designed for all attendees, at all levels of familiarity, experience, and expertise with the topic.

F Foundational (early/new career professionals)

These sessions focus on building awareness around current issues, initiatives, and practices in the science-center field. They are especially suited for professionals at the beginning of their careers (or new to science centers and museums) and those interested in sampling current topics in informal STEM learning, engagement, and communication. These sessions may also be perfect introductions to a new topic that may be unfamiliar to attendees, regardless of their career stage.

A Applied (mid-career professionals)

These are developed for science center and museum professionals with advanced practice in their areas of interest, middle-level managers, or people looking to build on existing programs or organizational plans. These sessions focus on deepening understanding and engagement, as well as building the capacity of individuals and organizations to improve their practices, operations, and areas of expertise. They may also be a deeper dive into a topic for practitioners who are experienced with a given approach and want to dig into the lessons learned and new techniques to apply in their own work.

S Strategic (advanced-career professionals)

Created for experienced professionals, these sessions are designed for people who are in positions responsible for setting directions for their organizations or are influencers in the field. They address topics relevant to high-level strategic work that is advancing the science center and informal learning fields.

Exhibit Hall Schedule

Saturday, September 21

10:30 a.m.–6:00 p.m.

Exhibit Hall Open

1:00–2:00 p.m.

Networking Lunch in the Exhibit Hall

3:30–4:30 p.m.

Exhibit Hall Refreshment Break

Sunday, September 22

9:30 a.m.–6:00 p.m.

Exhibit Hall Open

9:30–11:30 a.m.

Networking Breakfast and Poster Palooza in the Exhibit Hall

1:00–1:30 p.m.

Networking Break in the Exhibit Hall

4:30 p.m.–6:00 p.m.

Networking Reception in the Exhibit Hall

LABESCAPE

MEETING ROOM 710

During ASTC 2019, don't miss your chance to experience what may be the world's only science-based escape room, in which all the puzzles involve various physics phenomena. You will literally see objects disappear in front of your eyes—no CGI tricks here! This STEM-engagement outreach project, funded by the American Physical Society and the U.S. National Science Foundation, aims to show that science can be useful and accessible, as well as beautiful and fun!

World-renowned quantum physicist Professor Alberta Pauline Schrödenberg is stuck on an airplane and desperately needs your help—the fate and security of the entire world (and more importantly, her funding!) hang in the balance. You'll have to search her lab, solve mind-blowing puzzles to reveal clues, and hopefully find a way to complete your mission.

LabEscape will be open at no charge to anyone with an ASTC badge. Reserve your 60- to 70-minute mission time online in advance at labescape.org/astc. Mission-time reservations are available on a first-come, first-serve basis, and team reservations may be made for groups of up to seven people. Time slots are available daily, Friday–Monday, September 20–23.

Preregistration required. Space is limited



Preconference

September

19th–20th

TORONTO
TOBONTO



AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

Thursday, September 19

9:00 a.m.–7:00 p.m.

ASTC Diversity and Leadership Development Fellows Opening Session

MEETING ROOM 706

For 2019 Fellows, alumni, and invited guests.

Friday, September 20

7:00 a.m.–5:00 p.m.

Registration Open

PREFUNCTION AREA, LEVEL 600

8:00 a.m.–2:00 p.m.

ASTC Diversity and Leadership Development Fellows Opening Session

MEETING ROOM 706

For 2019 Fellows, alumni, and invited guests.

8:00 a.m.–6:00 p.m.

ILLC Learning Day—Agents of Change

MEETING ROOM 707

AFFILIATE EVENT

In the 2019 Informal Learning Leadership Collaborative (ILLC) Learning Day, ILLC members and fellows will connect across cohorts to explore tools and strategies for using our leadership positions to identify our goals, and to provoke ourselves and others, in embracing change.

Change is inevitable. It happens with or without our intervention. As transformative leaders, we experience and create continuous change as a result of our work, and we wield the potential to inspire change in our communities. Are we truly moving ourselves out of our comfort zones to create and/or accept change in our environments? Are we embracing change? Let's dive deep into what it takes to positively change our organizations and our society. The book *Switch: How to Change Things When Change is Hard* by Chip Heath and Dan Heath will provide inspiration for our daylong intensive program.

By invitation only.

ASTC Intensives

9:00 a.m.–1:00 p.m.

INFORMAL EDUCATION AND LEARNING U

Controversy in Science Museums: Reimagining Exhibition Spaces and Practice

MEETING ROOM 716A

Science center landscapes are shifting to tackle engaging and controversial topics such as climate change, mental health, and GMOs. Join our interactive session to explore possibilities and challenges of provocative science exhibitions and how new and preexisting exhibitions can embrace controversy in their designs while supporting visitor experiences.

Limited to 30 people. Preregistration required.

Session Leader: *Erminia Pedretti, Professor of Science Education, Ontario Institute for Studies in Education, University of Toronto, Toronto, Ontario, Canada*

Presenters: *Ana Maria Navas Iannini, Ontario Institute for Studies in Education, University of Toronto, Toronto, Ontario, Canada; Daniel Atkinson, Ph.D. Candidate, University of Toronto, Toronto, Ontario, Canada; and Vishnu Ramcharan, Specialist, Visitor and Community Engagement, Ontario Science Centre, Toronto, Ontario, Canada*

Exhibit Design Learning Research Visitor Experience

CONTENT AND DESIGN U

Designing a Situated Mobile Game to Enhance Informal Science Learning

MEETING ROOM 716B

ARIS is a free, open-source, location-based game development platform that has been used to enhance learning in informal environments. Play an ARIS game and learn the ARIS basics as you work collaboratively to create your first situated mobile learning adventure! No “coding” necessary!

Limited to 30 people. Preregistration required.

Session Leader: *Dana Atwood-Blaine, Assistant Professor, Jacobson Elementary Science Fellow, University of Northern Iowa, Cedar Falls, Iowa*

Presenter: *Bettina Fabos, Professor, University of Northern Iowa, Cedar Falls, Iowa*

Visitor Experience K-12 School Collaboration Advanced Technology (AR, VR, etc.)

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION

**How to Present a Universe of Data through OpenSpace**

MEETING ROOM 714B

Learn how to explore the universe in OpenSpace, an open source NASA-funded software that runs on a variety of platforms, from laptops to planetarium domes. Workshop participants will download and operate the software on their own machines and get tips on using it to design unique presentations and education activities.

Limited to 20 people. Preregistration required.

Session Leader: *Corrie Roe, Production Coordinator, Science Visualization, American Museum of Natural History; New York, New York*

Presenters: *Rosamond Kinzler, Senior Director, National Center for Science Literacy; Education, and Technology; American Museum of Natural History; New York, New York; Rachel L. Smith, Head, Astronomy and Astrophysics Research Lab Curator, Meteorites, North Carolina Museum of Natural Sciences/Appalachian State University; Raleigh, North Carolina; Mark SubbaRao, Director of the Space Visualization, The Adler Planetarium, Chicago, Illinois; Micah Acinapura, Software Integration Engineer, American Museum of Natural History; New York, New York; Carter Emmart, Director of Astrovisualization for Production and Education, American Museum of Natural History; New York, New York; and Vivian Trakinski, Director, Science Bulletins, American Museum of Natural History; New York, New York*

Advanced Technology (AR, VR, etc.) Public Programs Youth Development

EXTERNAL COLLABORATIONS AND CO-CREATION

**The Future of Cannabis: Science, Health, Public Policy in Canada and the World**

MEETING ROOM 717

Come to this workshop with clinical, policy, research, and STEM education experts to grapple with the interrelated scientific and social questions raised by the end of the cannabis prohibition in Canada. How can we engage with our diverse communities during this period of rapidly emerging and contradictory information?

Limited to 50 people. Preregistration required.

Session Leader: *Eric Siegel, Director of Strategic Projects, University of California at Berkeley; Berkeley, California*

Presenters: *Lionel Marks de Chabris, Physician, Pain Management and Medical Evaluator, Toronto, Ontario, Canada; Sarah Seiter, Associate Curator of Natural Sciences, Oakland Museum of California, Oakland, California; and Julie Moskalyk, Science Director, Science North, Sudbury, Ontario, Canada*

Global Perspective Social Justice Adult Engagement

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

S

Up the Learning Curve: Tips and Networking for New CEOs and Senior Leaders

MEETING ROOM 718A

This workshop follows the CEO Forum and gives new CEOs (typically under five years in current role) and senior leaders the opportunity to discuss relevant topics with experienced science center and museum leaders. Participants will select three topics to explore during the workshop.

Limited to 40 people. Preregistration required.

Session Leader: *Charlie Trautmann, Director Emeritus, Sciencenter, Ithaca, New York*

Presenters: *Kate Bennett, Past President, Rochester Museum & Science Center, Rochester, New York; Christian Greer, President and CEO, Michigan Science Center, Detroit, Michigan; Chevy Humphrey, President and CEO, Arizona Science Center, Phoenix, Arizona; Lesley Lewis, Past Chair of ASTC and former CEO, Ontario Science Centre, Toronto, Ontario, Canada; Lara Litchfield-Kimber, Executive Director, Mid-Hudson Children's Museum, Poughkeepsie, New York; Jennifer Martin, Freelance CEO, Calgary, Alberta, Canada; Pelle Persson, Past Chair of ASTC and former Director, Heureka, the Finnish Science Centre, Vantaa, Finland; Dennis Schatz, Senior Advisor, Pacific Science Center, Seattle, Washington; Gillian Thomas, Consultant and President Emerita, Phillip and Patricia Frost Museum of Science, Miami, Florida; David Ucko, former President, Science City at Union Station, Kansas City, Missouri; and Barry Van Deman, President and CEO, Museum of Life and Science, Durham, North Carolina*

Administration Management Leadership

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

9:00 a.m.–2:30 p.m.

CONTENT AND DESIGN

U

Exhilarating Experiments and Dramatic Discoveries: How to Tell Riveting Science Stories Like an Artist

IMPERIAL AUDITORIUM, ONTARIO SCIENCE CENTRE

Science is full of stories and telling them well is an art. Join artists – creative writers, physical comedians, songwriters, and professional yarn-spinners – as they share diverse, arts-based tools for telling your stories with confidence, integrity, dramatic effect, and emotional immediacy. The day will culminate in a performance of Matheatre's *Curie Me Away!*

Buses to the Ontario Science Centre will depart at 8:00 a.m. from the Metro Toronto Convention Centre, South Building, Level 500. Limited to 40 people. Preregistration required.

Session Leader: *Sadie Bowman, Writer, Performer, Booking Manager, Matheatre, Minneapolis, Minnesota*

Presenters: *Ricky Coates, Performer, Technical Director, Matheatre, Minneapolis, Minnesota; Anika Taylor, Outreach Programs Manager, The Bakken Library and Museum, Minneapolis, Minnesota; Zita Nyarady, Performer, Director, The Grand Salto Theatre Co., Toronto, Ontario, Canada; Myque Franz, Performer, Director, The Grand Salto Theatre Co., Toronto, Ontario, Canada; and Sage Tyrtle, Educator, Storyteller, Sage Tyrtle-Storyteller, Toronto, Ontario, Canada*

Communications Member Engagement Outreach

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

9:00 a.m.–5:30 p.m.

CONTENT AND DESIGN



Emotion in the Science Center: Applying Affective Theory, Research, and Technologies in Designed Experiences

MEETING ROOM 718B

How can emotion be leveraged in designed experiences to foster meaningful learning and engagement? In this intensive, participants will investigate emotion theory, explore measurement tools and technologies, and practice designing for emotional goals. Participants' perspectives and expertise will help us co-create understanding of the future of emotion in our work.

Limited to 60 people. Preregistration required.

Session Leader: Sarah May, *Research and Evaluation Associate, Museum of Science, Boston, Massachusetts*

Presenters: Becki Kipling, *Manager, Early Childhood Development and Education, Museum of Science, Boston, Massachusetts*; Gabrielle Rappolt-Schlichtmann, *Chief Scientist and Executive Director, EdTogether, Cambridge, Massachusetts*; Alana Parkes, *Supervisor, Exhibit Content Development, Museum of Science, Boston, Massachusetts*; Elizabeth Kong, *Manager, Hall of Human Life, Museum of Science, Boston, Massachusetts*; and Beth Malandain, *Senior Exhibit Designer, Museum of Science, Boston, Massachusetts*

Learning Research Exhibit Design Emerging Technology

CONTENT AND DESIGN



Flexible Methods for Formative Evaluation

GEMINI WEST, ONTARIO SCIENCE CENTRE

Curious about formative evaluation? Join us to learn about a range of formative evaluation methods that can be used during the exhibit development process. In this workshop, participants will have the opportunity to practice different methods aimed at gathering visitor-informed data through prototyping and piloting.

Buses to the Ontario Science Centre will depart at 8:00 a.m. from the Metro Toronto Convention Centre, South Building, Level 500. Limited to 25 people. Preregistration required.

Session Leader: Leigh Ann Mesiti, *Assistant Manager, Research and Evaluation, Museum of Science, Boston, Massachusetts*

Presenters: Alexander Lussenhop, *Research Associate, Museum of Science, Boston, Massachusetts*, and Sarah Cohn, *Evaluator, Aurora Consulting, Minneapolis, Minnesota*

Visitor Experience Prototyping and Piloting Exhibit Design

INFORMAL EDUCATION AND LEARNING

Let's Do Chemistry: Designing and Facilitating Chemistry Activities to Increase Interest, Relevance, and Self-efficacy

U

MEETING ROOM 715

Learn about a framework for designing and facilitating hands-on informal chemistry activities that increase learners' interest, relevance, and self-efficacy. We'll explore video interactions with visitors that embody the framework, practice and discuss hands-on activities that can help to promote these positive attitudes, and apply the framework to other activities.

Limited to 50 people. Preregistration required.

Session Leader: David Sittenfeld, *Manager, Forums and National Collaborations, Museum of Science, Boston, Massachusetts*

Presenters: Ali Jackson, *Director of National Collaborations, Sciencenter, Ithaca, New York*; Rae Ostman, *Assistant Research Professor, Center for Innovation in Informal STEM Learning, Arizona State University, Tempe, Arizona*; Elizabeth Kollmann, *Manager, Research and Evaluation, Museum of Science, Boston, Massachusetts*; Emily Hostetler, *Forum Education Associate, Museum of Science, Boston, Massachusetts*; and Patricia Galvan, *Program Manager, Office of Science Outreach, American Chemical Society, Washington, D.C.*

Public Programs Prototyping and Piloting Learning Research

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

Lights, Camera, Action! Speaking Science in the Spotlight

U

MEETING ROOM 713

Welcome to the world of social media, television, radio, and podcasts. Grab your smartphone, laptop, and camera in this intensive workshop, we're blending education with marketing to hone your content creation, storytelling, and media-pitching skills to build public awareness, interest, and engagement in science and your center.

Limited to 20 people. Preregistration required.

Session Leader: Sari Custer, *Chief Curiosity Officer, Arizona Science Center, Phoenix, Arizona*

Presenters: Susan Heilman, *Senior Education Associate, Museum of Science, Boston, Massachusetts*; Samantha McDuffee, *Manager Content Strategy and Social Media, Museum of Science, Boston, Massachusetts*; Brian O'Malley, *Senior Account Executive and Director of Events and Marketing, Gordon C. James Public Relations, Phoenix, Arizona*; Heather Zielinski, *Public Relations and Social Media Manager, Arizona Science Center, Phoenix, Arizona*; and Alex Hastings, *Philip W. Fitzpatrick Chair of Paleontology, Science Museum of Minnesota, St. Paul, Minnesota*

Communications Marketing Science Shows

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING

U

Making a Maker Future

CENTRE FOR SOCIAL INNOVATION/TORONTO TOOL LIBRARY, 192 SPADINA AVENUE

An intensive and fun full-day hackathon to imagine, build, and test new visions for maker culture, exhibits, and activities in our science centers.

Limited to 20 people. Preregistration required.

Session Leader: **Andy Forest**, *Executive Director, STEAMLabs, Toronto, Ontario, Canada*

Presenters: **Kevin Von Appen**, *Director, Science Communication, Ontario Science Centre, Toronto, Ontario, Canada*, and **Lorrie Ann Smith**, *Director, Education, Ontario Science Centre, Toronto, Ontario, Canada*

Making and Tinkering

INFORMAL EDUCATION AND LEARNING

U

NEON: National Education Outreach Network

MEETING ROOM 714A

Outreach programs are some of the most diverse, dynamic, exciting, and innovative in the science center field. NEON will explore the many facets of outreach. Multiple presenters will address programs, demos, new opportunities, and new audiences – and brainstorm solutions to outreach challenges.

Limited to 60 people. Preregistration required.

Session Leader: **Jonah Cohen**, *Manager, Science Education, McWane Science Center, Birmingham, Alabama*

Presenters: **Tara Broadhurst**, *Statewide Director, Sci-Tech Discovery Center, Perth, Australia*;

Paul Taylor, *Traveling Science Show and Community Outreach Manager, The Franklin Institute, Philadelphia, Pennsylvania*; and **Dani Boyd**, *Early Childhood Education Coordinator, Carnegie Science*

Center, Pittsburgh, Pennsylvania

Outreach Science Shows

INFORMAL EDUCATION AND LEARNING

U

Practice-based Facilitation: A Framework for Advancing Visitor Learning through Engagement in STEM Practices

CHALLENGE ZONE, ONTARIO SCIENCE CENTRE

Science centers are shifting toward open-ended, audience-centered learning experiences that require new methods of identifying what visitors are learning and new techniques for facilitating their experience. This workshop will equip and inspire science centers and museums to implement practice-based learning experiences that extend and deepen visitors' use of STEM practices through practice-based facilitation.

Buses to the Ontario Science Centre will depart at 8:00 a.m. from the Metro Toronto Convention Centre, South Building, Level 500. Limited to 40 people. Preregistration required.

Session Leader: **Ron Skinner**, *Director of Education, MOXI, The Wolf Museum of Exploration + Innovation, Santa Barbara, California*

Presenters: **Danielle Harlow**, *Associate Professor, Science Education, University of California, Santa Barbara, Santa Barbara, California*, and **Donna Francis**, *Researcher/Programmer, Ontario Science Centre, Toronto, Ontario, Canada*

Partnerships Visitor Experience Learning Research

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

A

Reflecting on Practice Coaching Workshop: Blending In-person and Online

MEETING ROOM 711

Reflecting on Practice (RoP) is a professional learning program for educational professionals in informal learning institutions. This blended workshop (ASTC Intensive and five online meetings) is designed for leaders and/or emerging leaders from an institution to become an RoP facilitator and be able to lead the program at their organizations.

Limited to 20 people. Preregistration required.

Session Leader: Lynn Uyen Tran, Director of Research, The Lawrence Hall of Science, Berkeley, California

Presenter: Catherine Halversen, Senior Project Director, Teaching and Learning, The Lawrence Hall of Science, Berkeley, California

Inclusive Workforce Development Talent Management Visitor Experience

INFORMAL EDUCATION AND LEARNING

U

STEM Justice 101: Redefining STEM as a Tool for Addressing Systems of Oppression

MEETING ROOM 701B

Struggling to broaden participation? Join the STEM justice movement to redefine STEM as a tool for addressing systemic oppression. This workshop explores five themes: self, social justice, the culture of STEM, youth development, and STEM justice practices. Leave with new tools, connections, and an ongoing platform to engage the movement.

Limited to 30 people. Preregistration required.

Session Leader: Joseph Adamji, Director, Kitty Andersen Youth Science Center, Science Museum of Minnesota, St. Paul, Minnesota

Presenters: Emmanuel Donaby, Manager, Middle School Programs, Science Museum of Minnesota, St. Paul, Minnesota; Oanh Vu, Manager-Media and Technology; Science Museum of Minnesota, St. Paul, Minnesota; and Shannon McManimon, Museum Educator, Science Museum of Minnesota, St. Paul, Minnesota

Career Development Diversity and Equity 21st Century Skills

1:30–5:30 p.m.

INFORMAL EDUCATION AND LEARNING

U

In a Good Way . . . Decolonizing Science Education

ROYAL ONTARIO MUSEUM, 100 QUEENS PARK, TORONTO

How do we begin to decolonize science education? Through this intensive session, build your capacity to understand the truth of our shared colonial history and its legacy, challenge stereotypes and appropriation, and begin to reconcile Western science and Indigenous ecological knowledge to cultivate new understandings of our natural environment.

Bus to the Royal Ontario Museum will depart at 12:30 p.m. from the Metro Toronto Convention Centre, South Building, Level 500. Limited to 30 people. Preregistration required.

Session Leader: J'net Ayayqwayaksheelth, Indigenous Outreach & Learning Coordinator, Royal Ontario Museum, Toronto, Ontario, Canada

Presenter: Julie Tomé, Bilingual Teacher, Royal Ontario Museum, Toronto, Ontario, Canada

Diversity and Equity Leadership Social Justice

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

CONTENT AND DESIGN



Designing and Evaluating Programs for Family Audiences

MEETING ROOM 716A

Adults support their children’s learning continuously. Learn to harness that potential by planning for family learning in exhibition and lab classroom programs. Participants will leave with handouts covering the family learning framework, tools for program planning, and tools for program evaluation developed at The Children’s Museum of Indianapolis.

Limited to 25 people. Preregistration required.

Session Leader: **Claire Thoma Emmons**, *Research and Evaluation Associate, The Children’s Museum Indianapolis, Indianapolis, Indiana*

Presenters: **Carey Meier**, *Programs Manager of Interpretations, The Children’s Museum of Indianapolis, Indianapolis, Indiana*, and **Becky Wolfe**, *Director of School Programs and Educational Resources, The Children’s Museum of Indianapolis, Indianapolis, Indiana*

Program Evaluation Public Programs

CONTENT AND DESIGN



Make-A-Vis: Come Build a Data Visualization from the Ground Up

MEETING ROOM 716B

Visualize your world! During this hands-on session come play with the xMacroScope, an open-source tool that supports the design of compelling data visualization experiences for the museum floor. This is a hands-on session; bring your laptop and use your data or ours.

Limited to 40 people. Preregistration required.

Session Leader: **Katy Borner**, *Victor H. Yngve Distinguished Professor of Intelligent Systems Engineering, Indiana University, Bloomington, Indiana*

Presenters: **Elizabeth Record**, *Curator, Places & Spaces: Mapping Science, CNS, School of Informatics, Computing, and Engineering Indiana University, Bloomington, Indiana*; **Bryan Kennedy**, *Director, Exhibit Media, Science Museum of Minnesota, St. Paul, Minnesota*; **Kylie Pepler**, *Associate Professor, University of California Irvine, Irvine, California*; and **Stephen Uzzo**, *Chief Scientist, New York Hall of Science, Queens, New York*

Working with Higher Education Learning Research 21st Century Skills

CONTENT AND DESIGN



Playing with the Future: Creating Exhibits and Programs that Immerse Visitors in Futures Thinking

MEETING ROOM 718A

Meet professional “futurists” and learn how futures thinking, skills, and ideas have been integrated into science centers and children’s museums. Then work in small groups to brainstorm and develop ideas for new STEM learning experiences that immerse public audiences in envisioning the kind of future we want to live in.

Limited to 30 people. Preregistration required.

Session Leader: **Rae Ostman**, *Assistant Research Professor, Center for Innovation in Informal STEM Learning, Arizona State University, Tempe, Arizona*

Presenters: **Meredith Doby**, *Vice President of Exhibits, The DoSeum, San Antonio, Texas*; **Peter Bishop**, *Founder and Executive Director, Teach the Future, Houston, Texas*; and **Joe Tankersley**, *Principal Consultant, Unique Visions, Winter Springs, Florida*

Public Programs Exhibit Design 21st Century Skills

EXTERNAL COLLABORATIONS AND CO-CREATION



Preparing for NASA’s Next Moonshot: An Interactive Discussion about NASA’s James Webb Space Telescope

MEETING ROOM 717

NASA’s next big moonshot, the James Webb Space Telescope, will launch in 2021 and bring discoveries that will change our understanding of the universe. How will you share the science and stories of this wonder? Join us to brainstorm your needs and desires for programming around NASA’s next great observatory.

Limited to 25 people. Preregistration required.

Sponsored by the Space Telescope Science Institute

Session Leader: Alexandra Lockwood, *Webb Science Communications Lead, Space Telescope Science Institute, Baltimore, Maryland*

Presenter: Timothy Rhue II, *Senior Informal Education Specialist, Space Telescope Science Institute, Baltimore, Maryland*

Prototyping and Piloting Future Planning Public Programs

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

3:00–5:30 p.m.

CEO Forum

MEETING ROOM 501

This year’s CEO Forum will focus on public perceptions of science, technology, and research. As leaders of places where each year more than 110 million people around the world encounter and engage with science and technology, chief executives of science and technology centers and museums must keep a pulse on the public’s views on and experience of science. The forum will feature data analysis from several related research reports, including the Wellcome Global Monitor, the ScienceCounts National Benchmark Segmentation Survey, and the American Academy of Arts and Science’s Public Face of Science initiative, including its 2019 report on Encountering Science in America. Following presentations from leaders involved with these studies and reports, institutional chief executives will discuss the implications of these findings for their science-engage ment work, and, in the context of ASTC’s new strategic direction, will provide feedback for how ASTC can support its members in responding and setting course together for new frontiers and an equitable future. Presenters include **Imran Khan**, Head of Public Engagement, Wellcome Trust; **Erica Kimmerling**, Senior Advisor for Science Engagement Policy and Partnerships, Association of Science and Technology Centers; and **Chris Volpe**, Executive Director, ScienceCounts.

Preregistration required. For CEOs of science museums and institutions.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

5:30–6:30 p.m.

Navigation and Networking Gathering

MEETING ROOM 803

Is this your first time attending an ASTC conference? If so, join other first-time attendees, and the members of ASTC's Conference Program Planning Committee, to kick off your conference experience at this welcome reception.

Preregistration required. Space is limited.

5:30–7:30 p.m.

ASTC Diversity and Leadership Development Fellowship Alumni Discussion and Drinks and Informal Learning Leadership Collaborative (ILLC) Reception

MEETING ROOM 704

Are you a past Diversity Fellow? We welcome you to join us for drinks and conversation with Fellows from the past 20 years. It's a time to reconnect and vision together how to keep the network strong. Members of the Informal Learning Leadership Collaborative (ILLC) are invited to share in this joint reception and raise a glass together at 6:30 p.m.

Preregistration required.

6:00–7:30 p.m.

Informal Learning Experiences Traveling Exhibitions Forum

AFFILIATE EVENT

TORONTO MARRIOTT CITY CENTRE, 1 BLUE JAYS WAY

Traveling exhibition providers highlight their available and upcoming exhibits, and science centers and museums discuss the kinds of exhibitions they are currently seeking. This event is free, and all are welcome to attend, grab light snacks and drinks, network, listen, and participate. Presentations will begin promptly at 6:30 p.m., so speakers and attendees are encouraged to arrive beforehand for refreshments and networking.

Write to ileinc@informallearning.com with questions. No need to RSVP.

6:00–9:00 p.m.

The Educators Network (TEN) Social

MEETING ROOM 401

Begin the 2019 ASTC Conference by networking with fellow educators from informal and formal settings. Join us for the upbeat TEN social in Toronto to reconnect with familiar colleagues and initiate new relationships.

Preregistration required.

6:45–7:45 p.m.

Welcome to Toronto Meet-ups

Meet and mingle with colleagues who have shared interests and explore downtown Toronto all at the same time! On Friday night, join one of the topical meet-up groups and enjoy informal networking with other museum professionals at Toronto’s top local spots.

Fort York Tavern

92 Fort York Boulevard

This is a meet-up for people interested in education and programs.

Kellys Landing

123 Front Street West

This is a meet-up for people interested in visitor services and hospitality.

Jack Astor’s

144 Front Street West

This is a meet-up for people interested in exhibits and facilities.

Taverna Mercato

120 Bremner Boulevard

This is a meet-up for people interested in development, membership, and marketing.

7:00–9:00 p.m.

Leadership Reception

CORUS QUAY ATRIUM, 25 DOCKSIDE DRIVE

By invitation only.

With support from

Lord Cultural Resources

Buses to the event will depart at 6:30 p.m. from the Metro Toronto Convention Centre, South Building, Level 500.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.



10
years

imagine
exhibitions

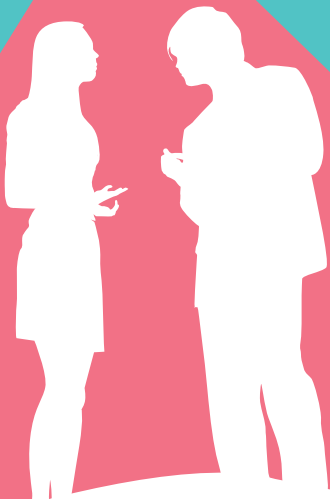


See our full portfolio of traveling exhibitions at ImagineExhibitions.com
Sales@ImagineExhibitions.com

Celebrating 10
Years of Producing
Traveling Exhibitions

Visit us at **Booth #829** in the Conference Exhibit Hall!

Saturday
September 21st





UNDER THE CANOPY

ANIMALS OF THE RAINFOREST



DON'T MISS THIS AMAZING SCALABLE EXHIBIT DESIGNED TO FIT A WIDE VARIETY OF EXHIBIT HALL SIZES.

LOCATED IN THE TRAVELING EXHIBIT AREA AT BOOTH # 943

Saturday, September 21

7:00 a.m.–5:00 p.m.

Registration Open

PREFUNCTION AREA, LEVEL 600

7:30–8:30 a.m.

Meet and Greet Breakfast

HALLS F&G

Before the Opening Plenary Session, grab some breakfast and coffee, sit down with new and longtime friends, share what's new with you, and find out what's happening in other science centers and museums around the world.

8:30–10:30 a.m.

Opening Plenary Session and Keynote Presentation

HALLS F&G

The opening session will feature a welcome from ASTC and the Ontario Science Centre leadership; an insider's look at how NASA's Jenn Gustetic at how NASA uses cross-sector collaboration to advance its own bold missions, and ways science centers and museums can increase impact as they set their moonshots; and presentation of some of the 2019 Roy L. Shafer Leading Edge Awards.

Open to all registered attendees.

Keynote Speaker



Jenn Gustetic, *Program Executive for Small Business Innovation Research, NASA Headquarters*

Roy L. Shafer Leading Edge Awards sponsored by



AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

10:30 a.m.–6:00 p.m.

Exhibit Hall Open

HALL E

Open to all registered attendees.

10:45–11:15 a.m.

Meet and Greet with 2019 ASTC Diversity and Leadership Development Fellows

ASTC LAUNCH PAD, BOOTH 443, HALL E

Meet this year’s awardees and find out about their passions and vision for the field.

11:45 a.m.–1:00 p.m.

CONTENT AND DESIGN



Addressing Barriers to Participation: Making the Museums of the Future Equitable, Inclusive, and Accessible

MEETING ROOM 715

One of our biggest moonshots is that informal education centers be equitable, inclusive, accessible, and welcoming to all. In this session, you will recognize strengths that your institution already has in inclusive/accessible practices, identify new strategies for inclusion and accessibility, and collaboratively workshop solutions that address your institution’s unique experiences.

Session Leader: *Nichelle O’Saurus, Volunteer Coordinator, Natural History Museum of Utah, Salt Lake City, Utah*

Presenters: *Sandra Bonnici, Associate Director of Education, Diversity, and Inclusion, Madison Children’s Museum, Madison, Wisconsin; Dee W. Perry, Floor Manager, The Lawrence Hall of Science, Berkeley, California; and Raquel Stewart, Junior Inclusion and Engagement Specialist, Oregon Museum of Science and Industry, Portland, Oregon*

Visitor Experience Diversity and Equity Accessibility

INFORMAL EDUCATION AND LEARNING



Evaluating the Outcomes of Informal STEM Learning: Will We Ever Figure It Out?

MEETING ROOM 714B

Why is it so challenging to define and assess the impacts of informal STEM education? How can we grow capacity to evaluate outcomes in rigorous, authentic, culturally responsive, and useful ways? A recent journal issue addressed these questions, and authors will share the creative solutions they’ve been inspired by.

Session Leader: *Melissa Ballard, Communications and Community Manager, Center for Advancement of Informal Science Education (CAISE), Washington, D.C.*

Presenters: *Alice Fu, Independent Consultant, Researcher, SK Partners, Edmonton, Alberta, Canada; Marjorie Bequette, Director, Evaluation and Research in Learning, Science Museum of Minnesota, St. Paul, Minnesota; Megan Goeke, Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota; Ryan Auster, Senior Research Associate, Museum of Science, Boston, Massachusetts; and Sarah Cohn, Evaluator, Aurora Consulting, Minneapolis, Minnesota*

Learning Research

INFORMAL EDUCATION AND LEARNING

A

Getting Them in the Door—Effective Recruitment Strategies

MEETING ROOM 716B

Your program is approved, now how do you recruit? Lots of us have this experience and conundrum. Panelists will briefly describe some situations they've overcome before we turn this into a solution room and tackle the issues facing many of us. Join us with your own problems and/or solutions!

Session Leader: *Brian Levine, Manager of Youth Programs/Astrophysics Educator, American Museum of Natural History, New York, New York*

Presenters: *Leah Kalish, Youth Volunteer Programs Manager, California Academy of Sciences, San Francisco, California; Karyn Torigoe, School Programs Manager, Great Lakes Science Center, Cleveland, Ohio; and Daniel Zeiger, Assistant Director, Children and Family Learning, American Museum of Natural History, New York, New York*

Diversity and Equity Partnerships Project Management

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

S

Global Outlook on the Future of Science Centers—Toward 2030 and Beyond

MEETING ROOM 801

Where are science centers headed? Science center global leaders share the outcomes of a week-long workshop advancing our field. Find out about new models in STEM, formal and informal education; new technologies as the next science center phase; implementing science centers in the developing world; and our future audiences. Come join this interactive session and shape our future!

Session Leader: *Ronen Mir, Director, Science Learning Centers, The Weizmann Institute of Science, Rehovot, Israel*

Session Moderator: *Graham Durant, Director, QUESTACON, The National Science and Technology Centre, Canberra, Australia*

Presenters: *Linda Conlon, Chief Executive, International Centre for Life, Newcastle upon Tyne, United Kingdom; Maurice Bitran, CEO, Ontario Science Centre, Toronto, Ontario, Canada; Chey Humphrey, President and CEO, Arizona Science Center, Phoenix, Arizona; Maya Halevy, Director, Bloomfield Science Museum Jerusalem, Jerusalem, Israel; Liat ben David, CEO, Clore Garden of Science, Rehovot, Israel; Netzach Farbiash, CEO, Carasso Science Park, Beer Sheva, Israel; Eli Shermeister, CEO, MadaTech, The Israel National Museum of Science, Technology, & Space, Haifa, Israel; and Erik Jacquemyn, CEO, Jacquemyn & Associates, Mechelen, Belgium*

Future Planning Global Perspective Making the Case for Science Centers

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



How a Collaborative Network Co-Created a Science Exploration and Research Center on the Border

MEETING ROOM 714A

This session introduces participants to the Bisbee Science Exploration and Research Center – a new, binational, rural STEAM initiative – and its newly opened, pop-up center, the Bisbee Science Lab/Laboratorio de Ciencias de Bisbee, an “Experiment in Progress.”

Session Leader: *Etta Kralovec, Chair, Board of Directors, Bisbee Science Exploration and Research Center*

Presenters: *Kal Mannis, Board Member, Bisbee Science Exploration and Research Center, Bisbee, Arizona; Melanie Greene, Board Member, Bisbee Science Exploration and Research Center, Bisbee, Arizona; Robert Quintanar, Board Member, Bisbee Science Exploration and Research Center, Bisbee, Arizona; and Oscar Hernandez, City Clerk, City of Cananea, Cananea, Sonora, Mexico*

Small Museum Community Impact Partnership

INFORMAL EDUCATION AND LEARNING



How to Communicate Climate Change: Key Takeaways from Program Evaluation

MEETING ROOM 718B

Explore successes and challenges of communicating climate change through the lens of key program evaluation takeaways. This session will highlight evaluation lessons from two complementary programs that serve diverse audiences: a youth climate leadership program from The Wild Center and climate resiliency public programs at the Science Museum of Virginia.

Session Leader: *Erin Griffin, Climate & Communities Coordinator, The Wild Center, Tupper Lake, New York*

Presenters: *Katie Chandler, Research Associate, RK&A, Inc., Alexandria, Virginia, and Jeremy Hoffman, Climate and Earth Scientist, Science Museum of Virginia, Richmond, Virginia*

Program Evaluation Public Programs

INFORMAL EDUCATION AND LEARNING



Launching Moonshots: Broadening Participation in Deep-dive, Maker-based STEM Programs through Strong Partnerships

MEETING ROOM 701B

High-quality STEM programs utilizing maker learning practice do not have to be watered down in order to broaden participation. Hear from regional and national organizations on the key ingredients for successful collaboration among partners delivering deep learning, high-impact programs as they scale to offer greater access and more diverse students.

Session Leader: *Liza Manfred, KID Museum, Bethesda, Maryland*

Presenters: *Stephanie Chang, Director of Impact, Maker Ed, Oakland, California; Mindy Porter, Director of Education, Scott Family Amazeum, Bentonville, Arkansas; and Scott Murphy, Director, Department of Secondary Curriculum and Districtwide Programs, Montgomery County Public Schools, Rockville, Maryland*

Diversity and Equity K-12 School Collaboration Partnership

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

S

Making the Case

MEETING ROOM 713

Authors from the May/June issue of *Dimensions Magazine*, themed around “Making the Case,” explore how we can measure and communicate impact. How should science centers and museums quantify their impact and convey it to partners, visitors, funders, and the regional and local community? What data supports the case for science centers and what are the best practices for collecting it?

Session Leader: Susan Straight, *Senior Manager of Communications and Managing Editor, Dimensions Magazine, Association of Science and Technology Centers, Washington, D.C.*

Presenters: Paul Kortenaar, *Founding Director, El Paso Children’s Museum, El Paso, Texas, and Elizabeth Kollmann, Manager, Research and Evaluation, Museum of Science, Boston, Massachusetts*

Making the Case for Science Centers Future Planning

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

INFORMAL EDUCATION AND LEARNING

S

NIH SEPA Funding for ISE Exhibits—Program Overview and Grant

Writing Workshop

MEETING ROOM 711

At the U.S. National Institutes of Health (NIH), the Science Education Partnership Awards (SEPA) program enables partnerships between biomedical and clinical researchers and formal and informal education organizations. SEPA recipients will present case studies on their funded projects and their perspective as SEPA applicants and review panel members. SEPA Program Officer Tony Beck will discuss the program; the NIH grant application, review, and funding processes; and the “Gold Standard” for successful applications. Session participants will engage in a mock review panel.

Session Leader: Tony Beck, *SEPA Program Officer, National Institutes of Health, Bethesda, Maryland*

Presenters: Victoria Coats, *Manager of Exhibit Research and Development, Oregon Museum of Science and Industry, Portland, Oregon; Martin Weiss, Senior Scientist, New York Hall of Science, Queens, New York; Greg DeFrancis, Director of Engagement and Cambridge Science Festival, MIT Museum, Cambridge, Massachusetts; and Laurie Fink, Vice President of Science, Science Museum of Minnesota, St. Paul, Minnesota*

Project Management Grant Writing Business Development

EXTERNAL COLLABORATIONS AND CO-CREATION

U

Science on Tap Philadelphia: How to Get Your City Talking about Science

MEETING ROOM 701A

Since 2010, Science On Tap has connected more than 13,000 people to science content. Our session will include a mini Science On Tap presentation, tips on creating and maintaining quality collaborative programming with limited resources, tools for using nontraditional spaces to cultivate accessible science-based conversation, and best practices on generating institutional buy-in.

Session Leader: Allison Krisch, *Public Programs Manager, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, Pennsylvania*

Presenters: Alexis Pedrick, *Manager of Public Programs, Science History Institute, Philadelphia, Pennsylvania; Anna Dhody, Curator, Mutter Museum, and Director, Mutter Research Institute, Mutter Museum of the College of Physicians of Philadelphia, Philadelphia, Pennsylvania; and Michael Madeja, Museum Programs Manager, American Philosophical Society, Philadelphia, Pennsylvania*

Partnerships Outreach Adult Engagement

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



The Dark Side of the Moon: Exploring Our Failures, Foibles, and Fantasies

MEETING ROOM 716A

Moonshots are great when you ultimately get to plant your flag and win the race. But what about project ideas that exploded in flight, or collapsed while sitting on the pad? In this “solution room” session, panelists will share stories from less than perfect projects, then solicit solutions from participants.

Session Leader: *Christian Greer, President and CEO, Michigan Science Center, Detroit, Michigan*

Presenters: *Gretchen Walker, Vice President, Education, The Tech Interactive, San Jose, California; Jenn Barlup, Director of Floor Experiences, COSI, Columbus, Ohio; and Veronica Garcia-Luis, Project Director, VRE Director of Diversity and Inclusion Initiative, Exploratorium, San Francisco, California*

Project Management Future Planning Prototyping and Piloting

INFORMAL EDUCATION AND LEARNING



The Future Is Here: Youth Voices on Innovation

MEETING ROOM 801

Hear from youth of today that have taken their education into their own hands and are inventing the future. Four panelists range from ages 9 to 17 and are artists, makers, scientists, educators, and entrepreneurs. What is the future of education from a youth perspective?

Session Leader: *Andy Forest, Executive Director, STEAMLabs, Toronto, Ontario, Canada*

Presenters: *Presenters: Riya Karumanchi, CEO, SmartCane, Toronto, Ontario, Canada; Zephyrus Todd, makerzeph, Oakland, California; and Artash Nath, Hot Pop Robot, Toronto, Ontario, Canada*

Future Planning Teen Programs Youth Development

CONTENT AND DESIGN



The Science Of Cannabis: Critical Thinking, Emerging Science, and Social Context

MEETING ROOM 717

The emerging science of cannabis is a great attractor for a very diverse audience who are eager for reliable social, scientific, and clinical expertise. Join science center professionals who have leveraged this interest into successful public programs and exhibitions that address the topic’s complexity and controversy.

Session Leader: *Eric Siegel, Director of Strategic Projects, University of California at Berkeley, Berkeley, California*

Presenters: *Sarah Seiter, Associate Curator of Natural Sciences, Oakland Museum of California, Oakland, California; and Julie Moskalyk, Science Director, Science North, Sudbury, Ontario, Canada*

Adult Engagement Public Programs Social Justice

1:00–2:00 p.m.

Saturday Networking Lunch in the Exhibit Hall

HALL E

Complimentary lunch will be offered in the Exhibit Hall.

2:15–3:30 p.m.

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

U

**Flash Presentations:
Business Practices to Increase Relevance for All**

MEETING ROOM 716A

Session Leader: *Talance Orme, Director of Training and Business Operations, The Tech Interactive, San Jose, California*

Introducing Museum-specific Signing Glossaries for Visitors Who Are Deaf or Hard of Hearing

This session will highlight innovative features of signing glossary apps designed to enhance access of visitors who are deaf or hard of hearing to aquariums, botanical gardens, natural history museums, nature centers, science museums, and zoos. It will include research-based examples of how the apps enable access to exhibit content.

Presenter: *Judy Vesel, Principal Investigator, TERC, Cambridge, Massachusetts*

Re-Making the Maker Space: How Evaluation Can Spark Change

The Peoria PlayHouse Children’s Museum recently completed a two-year investigation into our maker space and correlating visitor experiences. Come learn about our research strategy, evaluation tools and findings, and the modifications we made to better achieve our museum’s mission and maker-related goals and outcomes.

Presenter: *Adrienne Huffman, Educator, Family and Public Programs, Peoria PlayHouse Children’s Museum, Peoria, Illinois*

Supporting Accessibility in Museum Classrooms through a Needs Assessment

Learning Labs at the Museum of Science and Industry in Chicago are hour-long, hands-on museum classroom experiences. To ensure Labs are open to all students, we asked 405 educators to rank 21 student accessibility needs. Needs rankings and follow-up interviews suggest visual information and setting expectations are top accessibility priorities of educators.

Presenter: *Lauren Applebaum, Senior Evaluator, Museum of Science and Industry, Chicago, Illinois*

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

Rethinking Relevance for Millennial Engagement with Science: Results from a National Survey

This research, conducted in partnership with LabX at the National Academy of Sciences, uses a nationally representative sample of millennials to investigate how science fits (or doesn't) into their lives, exploring perceptions of science as a domain of utility (both personally and on a community-wide scale) and enjoyment to them.

Presenter: Jennifer Benoit-Bryan, *Project Director and Quant Lead, Slover Linett Audience Research, Chicago, Illinois*

Institutional Knowledge: Creating a Framework to Pass the Baton Forward

Institutional Knowledge (IK) is the “stored knowledge within an organization.” The museum world relies on IK for successful operations, and its loss can create compounding issues across an organization. Join this session to understand the benefits of preserving IK and how to create a framework for passing the baton forward!

Presenter: Crystal Schneider, *Operations Manager, American Museum of Natural History, New York, New York*

2:15–3:30 p.m.

EXTERNAL COLLABORATIONS AND CO-CREATION



An Artist Walks into a Science Museum . . . Approaches for Bringing Artists and Visitors Together

MEETING ROOM 716B

How can science centers create powerful interdisciplinary experiences to help visitors understand our complex world? Join presenters as they share experiences about developing partnerships with artists to create connections between art and science. Learn about the successes and challenges of artist partnerships and strategies for creating experiences in your museum.

Session Leader: Carolina Chambers, *Portal to the Public Coordinator, Pacific Science Center, Seattle, Washington*

Session Moderator: Anna Johnson, *Portal to the Public Manager, Pacific Science Center, Seattle, Washington*

Presenters: Eric Godoy, *Partnership Programs Coordinator, Denver Museum of Nature & Science, Denver, Colorado*; PaulMichael Maxfield, *Public Programs Coordinator, Natural History Museum of Utah, Salt Lake City, Utah*; and Cesar Cueva, *Visitor Services Manager, Oakland Museum of California, Oakland, California*

Partnerships Visitor Experience Adult Engagement

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



DAIE and Organizational Change

MEETING ROOM 714B

By examining two initiatives focused on organizational change, this session will highlight synergies, opportunities, and differences between iPage and the Cultural Competence Learning Institute. Both feature museum cohorts, staff teams, and year-long engagement with materials grounded in diversity, accessibility, inclusion, and equity (DAIE). Find out how your institution can benefit from these programs.

Session Leader: Jenni Martin, *Director of Education and Strategic Initiatives, Children’s Discovery Museum of San Jose, San Jose, California*

Session Moderator: Ann Hernandez, *Senior Manager of Inclusion Initiatives, Association of Science and Technology Centers, Washington, D.C.*

Presenter: Liesl Chatman, *Director, Science House Professional Development Group, Science Museum of Minnesota, St. Paul, Minnesota*

Talent Management Inclusive Workforce Development 21st Century Skills

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

CONTENT AND DESIGN



Evolution: The Conversation Continues

MEETING ROOM 713

Join a cohort of professionals invested in evolution education. Participants will hear from three different organizations and participate in a discussion exploring the challenges, misconceptions, and methods for introducing evolution in programs and exhibitions. The session will also explore outreach programming, children’s programs, institutional statements, and strategies for handling opposition.

Session Leader: Stephanie Long, *Director of Science Live Theatre, Science Museum of Minnesota, St. Paul, Minnesota*

Presenters: Robert Mac West, *Board Member, National Center for Science Education, Oakland, California;* Liza Pryor, *Project Leader, Science Museum of Minnesota, St. Paul, Minnesota;* and Cynthia Sharpe, *Principal, Cultural Attractions and Research, Thinkwell, Burbank, California*

Science Shows Public Programs Exhibit Design

INFORMAL EDUCATION AND LEARNING



Evolving Teen Programs—Enter the Solution Room

MEETING ROOM 717

Come ready to problem-solve around topics such as workforce/career development, broadening access, recruitment and retention, on-boarding, and setting expectations for teen programs. This solution room-style session will allow participants to actively engage in the discussion and add value by sharing their own experiences while also learning from others.

Session Leader: Aimee Davis, *Volunteer and Public Learning Experiences Administrator, The Field Museum of Natural History, Chicago, Illinois*

Presenters: Heather Norton, *Vice President of Learning Experiences, Discovery Place, Charlotte, North Carolina;* Josh Kemper, *HR/Talent Coordinator, Pacific Science Center, Seattle, Washington;* Priya Mohabir, *Vice President, Youth Development, and Director, Alan J. Friedman Center for the Development of Young Scientists, New York Hall of Science, Queens, New York;* and Christian Greer, *President and CEO, Michigan Science Center, Detroit, Michigan*

21st Century Skills Youth Development Teen Programs

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING

U

Extending the Lifelong Learning Experience in Giant Screen Films

MEETING ROOM 718B

One of the hallmarks of giant screen films is their dedication to lifelong learning. The theaters exhibiting these films offer their communities unique, enriching experiences inspired by a large pipeline of memorable and timely giant screen films. Using tools provided by giant screen filmmakers, many science centers and museums have created award-winning programs that share innovative approaches to the lifelong science learning offered in giant screen films, extend the learning experience beyond the screening in the theater, and inspire action.

Session Leader: *Tammy Seldon, Executive Director, Giant Screen Cinema Association, Holly Springs, North Carolina*

Session Moderator: *Mike Lutz, Vice President of New Business Development, Salt Lake City, Utah*

Presenters: *Jason Brown, Interim Director, Carnegie Science Center, Pittsburgh, Pennsylvania; Andrea Durham, Vice President, Exhibits, Digital, and Evaluation, Science World, British Columbia, Canada; and Wendy MacKeigan, CEO, SK Films, Toronto, Ontario, Canada*

Small Museum Learning Research Advanced Technology (AR, VR, etc.)

EXTERNAL COLLABORATIONS AND CO-CREATION

A

Handing Over the Controls: Co-Creating Exhibits with Community Partners

MEETING ROOM 714A

Giving up control of exhibit design to community partners can be uncomfortable, but it is worth the risk. Co-developing exhibits allows science centers to integrate community needs and expertise into museum experiences. This session will share examples of how community-science center exhibit partnerships informed and changed the museums that participated.

Session Leader: *Andrea Girón Mathern, Director, Community Research and Engagement Strategies, Denver Museum of Nature & Science, Denver, Colorado*

Presenters: *Melissa Radey, Staff Scientist, Science North, Sudbury, Ontario, Canada; Jeff Rosenblatt, Director, Science City, Union Station, Kansas City, Missouri; and Kyrie Kellett, Principal, Mason Bee Interpretive Planning, Portland, Oregon*

Exhibit Design Diversity and Equity Partnership

INFORMAL EDUCATION AND LEARNING

A

Informal STEM Education and Science Communication: Branches of the Same Tree, Invasive Species, or Complementary Niches in an Ecosystem?

MEETING ROOM 718A

Museums and science centers are increasingly addressing socioscientific issues in their programming and exhibitions. Science communication practitioners seek to reach diverse, underrepresented audiences with broader impacts and education activities. In this session, researchers and practitioners will share and compare theory, strategy, and findings, surfacing opportunities and challenges for mutual learning.

Session Leader: **Jamie Bell**, *Project Director, Center for Advancement of Informal Science Education (CAISE), Washington, D.C.*

Presenters: **Melissa Ballard**, *Communications and Community Manager, Center for Advancement of Informal Science Education (CAISE), Washington, D.C.*; **Chantal Barriault**, *Research Advisor, Science North, Sudbury; Ontario, Canada*; **John Besley**, *Associate Professor and Ellis N. Brandt Chair in Public Relations, Michigan State University; East Lansing, Michigan*; **Rae Ostman**, *Assistant Research Professor, Center for Innovation in Informal STEM Learning, Arizona State University; Tempe, Arizona*; and **Sara Yeo**, *Assistant Professor, Communication, University of Utah, Salt Lake City; Utah*

Design Thinking Learning Research Diversity and Equity

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

S

Scaling Up: Positioning Your Museum for Its Next Campaign

MEETING ROOM 701A

Successful fundraising campaigns don't happen by accident. This panel discussion invites museum CEOs, trustees, and senior leadership team members to explore critical aspects of preparing your organization for its next major capital campaign.

Session Leader: **Lara Litchfield-Kimber**, *Executive Director, Mid-Hudson Children's Museum, Poughkeepsie, New York*

Presenters: **Christopher Gerstle**, *Trustee, Mid-Hudson Children's Museum, Poughkeepsie, New York*; **Chevy Humphrey**, *President and CEO, Arizona Science Center, Phoenix, Arizona*; **Stephen Snyder**, *Executive Director, Fleet Science Center, San Diego, California*; and **Ray Vandiver**, *Executive Director, Tulsa Children's Museum, Tulsa, Oklahoma*

Fundraising Board Management Making the Case for Science Centers

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

S

Take a Break from Building the Plane while Flying It

MEETING ROOM 715

How can you re-think the design of disparate youth programs to create a meaningful pathway for participants while simultaneously continuing to serve them within staff, space, and funding constraints? Come participate in a design charrette where you are free to think ambitiously about building a new space vehicle without having to fly it at the same time – a new way to create a youth development program . . . operationally.

Session Leader: **Preeti Gupta**, *Director of Youth Learning and Research, American Museum of Natural History; New York, New York*

Session Moderator: **Andrea Motto**, *Manager of Public and Youth Engagement, Yale Peabody Museum of Natural History; New Haven, Connecticut*

Presenter: **Denise Su**, *Director of Partnerships and Programs, Cleveland Museum of Natural History; Cleveland, Ohio*

Youth Development Teen Programs Project Management

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

CONTENT AND DESIGN

U

Virtual Reality and Immersive Technologies: A Roadmap for New Forms of Audience Engagement

MEETING ROOM 711

Through case studies of Pacific Science Center's adoption of VR and immersive technologies, this session will examine how these technologies impact visitor experiences and discuss the practical issues of how to create optimal VR installations, maximize high throughput, and attract new audiences by becoming a hub for local tech communities.

Session Leader: *Diana Johns, Vice President of Exhibits, Pacific Science Center, Seattle, Washington*

Session Moderator: *Paul Fraser, President, Blaze Cineworks LLC, Seattle, Washington*

Presenters: *Sandy Smolan, CEO and Co-Founder, VR Microtheaters, Seattle, Washington; and Jeff Ludwyck, Founder, HyperspaceXR, Seattle, Washington*

Temporary and Traveling Exhibits Emerging Technology Advanced Technology (AR, VR, etc.)

CONTENT AND DESIGN

U

Xs and Os: Connecting Visitor Experience Data and Operational Data to Drive Institutional Change

MEETING ROOM 701B

Combining operational and experience data can lead to unique insights that promote inter-departmental conversation and prompt change across an organization. In this session, seven examples will be presented of how museums have benchmarked themselves, collaborated with others, and made informed decisions by layering multiple sources of data.

Session Leader: *Ryan Auster, Senior Research Associate, Museum of Science, Boston, Massachusetts*

Session Moderator: *Sarah Cohn, Evaluator, Aurora Consulting, Minneapolis, Minnesota*

Presenters: *Christine Reich, Vice President of Exhibits, Museum of Science, Boston, Massachusetts; Rita Deedrick, Co-Director, COSI Center for Research and Evaluation, COSI, Columbus, Ohio; Megan Goeke, Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota; Elisa Israel, Director of Research and Evaluation, Saint Louis Science Center, St. Louis, Missouri; Michael Rathbun, Associate Director, Discovery Center Museum, Rockford, Illinois; Brett Turner, Director of Audience and Business Analytics, New York Hall of Science, Queens, New York; and Scott Vollmer, Vice President of STEM Learning, Great Lakes Science Center, Cleveland, Ohio*

Visitor Experience Future Planning Business Development

3:30–4:30 p.m.

Exhibit Hall Refreshment Break

HALL E

Take some time between attending sessions and exploring the Exhibit Hall to discover what's new at your colleagues' organizations, share what's working well in your local STEM ecosystem, forge new collaborations, and discuss ways science centers and museums can increase their impact in our communities.

4:45–6:00 p.m.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

A

Building an ISL Profession that Has the Skills Needed for the Future

MEETING ROOM 701B

The panelists will introduce the Informal STEM Learning (ISL) Professional Learning Framework workbook. Participants will be the first to test the research-based competency assessment tools. The tools will be used to launch a discussion of how professional learning is evolving and what it means to be a professional working in ISL, today and tomorrow.

Session Leader: Lesley Markham, *Senior Manager of Impact Initiatives, Association of Science and Technology Centers, Washington, D.C.*

Presenters: Dennis Schatz, *Senior Advisor, Pacific Science Center, Seattle, Washington;* Martin Storksdieck, *Director, Center for Research on Lifelong STEM Learning, Oregon State University, Corvallis, Oregon;* Joe Heimlich, *Senior Researcher, COSI, Columbus, Ohio;* Nancy Staus, *Research Associate, Oregon State University, Corvallis, Oregon;* Kris Morrissey, *Consultant, Morrissey Research, Seattle, Washington;* and Cathlyn Stylinski, *Researcher/Senior Agent, University of Maryland Center of Environmental Science, Frostburg, Maryland*

Future Planning Talent Management 21st Century Skills

INFORMAL EDUCATION AND LEARNING

A

Creating, Re-Designing Professional Learning Experiences for Teachers and Museum Educators: Creating Collaborations, Utilizing Best Practices

MEETING ROOM 718B

Learn about model professional development programs used at four institutions from across the United States. Take home the tools we designed to assist institutions with developing or re-inventing sustainable professional development programs that meet the needs of K-12 teachers and museum educators. We will share lessons learned and the models used.

Session Leader: Sandra Ryack-Bell, *Executive Director, Wade Institute for Science Education, Quincy, Massachusetts*

Presenters: Robert Payo, *Educational Technology Coordinator, Denver Museum of Nature & Science, Denver, Colorado;* Nicole Kowrach, *ITW Director of Teaching and Learning, Museum of Science and Industry, Chicago, Illinois;* and Erica Barraeto, *Senior Director, Bowers Institute, The Tech Interactive, San Jose, California*

K-12 School Collaboration Teacher Professional Development

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

A

Developing Interest in STEM & STEM Careers through Museum Programming

MEETING ROOM 714B

Last year, ASTC and Voya partnered to conduct a multisite evaluation of STEM career initiatives. This session will detail how tools were adapted to measure interest in STEM and STEM careers, as well as how this project coordinated data collection across five science centers and museums. This session will share findings from Year 1 of the study and provide a practitioner perspective from one of the participating sites.

Session Leader: Leigh Ann Mesiti, *Assistant Manager, Research and Evaluation, Museum of Science, Boston, Massachusetts*

Presenters: Tammy Stewart, *Chief Development Officer, Arizona Science Center, Phoenix, Arizona;* Elizabeth Kollmann, *Manager, Research and Evaluation, Museum of Science, Boston, Massachusetts;* and Ryan Auster, *Senior Research Associate, Museum of Science, Boston, Massachusetts*

Program Evaluation Youth Development Impact Measurement

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING

A

Highlighting STEM for Young Children while Keeping the Tinkering Intact: Program Development, Facilitation, and Environments

MEETING ROOM 701A

Delve into real-life, STEM-rich experiences that engage children ages 3 to 10 in science centers and museums. Whether or not you have a maker space, work with families or school groups, or offer drop-in or scheduled programs, this session provides research-based, practical tips for strong STEM programming grounded in making and tinkering mindsets.

Session Leader: **Kim Koin**, *Director of Art and Tinkering Lab Studios, Chicago Children's Museum, Chicago, Illinois*

Presenters: **Adrienne Huffman**, *Educator, Family and Public Programs, Peoria PlayHouse Children's Museum, Peoria, Illinois*; **Alia Carter**, *Director of Science Engagement, McWane Science Center, Birmingham, Alabama*; **Lisa Regalla**, *Director of STEM Learning and Innovation, Bay Area Discovery Museum, Sausalito, California*; and **Tsivia Cohen**, *Associate Vice President of Play and Learning Initiatives, Chicago Children's Museum, Chicago, Illinois*

Early Childhood Making and Tinkering Public Programs

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

U

Putting It on Paper: The Power of an Equity and Inclusion Statement

MEETING ROOM 801

Developing an equity and inclusion statement can play a vital role in advancing institutional practices that champion equity, diversity, and inclusion. Presenters will share examples and strategies from the field and attendees will walk away with tools for creating an equity and inclusion statement of their own.

Session Leader: **Timothy Hecox**, *Grants Coordinator, Oregon Museum of Science and Industry, Portland, Oregon*

Presenters: **Ann Hernandez**, *Senior Manager of Inclusion Initiatives, Association of Science and Technology Centers, Washington, D.C.*; **Robby Callahan Schreiber**, *Museum Access and Equity Director, Science Museum of Minnesota, St. Paul, Minnesota*; **Sandra Bonnici**, *Associate Director of Education, Diversity, and Inclusion, Madison Children's Museum, Madison, Wisconsin*; **Jenni Martin**, *Director of Education and Strategic Initiatives, Children's Discovery Museum of San Jose, San Jose, California*; and **Cecile Shellman**, *Museum DEAI Consultant, Cecile Shellman Consulting, Pittsburgh, Pennsylvania*

Social Justice Diversity and Equity Communications

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

A

Reflecting Critically on Our Beliefs about Learning

MEETING ROOM 716A

There is no empirical evidence that teaching students consistent with their “learning styles” will improve their learning. This myth about learning styles is pervasive and focus on it is counter-productive and potentially detrimental for our efforts. In this interactive session, we will carefully unpack this myth, examine our own beliefs, discuss current research on learning, and explore practical implications for this research.

Session Leader: **Lynn Uyen Tran**, *Director of Research, The Lawrence Hall of Science, Berkeley, California*

Presenters: **Preeti Gupta**, *Director of Youth Learning and Research, American Museum of Natural History, New York, New York*; **Daniel Zeiger**, *Assistant Director, Children and Family Learning, American Museum of Natural History, New York, New York*; and **Naina Abowd**, *Senior Manager of Curriculum and Teaching, American Museum of Natural History, New York, New York*

Visitor Experience Learning Research Career Development

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

U

Reviews and Reputation: How to Respond to Negative (or Positive!)

Social Media Reviews

MEETING ROOM 713

Reputation management is a critical marketing strategy essential to maintaining and enhancing brand and driving admissions. We will discuss why online reviews are valuable, how other organizations have responded to reviews, and what resources are available to garner more reviews, maintain a positive online reputation, and drive your business objectives.

Session Leader: Mandy Smith, *Senior Account Executive, TripAdvisor, Portland, Oregon*

Presenters: Jacquie Chakirelis, *Director of Marketing, Great Lakes Science Center, Cleveland, Ohio;*

Catherine Harris, *Manager, Hosts, Ontario Science Centre, Toronto, Ontario, Canada;* and Anna Relyea, *Director, Strategic Communications, Ontario Science Centre, Toronto, Ontario, Canada*

Visitor Experience Social Media Engagement Marketing

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION

U

How to Take Over the World through Off-site Engagement

MEETING ROOM 711

Looking to engage more adults? Check your local bar, start a podcast, or both! Discover how you can create offsite programming that reaches new audiences and drives them to your museum. Dissect the Two Scientists Walk into a Bar program and SNaQ (Science News and Questions) podcast and explore ways to develop them at your institution.

Session Leader: Lamont Craven, *Program Manager, Adult Programs, Carnegie Science Center, Pittsburgh, Pennsylvania*

Presenters: Ralph Crewe, *Program Development Coordinator, Carnegie Science Center, Pittsburgh, Pennsylvania,* and Andrea Decker, *Executive Assistant, Fleet Science Center, San Diego, California*

Communications Adult Engagement 21st Century Skills

EXTERNAL COLLABORATIONS AND CO-CREATION

S

The Future of Entrepreneurship in Science and Technology Engagement: Being an Acceleration Hub

MEETING ROOM 714A

Science centers, museums, and libraries are sparking entrepreneurship and innovation, evolving to provide new resources to create new opportunities for those we serve. Hear about how they work with partners, networks, community organizations, and companies in different ways, from space allocation, to co-developed, co-delivered programs, cafés, stores, innovation labs, and co-working spaces.

Session Leader: Andy Forest, *Executive Director, STEAMLabs, Toronto, Ontario, Canada*

Presenters: Ab Velasco, *Manager, Innovation, Toronto Public Library, Toronto, Ontario, Canada;* Lorrie-Ann Smith, *Director, Education, Ontario Science Centre, Toronto, Ontario, Canada;* and Diana Johns, *Vice President of Exhibits, Pacific Science Center, Seattle, Washington*

Partnerships Future Planning Community Impact

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING

A

To Infinity and Beyond! Enduring Connections with Youth Along the Career Ladder

MEETING ROOM 717

Relevancy in the future necessitates that cultural institutions and science museums diversify programmatic objectives that holistically support youth through academic and career journeys. Presenters who lead initiatives with varied audiences (including LGBTQ youth, all girls, and a coed civics program) will share key factors to sustain connections with youth.

Session Leader: **Shihadah Saleem**, *Manager of Teen Leadership Programs, Intrepid Sea, Air & Space Museum, New York, New York*

Presenters: **Julia Orr**, *Museum Educator, Intrepid Sea, Air & Space Museum, New York, New York*; **Ivel Gontan**, *Community Programs Senior Manager, Fleet Science Center, San Diego, California*; and **Lindsay C. Harris**, *Teen Programs Manager, Brooklyn Museum, Brooklyn, New York*

21st Century Skills Teen Programs Youth Development

CONTENT AND DESIGN

U

Using Narratives to Create Inclusive and Engaging Museum-based Engineering Experiences

MEETING ROOM 718A

Three museums will share practical insights from an NSF collaborative research project investigating how narrative elements can impact visitors' engineering design experiences by fostering perspective taking and empathy. Participants will experience firsthand how to integrate subtle hints of narrative into materials, facilitation, and problem-framing to create more inclusive experiences.

Session Leader: **Dorothy Bennett**, *Director of Creative Pedagogy, New York Hall of Science, Queens, New York*

Session Moderator: **Kylie Pepler**, *Associate Professor, University of California Irvine, Irvine, California*

Presenters: **Suzy Letourneau**, *Research Associate, New York Hall of Science, Queens, New York*; **Dana Schloss**, *Director of Exhibit Experience, New York Hall of Science, Queens, New York*; **Mindy Porter**, *Director of Education, Scott Family Amazeum, Bentonville, Arkansas*; and **Lauren Cage**, *Gallery Programs Specialist, The Tech Interactive, San Jose, California*

Learning Research Diversity and Equity Design Thinking

CONTENT AND DESIGN

U

Youth-led Civic Action

MEETING ROOM 716B

Come explore strategies and brainstorm solutions for designing teen programs that tackle environmental challenges through youth-led civic action.

Session Leader: **Laura Herszenhorn**, *Senior Manager, Science Action Club, California Academy of Sciences, San Francisco, California*

Presenters: **Leah Kalish**, *Youth Volunteer Programs Manager, California Academy of Sciences, San Francisco, California*; and **Erin Prada**, *Manager of Youth Development, Wildlife Conservation Society, Bronx, New York*

21st Century Skills Teen Programs Youth Development

6:00–7:00 p.m.

Association of Science Museum Directors Reception for Directors

AFFILIATE EVENT

MEETING ROOM 501

A reception for current and prospective director members of the Association of Science Museum Directors (ASMD), a community of science-museum leaders that gathers to share experiences and discuss issues related to the advancement of member organizations. Learn about ASMD activities, meet fellow science-museum directors, and enjoy a cash bar. Please RSVP to asmd.styles@gmail.com.

7:00–11:30 p.m.

Saturday Night Party at the Ontario Science Centre: A Mosaic of Cultures

ONTARIO SCIENCE CENTRE

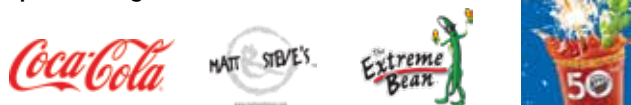
Satisfy your wanderlust by experiencing Toronto’s vibrant, ever-growing cultural diversity at the Ontario Science Centre’s “Saturday Night: A Mosaic of Cultures!” As one of the world’s first interactive science museums, the Ontario Science Centre contains an array of engaging installations and curiosity-inspiring exhibit halls. Connect with old and new friends, embrace challenges, and take part in innovative thinking while igniting your passion for the human adventure of discovery.

Enjoy a classic Canadian Mott’s Clamato Caesar and indulge in flavors from some of Toronto’s neighborhoods like Greektown, Chinatown, Little Italy, and more. Bhangra dance your way to our Weston Family Innovation Centre and experience cross-collaborations in music, dance, and food throughout the center. Get the first glimpse of our upcoming, thought-provoking *MindWorks* exhibition that promises to provide bodies-on and minds-on experiences into the realms of cognitive, behavioral, and social psychology, and so much more. This is an evening you won’t want to miss!

Buses to the Ontario Science Centre will begin departing at 6:30 p.m. from the official ASTC Annual Conference hotels. Return buses will drop off at the official ASTC Annual Conference hotels.

For guests aged 19+. Preregistration required. Fee: \$12 (supports the ASTC Diversity and Leadership Development Fellows Program).

Sponsored by



AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

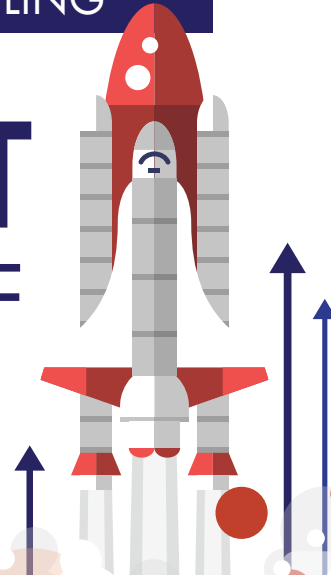
All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.



MILLENNIALS

FROM LEADING TO TRAILING

MAKE UP THE
LARGEST
SEGMENT OF
ATTRACTION VISITORS



SO WHY DID

ONLY VISIT SCIENCE CENTERS IN
18% | 2018?

1,500 attraction visitors surveyed, 532 Millennials



GOT THE FACTS?
VISIT PGAVDESTINATIONS.COM

    **PGAVDESTINATIONS**

MASTER PLANNERS | INTERPRETIVE PLANNERS | EXHIBIT DESIGNERS | ARCHITECTS



Sunday
September 22nd



AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

Sunday, September 22

7:00 a.m.–5:00 p.m.

Registration Open

PREFUNCTION AREA, LEVEL 600

8:00–10:00 a.m.

GSCA CEO Strategy Session and Breakfast

AFFILIATE EVENT

MEETING ROOM 501

Giant Screen Cinema Association (GSCA) member CEOs will moderate a breakfast discussion sharing industry data as well as their own strategies, successes, and challenges in realizing their theater's mission and financial success.

By invitation only.

9:30–11:30 a.m.

Networking Breakfast and Poster Palooza in the Exhibit Hall

HALL E

It's poster palooza! Grab a bite, take a tour of poster palooza, sit down with new and long-time friends, share what's new with you, and find out what's happening in other science centers and museums around the world.

9:30 a.m.–6:00 p.m.

Exhibit Hall Open

HALL E

Open to all registered attendees.

10:00–11:30 a.m.

CONTENT AND DESIGN



Climate Change Program and Exhibit Showcase

BOOTH 109, HALL E

The impending realities of climate change calls on science centers and museums to be key community catalysts in the rapid transition to a low carbon economy and society. No sales, just sharing strategies so your organization can be part of the solution. Network, gather program templates, and be inspired by ideas showcased.

Session Leader: *Stephanie Ratcliffe, Executive Director, The Wild Center, Tupper Lake, New York*

Presenters: *Jamie Bell, Project Director, Center for Advancement of Informal Science Education (CAISE), Washington, D.C.; Greg DeFrancis, Director of Engagement and Cambridge Science Festival, MIT Museum, Cambridge, Massachusetts; Jen Kretser, Director of Programs and the Youth Climate Summit Initiative, The Wild Center, Tupper Lake, New York; Heather Deschenes, Director of Education, New England Aquarium, Boston, Massachusetts; Pat Hamilton, Director, Global Change Initiatives, Science Learning Division, Science Museum of Minnesota, St. Paul, Minnesota; Alan Bunge, STEM Education Specialist, The Maritime at Norwalk, Norwalk, Connecticut; Leigh Peakes, Director of Education, Gulf of Maine Research Institute, Portland, Maine; and Jon Love, Outreach, Pachamama Alliance, Toronto, Ontario, Canada*

Teacher Professional Development Learning Research Public Programs

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

10:00–11:30 a.m.

Poster Presentations

ALL POSTERS PRESENTATIONS ARE IN HALL E

INFORMAL EDUCATION AND LEARNING



Advancing Homeschooling Education through Museums: Parents Promote Computational Thinking and Engineering in Children

HALL E

Find out about a research study that takes a unique approach to investigating parents' role in children's engagement in engineering and computational thinking (E-CT), by focusing on homeschool families who follow un-schooling and informal approaches for educating their children (ages 5–7).

Poster Leader: *Hoda Ehsan, Graduate Student, Purdue University, West Lafayette, Indiana*

Presenter: *Monica Cardella, Director, Purdue University, West Lafayette, Indiana*

Early Childhood 21st Century Skills

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



ArtLab: Intersection of Art and Science

HALL E

Built around the idea of an art studio, and situated in the heart of a university science and engineering building, ArtLab focuses on design-thinking to explore the intersection of the humanities and STEAM. ArtLab solicits scientists, researchers, faculty members, and students for project ideas (science and cinema, environmentally responsible fashion, etc.) and showcases them in a yearly exhibition.

Poster Leader/Presenter: Kendra Oliver, *Instructor, Vanderbilt University; Nashville, Tennessee*

Communications Outreach Design Thinking

CONTENT AND DESIGN



Beyond the Museum's Walls: NMNH's Do-It-Yourself Exhibits Program

HALL E

In 2018, Smithsonian's National Museum of Natural History launched its first-ever "do-it-yourself" (DIY) exhibit, providing free, ready-to-print digital files and other resources to museums, libraries, and other venues. The goal was to make our *Outbreak: Epidemics in a Connected World* exhibition widely accessible and to generate discussion worldwide about the human, animal, and environmental connectedness of infectious disease.

Poster Leader/Presenter: Kerri Dean, *DIY Project Manager, Smithsonian Institute, National Museum of Natural History; Washington, D.C.*

Temporary and Traveling Exhibits Outreach Exhibit Design

CONTENT AND DESIGN



Bring Out the Creativity in Children—Welcome to the PlayCraft!

HALL E

The Cité des Enfants is a permanent children space at the Cité des Sciences et de l'Industrie that each year draws 750,000 visitors. Recently, a giant PlayCraft landed. This session will focus on how this PlayCraft was designed with experiential learning in mind, giving children space to bring out their creativity.

Poster Leader/Presenter: Marie-Sophie Mugica, *Export Department Manager, Cité des Sciences et de l'Industrie—Palais de la Découverte, Paris, France*

Accessibility Exhibit Design Early Childhood

INFORMAL EDUCATION AND LEARNING



Can Live Interactive Video Positively Influence Student Interest in Science?

HALL E

"Smithsonian Science How" is a live, interactive, web-based broadcast that has been putting a scientist into classrooms, virtually, since 2014. This poster shares key findings from a recent evaluation study on how this live, interactive video technology can connect students with scientists in ways that positively influence students' interest in science, and their ideas about what science is and who scientists are.

Poster Leader/Presenter: Margaret Benson, *Distance Learning Manager, National Museum of Natural History; District of Columbia, D.C.*

Science Shows Program Evaluation Learning Research

EXTERNAL COLLABORATIONS AND CO-CREATION U

Case Study: Special Science Exhibition Collaborated with National Science Museums in Korea

HALL E

The three national science museums in Korea worked together to organize high-quality exhibits on a limited budget when preparing special exhibits. In celebration of the 50th anniversary of the Apollo 11 mission and the 100th anniversary of the establishment of the International Astronomical Union, we planned a special exhibition, *Trip to Space*.

Poster Leader: Hyeong-gu Kang, *Researcher, Daegu National Science Museum, Daegu, South Korea*

Presenter: Choelhee Kim, *Researcher, Daegu National Science Museum, Daegu, South Korea*

Advanced Technology (AR, VR, etc.) Partnerships Visitor Experience

CONTENT AND DESIGN U

Computational Thinking and Engineering for 5- to 7-Year-Olds: An Exhibit Designed to Broaden Participation for a Better Future

HALL E

Poster Leader: Hoda Ehsan, *Graduate Student, Purdue University, West Lafayette, Indiana*

Presenters: Monica Cardella, *Director, Purdue University, West Lafayette, Indiana*, and Philip Cardella, *Executive Director, Imagination Station, Lafayette, Indiana*

Exhibit Design Early Childhood Diversity and Equity

LEADERSHIP AND PROFESSIONAL DEVELOPMENT U

Design Thinking for Exceptional Visitor Experiences

HALL E

Montshire Museum of Science engaged in a design thinking initiative to provide professional development for staff, and to explore ways to better support visitors affected by autism spectrum disorder. Funded by the Institute of Museum and Library Services, this project underscored the value of design thinking practices for management of visitor services and museum operations.

Poster Leader/Presenter: Jennifer Rickards, *Deputy Director, Montshire Museum of Science, Norwich, Vermont*

Customer Service Visitor Experience Design Thinking

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



Developing YOUTH! Year Three Results of a Longitudinal Study of STEM Youth Development Program Alumni

HALL E

We report on the first three years' of data in a quasi-experimental, longitudinal study about the impact of a museum-based youth development program on STEM career interests. Results show the program alumni's STEM career interest dropped by 15% after two years of college while the control group's dropped by 27%.

Poster Leader: Aaron Price, *Director of Research and Evaluation, Museum of Science and Industry, Chicago, Illinois*

Presenters: Alison Mroczkowski, *Researcher and Project Manager, Museum of Science and Industry, Chicago, Illinois*; **Angela Skeeles-Worley**, *Science Educator Assistant Editor, University of Virginia, Charlottesville, Virginia*; and **Robert Tai**, *Associate Professor, University of Virginia, Charlottesville, Virginia*

Learning Research Teen Programs Youth Development

INFORMAL EDUCATION AND LEARNING



Discovering Alaska's Soundscapes through K-12 Outreach

HALL E

This session will provide an overview of the Anchorage Museum's K-12 Soundscape Ecology Outreach Program, sharing some of the challenges and successes as well as the next steps for the program. We will provide resources and ideas for how to incorporate soundscape ecology at your institutions through K-12 outreach.

Poster Leader/Presenter: Erin Marbarger, *Curator of Science and Innovation, Anchorage Museum at Rasmuson Center, Anchorage, Alaska*

Community Impact Outreach K-12 School Collaboration

EXTERNAL COLLABORATIONS AND CO-CREATION



Engagement Opportunities with the Launch of NASA's James Webb Space Telescope

HALL E

NASA's next big moonshot, the James Webb Space Telescope, will launch in 2021 and bring discoveries that will change our understanding of the universe. In order to best prepare the ASTC community, this poster will share information about the science of the Webb mission and solicit feedback about future resources.

Poster Leader/Presenter: Alexandra Lockwood, *Webb Science Communications Lead, Space Telescope Science Institute, Baltimore, Maryland*

Prototyping and Piloting Future Planning Exhibit Design

INFORMAL EDUCATION AND LEARNING

A

Engaging Children in Science Inquiry Skills with Interactive, Digital Comics

HALL E

Digital, interactive comics entice reluctant learners to discover that science can be fun. Transmissions integrates interactives into a compelling narrative, inviting readers to hone their science inquiry skills. A teacher design team helped develop companion materials. Middle-school students participated in design workshops. Find out about our project and process.

Poster Leader: Geryl Abinader, *Creative Producer, New York Hall of Science, Queens, New York*

Presenters: Martin Weiss, *Senior Scientist, New York Hall of Science, Queens, New York*; and **Laycca Umer**, *Manager of Online Professional Development, New York Hall of Science, Queens, New York*

Prototyping and Piloting Learning Research K-12 School Collaboration

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

F

Engaging Young Museum Professionals in a Global Learning Ecosystem

HALL E

How can young museum professionals create change within their institutions and the wider field? This poster will share the perspectives of early career practitioners who attended the Science Center Global Workshop, engaging attendees in discussing how professionals at all levels can address common challenges faced by science centers.

Poster Leader/Presenter: Eveline Kuchmak, *Manager of Temporary Exhibitions, Perot Museum of Nature and Science, Dallas, Texas*

Diversity and Equity Global Perspective Making the Case for Science Centers

INFORMAL EDUCATION AND LEARNING

U

Engineering Explorations: An NGSS-aligned Museum-based Engineering Education Program with Classroom Extensions

HALL E

Engineering Explorations modules leverage the unique resources of multiple education sectors (formal and informal) to provide engineering learning experiences for youth and increase K-12 school teachers' capacity to deliver high quality engineering learning opportunities. Each module consists of a science center field trip activity and pre- and post-classroom activities.

Poster Leader: Ron Skinner, *Director of Education, MOXI, The Wolf Museum of Exploration + Innovation, Santa Barbara, California*

Presenter: Danielle Harlow, *Associate Professor, Science Education, University of California, Santa Barbara, Santa Barbara, California*

K-12 School Collaboration Partnerships Design Thinking

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



Ensuring a Gender Equity Lens in STEM Programming

HALL E

This presentation will introduce the National Girls Collaborative Project (NGCP) to the global audience in attendance, then highlight current research on gender equitable STEM engagement and the benefits of collaboration, and finally outline NGCP's resources and the ways in which the science and technology centers present can get involved.

Poster Leader/Presenter: Karen Peterson, CEO, National Girls Collaborative, Seattle, Washington

Partnerships Diversity and Equity Community Impact

CONTENT AND DESIGN



Equipping Your Center for NASA's Moon and Mars Missions

HALL E

NASA's Moon and Mars missions are underway, and NASA is equipping institutions like yours for the adventure ahead. NASA's Deep Space Exploration team will share digital resources and low-cost exhibit designs as well as highlight how partnering museums, science centers, and planetariums are integrating and customizing these resources.

Poster Leader: Patricia Moore, Museum Liaison Exploration Systems Development Division, NASA, Houston, Texas

Advanced Technology (AR, VR, etc.) Exhibit Design Visitor Experience

EXTERNAL COLLABORATIONS AND CO-CREATION



Family Science Nights: Shaping the Future of Family Engagement

HALL E

Poster Leader: Yvette Sandoval, Director of Visitor Services, Explora, Albuquerque, New Mexico

Presenters: Marc Wunder, Title I Resource Teacher/Explora Liaison, Albuquerque Public Schools, Albuquerque, New Mexico, and Stefanie McDermott, Title I Resource Teacher/Explora Liaison, Albuquerque Public Schools, Albuquerque, New Mexico

Diversity and Equity Accessibility K-12 School Collaboration

CONTENT AND DESIGN



Free and Open-Source Software for Museum Exhibits

HALL E

The Fort Worth Museum of Science and History has developed open-source software tools to support digital content, including timelines, video selectors, video players, and voting systems. We describe the philosophy behind this effort and our experience using these tools within a large exhibition. This software can be accessed at <https://github.com/fwmslh>.

Poster Leader: Doug Roberts, Chief Technology Officer, Fort Worth Museum of Science and History, Fort Worth, Texas

Presenter: Morgan Rehnberg, Director of Scientific Presentation, Fort Worth Museum of Science and History, Fort Worth, Texas

Program Evaluation Exhibit Design

CONTENT AND DESIGN



Hearts and Minds: Creating Exhibits that Challenge and Change Mindset

HALL E

Explore museum exhibitions, informal learning experiences, and programs that invite visitors to challenge and change their mindset, as well as some best practices for developing these offerings – drawing on mindset-changing programs such as a makerspace, and exhibition on love, and programming centering on race and racism.

Poster Leader: Sarah Seiter, *Oakland, California*

Presenters: Robby Callahan Schreiber, *Museum Access and Equity Director, Science Museum of Minnesota, St. Paul, Minnesota*; Katherine Ozawa, *STEM Experience Developer, The Tech Interactive, San Jose, California*; Anne Fullenkamp, *Director of Design, Children’s Museum of Pittsburgh, Pittsburgh, Pennsylvania*; and Ryan Jenkins, *Co-founder, Educator, Wonderful Idea Company, El Cerrito, California*

Community Impact 21st Century Skills Making and Tinkering

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

CONTENT AND DESIGN



Introduction of Creative Café: The Theme-based Maker Space

HALL E

We opened Creative Café, where the theme is changed every two months – car and paper, moving toys, etc. We believe it could help people to participate in maker activities easily and joyfully. In this session, you can get some information how to make this theme-based maker program for various target audiences.

Poster Leader/Presenter: Mansun Yu, *Senior Researcher, Gwacheon National Science Museum, Gyeonggi-do, South Korea*

Learning Research Making and Tinkering Prototyping and Piloting

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



iPAGE Professional Development: A Framework and Evidence for Igniting Change in Museum Workplace Culture

HALL E

The iPAGE program prepares teams of strategically placed individuals to enact significant social change toward equity and inclusion within their institutions. Deep research on this program revealed specific critical aspects of professional development for museum professionals, resulting impacts on participants and institutions, and insights on promoting change in museum workplace culture.

Poster Leader: Megan Goeke, *Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota*

Presenters: Liesl Chatman, *Director, Teacher Professional Development Group, Science Museum of Minnesota, St. Paul, Minnesota*; Gretchen Haupt, *Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota*; Choua Her, *Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota*; Travis Sandland, *Professional Development Specialist, Science Museum of Minnesota, St. Paul, Minnesota*; and Erin Strauss, *Project Lead, Teacher Professional Development Group, Science Museum of Minnesota, St. Paul, Minnesota*

Inclusive Workforce Development Diversity and Equity

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



Long-term ISE Programming, and Persistence in STEM

HALL E

The ISE environment offers tangible benefits to helping students persist in STEM pathways. In this poster, results are shared from a major study of graduates of one long-term, extracurricular, natural history teen program, which includes elements common to the ISE community.

Poster Leader/Presenter: Brian Levine, *Manager of Youth Programs/Astrophysics Educator, American Museum of Natural History, New York, New York*

Impact Measurement Learning Research Teen Programs

EXTERNAL COLLABORATIONS AND CO-CREATION



More than the Child: The Impacts of Museum STEM Programs on the Family

HALL E

Museums can play a vital role in building the science interests and career aspirations of youth. We discuss our model for a sustained and engaging museum-based, family STEM program and how it influenced the parent participants who are necessary to support the long-term science interests and aspirations of their children.

Poster Leader: Megan Ennes, *Graduate Research Assistant, North Carolina State University, Raleigh, North Carolina*

Presenters: Gail Jones, *Professor of STEM Education, North Carolina State University, Raleigh, North Carolina*, and **Liz Baird**, *Chief, School and Lifelong Education, North Carolina Museum of Natural Sciences, Raleigh, North Carolina*

Community Impact Diversity and Equity Partnerships

INFORMAL EDUCATION AND LEARNING



Move2Learn—Embodied Learning for Preschool Scientists

HALL E

Have you ever noticed how children and adults move their hands and bodies as they explore exhibitions? Move2Learn is investigating what types of sensory experiences and physical actions are meaningful for developing science ideas, and ways we can encourage these through both the design and facilitation of interactive exhibits.

Poster Leader: Judy Brown, *Senior Vice President of Education, Emerita, Phillip and Patricia Frost Museum of Science, Miami, Florida*

Presenter: Cheryl Juarez, *Senior Director of Professional Development, Phillip and Patricia Frost Museum of Science, Miami, Florida*

Learning Research Exhibit Design Early Childhood

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING



Museum after Dark: Capturing the Elusive Millennial

HALL E

How does a 50-year-old science museum stay relevant and inspiring? Founded in 1969 in San Francisco with revolutionary, explore-for-yourself exhibits, the Exploratorium is now challenged to adapt to the city's changing demographics. Dive into the successes and lessons learned from launching a multichannel marketing campaign and a unique new membership.

Poster Leader: Sewon Barrera, *Digital Marketing Manager, Exploratorium, San Francisco, California*

Presenter: Sarah Owens, *Membership Manager, Exploratorium, San Francisco, California*

Adult Engagement Member Engagement Marketing

EXTERNAL COLLABORATIONS AND CO-CREATION



Museums in Service to Young, Multilingual Learners: A National Needs Assessment

HALL E

See the results of a study that examined the needs and practices of science centers and children's museums as service providers related to linguistic inclusiveness in informal science programming for preschool children. The study was conducted with assistance from ASTC and the Association of Children's Museums, as part of a U.S. National Science Foundation Pathways project.

Poster Leader/Presenter: Rita Deedrick, *Co-Director, COSI Center for Research and Evaluation, COSI, Columbus, Ohio*

Early Childhood Diversity and Equity Community Impact

CONTENT AND DESIGN



NASA Resources for You!

HALL E

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

Poster Leader: Amelia Chapman, *Education Program Specialist, Jet Propulsion Laboratory; Pasadena, California*

Presenters: Beverly Girtten, *Director, Institutional Engagement, NASA, Washington, D.C., and Leslie Lowes, Informal Education Specialist, Jet Propulsion Laboratory; Pasadena, California*

Small Museum Public Programs Inclusive Workforce Development

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



Overcoming the Challenges of Ambitious and Complex Collaborations among University, Museum, and Community Partners

HALL E

Leading multi-organizational team projects is a challenge. Individuals and organizations are diverse in their experience, cultural perspectives, personal motivations, and priorities. The poster will describe the Collaborative Project Management (CoPM) philosophy and the CoPM Playbook, specifically designed for informal STEM learning partnerships among researchers, practitioners, and community partners.

Poster Leader: Lesley Markham, *Senior Manager of Impact Initiatives, Association of Science and Technology Centers, Washington, D.C.*

Presenters: Judy Brown, *Senior Vice President of Education, Emerita, Phillip and Patricia Frost Museum of Science, Miami, Florida;* Cinda Voegtli, *Senior Consultant, ICS Group, Danbury, Connecticut;* and Inese Kaufman, *President, ICS Group, Danbury, Connecticut*

Diversity and Equity Project Management Partnerships

INFORMAL EDUCATION AND LEARNING



Raspberry Pi and Digital Making in a WWII Aircraft Carrier

HALL E

Learn how Intrepid Sea, Air & Space Museum solves common issues in digital making using Raspberry Pis and Micro:bits. All participants will leave with a new idea on how to implement digital making – even in spaces where technology can be an anachronism!

Poster Leader/Presenter: Julia Orr, *Museum Educator, Intrepid Sea, Air & Space Museum, New York, New York*

Design Thinking Teacher Professional Development Teen Programs

INFORMAL EDUCATION AND LEARNING



STEM Celebrations! Moon Landings, Earth Day 50th Anniversary, International Year of Periodic Table, Solar Eclipses

HALL E

These simultaneous celebrations are an exciting way for public audiences to engage in STEM content both inside and outside museum walls. Presenters will focus on the ways we can capture audience attention and transform interest in large-scale anniversaries and events into meaningful public engagement in STEM at our local museums.

Poster Leader: Catherine McCarthy, *Project Leader–NISE Network, Science Museum of Minnesota, St. Paul, Minnesota*

Presenters: Meghan Curry, *Executive Director, Insights El Paso, El Paso, Texas;* Michele Kloda, *Director of Learning Environments, Museum of Life and Science, Durham, North Carolina;* Amelia Chapman, *Education Program Specialist, Jet Propulsion Laboratory, Pasadena, California;* and Christina Carlson, *Manager, Science Beyond the Boundaries, Saint Louis Science Center, St. Louis, Missouri*

Partnerships Public Programs Outreach

CONTENT AND DESIGN

U

SciGirls Strategies: Gender Equitable Teaching Strategies for STEM Programs

HALL E

The SciGirls approach is rooted in research about how to engage girls in STEM. The updated SciGirls Strategies are based on the latest gender equitable and culturally responsive research. Visitors to this poster will learn how to use these strategies in their programs – improving STEM engagement for all students.

Poster Leader/Presenter: *Niki Becker, STEM Media and Education Specialist, Twin Cities PBS, St. Paul, Minnesota*

Learning Research Diversity and Equity

EXTERNAL COLLABORATIONS AND CO-CREATION

A

Science Centers Connect the Dots

HALL E

Leaders from the Portal to the Public and Partnerships for Broader Impacts Design projects will share overviews of work that helps connect the public to scientists and their work – through place-based, community-connected science centers, museums, and other informal science learning organizations.

Poster Leader: *Eve Klein, Program Director, Institute for Learning Innovation, Seattle, Washington*

Presenters: *Anna Johnson, Portal to the Public Manager, Pacific Science Center, Seattle, Washington, and Michelle Kortenaar, Vice President of Strategic Development, Sciencenter, Ithaca, New York*

Partnerships Working with Higher Education

INFORMAL EDUCATION AND LEARNING

U

Science on a Sphere, Data in the Classroom, and Other NOAA Data Resources: A Coevolution of Data Visualization and Modern Education

HALL E

The U.S. National Oceanic and Atmospheric Administration has a plethora of data visualization resources for museums, science centers, and educators alike, all free to the public. Learn about our widely used programs, as well as some of our more obscure data resources, to help make your science center stand out.

Poster Leader/Presenter: *Stephen Zepecki, Educational Outreach Coordinator and Data Visualizer, Office of Education, National Oceanic and Atmospheric Administration, Silver Spring, Maryland*

Community Impact Global Perspective Learning Research

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



Sprouting STEM Museum Magnet School Exhibit Design Training Workshop and Museum Integration Program

HALL E

The Museum of Discovery and Science partnered with public schools to implement a Sprouting STEM Museum magnet school “exhibit design training” workshop and museum integration program. This was achieved through professional development educating teachers about exhibit methods, outreaches that included docent and loan program training, and a student-developed classroom exhibit.

Poster Leader/Presenter: Summer Scarlatelli, *STEM Center for Education and Career Development Manager, Museum of Discovery and Science, Fort Lauderdale, Florida*

Exhibit Design K-12 School Collaboration Teacher Professional Development

INFORMAL EDUCATION AND LEARNING



Staff Affect and Science Learning in Citywide Summer Youth Programs

HALL E

This study looks at impacts of adolescents delivering science programming to public libraries and parks in an urban area. Surveys and observation rubrics were used to measure emotions and engagement. Results will help investigate how to best support teen facilitators to ensure high-quality STEM teaching to cross-age audiences.

Poster Leader: Gloria Segovia, *Evaluator, Museum of Science and Industry; Chicago, Illinois*

Presenters: Brett Nicholas, *Manager, Community Initiatives, Museum of Science and Industry; Chicago, Illinois*; **Christine Nguyen**, *Research and Evaluation Intern, Museum of Science and Industry; Chicago, Illinois*; and **Aaron Price**, *Director of Research and Evaluation, Museum of Science and Industry; Chicago, Illinois*

Learning Research Teen Programs Youth Development

CONTENT AND DESIGN



Storytelling through Play Space

HALL E

How can storytelling through play be an extension of the learning experiences in museums and cultural centers? Play environments rich with place-making are incredibly meaningful. Highlighted is the collaborative custom playground design between the community, Earthscape Play, and the Fort Collins Museum of Discovery featured in “Once Upon A Playground.”

Poster Leader: Nathan Schleicher, *Concept Designer, Earthscape, Wallenstein, Ontario, Canada*

Presenters: Jason Wolvington, *Associate Director, Fort Collins Museum of Discovery; Fort Collins, Colorado*

Temporary and Traveling Exhibits Visitor Experience Exhibit Design

CONTENT AND DESIGN

A

Study of the Effects of the Museographic Environment on the Perceptive Experience of Visitors

HALL E

This study focuses on the exhibition design and the effect of the exhibition environment on the behavior of visitors. We have based our study on Forrest’s proposal which presents two elements of the environment: vibrancy and spatiality. Under the hypothesis of these elements, we explore how to allow visitors to enjoy their visit more.

Poster Leader: Diana Carina Monterrosa, *Continuing Education Manager, Universum, Museo de las Ciencias, UNAM, Mexico City, Mexico*

Presenters: María del Carmen Sanchez-Mora, *Training and Extension Coordinator, Universum, Museo de las Ciencias, UNAM, Mexico City, Mexico*

Exhibit Design Program Evaluation Visitor Experience

INFORMAL EDUCATION AND LEARNING

U

Teens Connecting to Their Communities through the STEM Involved in Natural Disaster Response

HALL E

Teen Science Cafés provide an ideal platform for introducing teens to the technology and STEM involved in preventing and responding to serious natural disasters. We’ll demonstrate ways of engaging teens in protecting their communities by responding to disasters, while using cutting edge technology in the process.

Poster Leader: Jan Mokros, *Senior Scientist, Science Education Solutions, Los Alamos, New Mexico*

Presenters: Michelle Hall, *President and CEO, Institute for Science Education New Mexico, Los Alamos, New Mexico; and Michael Mayhew, Director, Institute for Science Education New Mexico, Los Alamos, New Mexico*

Teen Programs Outreach Community Impact

INFORMAL EDUCATION AND LEARNING

A

The “Scientific Leadership” Program as a Home for Teenagers to Articulate and Negotiate Science Identities

HALL E

The “Scientific Leadership” program trains highly motivated 10th–12th grade student in Israel to lead and operate community science activities in Carasso Science Park. Our study’s primary goal is to identify the various aspects of “science identity” displayed in the participants’ conceptions and reflections regarding their participation in the science museum program.

Poster Leader/Presenter: Netzach Farbiash, *CEO, Carasso Science Park, Beer Sheva, Israel*

Youth Development Outreach Teen Programs

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



The Wave of Data Science Has Arrived: Preparing Youth for the “Data Future”

HALL E

Data science has caused a major shift in how scientists approach their research. How can we make data science engaging for middle-school students, using state-of-the-art technology and datasets? We describe a project implementing out-of-school data clubs with community partners in urban and rural communities.

Poster Leader: Andee Rubin, *Senior Scientist, TERC, Cambridge, Massachusetts*

Presenter: Jan Mokros, *Senior Scientist, Science Education Solutions, Los Alamos, New Mexico*

21st Century Skills Emerging Technology Learning Research

CONTENT AND DESIGN



There’s No Time: Rapid Front-End Reporting with Infographics

HALL E

When developing GameXPloration, an exhibition about games aimed at teenagers, evaluators created a series of seven infographics that highlighted questions about the future exhibition. Sent to the project team once each was completed, findings were immediately implemented in planning. This poster dives into this process and how infographics influenced GameXPloration.

Poster Leader/Presenter: Kelley Staab, *Research and Evaluation Associate, Saint Louis Science Center, St. Louis, Missouri*

Exhibit Design Visitor Experience

CONTENT AND DESIGN



Tinkering with Maker and Chemistry-based Activity Facilitation Frameworks

HALL E

The discussion will showcase how a new facilitation framework was adapted from and developed through existing maker/tinkering facilitation strategies to address issues surrounding visitor attitudes about chemistry. Audiences will learn more about different types of facilitation frameworks that can be combined, customized, and implemented to impact learning goals.

Poster Leader: Hever Velazquez, *Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota*

Presenters: Gretchen Haupt, *Evaluation and Research Associate, Science Museum of Minnesota, St. Paul, Minnesota*; Rae Ostman, *Associate Research Professor, School for the Future of Innovation in Society, Arizona State University, Tempe, Arizona*; and Mike Petrich, *Making-Learning Studio, Exploratorium, San Francisco, California*

Exhibit Design Making and Tinkering Learning Research

CONTENT AND DESIGN

A

Touch Anywhere to Begin: Meta-Evaluation of Touchscreen Interactives

HALL E

What makes a touchscreen interactive successful? Learn from the findings of a building-wide study including more than 40 interactives of various design types and screen sizes. Formats included open-ended and structured games, databases, and photo-ops. Discuss options for employing observational studies as well as back-end analytics to measure “success.”

Poster Leader: Claire Thoma Emmons, *Research and Evaluation Associate, The Children’s Museum of Indianapolis, Indianapolis, Indiana*

Visitor Experience Exhibit Design

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

S

What Happens When an Organization Evaluates Its Own Learning?

HALL E

While museums have long focused on visitor learning, the National Museum of Natural History became interested in learning that happens within the organization. It worked with RK&A to measure and develop a theory of organizational learning. We will share early findings that might be applied to strengthen the organization and programs.

Poster Leader: Colleen Marzec, *Chief of Content Development and Science Learning, Smithsonian Institution, Washington, D.C.*

Presenter: Katie Chandler, *Research Associate, RK&A, Inc., Alexandria, Virginia*

Management Learning Research Impact Measurement

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

11:30 a.m.–1:00 p.m.

Alan J. Friedman Science Center Dialogues Luncheon

HALLS F&G

These annual discussions are conducted in memory and tribute to the founding director of the New York Hall of Science in Queens, New York. Sponsored by The Kavli Foundation, they connect science-center professionals, science educators, and science communicators to timely and thought-provoking issues emerging in science and society. 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.

This year’s dialogue will explore how science centers and museums, and science communicators, can advance the public discourse on climate change and other global challenges, increase opportunities for all in public engagement in science, spark interest and action among individuals and communities, play a more active role in local and regional resilience efforts, and more.

Dialogue Participant



Katharine Hayhoe, *Director, Climate Science Center, Texas Tech University (participating virtually)*

Dialogue Participant



John Holdren, *Teresa and John Heinz Professor of Environmental Policy, Harvard Kennedy School of Government and former science advisor to President Barack Obama*

Dialogue Participant



Ellen Stofan, *John and Adrienne Mars Director, Smithsonian National Air and Space Museum, and former NASA Chief Scientist*

Sponsored by



1:00–1:30 p.m.

Networking Break in the Exhibit Hall

HALL E

1:45–3:00 p.m.

INFORMAL EDUCATION AND LEARNING

A

Beyond the Walls—Building Community with Offsite Camps

MEETING ROOM 716A

Offsite camps are a pain. Despite the challenges, camps in the community are worth it. Learn creative ways to extend your reach with innovation implementations and strategic partnerships. Discuss approaches for overcoming potential barriers. Learn strategies to set yourself up for success. Enrich relationships in your community with camps!

Session Leader: Justin Spencer, *Associate Director of Education-Youth and Family Programs, The Bakken Museum, Minneapolis, Minnesota*

Presenters: Brenda Boddiger, *Manager of Programs and Special Projects, Museum of Discovery and Science, Fort Lauderdale, Florida*; Adrienne Huffman, *Educator, Family and Public Programs, Peoria PlayHouse Children's Museum, Peoria, Illinois*; and Sean Murray, *Staff Scientist-Informal Learning Programs, Science North, Sudbury, Ontario, Canada*

Community Impact Partnerships Impact Measurement

INFORMAL EDUCATION AND LEARNING

A

Bringing Chemists and Chemistry Experiments into Your Museum and Out into Your Community

MEETING ROOM 701B

Hands-on chemistry is a great way to get visitors involved with the process of science. Chemistry can be inspiring, fun, and messy! Learn about how to get more chemistry into your museum: getting stakeholder buy-in, training staff and volunteers, planning for safety, materials handling and storage, and finding collaborators.

Session Leader: Catherine McCarthy, *Project Leader–NISE Network, Science Museum of Minnesota, St. Paul, Minnesota*

Presenters: Darrell Porcello, *Director, STEM Networks and Partnerships, Children's Creativity Museum, San Francisco, California*; Soma Chatterji, *STEM Education Coordinator, Carnegie Science Center, Pittsburgh, Pennsylvania*; Emily Belle, *Education Program Coordinator, Sciencenter, Ithaca, New York*; Paul Kortenaar, *Founding Director, El Paso Children's Museum, El Paso, Texas*; Mary Kirchoff, *Executive Vice President, Scientific Advancement, American Chemical Society, Washington, D.C.*; and Laura McConnell, *International Year of the Periodic Table (IYPT) Centenary Planning Committee, International Union of Pure and Applied Chemistry (IUPAC), Research Triangle Park, North Carolina*

Partnerships Public Programs Working with Higher Education

INFORMAL EDUCATION AND LEARNING

U

Early Learning and STEM—Opportunities Ahead!

MEETING ROOM 711

Find out about funding opportunities, partnerships, and field-tested prototypes that are striving to make an impact on the early childhood STEM pipeline. Join three dynamic practitioners in conversation with Institute of Museum and Library Services leadership staff to learn, share, and engage.

Session Leader: Paula Gangopadhyay, *Deputy Director, Museum Services, Institute of Museum and Library Services, Washington, D.C.*

Presenters: Carol Tang, *Executive Director, Children's Creativity Museum, San Francisco, California*; Andrew Haight, *Director of Guest Engagement, Oregon Museum of Science and Industry, Portland, Oregon*; and Sloan Mann, *Director of STEM Education, Imagination Station, Toledo, Ohio*

Early Childhood

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



Enabling a Climate-Resilient Future through Community Partnerships

MEETING ROOM 714B

Frequent natural disasters are the new normal, and cities are struggling to be resilient. Come learn about projects funded by the U.S. National Oceanic and Atmospheric Administration that enable climate resilience through community partnerships, including teens becoming advocates for resilient communities, citizen science and public dialogue forums, integration of art, and students engaging in their coastal communities' resilience.

Session Leader: *Carrie McDougall, Senior Program Manager, National Oceanic and Atmospheric Administration, Washington, D.C.*

Presenters: *David Sittenfeld, Manager, Forums and National Collaborations, Museum of Science, Boston, Massachusetts; Avalon Bunge, STEM Education Specialist, The Maritime Aquarium at Norwalk, Norwalk, Connecticut; Bryan Wunar, President and CEO, Discovery World, Milwaukee, Wisconsin; Jen Kretser, Director of Programs and the Youth Climate Summit Initiative, The Wild Center, Tupper Lake, New York; and Kathryn Semmens, Science Director, The Nurture Nature Center, Easton, Pennsylvania*

Community Impact Grant Writing Youth Development

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



Fifty Years and Counting: Two Seminal Science Centers Look to the Future

MEETING ROOM 801

The Ontario Science Centre in Toronto and the Exploratorium in San Francisco opened in 1969. Recently, these organizations have undergone significant strategic planning processes that built on their past strengths but point them in new directions. This session will present their new thinking as they adapt to a changing world.

Session Leader: *Rob Semper, Associate Executive Director, Exploratorium, San Francisco, California*

Presenters: *Maurice Bitran, CEO, Ontario Science Centre, Toronto, Ontario, Canada; Chris Flink, Executive Director, Exploratorium, San Francisco, California; and Gillian Thomas, Consultant and President Emerita, Phillip and Patricia Frost Museum of Science, Miami, Florida*

Management Future Planning Business Development

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING



From Pop-ups to Partnerships—New Models for Ancillary Revenue Streams

MEETING ROOM 701A

Find out what worked, what didn't, and some of the unexpected outcomes when these four institutions needed to diversify and grow their sources of revenue. Explore models for pop-up shops with external organizations, licensing agreements, events, web-based extensions of onsite experiences, and unique partnerships that could help support your institution's sustainability.

Session Leader: *Terri Lang, VP Corporate Services and Operations and COO, Ontario Science Centre, Toronto, Ontario, Canada*

Session Moderator: *Catherine Paisley, Vice President, Science Education and Experience, Ontario Science Centre, Toronto, Ontario, Canada*

Presenters: *Tricia Edwards, Interim Associate Director, Smithsonian Affiliations, Washington, D.C.; Toph Bryant, Visitor Services Senior Manager, Kentucky Science Center, Louisville, Kentucky; and Josh Sarver, Senior Director of Experiences, COSI, Columbus, Ohio*

Pricing and Sales Facilities Operations Business Development

CONTENT AND DESIGN



Iterating on Design Thinking in Museums

MEETING ROOM 718B

How has design thinking pushed museum professionals to change approaches and programming? Bringing together practitioners from diverse areas of the field, this fast-paced session examines approaches from exhibit development to programming focused on engaging visitors in a design thinking process to collaborating with universities and industry.

Session Leader: Janine Okmin, *Director of Education, Bay Area Discovery Museum, Sausalito, California*

Presenters: Ashanti Davis, *Exhibits Project Supervisor, Fleet Science Center, San Diego, California;* **Brenda Lopez**, *Community Education Manager, Thinkery, Austin, TX;* and **Satbir Multani**, *Design Lab Program Manager, New York Hall of Science, Queens, New York*

Prototyping and Piloting Partnerships Design Thinking

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



Practice What You Preach: Training Staff on STEM Practices

MEETING ROOM 714A

Come discover five training programs designed to help science center and museum staff from a diversity of departments become more comfortable with science and engineering. By sharing successes and failures from program development and delivery, we hope to equip and inspire other institutions to offer basic science training to their staff.

Session Leader: Jennifer Lawrence, *Senior Exhibit Writer/Researcher, California Science Center, Los Angeles, California*

Presenters: Jayatri Das, *Chief Bioscientist, The Franklin Institute, Philadelphia, Pennsylvania;* **Melissa Radey**, *Staff Scientist, Science North, Sudbury, Ontario, Canada;* **Jenn Barlup**, *Director of Floor Experiences, COSI, Columbus, Ohio;* and **Abigail Sewnauth**, *Training Specialist, New York Hall of Science, Queens, New York*

21st Century Skills Adult Engagement Prototyping and Piloting

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



Practice-based Facilitation: Advancing Science Centers' Capacity to Engage Visitors in STEM Practices

MEETING ROOM 718A

Transform exhibit and program facilitation at your institution through practice-based facilitation (PBF), a framework informed by the Next Generation Science Standards to expand and deepen visitors' use of STEM practices. After a hands-on activity, panelists will discuss how large and small science centers use PBF to facilitate, evaluate, and develop exhibits and programs.

Session Leader: Danielle Harlow, *Associate Professor, Science Education, University of California, Santa Barbara, Santa Barbara, California*

Presenters: Ron Skinner, *Director of Education, MOXI, The Wolf Museum of Exploration + Innovation, Santa Barbara, California;* **Tara Henderson**, *Director of School and Community Programs, Explora, Albuquerque, New Mexico;* and **Preeti Gupta**, *Director of Youth Learning and Research, American Museum of Natural History, New York, New York*

Visitor Experience Learning Research Partnerships

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



Public Libraries and Citizen Science: Fictional Moonshot or Nonfiction Bestseller?

MEETING ROOM 717

Citizen science offers robust opportunities to address local or global concerns and stoke curiosity across scientific disciplines. In this session, presenters will report on an Arizona State University/SciStarter partnership and Institute of Museum and Library Services-funded pilot, “Libraries as Community Hubs for Citizen Science,” and discuss opportunities for mutually beneficial partnerships with science centers and museums.

Session Leader: *Darlene Cavalier, Founder, SciStarter, Philadelphia, Pennsylvania*

Presenters: *Jeannie Colton, Program Coordinator, Arizona State University, Tempe, Arizona; Robin Salthouse, Adult Services Supervisor, Southeast Regional Library, Maricopa County Library District, Gilbert, Arizona; and Dan Stanton, Liaison Librarian, Arizona State University, Tempe, Arizona*

Partnerships Prototyping and Piloting Community Impact

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



Rising Stars in a Homogeneous Galaxy—Navigating a Career Trajectory as Someone Who Is Different

MEETING ROOM 716B

This session focuses on sharing diverse perspectives on navigating a career trajectory in the museum field as someone who is different and how leadership and colleagues can support in this journey. Participants will discuss real-life scenarios and, through discussion in small groups, learn about building empathy and fostering resilience.

Session Leader: *Ivel Gontan, Community Programs Senior Manager, Fleet Science Center, San Diego, California*

Presenters: *Blair Denniberg, Executive Assistant, Oregon Museum of Science and Industry, Portland, Oregon; Veronica Garcia-Luis, Project Director, VRE Director of Diversity and Inclusion Initiative, Exploratorium, San Francisco, California; Finn Smith, Public Programs Coordinator, ScienceWorks Hands-On Museum, Ashland, Oregon; Claudia Tibbs, Conservation and Science Planning and Operations Manager, Monterey Bay Aquarium, Monterey, California; Alison Kennedy, Guest Relations Associate, COSI, Columbus, Ohio; and Alana Ladson, EVOLUTIONS After School Program Coordinator, Yale Peabody Museum of Natural History, New Haven, Connecticut*

Diversity and Equity Inclusive Workforce Development Social Justice

CONTENT AND DESIGN



Risks and Rewards: How to Incorporate Vital Risky Play at Science Centers

MEETING ROOM 713

Our session focuses on outdoor risky play experiences at science centers and museums. By sharing research, anecdotes, stories, and best practices, we will examine how early childhood development concepts like “outdoor risky play,” “free play,” and “loose parts play” can all positively contribute to a person’s development and increased visitor satisfaction.

Session Leader: *Nathan Huisman, Public Programmer, TELUS Spark, Calgary, Alberta, Canada*

Presenters: *Devon Hamilton, Principal and Owner, Playful Content, Calgary, Alberta, Canada; Janella Watson, Associate Director, Providence Children’s Museum, Providence, Rhode Island; Richard Del Rosario, Project Manager, Science World, Vancouver, British Columbia, Canada; Jennifer Beaudry, Senior Scientist-Dynamic Earth, Science North, Sudbury, Ontario, Canada; and Chip Lindsey, Education Director, Children’s Museum of Pittsburgh, Pittsburgh, Pennsylvania*

Early Childhood Making the Case for Science Centers Public Programs

CONTENT AND DESIGN



Flash Presentations: Redefine and Redesign

MEETING ROOM 715

Session Leader: Daniel Bateman, *Public Programs Manager, Exploration Place, The Sedgwick County Science and Discovery Center, Wichita, Kansas*

Team Creativity: Reinventing the Ways to Produce a Children’s Exhibition!

The Cité des Sciences et de l’Industrie goes back to children’s exhibitions with Playhuts. For this exhibition, the team was inventive with a new working methodology, a tinkering approach, collaborations with artists, and public engagement. The result: an exhibition with twenty original Playhuts! In this session, we will present concrete examples to twist exhibitions.

Presenter: Hélène Wang, *Export Marketing Manager, Cité des Sciences et de l’Industrie–Palais de la Découverte, Paris, France*

Saving Exhibits from the Dumpster

Refurbishing on a shoestring budget, we engaged our staff and public to re-imagine and re-design our oldest, most worn-out set of mismatched exhibits. An honest look at the results will include staff engagement, public participation, informative evaluation, content authoring, diversity and inclusion approaches, design considerations, and topographical treatments.

Presenter: Walter Stoddard, *Researcher-Programmer, Ontario Science Centre, Toronto, Ontario, Canada*

Citizen Science in Museums: New Approaches to Science Learning and Communication

Using an iterative design process informed by extensive interviews and testing with guests, Zooniverse team members worked with research teams and exhibits staff to create unique and engaging experiences. Learn about the various methods used to create these experiences and see how they can be applied at your own institution.

Presenters: Sarah Smail, *Manager of Program Development, The Adler Planetarium, Chicago, Illinois,* and Joseph Hernandez, *Manager of Guest and Member Services, The Adler Planetarium, Chicago, Illinois*

Redefining the Interactive Experience in Museums Using Emerging Technologies

How can we create an interactive canvas for communicating science? Can emerging technologies provide a playground for museum visitors to engage with scientific visualizations using their full body? Exploring interactive exhibits at the American Museum of Natural History, this session will introduce effective strategies for immersive media design in museums.

Presenter: Eojin Chae, *Lead Digital Artist, American Museum of Natural History, New York, New York*

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

Designing for Action: Developing Exhibits that Motivate Visitors to Adopt Sustainable Practices in Their Lives

How do you approach exhibit development and design for a future environmental science and sustainability center? This session explores the collaboration among SKOLNICK Architecture + Design Partnership, Roper Mountain Science Center in Greenville, South Carolina, and the science center's university and community partners, highlighting best practices in educating visitors and inspiring community action.

Presenter: Katie Ahern, *Interpretive Specialist, SKOLNICK Architecture + Design Partnership, New York, New York*

3:15–4:30 p.m.

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING



Can't We Be Friends? Bringing Development and Programming Together for Better Results and Job Satisfaction

MEETING ROOM 713

Successful fundraisers excel at building relationships with donors; however, these same fundraisers often struggle to develop vital internal relationships. Join fundraisers and program officers from four institutions as they discuss their relationship developed, barriers to relationship building, and why these relationships are advantageous for both sides and worth investing in.

Session Leader: Sarah Szabo, *Donor Relations Officer, Pacific Science Center, Seattle, Washington*

Presenters: Karlisa Callwood, *Vice President of Science Engagement and Outreach, Pacific Science Center, Seattle, Washington*; **Michelle Kortenaar**, *Vice President of Strategic Development, Sciencenter, Ithaca, New York*; **Karen Hager**, *Director, Science Engagement, Ontario Science Centre, Toronto, Ontario, Canada*; **Lindsay Godbold-Strevens**, *Director, Development and Partnerships, Ontario Science Centre, Toronto, Ontario, Canada*; **Kari Lawrence**, *Development Officer, Oregon Museum of Science and Industry, Portland, Oregon*; and **Andrew Haight**, *Director of Guest Engagement, Oregon Museum of Science and Industry, Portland, Oregon*

Fundraising Partnerships

CONTENT AND DESIGN



Conquering Complexity with Active Engagement

MEETING ROOM 701B

How do you engage visitors with the complex, unfamiliar, or intimidating? Join us for a panel discussion and solution-room mash-up to explore complex topics like ecosystems, quantum computing, and the universe. Hear about the crucial strategies we have identified, and develop and share your own solutions for engaging visitors.

Session Leader: Donna Francis, *Researcher/Programmer, Ontario Science Centre, Toronto, Ontario, Canada*

Session Moderator: Randall Landsberg, *Education Outreach Director, University of Chicago, Chicago, Illinois*

Presenters: Katherine Culp, *Chief Learning Officer, New York Hall of Science, Queens, New York*; **Danielle Harlow**, *Associate Professor of Education, University of California, Santa Barbara, Santa Barbara, California*; **Reyhaneh Maktoufi, Ph.D. Candidate**, *Media, Technology; and Society, Northwestern University*; **The Adler Planetarium and Astronomy Museum, Chicago, Illinois**; **Mark SubbaRao**, *Director of the Space Visualization, The Adler Planetarium, Chicago, Illinois*; **Jasmine Marckwordt, Ph.D. Student, STEM Education, University of California, Santa Barbara, Santa Barbara, California**; and **Alexandria Muller, Ph.D. Student, STEM Education, University of California, Santa Barbara, Santa Barbara, California**

Visitor Experience Partnerships Making the Case for Science Centers

EXTERNAL COLLABORATIONS AND CO-CREATION



U.S. Federal STEM Education Strategic Plan—An Ask Me/Tell Me Session

MEETING ROOM 716B

The White House released America’s five-year STEM-education strategic plan, with three goals—building STEM literacy; increasing diversity, equity, and inclusion in STEM; and preparing a future STEM workforce. This café session provides the opportunity to discuss and respond to the report—and to explore opportunities to partner with federal agencies to support the work that we and they do. Find out what’s in the plan from a member of the STEM Advisory Panel to the Federal Committee on STEM; take part in roundtable discussions focused on the different goals and pathways presented in the plan; and contribute to the ideas that will be shared with the Advisory Panel.

Session Leader: Rob Semper, *Associate Executive Director, Exploratorium, San Francisco, California*

Partnerships 21st Century Skills

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



From Modest to Moonshot: What’s Next for Museum R&D?

MEETING ROOM 714B

Museums that create exhibits and programs often gain new pedagogical insights through their development process. Some call this research and development; some call it research-practice partnerships. Come hear the R&D plans of CAISE, two science museums, and a children’s museum, and raise future topics worthy of R&D investment.

Session Leader: Joshua Gutwill, *Director of Visitor Research and Evaluation, Exploratorium, San Francisco, California*

Presenters: Jamie Bell, *Project Director, Center for Advancement of Informal Science Education (CAISE), Washington, D.C.*; Tom Rockwell, *Director Exhibits and Media Studio, Exploratorium, San Francisco, California*; Elizabeth Kollmann, *Manager, Research and Evaluation, Museum of Science, Boston, Massachusetts*; Christine Reich, *Vice President of Exhibits, Museum of Science, Boston, Massachusetts*; Lisa Brahms, *Director of Learning and Research, Children’s Museum of Pittsburgh, Pittsburgh, Pennsylvania*; and Chip Lindsey, *Education Director, Children’s Museum of Pittsburgh, Pittsburgh, Pennsylvania*

Future Planning Learning Research Prototyping and Piloting

INFORMAL EDUCATION AND LEARNING



Leveraging Camp Evaluations to Maximize Program Impact

MEETING ROOM 711

Museum science camps provide fun and enriching experiences for youth, but how do you determine the success of these programs beyond attendance and revenue? Hear from several different camp managers and researchers on how they evaluate their camps, what they have learned from engaging in the evaluation process, and ways of using data to maximize program impact.

Session Leader: Katie Brunecz, *Senior Manager, Out of School Learning, Carnegie Science Center, Pittsburgh, Pennsylvania*

Presenters: Norberto Oropez, *Senior Manager of Public Programs, California Science Center, Los Angeles, California*; and James Kisiel, *Associate Professor of Science Education, California State University, Long Beach, Long Beach, California*

Program Evaluation Learning Research Impact Measurement

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



Moonshots in the Museum: Creative Ways to Engage Museum Audiences in Big Challenges

MEETING ROOM 715

Explore ways to engage museum visitors in learning about today’s “moonshots,” including space exploration, sustainable living on Earth, and increased understanding of the human brain. Presenters will explore a variety of programmatic approaches to big challenges, and then we’ll divide into small groups and participate in rapid design charrettes.

Session Leader: *Rae Ostman, Assistant Research Professor, Center for Innovation in Informal STEM Learning, Arizona State University, Tempe, Arizona*

Presenters: *Darrell Porcello, Director, STEM Networks and Partnerships, Children’s Creativity Museum, San Francisco, California; Jayatri Das, Chief Bioscientist, The Franklin Institute, Philadelphia, Pennsylvania; Sari Custer, Chief Curiosity Officer, Arizona Science Center, Phoenix, Arizona; Jeannie Colton, Program Coordinator, Arizona State University, Tempe, Arizona; and Paul Martin, Co-director, Center for Innovation in Informal STEM Learning, Arizona State University, Tempe, Arizona*

Exhibit Design Public Programs Prototyping and Piloting

INFORMAL EDUCATION AND LEARNING



Research-Practice Partnerships: Museums and Researchers Working Together for Mutual Benefit

MEETING ROOM 716A

Find out about an emerging research approach that can advance the work of science centers and museums – research-practice partnerships that involve practitioners and researchers working together so research informs practice and practice informs research.

Session Leader: *Peter Wardrip, Assistant Professor of STEAM Education, University of Wisconsin–Madison, Madison, Wisconsin*

Presenters: *Bronwyn Bevan, Senior Research Scientist, University of Washington, Seattle, Washington; Talia Stol, Senior Research Scientist, Children’s Museum of Pittsburgh, Pittsburgh, Pennsylvania; Emily Schindler, Research Fellow, University of Wisconsin-Madison, Madison, Wisconsin; Mike Cook, Associate Director of Exhibit Development and Maker Experiences, Betty Brinn Children’s Museum, Milwaukee, Wisconsin; Bill Pariso, Be a Maker Program Developer, Betty Brinn Children’s Museum, Milwaukee, Wisconsin; and Annie McNamara, Graduate Student Researcher, University of Pittsburgh, Pittsburgh, Pennsylvania*

Partnerships Learning Research Impact Measurement

INFORMAL EDUCATION AND LEARNING



The Power of Small: A Strategic Advantage

MEETING ROOM 717

From small staffs to small budgets, how do science centers turn their limitations into opportunities for creativity? Join us as we embrace the positive strategic advantages that being small can present, while also providing a forum for discussing the challenges.

Session Leader: *Lisa Regalla, Deputy Director, Center for Childhood Creativity, Bay Area Discovery Museum, Sausalito, California*

Presenters: *Charlie Trautmann, Director Emeritus, Sciencenter, Ithaca, New York; Cara Lesser, KID Museum, Bethesda, Maryland; and Lara Litchfield-Kimber, Executive Director, Mid-Hudson Children’s Museum, Poughkeepsie, New York*

Community Impact Small Museum

INFORMAL EDUCATION AND LEARNING



The Whole Young Person: Social Emotional Learning in Youth Development

MEETING ROOM 714A

Cultural competency and social and emotional learning are key components of positive youth development programming. Join us to explore what you are already doing that supports the development of youth in their communities, and areas where your programming can grow to become more inclusive of social, emotional, and cultural learning.

Session Leader: *Alix Cotumaccio, Director of Education, Wave Hill, Bronx, New York*

Presenters: *Nickcoles Martinez, Senior Coordinator, Youth Initiatives, American Museum of Natural History, New York, New York; Zach Lynn, Director of Volunteers and Engagement, Orlando Science Center, Orlando, Florida; and Linda Aaron, Youth Development Programs Coordinator, Natural History Museum of Utah, Salt Lake City, Utah*

Diversity and Equity Youth Development

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

CONTENT AND DESIGN



Thinking Like an Evaluator: Capacity-building Efforts at Three Museums

MEETING ROOM 801

Two children's museums and a natural history museum will share overlaps, challenges, resources, and reflections about their evaluation capacity-building efforts funded by the Institute of Museum and Library Services. Each aspired to cultivate an institutional culture of evaluation, partnered with a different evaluation expert, and used different lenses and strategies for engaging staff in the process of evaluation.

Session Leader: *Dale McCreedy, Vice President of Audience and Community Engagement, Discovery Center at Murfree Spring and Middle Tennessee State University, Murfreesboro, Tennessee*

Presenters: *Dana Whitelaw, Executive Director, High Desert Museum, Bend, Oregon, and Aubrey Henriksen, Evaluation Coordinator, Creative Discovery Museum, Chattanooga, Tennessee*

Program Evaluation Partnerships Impact Measurement

EXTERNAL COLLABORATIONS AND CO-CREATION



Tu Museo: Meeting the Needs of Latino Audiences

MEETING ROOM 701A

Museums and science centers must be proactive in engaging more and diverse people. It can be difficult to know where to begin. Three science centers and museums will share information from research, programmatic efforts, and organizational change strategies used to address The Latino community's specific needs.

Session Leader: *Andrea Girón Mathern, Director, Audience Research and Evaluation, Denver Museum of Nature & Science, Denver, Colorado*

Presenters: *Rose Jones, Director of Evaluation, Perot Museum of Nature and Science, Dallas, Texas, and Marcia Bueno, Director of NYSCI Neighbors, New York Hall of Science, Queens, New York*

Visitor Experience Diversity and Equity Community Impact

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

CONTENT AND DESIGN



Unexpected Outcomes: Three Exhibitions Aiming to Impact Visitors and Transform Their Own Institutions

MEETING ROOM 718B

What do the Exploratorium, the Eastern State Penitentiary Historic Site, and the Science Museum of Minnesota have in common? Each tackled exhibits about race and found this required honest self-evaluation and heightened inclusionary practices. Practitioners from three different projects chronicle their journeys, and address their own shortcomings, challenges, and outcomes.

Session Leader: Diane Whitmore, *Master Exhibit Developer, Exploratorium, San Francisco, California*

Presenters: Jessica Strick, *Lead Exhibit Developer, Exploratorium, San Francisco, California;* Robby Callahan Schreiber, *Museum Access and Equity Director, Science Museum of Minnesota, St. Paul, Minnesota;* and Sean Kelley, *Senior Vice President and Director of Interpretation, Eastern State Penitentiary Historic Site, Philadelphia, Pennsylvania*

Prototyping and Piloting Diversity and Equity Community Impact

3:30–5:30 p.m.

ASTC Alumni Diversity Fellows Present: Drive-by Discussions with the Future Leaders of Tomorrow



ASTC LAUNCH PAD, BOOTH 443, HALL E

A series of mini-fishbowl group discussions that encourages conference attendees to listen, share ideas, and collaborate in conversations that are crucial to the future of science centers. Topics include: Remaking the Science Center; How to Nurture and Develop the Leaders of Tomorrow; and Navigating the Changing Communities around Our Museums.

Session Leader: Cesar Cueva, *Visitor Services Manager, Oakland Museum of California, Oakland, California*

Presenters: Ashanti Davis, *Exhibits Project Supervisor, Fleet Science Center, San Diego, California;* Brenda Lopez, *Community Education Manager, Thinkery, Austin, Texas;* Yvette Sandoval, *Director of Visitor Services, Explora, Albuquerque, New Mexico;* Michelle Rodriguez, *Coordinator for Special Initiatives, The Lawrence Hall of Science, Berkeley, California;* and Rocheline Deronville, *Reservation Sales Manager, Museum of Discovery and Science, Fort Lauderdale, Florida*

Community Impact Diversity and Equity Inclusive Workforce Development

4:30–6:00 p.m.

Networking Reception in the Exhibit Hall

HALL E

The Networking Reception in the Exhibit Hall will give you even more opportunities to interact with your fellow conference attendees from across the globe. The reception is free of charge (cash bar available).

5:30–7:00 p.m.

ASTC Governing Members Appreciation Reception

MEETING ROOM 401

By invitation only:

Sponsored by
blackbaud
power your passion



Monday
September 23rd



AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

Monday, September 23

7:00 a.m.–5:00 p.m.

Registration Open

7:30–9:00 a.m.

NISE Network Partner Breakfast

AFFILIATE EVENT

MEETING ROOM 401

Staff from NISE Net partner institutions are invited to a free, informal breakfast to learn about new project opportunities and to meet and talk with other partners from across the United States. No need to RSVP.

8:00–9:00 a.m.

Development Breakfast

MEETING ROOM 501

Join your fellow chief executives and fundraising professionals for an empowering discussion of ways that effective nonprofit organizations make the case for their organizations to their many supporters, including donors, elected officials, corporate partners, and more.

Preregistration required.

9:15–10:30 a.m.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



Advocacy: Doing It Your Way

MEETING ROOM 715

Doing advocacy is not an easy task, but, whether you like it or not, it is essential and cannot be overlooked. Hear how three science engagement leaders, at national and international levels, found the right voice, approaches, and tools to develop an advocacy style that matched their organizations' values.

Session Leader: *Herbert Munder, General Manager, Universum, Bremen, Germany*

Presenters: *Robert Firmhofer, Director, Copernicus Science Centre, Warsaw, Poland; Catherine Franche, Executive Director, Ecsite—The European Network of Science Centres and Museums, Brussels, Belgium; and Stephen White, Vice President of External Affairs, Strategic Initiatives, and Business Development, COSI, Columbus, Ohio*

Communications Making the Case for Science Centers Member Engagement

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

S

Closed but Not Out: What Happens when a Science Center is Undergoing a Complete Renovation?

MEETING ROOM 714A

Renovating an old museum like the Palais de la Découverte, preserving its soul, and recognizing changes occurring in science and in society is a challenge. We have chosen to take it on ourselves. In the future the institution will initiate a conversation with the public about contemporary science, based on a radical rethinking of the deficit model.

Session Leader: Michèle Antoine, *Director of Exhibitions, Universcience, Paris, France*

Future Planning Global Perspective Making the Case for Science Centers

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

**All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.**

INFORMAL EDUCATION AND LEARNING

U

Developing Family Programs for Museums—Findings and Best Practices from Four Partnerships

MEETING ROOM 713

Learn how storytelling and object-based activities can engage families in STEM learning. Paired university-museum partners will share research related to supporting partnerships, project-based curriculum models, serving family audiences, and working with scientists and engineers. Leave with sample curricula, empirical research findings, and best practices for partnerships and relationship building.

Session Leader: Heather Toomey Zimmerman, *Associate Professor, Penn State University; University Park, Pennsylvania*

Session Moderator: Catherine Haden, *Professor, Loyola University Chicago, Chicago, Illinois*

Presenters: Michele Cowl, *Director of Education, Discovery Space of Central Pennsylvania, State College, Pennsylvania;* Christina Cid, *Director of Programs, High Desert Museum, Bend, Oregon;* Kimberly Sheridan, *Associate Professor, George Mason University, Washington, D.C.;* and Amanda Thorne, *Program Manager and Maker Educator, KID Museum, Bethesda, Maryland*

Partnerships Public Programs Learning Research

INFORMAL EDUCATION AND LEARNING

S

Even Space Shuttles Have Expiration Dates: Gracefully Ending Successful Programs

MEETING ROOM 701B

Energy abounds within science centers to develop and sustain programs, but what happens when priorities shift or funding ends? This session spotlights four diverse institutions that have sunset successful programs, along with subsequent lessons learned and growth realized. You'll acquire resources to assess your programs' vitality and sunsetting strategies.

Session Leader: Eric Godoy, *Partnership Programs Coordinator, Denver Museum of Nature & Science, Denver, Colorado*

Presenters: Sandra Bonnici, *Associate Director of Education, Diversity, and Inclusion, Madison Children's Museum, Madison, Wisconsin;* Charlie Trautmann, *Director Emeritus, Sciencenter, Ithaca, New York;* and Summer Scarlatelli, *STEM Center for Education and Career Development Manager, Museum of Discovery and Science, Fort Lauderdale, Florida*

Community Impact Future Planning Partnerships

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

U

Exploring U.S. Federal Funding Opportunities—Part I

MEETING ROOM 711

Find out about opportunities from program officers of several U.S. government science-mission agencies and ways to partner with them on mutual STEM-engagement priorities. Other resources, access to grant programs, and your questions will be discussed. Part I of this two-part session will provide an overview of the programs; join Part II in the afternoon to share your grant ideas and get tips for developing successful grant proposals.

Session Leader: *Wendy Hancock, Senior Manager of Programs and Events, Association of Science and Technology Centers, Washington, D.C.*

Presenters: *Carolyn Ng, Informal Education Lead, NASA GSFC/ADNET Systems, Inc., Washington, D.C.; Helen Wechsler, Senior Program Officer, Institute of Museum and Library Services, Washington, D.C.; and Tony Beck, SEPA Program Officer, National Institutes of Health, Bethesda, Maryland*

Partnerships Grant Writing Business Intelligence

EXTERNAL COLLABORATIONS AND CO-CREATION

U

Investigating Science with Children and Their Caregivers: A School District and Science Center Collaborative

MEETING ROOM 714B

According to research, parents are important predictors of success in children's lives. Hear how a science center and two departments at a public-school district collaborated and aligned multiple programs to support family-learning and to make an impactful difference in the community. Then brainstorm ways museums and schools can work together.

Session Leader: *Tara Henderson, Director of School and Community Programs, Explora, Albuquerque, New Mexico*

Presenters: *Marc Wunder, Title I Resource Teacher/Explora Liaison, Albuquerque Public Schools, Albuquerque, New Mexico; Stefanie McDermott, Title I Resource Teacher/Explora Liaison, Albuquerque Public Schools, Albuquerque, New Mexico; and Aida Homs-Rivera, PreK Coordinator, Albuquerque Public Schools, Albuquerque, New Mexico*

Community Impact Early Childhood Teacher Professional Development

INFORMAL EDUCATION AND LEARNING

U

Recognizing Realities: Explore Strategies for Serving the Immigrant, Migrant, and Refugee Communities

MEETING ROOM 716B

Looking for ways to advance informal learning in immigrant, migrant, and refugee communities? Meet four organizations that fulfill STEM learning needs of immigrants using a variety of strategies while advancing organizational goals. Learn about research regarding cultural communication and access barriers, discover strategies for overcoming barriers, and discuss concerns.

Session Leader: *Laurel Zhang, Director of Special Projects, Exploration Place, The Sedgwick County Science and Discovery Center, Wichita, Kansas*

Presenters: *Jennifer Jovanovic, Executive Director, GrowingGreat, Manhattan Beach, California; Andres Barrera Guerrero, Educator, Explora, Albuquerque, New Mexico; and Joanne Sandberg, Associate Professor, Wake Forest School of Medicine, Winston-Salem, North Carolina*

Diversity and Equity K-12 School Collaboration Outreach

INFORMAL EDUCATION AND LEARNING

U

STEAM and the Integration of Formal and Informal Learning

MEETING ROOM 718A

STEAM is critical in developing innovative solutions, emerging when diverse perspectives are applied to imagine a new future for humanity. Learn how two science centers, government, and school boards collaborated to create unique student environments focused on experimentation, making, and inquiry as a model to desegregate formal and informal learning.

Session Leader: *Lorrie-Ann Smith, Director, Education, Ontario Science Centre, Toronto, Ontario, Canada*

Presenters: *Patrick Miller, Education Officer, Ontario Ministry of Education, Toronto, Ontario, Canada; Jonathan Jerome, Coordinator, STEAM Residency; Ingenium - Canada Science and Technology Museum, Ottawa, Ontario, Canada; and Joanne Arcand, Teacher, Halton District School Board, Toronto, Ontario, Canada*

21st Century Skills K-12 School Collaboration Partnerships

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION

U

Science Centers: Leaders in Promoting Participation for All

MEETING ROOM 716A

Science centers not only remove barriers to informal science learning – we build bridges for access. We make connections, work with expert partners, and take risks. Hear our experiences launching accessibility initiatives, from programming to partnerships, staff training to staff roles, and funding the STEM pathway for all learners.

Session Leader: *Michele Kloda, Director of Learning Environments, Museum of Life and Science, Durham, North Carolina*

Presenters: *Treloar Bower, Manager of Program Development, Denver Museum of Nature & Science, Denver, Colorado; Michelle Kortenaar, Vice President of Strategic Development, Sciencenter, Ithaca, New York; Stephanie McMahon, Accessibility and Inclusion Specialist, Space Center Houston, Houston, Texas; Kamlynn Thomas, Director of School Programs, Arizona Science Center, Phoenix, Arizona; and Betsy Hall, Vice President for Guest Experiences, Museum of Life and Science, Durham, North Carolina*

Accessibility Community Impact Partnerships

CONTENT AND DESIGN

U

Science Outreach at the Cutting Edge: Design-A-Palooza

MEETING ROOM 717

How can science centers design experiences around cutting-edge science phenomena that are abstract, complex, and unfamiliar to the public? After a short panel discussion, session participants will play the Design Game, in which we will propose design strategies for randomly assigned content, audiences, and modalities generated through audience participation.

Session Leader: *Lee Bishop, Biotechnology Lead, Lawrence Hall of Science, Berkeley, California*

Presenters: *Ari Krakowski, Learning Labs and Digital Apps Director, Lawrence Hall of Science, Berkeley, California; Stacey Forsyth, Director, CU Science Discovery, University of Colorado Boulder, Boulder, Colorado; David Sittenfeld, Manager, Forums & National Collaborations, Museum of Science, Boston, Massachusetts; and Brian Mernoff, Education Programs Coordinator, MIT Museum, Cambridge, Massachusetts*

Design Thinking Working with Higher Education Public Programs

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

CONTENT AND DESIGN

U

Stop, Collaborate, and Listen: Co-creating the 21st Century Exhibit Experience

MEETING ROOM 701A

By re-working our practices and learning from the past, we can better seat ourselves to have museum experiences that are not only created for our diverse communities, but with them. Presenters will share their organizations' moonshots for the future of community-driven exhibits, and session participants will take away new ways to think about relationships with their communities and how to put diverse communities at the center of exhibit experiences.

Session Leader: Ashanti Davis, *Exhibits Project Supervisor, Fleet Science Center, San Diego, California*

Session Moderator: Daniel Aguirre, *Community Engagement Manager, Fleet Science Centre, San Diego, California*

Presenters: Sarah Gobbs-Hill, *Education Director, Terry Lee Wells Nevada Discovery Museum, Reno, Nevada*; Lindsay Jones, *Director of Operations, Virginia Discovery Museum, Charlottesville, Virginia*; and Vince Iannelli, *Exhibit Developer, TELUS Spark, Calgary, Alberta, Canada*

Visitor Experience Exhibit Design Community Impact

EXTERNAL COLLABORATIONS AND CO-CREATION

U

The Distributed Conference: Indigenous Knowledge Systems

MEETING ROOM 801

Join in this live, multi-continent discussion exploring the richness of indigenous knowledge systems around the world and what they can teach us about diversity and inclusion. Contributors include Sivuyile Manxoyi, a passionate indigenous astronomer promoting cultural astronomy as a tool for advancing culturally relevant science; Graham Durant, Director of QUESTACON, Australia's National Science and Technology Centre in Canberra, who has a rich history of working with local indigenous communities; Alfredo Wagner, an anthropologist working in the Amazon region in Brazil, on new social cartography to empower local communities by providing them with a path to control their own autonomy; and Guido Gryseels, who led the total transformation of the famous Belgian "Africa Museum," originally created by King Leopold II as an instrument to justify colonization.

Diversity and Equity Leadership Social Justice

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

A

You Never Get a Second First Day, Week, Year—Starting New Team Members Off Right

MEETING ROOM 718B

It is imperative for new team members to feel connected to your organization from day one, but successful onboarding lasts well beyond their first day. In this session, presenters will share components of inclusive onboarding programs which add value, authenticity, and thoughtful intention to a new team member's journey.

Session Leader: Zach Lynn, *Director of Volunteers and Engagement, Orlando Science Center, Orlando, Florida*

Presenters: Leslie Emery, *Vice President of Human Resources, Orlando Science Center, Orlando, Florida*, and Justin Tognarine, *Operations Manager, Carnegie Science Center, Pittsburgh, Pennsylvania*

Inclusive Workforce Development Management Diversity and Equity

10:45 a.m.–12:15 p.m.

General Plenary Session and ASTC 2020 Preview

HALLS F&G

Meet some of the 2019 Roy L. Shafer Leading Edge Award recipients; preview next year's conference with the team from Carnegie Science Center, host of the 2020 ASTC Annual Conference in Pittsburgh, Pennsylvania; and get inspired by the featured speakers as they share the importance of community science and the role that science and technology centers and museums can play in building "community science capital."

Featured Speaker

Raj Pandya, *Director, Project Director, Thriving Earth Exchange, American Geophysical Union*

Featured Speaker

Stella Bowles, *Community Science Activist*

AUDIENCES**U**

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

12:45–2:00 p.m.

CEO/Trustee Luncheon

MEETING ROOM 501

Following the General Session, sit down with your fellow institutional leaders, continue building and nurturing your network, and discuss with ASTC President and CEO Cristin Dorgelo how ASTC and our members can partner to gather the market research we need to better make the case for the work of science and technology centers and museums to funders and other stakeholders.

Preregistration required. Open to museum CEOs and trustees only.

Sponsored by



AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

2:30–3:45 p.m.

EXTERNAL COLLABORATIONS AND CO-CREATION

U

Amplify: Managing Microaggressions and Countering Stereotypes against Women and Girls in STEM

MEETING ROOM 714B

This interactive session will explore methods to increase awareness of intersectional microaggressions and combat stereotypes against women in STEM through public programs, partnerships, and social media. Learn tips and tools for identifying one's own biases, how to be an ally, and amplify the voices of those who often go unheard.

Session Leader: Rachel Ward-Maxwell, *Researcher-Programmer, Astronomy and Space Sciences, Ontario Science Centre, Toronto, Ontario, Canada*

Presenters: Andrea Mus, *Media Relations Officer, Ontario Science Centre, Toronto, Ontario, Canada;* Azadeh Shirzadi, *Founder, STEMneutral, Toronto, Ontario, Canada;* and Ana Sofia Barrows, *Social Media Manager, Lina Duque Consulting, Toronto, Ontario, Canada*

Partnerships Public Programs Diversity and Equity

CONTENT AND DESIGN

U

Are We Promising the Moon?—Lessons Learned on Group Visitor Engagement

MEETING ROOM 713

The session will focus on group visitor engagement in two ways. First, we will explore exhibits that foster teamwork and the benefits of such activities. Second, we will examine exhibits that prompt input from visitor groups and display the results. Design approaches for each exhibit type will be discussed.

Session Leader: Adryanne Quenneville, *Exhibit Designer, Reich+Petch Design International, Toronto, Ontario, Canada*

Presenters: Julie Moskalyk, *Science Director, Science North, Sudbury, Ontario, Canada;* Joshua Gutwill, *Director of Visitor Research and Evaluation, Exploratorium, San Francisco, California;* and Amy Barron, *Faculty, Sir Sandford Fleming College and Clarington Museums and Archives, Peterborough, Ontario, Canada*

Exhibit Design Impact Measurement Visitor Experience

CONTENT AND DESIGN

U

From Flintstones to Jetsons: Pushing the Future of Interactive Experience Design

MEETING ROOM 718A

This panel of design professionals are leaders in the design, prototyping, and implementation of immersive technologies into the museum environment. We'll share some projects that integrate augmented reality and virtual reality environments into the guest experience, and some strategies and vocabulary to use in developing and installing these experiences.

Session Leader: Thomas Hudson, *Senior Electronics Developer, Oregon Museum of Science and Industry, Portland, Oregon*

Session Moderator: David Laubenthal, *Director of Creative Services, Oregon Museum of Science and Industry, Portland, Oregon*

Presenters: Aaron Heidgerken-Greene, *Instrument Project Manager, Department of Physics and Astronomy, Carleton College, St. Paul, Minnesota;* Theodore Watson, *Co-Founder Design I/O, Co-Founder openFrameworks, Petaluma, California;* and Jake Rudder, *Senior Multimedia Specialist, Connecticut Science Center, Hartford, Connecticut*

Exhibit Design Design Thinking Advanced Technology (AR, VR, etc.)

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

**Exploring U.S. Federal Funding Opportunities—Part II**

MEETING ROOM 711

In this continuation from the Monday-morning session on STEM-education funding opportunities with U.S. government agencies, sit down with program officers to discuss your ideas for future grant proposals, join small-group discussions on ways to develop competitive applications, and expand your network of potential grant partners and collaborators.

Session Leader: Wendy Hancock, *Senior Manager of Programs and Events, Association of Science and Technology Centers, Washington, D.C.*

Presenters: Carolyn Ng, *Informal Education Lead, NASA GSFC/ADNET Systems, Inc., Washington, D.C.*; Helen Wechsler, *Senior Program Officer, Institute of Museum and Library Services, Washington, D.C.*; and Tony Beck, *SEPA Program Officer, National Institutes of Health, Bethesda, Maryland*

Partnerships Grant Writing Business Intelligence

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

**Making Observations: Identifying, Observing, and Communicating Local Learning Values**

MEETING ROOM 718B

How do we measure and assess making as a learning process, to improve our making programs to better support the learning we value as organizations and as a field? Learn about a process for identifying, documenting and using evidence of program-specific learning goals to improve practice and communicate value.

Session Leader: Lisa Brahms, *Director of Learning and Research, Children's Museum of Pittsburgh, Pittsburgh, Pennsylvania*

Presenters: Peter Wardrip, *Assistant Professor of STEAM Education, University of Wisconsin–Madison, Madison, Wisconsin*; Alison Bank, *Learning & Research Coordinator, Children's Museum of Pittsburgh, Pittsburgh, Pennsylvania*; Sherlock Terry, *Assistant Director of Exhibits, Montshire Museum of Science, Norwich, Vermont*; and Evelyn Ronning, *Research and Evaluation Senior Associate, Science Museum of Minnesota, St. Paul, Minnesota*

Impact Measurement Learning Research Making and Tinkering

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

**One Giant Leap for Shipping Practice**

MEETING ROOM 701A

Is shipping practice old-fashioned or just misunderstood? Many see it as complicated, confusing, or utterly archaic. We'll speculate on future technologies, generate fresh ideas, and imagine a brave new shipping world. As lovers of everything ship-shaped, come join the lively disagreement and opinionated chatter. Let's reach for the moon.

Session Leader: Rob Warren, *Business Development and Client Relationship Management, Traveling Exhibitions Consultant, West Harwich, Massachusetts*

Presenters: Cynthia Brown, *Exhibitions Manager, Phillip and Patricia Frost Museum of Science, Miami, Florida*; Rick Gales, *Business Development, Oregon Museum of Science and Industry, Portland, Oregon*; Paul Siboroski, *Exhibits Director, Fleet Science Center, San Diego, California*; Natalie Das, *Project Consultant, International Sales, Ontario Science Centre, Toronto, Ontario, Canada*; and Robert Aspinall, *CEO, The Shipping Monster, Atlanta, Georgia*

Temporary and Traveling Exhibits Partnerships Future Planning

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



Out of this Solar System! Take II: Programming around NASA's Universe of Learning Astronomy Resources

MEETING ROOM 714A

Bring the universe down to Earth! Connect your audience with a host of free resources from NASA's Universe of Learning. Hear how museums adapted those resources to use for their local audience. Then join a discussion about how to use those program models in your own building.

Session Leader: *Timothy Rhue II, Senior Informal Education Specialist, Space Telescope Science Institute, Baltimore, Maryland*

Presenters: *Alyson Annette Eshelman, Curator of Education, Springfield Museum of Art, Springfield, Ohio; Sarabeth Gordon, Education Director, Pensacola MESS Hall, Pensacola, Florida; and Jamilia Martineau-Lopez, Education Specialist for Youth Audiences, Museum of Life and Science, Durham, North Carolina*

Prototyping and Piloting Partnerships

CONTENT AND DESIGN



Planting the Seed . . . Creating Wonderment and Fascination

MEETING ROOM 715

By focusing on creating wonderment and fascination we can spark the natural abilities and curiousness of children, which provides opportunities for enhancing their 21st century skills. To achieve this, we need to change our content-based offering, mindset, and way of working. Come be wondered and discuss possibilities and learnings.

Session Leader: *Dorien Smits, Pedagogical Content Specialist, Technopolis, the Flemish Science Centre, Mechelen, Belgium*

Presenters: *Stephane Berghmans, Chief Executive Officer, Technopolis, the Flemish Science Centre, Mechelen, Belgium, and Nele Van der Elst, Experience Director, Technopolis, the Flemish Science Centre, Mechelen, Belgium*

21st Century Skills Future Planning Visitor Experience

LEADERSHIP AND PROFESSIONAL DEVELOPMENT



The Guest Is Never Wrong, but Not Always Right

MEETING ROOM 717

In a "Customer Is Always Right" industry, how can we train frontline staff to provide stellar customer service with an unreasonable, disrespectful, or even inappropriate guest? Join us in discussing training techniques that promote guest experience, staff safety, and how we can bring this discussion back to our cultural institutions.

Session Leader: *Joseph Hernandez, Manager of Guest and Member Services, The Adler Planetarium, Chicago, Illinois*

Presenters: *Erick Orellana, Visitor Experience Manager, Chabot Space & Science Center, San Francisco, California, and Mary Potter, Manager, Discovery Space of Central Pennsylvania, State College, Pennsylvania*

Customer Service Management Visitor Experience

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

A

The Middle: Manager-led Institutional Change

MEETING ROOM 701B

Join four museum professionals to discuss working across departments, how to find support where you might not expect it, as well as resources, materials, and strategies integral in changing workplace policies and culture. Attendees will have the opportunity to create an action plan to kick start your organizational change.

Session Leader: Heather Cain, *Assistant Project Manager and Call Center Manager, Carnegie Science Center, Pittsburgh, Pennsylvania*

Session Moderator: Stuart McNiell, *Manager of STEM Programs, Carnegie Science Center, Pittsburgh, Pennsylvania*

Presenters: Jason Mizerek, *Manager of Educator Programs, Fleet Science Center, San Diego, California*, and **Thomas Barry**, *Senior Manager, Community Engagement and Family Programs, Intrepid Sea, Air & Space Museum, New York, New York*

Project Management Administration Management

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

U

We Need a Giant Leap in Climate Communication . . . What Steps Move the Field Forward?

MEETING ROOM 716B

As social spaces trusted as sources of accurate scientific information, science centers are well-positioned to support productive, de-politicized public discourse about climate change. We know our voices are needed. So, how do we start? Join us to share grassroots strategies, free resources, and ideas for moving our museums forward.

Session Leader: Victoria Coats, *Manager of Exhibit Research and Development, Oregon Museum of Science and Industry, Portland, Oregon*

Presenters: Pat Hamilton, *Director, Global Change Initiatives, Science Learning Division, Science Museum of Minnesota, St. Paul, Minnesota*; **Rose Jones**, *Director of Evaluation, Perot Museum of Nature and Science, Dallas, Texas*; **Aly Busse**, *Director of Education, Mote Marine Laboratory and Aquarium, Sarasota, Florida*; and **Megan Ennes**, *Assistant Curator of Museum Education, Florida Museum of Natural History, Gainesville, Florida*

Global Perspective Making the Case for Science Centers Community Impact

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

INFORMAL EDUCATION AND LEARNING



Flash Presentations: Transforming Learning Approaches

MEETING ROOM 801

Session Leader: Allison Schwanebeck, *Director of Exhibits, Science Center of Iowa & Blank IMAX Dome Theater, Des Moines, IA*

Participant Created Skyshows: A Summer Camp Model

In The Adler Planetarium's Skyshow Camp, middle-school kids research, storyboard, script, program, and present an original skyshow – all in one short week! If you're looking for ways to make your planetarium or theater space more interactive for your guests, come hear Adler's camp manager talk about our challenges and successes!

Presenter: Sarah Smail, *Manager of Program Development, The Adler Planetarium, Chicago, Illinois*

Social and Emotional Learning in STEM Education in Museums

Staff from Intrepid Museum's GOALS for Girls Summer Intensive worked with a psychology graduate student to revamp their program to better address and develop their students' social and emotional (SEL) skills in conjunction with STEM learning. Presenters will discuss the methods and techniques used to develop SEL and collect feedback.

Presenters: Julia Orr, *Museum Educator, Intrepid Sea, Air & Space Museum, New York, New York, and Shihadah Saleem, Manager of Teen Leadership Programs, Intrepid Sea, Air & Space Museum, New York, New York*

All Is Not Lost: Empowering Teens to Save the Planet

How do you mobilize the next generation now? You create a space where their voice drives conversations with the people who are doing the science and creating the solutions. Contribute to this session and learn an approach that is informing, inspiring, and empowering teens to take action using museum resources.

Presenters: Jennifer Collins, *Ocean Education, National Museum of Natural History, Washington D.C.*, and Nicole Webster, *Manager of School and Youth Programs, National Museum of Natural History, Washington D.C.*

Segmenting Science Center Visitors by Their Distinct Relationships with Science and Implications for Relevance

This session will share results of a recent audience research study at the Science Center of Iowa, focusing on four distinct audience clusters that emerged based on visitors' attitudes towards and relationships with science. We will consider implications for the broader science center community in connecting with these distinct audiences.

Presenter: Cathy Sigmond, *Research Associate, RK&A, Inc., Alexandria, Virginia*

Reinventing the Field Trip—Creating Impactful School Visits that Empower Both Student and Teacher

Science museums and technology centers have been popular field trip destinations for generations. In this flash session, learn how one small museum took a different approach to school visits—one in which learning focused on the teacher—and saw student attendance shoot from 900 to 4,000 in a single year.

Presenter: Nina Arens, *Education Coordinator, Living Computers: Museum + Labs, Seattle, Washington*

Presentation Techniques to Maximize Audience Impact: A Mixed-Method Research Project

What does audience interaction really mean—and what does it accomplish? We'll present the results from one study that looked at how incorporating questions and physically involving audience members changed how the audience interpreted the presentation. Design your presentation with this information in order to maximize your effect.

Presenter: William Katzman, *Program Leader, LIGO Livingston, Livingston, Louisiana*

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

4:15–5:30 p.m.

INFORMAL EDUCATION AND LEARNING

Bridging the Opportunity Gap

MEETING ROOM 718A

Visions of Science engages more than 500 youth from low-income communities in STEM programming across the Greater Toronto Area. Presenters will share strategies and tools on how to meaningfully engage communities, leverage multi-sector partnerships, and foster long-term STEM engagement among low-income and racialized youth.

Session Leader: Eugenia Duodu, *Chief Executive Officer, Visions of Science Network for Learning, Toronto, Ontario, Canada*

Presenter: Dina Al-khooly, *Evaluation Coordinator, Visions of Science Network for Learning, Toronto, Ontario, Canada*

Community Impact Diversity and Equity Youth Development



LEADERSHIP AND PROFESSIONAL DEVELOPMENT

Choosing the Moon: Transforming Science toward Equity and Justice

MEETING ROOM 711

What if we took as our mandate not simply transforming K–12 STEM education and science communication, but rather transforming science itself to be more equitable and just? What does it take to engage in a culture-change moonshot? We'll discuss defining metrics, measuring success, garnering support, and playing the long game.

Session Leader: Cynthia Sharpe, *Principal, Cultural Attractions and Research, Thinkwell, Burbank, California*

Presenters: Sarah Cole, *President and CEO, Glazer Children's Museum, Tampa, Florida*; Marcus Harshaw, *Vice President, Education and Facilities, Kaleideum, Winston-Salem, North Carolina*; and Joe Imholte, *Vice President of Museum Experience, Science Museum of Minnesota, St. Paul, Minnesota*

Diversity and Equity Leadership Social Justice



AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

EXTERNAL COLLABORATIONS AND CO-CREATION



Collaborations Gone Wild: How Community Buy-in Can Make or Break Program Scaling

MEETING ROOM 716B

How can “moonshot” ideas be scaled while remaining authentic to our local communities? This session will help participants identify and brainstorm solutions for big issues that arise when valuable local programming is scaled regionally or nationally.

Session Leader: *Lisa Regalla, Deputy Director, Center for Childhood Creativity; Bay Area Discovery Museum, Sausalito, California*

Presenters: *Anne Holland, Exhibit and Outreach Manager, National Center for Interactive Learning, Space Science Institute, Boulder, Colorado, and Brooks Mitchell, Education Coordinator 2, Space Science Institute, Boulder, Colorado*

Community Impact Partnerships Prototyping and Piloting

INFORMAL EDUCATION AND LEARNING



Creating Sustainable Partnerships with Schools: Innovative Extensions to Your Professional Learning Programs

MEETING ROOM 701B

Explore how four institutions have developed partnerships with school districts to provide ongoing teacher professional development. These models include classroom coaching, in-school programs that model inquiry, and connecting teachers with STEM professionals who can provide classroom support. Explore how these programs have developed and how you can replicate these models.

Session Leader: *Sandra Ryack-Bell, Executive Director, Wade Institute for Science Education, Quincy, Massachusetts*

Presenters: *Cheryl Tokarski, Vice President of Programs, Connecticut Science Center, Hartford, Connecticut; Doug Thompson, STEM Education Manager, Discovery Place, Charlotte, North Carolina; and Audra Chapleski, Director of Education, Space Foundation Discovery Center, Colorado Springs, Colorado*

Teacher Professional Development Prototyping and Piloting K-12 School Collaboration

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING



Your Galaxy of Stars: Recruiting Talent with the Right Stuff

MEETING ROOM 714B

In this interactive panel discussion on recruiting and hiring practices, hear from museum leaders at different institutions about their challenges and successes in hiring staff with the “right stuff.” Participants will walk away with the necessary tools for recruiting the brightest stars.

Session Leader: *Wendy Hancock, Senior Manager of Programs and Events, Association of Science and Technology Centers, Washington, D.C.*

Presenters: *Talance Orme, Director of Training and Business Operations, The Tech Interactive, San Jose, California; Abigail Curran, Chief Operating Officer, Natural History Museum of Utah, Salt Lake City, Utah; and Ervin Gourdine, Chief Talent Officer, Discovery Place, Charlotte, North Carolina*

Administration Diversity and Equity Talent Management

EXTERNAL COLLABORATIONS AND CO-CREATION

A

Forward to the Moon: Inspired NASA Museum Collaborations Build Future Communities

MEETING ROOM 715

Review Apollo 50th Anniversary celebrations and related NASA activities – exploring what worked, strategies for addressing what didn't, and how collaborations benefited institutions. Then “crowdsource” the best ways to move forward collaboratively – to the Moon, or another upcoming big space event.

Session Leader: *Leslie Lowes, Informal Education Specialist, Jet Propulsion Laboratory, Pasadena, California*

Presenters: *Christina Carlson, Manager, Science Beyond the Boundaries, Saint Louis Science Center, St. Louis, Missouri; Sari Custer, Chief Curiosity Officer, Arizona Science Center, Phoenix, Arizona; Ben Dickow, President and Executive Director, Columbia Memorial Space Center, Downey, California; David Mestre, Manager of STEM, Discovery Museum, Bridgeport, Connecticut; Denise Kopecky, Vice President of Education, Challenger Center, Washington, D.C.; and Linda Rosenblum, Education Program Manager, National Park Service, Washington, D.C.*

Public Programs Partnerships Community Impact

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

A

Getting the Most from Your Volunteer Program, or How to Train Your Dragons

MEETING ROOM 713

Volunteers are one of the strongest assets for informal science institutions. Learn from panelists about some effective practices in training volunteers – and the staff who work with them – to get the most of your volunteer program, and to set your volunteers (and your institution) up for success.

Session Leader: *Nichelle O'Saurus, Volunteer Coordinator, Natural History Museum of Utah, Salt Lake City, Utah*

Presenters: *Sarah Moshenberg, Manager, Discovery Room and Family Learning, American Museum of Natural History, New York, New York; Kelly Gascoine, Manager, Volunteers and Internship Program, Carnegie Science Center, Pittsburgh, Pennsylvania; Janna Doherty, Program Manager, Early Childhood Development and Education, Museum of Science, Boston, Massachusetts; and Mary Potter, Front Desk Manager, Discovery Space of Central Pennsylvania, State College, Pennsylvania*

Volunteer Management Talent Management Administration

INFORMAL EDUCATION AND LEARNING

U

Got a Teacher PD Problem? Let's Shoot for the Moon and Solve It!

MEETING ROOM 717

If you work with teachers, combine your brainpower with colleagues across the country to explore solutions to the challenges we all face in working in the intersection of formal and informal education. Participants will brainstorm and problem-solve around challenges and obstacles in the field of teacher professional development and how institutional cultures (at both schools and informal science organizations) influence such efforts.

Session Leader: *Katharine Muniz, Director of Professional Development, California Science Center, Los Angeles, California*

Session Moderator: *James Kisiel, Associate Professor of Science Education, California State University, Long Beach, Long Beach, California*

Presenters: *Sarah Soule, Senior Manager of Professional Development, California Academy of Sciences, San Francisco, California, and Elena Lopez, Manager of Professional Development, California Science Center, Los Angeles, California*

Teacher Professional Development K-12 School Collaboration

AUDIENCES

U

Universal
(all audiences)

F

Foundational
(early/
new-career
professionals)

A

Applied
(mid-career
professionals)

S

Strategic
(advanced-career
professionals)

All sessions are
located in the
South Building,
Metro Toronto
Convention
Centre, unless
otherwise noted.

CONTENT AND DESIGN

S

Integrating Indigenous Cultural Experiences and Content in Our Science Centers and Museums

MEETING ROOM 801

Come learn how science centers and museums are integrating Indigenous culture, highlighting traditional knowledge, and celebrating Indigenous contributions. Hear about these visitor experiences, whether on location or through outreach, and the important steps in decision-making, development, and production to ensure they are true and respectful of the culture and sharing the right stories.

Session Leader: *Nicole Chiasson, Director of Education and Northern Programs, Science North, Sudbury, Ontario, Canada*

Presenters: *Stephanie Ratcliffe, Executive Director, The Wild Center, Tupper Lake, New York; Cybèle Robichaud, Director, Programming, Montréal Science Centre, Montreal, Quebec, Canada; Nancy Maryboy, President, Indigenous Education Institute, Friday Harbor, Washington; and Victoria Coats, Manager of Exhibit Research and Development, Oregon Museum of Science and Industry, Portland, Oregon*

Global Perspective Partnerships Visitor Experience

BUSINESS OPERATIONS, DEVELOPMENT, AND MARKETING

U

Moonshots: Make Your Membership Program Reach for the Stars!

MEETING ROOM 716A

Membership growth is important to the success of our science centers. Often the biggest source of attendance and ongoing revenue, member engagement is paramount to a successful trajectory. We'll talk about engaging, renewing, and expanding your membership; moving from transactional to philanthropic giving; improving accessibility for low-income audiences and nonprofit partners; and reaching higher-level donors.

Session Leader: *Terry Billie, Development Manager, Museum of Life and Science, Durham, North Carolina*

Presenters: *Michelle Kortenaar, Vice President of Strategic Development, Sciencenter, Ithaca, New York; Jennifer Stone, Manager of Membership, Denver Museum of Nature & Science, Denver, Colorado; Amy Marks, Membership Manager, Space Center Houston, Houston, Texas; and Tammy Stewart, Chief Development Officer, Arizona Science Center, Phoenix, Arizona*

Member Engagement Social Media Engagement Visitor Experience

EXTERNAL COLLABORATIONS AND CO-CREATION

U

Not Everybody Can Be an Astronaut: The Cast Supporting the Launch

MEETING ROOM 701A

Every successful major project requires the contributions of key players. Join this “fish-bowl” session and jump into the ring to discuss what roles the originator, champion, allocator, cat herder, and stakeholders play in a variety of major launches ranging from an escape room to an international collaboration on resilience.

Session Leader: *Barbara Punt, President and Chief Project Manager, Punt Consulting, Redondo Beach, California*

Presenters: *Mikko Myllykoski, Experience Director, Heureka, the Finnish Science Centre, Vantaa, Finland; Dante Centuori, Executive Director, Armstrong Air & Space Museum, Wapakoneta, Ohio; and Betsy Loring, Consultant, Worcester, Massachusetts*

Future Planning Partnerships Project Management

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

**Saving Mr. Spats: Strategies for Supporting Small-Museum Employees and Their Many Hats**

MEETING ROOM 714A

Employees of small museums quickly learn that, whatever their title, their duties are likely to be wide-ranging and eclectic. We will explore how to leverage the potential benefits of working at a small museum, developing an engaged and happy team, and avoiding some of the pitfalls.

Session Leader: **Anika Taylor**, *Outreach Programs Manager, The Bakken Museum, Minneapolis, Minnesota*

Presenters: **Michael Rathbun**, *Associate Director, Discovery Center Museum, Rockford, Illinois*; **Sarabeth Gordon**, *Education Director, Pensacola MESS Hall, Pensacola, Florida*; and **Kristian Zambrana**, *Camp Manager, Science Educator, South Florida Science Center and Aquarium, West Palm Beach, Florida*

Talent Management Small Museum Career Development

AUDIENCES



Universal
(all audiences)



Foundational
(early/
new-career
professionals)



Applied
(mid-career
professionals)



Strategic
(advanced-career
professionals)

All sessions are located in the South Building, Metro Toronto Convention Centre, unless otherwise noted.

CONTENT AND DESIGN

**Team Tools for Creative Idea Generation and Reflection**

MEETING ROOM 718B

In this showcase of case studies, presenters will share tools they use to facilitate creativity and reflection for solving problems in ways that are sensitive to the diverse collaboration styles of team members. The session will focus on how to match these tools to the problem you are trying to solve and to the makeup of the team. These approaches will translate to problems of different scales, internal team, and external collaborations.

Session Leader: **Dana Schloss**, *Director of Exhibit Experience, New York Hall of Science, Queens, New York*

Presenters: **Sherlock Terry**, *Assistant Director of Exhibits, Montshire Museum of Science, Norwich, Vermont*; **Katherine Ziff**, *Faculty, Entrepreneurship and Social Innovation, Mount Royal University, Calgary, Alberta, Canada*; and **Peter Wardrip**, *Assistant Professor of STEAM Education, University of Wisconsin–Madison, Madison, Wisconsin*

Talent Management Prototyping and Piloting 21st Century Skills

6:00–10:00 p.m.

ASTC Diversity and Leadership Development Fellows Closing Session

MEETING ROOM 501B

For 2019 Fellows, alumni, and invited guests.

VISIT US AT BOOTH #611 TO LEARN ABOUT
OUR NEW RELEASES

WHAT WE DO



TRAVELING
EXHIBITIONS



IMMERSIVE
THEATERS



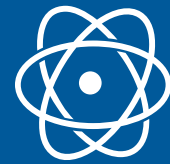
CONSULTING
SERVICES



TOUR
MANAGEMENT



LARGE FORMAT
FILMS



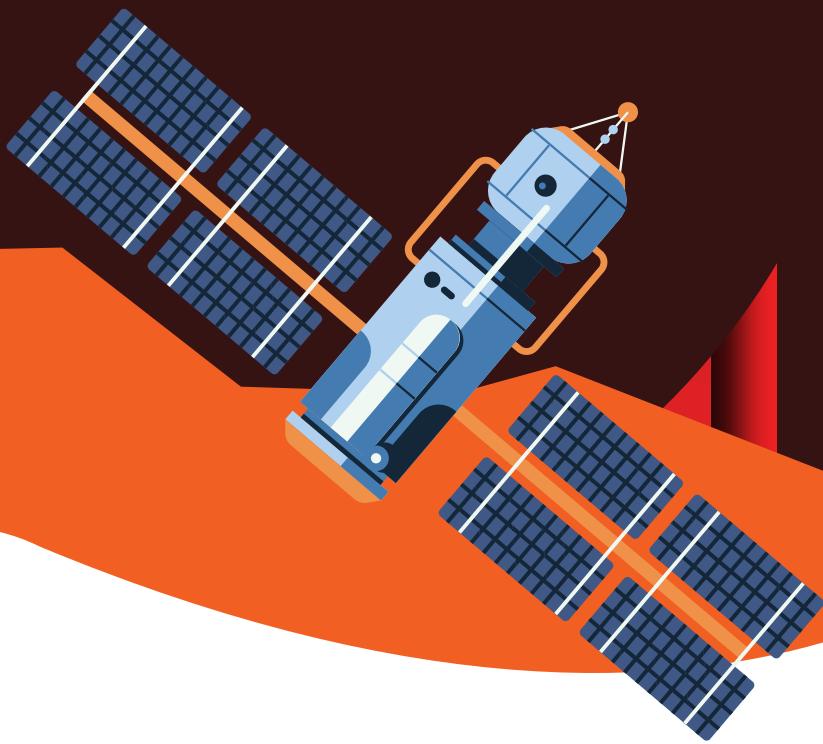
PERMANENT
EXHIBITS

Visit our website to learn more.

sciencenorth.ca/internationalsales

Science North would like to congratulate the Ontario Science Centre on hosting the
2019 ASTC Conference!

Tuesday
September 24th



Tuesday, September 24

8:00–10:00 a.m.

ASTC Conference Program Planning Committee Meeting

MEETING ROOM 809

For members only.

8:45 a.m.–1:00 p.m.

INFORMAL EDUCATION AND LEARNING



Outreach Live

GRENOBLE PUBLIC SCHOOL

Travel to a local school to see multiple outreach programs in action, presented to their natural audience: kids! Check out the equipment, content, and presentation style of several outreach programs in this highly immersive setting. Followed by group discussion and Q&A with the presenters.

Bus to the school will depart at 7:45 a.m. from the Metro Toronto Convention Centre, South Building, Level 500; following the program, participants may walk (10 minutes) to the nearby Ontario Science Centre. Limited to 55 people. Preregistration required.

Session Leader: **Jonah Cohen**, *Education Specialist, McWane Science Center, Birmingham, Alabama*

Presenters: **Brian Anderson**, *Director of Performance and Fun Times, Science World, Vancouver, British Columbia;* **Matthew Graveline**, *Staff Scientist–Outreach, Science North, Sudbury, Ontario Canada;*

Michael Edwards, *Chief Science Officer, Science East, Fredericton, New Brunswick, Canada;* **Katherine Trausch**, *Manager of COSI on Wheels, COSI, Columbus, Ohio;* **Anika Taylor**, *Outreach Programs Manager, The Bakken Museum, Minneapolis, Minnesota;* and **Nadine Dagenais-Dessaint**, *Education, Interpretation, and Exhibition Officer, Canada Agriculture and Food Museum, Ottawa, Ontario, Canada*

[K-12 School Collaboration](#) [Outreach](#) [Science Shows](#)

9:30 a.m.–4:00 p.m.

Science in the 6ix (Open House Day)

Ask. Test. Repeat.

ONTARIO SCIENCE CENTRE

While you're in Toronto – known to locals as “the 6ix” – don't miss a chance to visit our host organization, the Ontario Science Centre. Join us as we kick off the day with the popular Live Demo Hour, followed by rare, behind-the-scenes tours of the onsite design and fabrication facilities; interactive Creative Sessions on design and enhancing your museum's exhibits and demos; and the feature film screenings of Big Screen Day. We will wrap things up with a dynamic closing keynote presentation with Director X. We invite you to ASK questions, TEST the experiences, and REPEAT the best practices from ASTC 2019.

Check the ASTC 2019 app for the complete Science in the 6ix schedule, special tours, workshops, education programs, and a variety of demonstrations.

For all ages. Event free to ASTC Annual Conference participants.

All Science in the 6ix (Open House Day) programs at the Ontario Science Centre will conclude by 4:00 p.m.

Buses to the Ontario Science Centre will begin departing at 8:15 a.m. from the official ASTC Annual Conference hotels. Return buses will drop off at the official ASTC Annual Conference hotels.

9:30–10:30 a.m.

Live Demonstration Hour

IMPERIAL OIL AUDITORIUM, ONTARIO SCIENCE CENTRE

Join everyone for this ASTC tradition showcasing some of the best, most engaging demonstrations, with science and fun, rolled into one.

10:45 a.m.–3:15 p.m.

Behind-the-Scenes Tours @ the Ontario Science Centre

ONTARIO SCIENCE CENTRE

Join Ontario Science Centre staff members for a peek at the design and fabrication process behind our public-facing spaces. Tours will walk through our spaces beginning in the design space showcasing early ideas and prototypes for Mind Works and then will move into our fabrication facility where one-of-a-kind experiences are built. Tours last 30 minutes and will begin at 10:45 a.m., 11:00 a.m., and 2:45 p.m.

Space is limited. Advance registration required.

11:15 a.m.–12:30 p.m.

Creative Planning Workshops

ONTARIO SCIENCE CENTRE

We have \$1 million dollars . . . help us spend it! Alone or as a deeper dive into a behind-the-scenes exhibition development at the Ontario Science Centre. For this interactive element of the day, we will be collaborating with leaders of the exhibit walking tour. Our innovation center has been granted \$1 million for improvements to the hall, specifically exhibits. We will be re-designing this hall and adding six to eight novel exhibits. This portion of the day will involve ASTC attendees in assessing the hall, looking at what is working in the hall and what needs attention or gaps that might be present. The group will then move into a creative space to generate ideas on what could be done. This activity will run for one hour and be offered at 11:15 and 11:30 a.m.

Space is limited. Advance registration required.

1:30–2:30 p.m.

Closing Keynote Presentation

IMPERIAL OIL AUDITORIUM, ONTARIO SCIENCE CENTRE

A successful moonshot ends with a powerful return to Earth! Join us for a unique “re-entry” experience that will send you home from ASTC 2019 with a mind and spirit that’s rested and ready to share all you’ve learned.

Featured Speaker

Our closing keynote will be delivered by Director X (Julien Christian Lutz), a Canadian film and music video director and producer who has collaborated with entertainers ranging from Drake to Justin Bieber. X is the founder of Operation Cerebral Cortex, a project that seeks to stop gun and mass violence through meditation. He will be joined by a mindfulness expert who will take us through a collective exercise that will be an ideal complement to the Ontario Science Centre’s new *MindWorks* exhibition and the close of our shared conversation.

2:45–4:00 p.m.

INFORMAL EDUCATION AND LEARNING

**Family Feud—Informal Education Edition**

ONTARIO SCIENCE CENTRE

This game-show style session will be presented Family Feud style, with participants competing against each other to test their knowledge about informal science venues. While this session is literally all fun and games, it will also provide participants with ideas for incorporating existing research into their “moonshots” for their venues.

Session Leader: Anne Holland, *Exhibit & Outreach Manager, National Center for Interactive Learning, Space Science Institute, Boulder, Colorado*

Presenters: Kate Haley Goldman, *Principal, Haley Goldman Consulting, Baltimore, Maryland, and James Harold, Education PI, Space Science Institute, Boulder, Colorado*

Visitor Experience Diversity and Equity Community Impact

INFORMAL EDUCATION AND LEARNING

A

Ignite Your Audience: Creating an Interactive Science Show

ONTARIO SCIENCE CENTRE

A truly interactive science show moves beyond the demonstration, engaging audiences of all ages to become a part of the experience. But how are these shows developed? What makes a show interactive? Science show performers and developers will share how to inject interactivity into shows, incorporate narrative and humor, and to present solo or with another actor, along with other tricks and tools.

Session Leader: **Sarabeth Gordon**, *Education Director, Pensacola MESS Hall, Pensacola, Florida*

Presenters: **Samantha Blau**, *External Programs Manager, Maryland Science Center, Baltimore, Maryland*; **Jeff Rosenblatt**, *Director—Kansas City Science Center, Science City, Science City at Union Station, Kansas City, Missouri*; **Anika Taylor**, *Outreach Programs Manager, The Bakken Museum, Minneapolis, Minnesota*; **Paul Taylor**, *Traveling Science Show and Community Outreach Manager, The Franklin Institute, Philadelphia, Pennsylvania*; and **Alyson Walker**, *Manager of School Programs, Arizona Science Center, Phoenix, Arizona*

Science Shows Public Programs Communications

INFORMAL EDUCATION AND LEARNING

F

Pocket Demonstration Showcase

ONTARIO SCIENCE CENTRE

Pocket demos are a great way to connect with visitors in any location because of their compact size and fast-paced delivery. Join us in this showcase session to learn some of your colleagues' favorite pocket demonstrations and also bring along some of your own to share.

Session Leader: **Brian Anderson**, *Director of Performance and Fun Times, Science World British Columbia, Vancouver, British Columbia, Canada*

Presenters: **Michael Edwards**, *Chief Science Officer, Science East, Fredericton, New Brunswick, Canada* and **Marie McConnell**, *Staff Scientist, TELUS World of Science—Edmonton, Edmonton, Alberta, Canada*

Small Museum Science Shows Prototyping and Piloting

Big Screen Day

SHOPPERS DRUG MART OMNIMAX THEATRE, ONTARIO SCIENCE CENTRE

See the latest in giant screen films and learn about high-resolution digital projection and LED domes for giant screen cinema and planetariums in a special workshop presented by Evans & Sutherland.

Sponsored by



Big Screen Day Schedule

10:00–10:25 a.m.....	High Resolution Digital Projection and LED Domes for Giant Screen Cinema
10:30–11:15 a.m.....	<i>Great Bear Rainforest</i>
11:30 a.m.–12:15 p.m.....	<i>Apollo 11: First Steps Edition</i>
12:30–1:15 p.m.....	<i>Cuba</i>

Great Bear Rainforest



Great Bear Rainforest is the story of one of the rarest animals on Earth the fabled, all-white Spirit Bear and its ancient forest home. Hidden from the outside world, the Great Bear Rainforest is one of the planet’s most exquisite and secluded wildernesses. Found on Canada’s rugged Pacific coast, it is the largest temperate coastal rainforest in the world and is home to indigenous First Nations peoples, who have provided stewardship of the forest for millennia. Embark on a remarkable journey into a land of grizzlies, coastal wolves, sea otters, and humpback whales and discover the secret world of the Spirit Bear. Narrated by Ryan Reynolds. *Great Bear Rainforest* is a Spirit Bear Entertainment film presented by Seaspan in association with Destination British Columbia and distributed by MacGillivray Freeman Films.

Release: February 2019

Formats: 2D and 3D, 15/70, DCI-compliant digital, DCI-compliant laser, IMAX digital, IMAX laser, Dome-customized 15/70, Fuldome digital

Length: 40:00

Producer: Spirit Bear Entertainment

Distributor: MacGillivray Freeman Films

Contact: Patty Collins, pcollins@macfreefilms.com

Website: greatbearrainforestfilm.com

Apollo 11: First Steps Edition



Timed with the 50th anniversary of NASA's celebrated Apollo 11 mission, *Apollo 11: First Steps Edition* is a thrilling cinematic experience that showcases the real-life moments of humankind's first steps on the moon. In this special, giant screen edition of Todd Douglas Miller's critically acclaimed Apollo 11 documentary, created exclusively for science centers and museum theaters, the filmmakers reconstruct the exhilarating final moments of preparation, liftoff, landing, and return of this historic mission—one of humanity's greatest achievements and the first to put men on the moon. With a newly discovered trove of never-before-seen 70mm footage and audio recordings, the film joins Neil Armstrong, Buzz Aldrin, and Michael Collins, Mission Control, and millions of spectators around the world, during those momentous days

and hours in 1969 when humankind took a giant leap into the future. Directed by Todd Douglas Miller and produced by Statement Pictures in partnership with CNN Films and presented by Land Rover.

Release: May 17, 2019

Formats: 2D, 15/70, DCI-compliant digital, DCI-compliant laser, IMAX digital, IMAX laser, Dome-customized 15/70, Fulldome digital

Length: 47:00

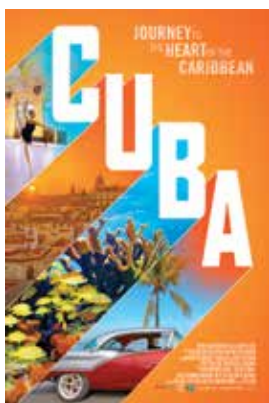
Producer: Statement Pictures

Distributor: MacGillivray Freeman Films

Contact: Patty Collins, pcollins@macfreefilms.com

Website: apollonfirststeps.com

Cuba



Cuba tells the powerful story of a land preserved in time yet poised on the cusp of dramatic change. The nation's vibrant culture, meticulously maintained colonial architecture, and pristine ecosystems provide a vivid window into the island's history and spirit. *Cuba* will transport audiences across breathtaking landscapes, under the ocean surface to iridescent reefs, and into streets throbbing with music and dance in the heart of Havana. Through the eyes of Cuban artists, historians, and scientists, the film provides an intimate look this vivacious island nation. Filmed exclusively for the giant screen format, *Cuba* reveals why Cuba continues to stir the imagination of the world. *Cuba* is produced by Golden Gate 3D, in association with BBC Earth, Giant Screen Films, and the Giant Dome Theater Consortium.

Release: January 19, 2019

Formats: 2D, 15/70, DCI-compliant digital, DCI-compliant laser, IMAX digital, IMAX laser

Length: 43:48 and 20:00

Producer: Golden Gate 3D

Distributor: Giant Screen Films

Contact: Mark Katz, mkatz@gsfilms.com

Website: cuba-film.com

Pittsburgh 2020

October 17–20



www.astc.org/conference



CARNEGIE 
SCIENCE
CENTER



THE BREATHTAKING RECREATION OF
THE PHARAOH'S TOMB AND TREASURES



TEEM
**THE EXPERIENCE
ECONOMY MEETING**

A new conference for the
experience and exhibition
industry

May 1-3, 2020
Downtown Los Angeles

Register now on
sc-exhibitions.com/teem

OUR EXHIBITIONS

MARVEL: UNIVERSE OF SUPER HEROES

A new exhibition celebrating 80 years of super heroes, from eye-popping print to big-screen blockbusters and beyond.

- Seattle** | MoPOP | 04/21/18 - 03/03/19 | 367,000 visitors
- Philadelphia** | The Franklin Institute | 04/13/19 - 09/11/19 | >300,000 visitors
- Edmonton** | TELUS World of Science | 10/18/19 - 02/17/20
- Dearborn** | The Henry Ford | 03/28/20 - 09/02/20

Available for winter 2020 and beyond.

THE DISCOVERY OF KING TUT

Millions of visitors have been fascinated by this journey of exploration to experience the treasures of Tutankhamun, featuring around 1,000 replica artefacts crafted in Egypt.

After stops in **Kansas City, San Diego, Grand Rapids, New York City, Davenport, St. Louis** and **Portland** the pharaoh is now available for the US again. Get in touch with us or our booking partner Imagine Exhibitions.

MEET US AT ASTC 2019

Christoph Scholz scholz.christoph@semmel.de
Seth! Leary leary.seth@semmel.de

SC-EXHIBITIONS.COM

Product Showcases

Saturday, September 21

10:30 a.m.–6:00 p.m. (Exhibit Hall Hours)

Sunday, September 22

9:30 a.m.–6:00 p.m. (Exhibit Hall Hours)

Beyond Human Limits

BOOTH 232, HALL E

Science North invites you to GET UP, TRY AGAIN, PUSH FURTHER. Produced in partnership with the Ontario Science Centre, Science North's *Beyond Human Limits* traveling exhibition challenges visitors to jump, fly, dive, and climb while exploring some of the riskiest activities in the world. Be immersed in a variety of exciting sports in a condensed version of this blockbuster exhibition during Exhibit Hall hours.

Presented by



Saturday, September 21

10:30 a.m.–6:00 p.m. (Exhibit Hall Hours)

Sunday, September 22

9:30 a.m.–6:00 p.m. (Exhibit Hall Hours)

Under the Canopy—Animals of the Rainforest

BOOTH 943, HALL E

The first installment in our habitat series introduces visitors to the world of rainforests, rainforest ecology, and issues affecting many of the people and animals that call rainforests home. Murals from rainforests around the world surround giant snakes, crocodilians, tarantulas, scorpions, piranhas, lizards, tiny Pacific parrotlets, Brazilian short-tailed possums, and more. This show transforms your exhibition area into a piece of the rainforest and is scalable and customizable to fit a wide range of gallery sizes and institutional needs.

Presented by



Sunday, September 22

3:15 a.m.–4:30 p.m.

Real-time Reactions: Keeping a Finger on the Pulse of Traveling Exhibitions

MEETING ROOM 718A

Reacting in real-time is critical to successfully marketing a traveling exhibition. With years of experience producing traveling exhibitions at venues of all sizes and budgets, Imagine Exhibitions offers powerful tools around audience and industry insights to support their clients and partners in developing and sustaining successful traveling exhibitions programs. In this session, meet the “experts behind the experience” as they share best practices that lead to traveling exhibitions that exceed expectations.

Presented by





Meet the 2019 ASTC Diversity and Leadership Development Fellows

Introduce yourself when you see them at the conference—
ask them about their work and what they are passionate about!

Meet them at the ASTC Launch Pad (#443) in the Exhibit Hall at 10:45 a.m. on Saturday.



UNITED STATES

Daniel Aguirre
Community Engagement
Manager
Fleet Science Center
San Diego, California



CANADA

Jason Boshier
Communications Coordinator
Science World British
Columbia
Vancouver, British
Columbia, Canada



UNITED STATES

Precious Brayboy
Manager of Visitor Services
Kaleideum
Winston-Salem, North
Carolina



UNITED STATES

Marissa Feldman
Museum and Animal
Program Educator/ Visitor
Experience Coordinator
Long Island Children's
Museum
Garden City, New York



UNITED STATES

Choua Her
Evaluation and Research
Associate
Science Museum of
Minnesota
St. Paul, Minnesota



UNITED STATES

Carla Herran
Junior Research Evaluation
Associate
Oregon Museum of Science
and Industry
Portland, Oregon



UNITED STATES

Dana Mahoney
Associate Director of Commu-
nity Engagement
Thinkery
Austin, Texas



UNITED STATES

Sheree Matchen
Visitor Services Assistant
Manager
Connecticut Science
Center
Hartford, Connecticut



UNITED STATES

Bridget Moore
Exhibits and Graphic De-
signer
Children's Discovery
Museum of San Jose
San Jose, California



UNITED STATES

Finn Smith
Public Programs Coordinator
ScienceWorks Hands-On
Museum
Ashland, Oregon



CANADA

Jacqueline Tran
Marketing & Communications
Coordinator
TELUS Spark
Calgary, Alberta, Canada



UNITED STATES

Ivel Gontan
Community Programs Senior
Manager
Fleet Science Center
San Diego, California



UNITED STATES

Lindsay Jones
Director of Operations
Virginia Discovery
Museum
Charlottesville, Virginia



UNITED STATES

Em Lozen
Manager for Family Fundrais-
ing Events
Museum of Life and
Science
Durham, North Carolina



UNITED STATES

Nichelle O'Saurus
Volunteer Coordinator
Natural History Museum
of Utah
Salt Lake City, Utah



UNITED STATES

Dee W. Perry
Floor Manager
Lawrence Hall of Science
Berkeley, California



UNITED STATES

Yvette Sandoval
Director of Visitor Services
Explora Science Center &
Children's Museum
Albuquerque, New Mexico

[www.astc.org/
professional-development/
conference-fellows](http://www.astc.org/professional-development/conference-fellows)

ASTC Members in Canada

ASTC is grateful for our ongoing collaboration with the Canadian Association of Science Centres (CASC). Visit the CASC Networking Zone on Saturday and Sunday in the Exhibit Hall (#915) to discover what's happening with science centers in Canada and connect with CASC staff.

Discovery Centre

1215 Lower Water Street
Halifax, Nova Scotia
www.thediscoverycentre.ca

Ingenium—Canada Science and Technology Museum

1867 St. Laurent Boulevard
Ottawa, Ontario
www.ingeniumcanada.org

Markham Museum

9350 Markham Road
Markham, Ontario
www.markhammuseum.ca

Montréal Science Centre

King Edward Pier
Old Port of Montreal
Montreal, Quebec
www.montrealsciencecentre.com

Okanagan Science Centre

2704 Highway 6
Vernon, British Columbia
www.okscience.ca

Ontario Science Centre

770 Don Mills Road
Toronto, Ontario
www.ontariosciencecentre.ca

Rossland Museum and Discovery Centre

1100 Highway 3B
Rossland, British Columbia
www.rosslandmuseum.ca

Saskatchewan Science Centre, Inc.

2903 Powerhouse Drive
Regina, Saskatchewan
www.sasksciencecentre.com

Science East

668 Brunswick Street
Fredericton, NB
www.scienceeast.nb.ca

Science North

100 Ramsey Lake Road
Sudbury, Ontario
www.sciencenorth.ca

Science World British Columbia

1455 Quebec Street
TELUS World of Science
Vancouver, British Columbia
www.scienceworld.ca

TELUS Spark

220 St. George's Drive NE
Calgary, Alberta
www.sparkscience.ca

TELUS World of Science—Edmonton

11211 142 Street NW
Edmonton, Alberta
telusworldofscienceedmonton.ca

The Exploration Place

333 Becott Place
Prince George, British Columbia
www.theexplorationplace.com



Educational Life-Changing Immersive Cinema



GSCA represents the business of premium, educational, immersive cinema experiences. Our members include science centers and museums, filmmakers, distributors, and suppliers from around the world. Ask us how we can help you extend the visitor learning experience.

Big Screen Day

Sponsored by GSCA
Tuesday, September 24
Ontario Science Centre
10:00am-2:00pm

Come see *Apollo 11: First Steps Edition*, *Cuba*, *Great Bear Rainforest*, and *Secrets of the Universe* in the Ontario Science Centre OMNIMAX Theatre. See the full schedule in the ASTC program.

GSCA-Led ASTC Session

“Extending the Lifelong Learning Experience in Giant Screen Films”
SATURDAY, SEPT 21, 2:15-3:30 PM

Visit **GSCA in Booth #414**
in the **ASTC Exhibit Hall**

giantscreencinema.com

tammy@giantscreencinema.com

[Twitter.com/gsca](https://twitter.com/gsca)

[Facebook.com/giantscreencinema](https://facebook.com/giantscreencinema)



Virtual Reality ▪ Capsule Simulation ▪ Interactive Experiences ▪ Augmented Reality

For more than 20 years, Pulseworks has provided out-of-home virtual reality and immersive entertainment experiences to premier science and technology centers across North America and is a proud sponsor of ASTC. Based in Atlanta, Georgia, our cutting-edge innovation and commitment to STEM-related content translates into mission-enriching "wow" for patrons and significant traffic monetization for our partners. Contact us to find out more! www.pulseworks.com p:770-916-1722



Sponsors and Exhibitors *(as of August 23, 2019)*

3DS—Three Dimensional Services—522

Burnaby, British Columbia, Canada

www.3dservices.com

3DS builds content-rich, interactive environments. From multi-gallery exhibit installations to simple one-off models, we work with designers and exhibit teams to achieve exceptional results.

Action Moving Services—733

Burnsville, Minnesota, United States

actionmoving.com/specialized

Our specially trained staff have years of experience in planning, packaging, crating, and transporting specialized, high-value exhibits and equipment.

American Alliance of Museums—741

Arlington, Virginia, United States

www.aam-us.org

AAM has been bringing museums together since 1906, helping to develop standards and best practices, gathering and sharing knowledge, and providing advocacy on issues of concern to the entire museum community.

American Association for the Advancement of Science (AAAS)—731

Washington, D.C., United States

www.aaas.org

The AAAS seeks to advance science, engineering, and innovation throughout the world for the benefit of all people.

American Museum of Natural History—837

New York, New York, United States

www.amnh.org/global-business-development/traveling-exhibitions

The American Museum of Natural History, founded in 1869, is a leading provider of traveling exhibitions, panel exhibits, planetarium shows, and other engaging scientific content.

Anatomage—415

San Jose, California, United States

www.anatomage.com

Anatomage is a medical company, driving innovation through advanced solutions in hospitals and educational institutions. Our products include medical tables, surgical devices, and radiology software.

Artisans of Florence—International Pty Ltd—828

Carlton, Victoria, Australia

www.artisansofflorence.com

We are the international tour operators for the Museum of Leonardo da Vinci in Florence, Italy, designing, developing, and touring interactive scientific exhibitions of artisanal experience.

BASE Hologram—836

Los Angeles, California, United States

basehologram.com

We partner with leading artists, cultural and educational institutions, and media companies to entertain crowds with unique, nonreplicable holographic productions, creating multiple revenue verticals to deliver value.

Betty Brinn Children's Museum—1029

Milwaukee, Wisconsin, United States

www.bbcmkids.org/salesrentals

The museum is dedicated to providing hands-on, educational experiences that help children build fundamental cognitive, social, emotional, and physical skills during their formative years.

BIG & Digital—416

Las Vegas, Nevada, United States

www.biganddigital.com

Celebrating 10 years as a distributor of immersive educational movies for museums and planetariums to wow audiences, inspire students, and generate attendance.

Billings Productions Inc.—435

Allen, Texas, United States

www.billingsproductions.com

Billings Productions specializes in permanent and temporary traveling exhibits featuring animatronic dinosaurs, prehistoric creatures, and giant insects—all creatures are created with validated scientific research and professional educational components.

Blackbaud, Inc.—220

GOLD SPONSOR

Charleston, South Carolina, United States

www.blackbaud.com

Blackbaud is the world's leading cloud software company powering social good. Learn more at our website.

Sponsors and Exhibitors *(as of August 23, 2019)*

BODY WORLDS—317

Heidelberg, Germany

bodyworlds.com

The original exhibitions featuring real plastinated human specimens from a body donation program. Human and animal exhibitions from 4,000 to 10,000 square feet (372 to 929 square meters) are available.

Boston Children's Museum—441

Boston, Massachusetts,

United States

www.bostonchildrensmuseum.org/exhibits-programs/museum-professionals

As one of the oldest and largest children's museums in the world, Boston Children's Museum creates award-winning traveling exhibits, staff training curriculum, exhibit kits, and museum consulting services.

Bradbury Science Museum, Los Alamos National Laboratory—1031

Los Alamos, New Mexico,

United States

www.lanl.gov/museum

Creates free, traveling STEM exhibits on the Lab's world-changing work and partners with you on content. This year's exhibit offering: *The Ribosome Machine*.

Budd Wentz Productions (Wentzscope Microscopes)—622

Oakland, California, United States

wentzscope.com

WENTZSCOPE Easy-View microscopes for museums. Built for rough public environments. Display opaque or translucent specimens, magnified 10–400x. Video to a screen is also available.

BWC Visual Technology, Spherical Systems—532

Upper Marlboro, Maryland,

United States

bwcviz.com

BWC Visual Technology is a distributor and licensed re-seller of state-of-the-art, interactive exhibit technology for museums and science centers.

California Science Center—823

Los Angeles, California,

United States

californiasciencecenter.org

The California Science Center develops world-class traveling exhibitions for museums across the globe. Experience *GOOSE BUMPS: The Science of Fear* and *DOGS: A Science Tail*.

CASEY CARLE, COMIC BUBBLE-OLIGIST—438

East Haddam, Connecticut,

United States

casey-carle.com

A live science stage show by full-time, professional bubble-ologist, comedian, and showman Casey Carle. A proven and popular draw at dozens of science centers nationwide. Jaws will drop. Brains will whirl. Bellies will laugh. Crowds will gather. "Aligned perfectly with our mission to delight, educate and inspire!"—Carnegie Science Center.

Chicago Scenic Studios Inc.—727

Chicago, Illinois, United States

www.chicagoscenic.com

Chicago Scenic has spent 40 years mastering the complexities of dynamic environments and challenging interactive experiences. Wherever you are in your exhibit development, let's talk.

The Children's Museum of Indianapolis—1037

Indianapolis, Indiana,

United States

www.childrensmuseum.org

Dora & Diego: Let's Explore available! The Children's Museum of Indianapolis creates extraordinary learning experiences that enrich the lives of children and families.

Children's Museum of Pittsburgh—729

Pittsburgh, Pennsylvania,

United States

pittsburghkids.org

Children's Museum of Pittsburgh delights and inspires children. The museum was named one of the nation's top 15 children's museums by *Parents* magazine in 2015.

Clark Planetarium—1015

Salt Lake City, Utah, United States

sco.org/clark-planetarium

Experience next-level digital interactive exhibits and learn about our newest full-dome show: *The Edge*, exploring the worlds of the outer solar system and beyond.

The Collaboration for Ongoing Visitor Experience Studies (COVES)—540

Washington, D.C., United States

www.understandingvisitors.org

COVES is a transformative data service created by museum professionals, helping museums be more effective through collaborative collection, analysis, and interpretation of visitor experience data.



Sponsors and Exhibitors *(as of August 23, 2019)*

Connecticut Science Center

BRONZE SPONSOR

Hartford, Connecticut,
United States

ctsciencecenter.org

With more than 165 hands-on exhibits, a state-of-the-art 3D digital theater, four educational labs, plus daily programs and events, the Connecticut Science Center offers endless exploration for children, teens, and adults.

Creative Discovery Museum—817

Chattanooga, Tennessee,
United States

www.cdmfun.org

Creative Discovery Museum is working with the BioEnergy Science Center on a biofuels/alternative energies STEM project called “Farming For Fuels.”

D-BOX Technologies—520

Longueuil, Quebec, Canada

www.d-box.com/en

D-BOX and Cabadra are joining forces to create tailor-made, immersive, edutainment experiences brought to life by the power of motion and stunning creativity.

D3D Cinema and Birdly VR—427

Evanston, Illinois, United States

birdlyvr.com

Birdly is a virtual reality birdflight simulator, coupling robotics and simulation technology to deliver a sensation of flight like none before.

DEA Museum and Visitor Center—222

Arlington, Virginia, United States

deamuseum.org

Drugs: Costs & Consequences, DEA’s traveling exhibition, is available to science museums wanting to hold conversations about the current heroin/opioid crisis in America.

Digitalis Education Solutions, Inc.—309

Bremerton, Washington,
United States

digitaliseducation.com

Digitalium digital planetarium systems make teaching astronomy and Earth science easy, effective, and engaging. Come experience one in action!

Digonex Dynamic Pricing—315

Indianapolis, Indiana,

United States

www.digonex.com

Industry leader in helping attractions transition from a static admission pricing strategy to a dynamic pricing strategy by creating custom algorithms that predict guest demand.

The DoSeum—326

San Antonio, Texas, United States

www.thedoseum.org

The DoSeum provides exhibition and experience design that empowers all young learners through STEAM education. We have interactive exhibit products and services.

The Elumenati, LLC—709

Milwaukee, Wisconsin,
United States

www.elumenati.com

Immersive experiences for entertainment, education, and enterprise.

The Gold Group—629

Salem, Massachusetts,
United States

www.thegoldgroup.com

The Gold Group is an industry leader and innovator in the marketing, promotion, and production of experiences and ticketed events that people line up for.

Eos Lightmedia—628

Vancouver, British
Columbia, Canada

eoslightmedia.com

From concept design to project completion, Eos Lightmedia is an award-winning lighting and interactive media firm specializing in themed attractions, museums, exhibits, and urban spaces.

EPlanetarium—529

Houston, Texas, United States

eplanetarium.com

We offer fully portable digital theaters, with true high-definition, presenting full-dome planetarium shows and digital starfields. We bring the excitement of museum-quality shows to you!

Evans & Sutherland Computer Corporation—215

Salt Lake City, Utah, United States
es.com

Theater and planetarium design and installation. Planetarium show production.

Sponsors and Exhibitors *(as of August 23, 2019)*

Evergreen Exhibitions—832

San Antonio, Texas, United States
evergreenexhibitions.com

Evergreen Exhibitions creates educational, touring science, natural history, art, and object exhibitions, delivering immersive experiences to museums throughout the world for more than 25 years.

Exhibits Development Group—920

St. Paul, Minnesota, United States
exhibitsdevelopment.com

EDG ignites and promotes cultural exchange by bringing exhibitions of art, science, history, and popular culture to a diverse audience worldwide.

Experiential Media Group—827

PLATINUM SPONSOR

Peachtree Corners, Georgia, United States
www.emgroup.com

EMG provides amazing, world-class touring exhibitions that combine immersive environments, educational experiences, and engaging stories.

Explorer Systems—815

Kelseyville, California, United States
versai.com

Premier, non-cloud based, all-in-one museum management software includes: school reservations, camp registrations, admissions, memberships, fundraising, grant tracking, real-time e-commerce, customer relationship management, gift shop, integrated reports.

Field Museum—1023

Chicago, Illinois, United States
www.fieldmuseum.org

The Field Museum combines research of its world-renowned scientific staff with award-winning design expertise to create traveling exhibitions that offer an exceptional level of service.

FLEXHIBIT—749

Spokane, Washington, United States
flexhibit.com

Through our portable, modular wall system called FlexWall, FLEXHIBIT offers the ability to switch out inspiring STEM content in a highly affordable manner.

Flying Fish Exhibits—509

Mount Martha, Victoria, Australia
www.flyingfishexhibits.com

Flying Fish is a world-renowned producer of touring exhibitions offering comprehensive services from exhibition design and fabrication to sales and marketing, global tour operations, and freight and logistics planning.

Foldscope Instruments, Inc.—841

Palo Alto, California, United States
www.foldscope.com

Foldscope is the ultraaffordable, paper microscope that you assemble yourself.

Fun Exhibits—632

Ann Arbor, Michigan, United States
funexhibits.com

Our flagship Ferrofluid Magnetoscope, new Electrolysis Detonator, Cooperative Phonograph, and Teleidoscope exhibits are in daily use around the world, creating excitement and wonder for visitors, visit after visit.

GES Events

GOLD SPONSOR

www.ges.com

With more than 90 years and the most comprehensive breadth of services and technology, we bring brands and customers closer together through events, exhibits, and exhibitions.

Giant Screen Cinema Association—414

SILVER SPONSOR

Holly Springs, North Carolina, United States
www.giantscreencinema.com

GSCA represents the worldwide network of organizations who exhibit and produce educational, life-changing, giant screen cinema experiences that help science centers fulfill mission and financial goals.

Grande Exhibitions—1025

Black Rock, Victoria, Australia
grandeexhibitions.com

Grande Exhibitions is a traveling exhibition provider that pushes the boundaries of innovation and technology, focusing on delivering maximum value to partners and visitors.

Group Delphi

SILVER SPONSOR

Alameda, California, United States
www.groupdelphi.com

From trade show booths to museum exhibits, retail installations to fine art prints, if they say it can't be done, we're the people to do it.



Sponsors and Exhibitors *(as of August 23, 2019)*

Gyroscope, Inc.—517

Oakland, California, United States

www.gyroscopeinc.com

We are an award-winning studio of creative designers who work closely with our clients to create innovative learning environments.

Hüttinger Interactive Exhibitions—635

Schwaig Bei Nuremberg,

Bavaria, Germany

www.huettinger.de

Designers and builders of interactive exhibitions.

Imagine Exhibitions Inc.—829

GOLD SPONSOR

Atlanta, Georgia, United States

www.imagineexhibitions.com

Imagine Exhibitions is currently producing 35+ exhibitions that educate, excite, and exceed attendance goals in science centers, museums, aquariums, integrated resorts, and nontraditional venues worldwide.

Imagination Playground

SUPPORTING SPONSOR

Providence, Rhode Island,

United States

www.imaginationplayground.com

Imagination Playground is a breakthrough concept that encourages child-directed, unstructured play. The kind of play critical to a child's intellectual, social, and emotional development.

Immotion Group—743

Los Angeles, California,

United States

immotion.co.uk

The Immotion Group is the world leader in developing and distributing immersive, entertaining, and educational virtual reality experiences on a variety of motion platforms.

Ingenium—Canada Science and Technology Museum—439

Ottawa, Ontario, Canada

ingeniumcanada.org/travelling-exhibitions

Engage your community or organization with Ingenium's traveling exhibitions, which offer a wide range of science and technology themes.

JRA—523

Cincinnati, Ohio, United States

www.jackrouse.com

We create experiences that delight the senses, capture imaginations, engage audiences, and inspire joy.

KaBOOM!—620

Washington, D.C., United States

kaboom.org

KaBOOM! is the nonprofit bringing play to all kids. Play with Rigamajig, a large-scale building kit used for hands-on play and STE(A)M learning.

The Kavli Foundation

DIAMOND SPONSOR

Los Angeles, California,

United States

www.kavlifoundation.org

The Kavli Foundation is dedicated to advancing science for the benefit of humanity, promoting public understanding of scientific research, and supporting scientists and their work.

Kubik Maltbie, Inc.—527

Mount Laurel, New Jersey,

United States

www.maltbie.com

Kubik Maltbie, Inc., is an experienced museum exhibit fabricator. The technical knowledge of our team is unrivaled, with an impressive portfolio of more than 350 projects.

Laser Fantasy International—224

Bellevue, Washington,

United States

laserfantasy.com

Laser Fantasy produces laser light shows for science centers, theme parks, events, and custom projects. Combining art and technology to entertain audiences the world over.

LiteZilla—514

Cedarburg, Wisconsin,

United States

www.litezilla.com

LiteZilla manufactures interactive light displays promoting STEAM programming. Also used therapeutically for developmental interventions, LiteZilla is a popular staple at science centers and children's museums internationally.

Little Ray's Nature Centres—948

GOLD SPONSOR

Ottawa, Ontario, Canada

www.animalambassadors.ca

Rainforests represent some of the most important and at-risk ecosystems in the world. Don't miss this amazing, incredibly scalable exhibition created to fit a wide range of museum and exhibit hall sizes. See Under *The Canopy—Animals of the Rainforest* on display in the ASTC 2019 Exhibit Hall.

Luci Creative—821

Lincolnwood, Illinois, United States

lucicreative.com

Luci Creative is a multidisciplinary studio that develops, designs, and produces compelling exhibits and spaces for museums and cultural institutions.

Sponsors and Exhibitors *(as of August 23, 2019)*

MadaTech, The Israel National Museum of Science, Technology, & Space—918

Haifa, Israel

www.madatech.org.il/en

MadaTech is a leader of museum-based scientific education and culture, creating experiences that shape and enhance people's attitude towards technology and science.

Mapcards.net—533

Brno, Czech Republic

www.mapcards.net

We produce a wide variety of 3D bookmarks, magnets, rulers, and other merchandise with human body, natural history, nature, space, and other themes.

Matheatre—747

Minneapolis, Minnesota,

United States

matheatre.com

Matheatre offers creative access points to science and math through live theatre—a powerful experience that also fosters imagination, active listening, and empathy.

Minnesota Children's Museum—1039

St. Paul, Minnesota, United States

mcm.org/museum-professionals/traveling-exhibits-page

MCM is the leading producer of children's traveling exhibits for museums. Visit our booth for a special announcement about our newest traveling exhibit!

Minotaur Mazes—826

Seattle, Washington, United States

www.minotaurmazes.com

Minotaur Mazes creates immersive traveling exhibitions—unique learning adventures bursting with interactive challenges. Topics include aerospace, brain games, butterflies, dinosaurs, rainforests, and clean water.

Modular Robotics—538

Boulder, Colorado, United States

www.modrobotics.com

Cubelets are the only toy that uses tactile coding to help builders of nearly any age explore robotics, coding, and more.

Museum of Discovery—939

Little Rock, Arkansas,

United States

museumofdiscovery.org

The Discovery Network offers interactive, traveling exhibitions focusing on STEM learning experiences, ranging in size from 500 to 3,500 square feet.

Museum of New Zealand Te Papa Tongarewa—1033

Wellington, New Zealand

www.tepapa.govt.nz

Te Papa and Weta Workshop's Bug Lab exhibition, presented by the incredible bugs themselves, changes how your visitors think about the world beneath their feet.

Museum of Pop Culture—633

Seattle, Washington, United States

www.mopop.org

With its roots in rock 'n' roll, MoPOP serves as a gateway museum, reaching multigenerational audiences through our collections, exhibitions, and educational programs that use interactive technologies to engage and empower our visitors.

Museum of Science—609

Boston, Massachusetts,

United States

www.mos.org

New England's most attended cultural institution, the Museum of Science, Boston, annually introduces 1.5 million visitors to STEM education via interactive exhibits, programs, and curriculum.

Museum of Science and Industry—1035

Chicago, Illinois, United States

msichicago.org

Traveling exhibits for rent.

NASA—Exploration System Directorate—809

Huntsville, Alabama, United States

www.nasa.gov/content/j2m-getting-to-mars-sls-and-orion

NASA's Moon and Mars missions are underway, and NASA is equipping institutions like yours for the adventure ahead. Learn about NASA's Artemis mission and how to gain access to free digital resources designed with science centers, museums, and planetariums in mind.



Sponsors and Exhibitors *(as of August 23, 2019)*

NASA Headquarters—907

Washington, D.C., United States

www.nasa.gov

Come experience the Hyperwall and discover how NASA's exploration expands knowledge and understanding of planet Earth, our Sun and solar system, and the universe beyond!

NISE Network—327

St. Paul, Minnesota, United States

www.nisenet.org

National Informal STEM Education Network is a community of informal educators and scientists dedicated to supporting learning about STEM across the United States.

NOAA, National Oceanic and Atmospheric Administration—843

Washington, D.C., United States

www.noaa.gov

NOAA is a U.S. federal science agency providing free information and education resources about weather, climate, oceans, coasts, fisheries, satellite data, and solar weather. Collaboration with ASTC fosters our mission to educate the nation and prepare a future workforce.

Northern Light Productions—916

Boston, Massachusetts,

United States

nlprod.com

Whether producing immersive media environments, interactive experiences, or documentary films, we view each client as our collaborator and strive for excellence that reflects our shared vision.

nWave Pictures Distribution—614

Los Angeles, California,

United States

www.nwave.com

nWave Pictures is a multinational company dedicated to producing and distributing immersive 3D/4D content worldwide.

Omaha Children's Museum—735

Omaha, Nebraska, United States

www.ocm.org

Omaha Children's Museum's *Forever Forest* exhibition showcases how we live, work, and play in the natural resource we call the forest. Designed by Kraemer Design.

Ontario Science Centre—937

ASTC 2019 HOST

Toronto, Ontario, United States

www.ontariosciencecentre.ca/

Rentals/

For 45+ years, our services have included design and fabrication of engaging, interactive science exhibits, consulting, development, and touring traveling exhibitions.

Oregon Museum of Science and Industry—929

Portland, Oregon, United States

omsi.edu/museum-services

OMSI can support your museum through a unique selection of interactive, audience-tested exhibit rentals and stand-alone experiences to purchase. Let's collaborate!

OVRX—535

San Antonio, Texas, United States

ovrx.com

Creator of the OVRView virtual reality platform, a synched, multi-user, virtual reality experience that is fun for visitors and provides supplemental income to museums.

Panasonic

DIAMOND SPONSOR

na.panasonic.com/ca

Panasonic is proud to support cultural institutions for their technology requirements as part of its social responsibility and commitment to make contributions to the society and culture.

Panelcraft—942

Canton, Michigan, United States

panelcraft.com

Panelcraft offers the world's first and only large-scale, magnetic construction sets and accessories to empower hands-on STEM learning experiences.

Pathfinders Design + Technology—842

Victoria, British Columbia, Canada

www.pathfindersdesign.com

Pathfinders makes hands-on, educational materials for STEM maker/tinkerer spaces and outreach science programs, as well as cool science kits for the museum store!

PGAV Destinations

GOLD SPONSOR

St. Louis, Missouri, United States

pgavdestinations.com

We are designers, architects, artists, master planners, and strategists devoted to creating experiences that will inspire, and empower guests to change the world.

Sponsors and Exhibitors *(as of August 23, 2019)*

Praxis Museum Projects Group

SUPPORTING SPONSOR

praxisexhibits.com

Praxis Museum Projects Group network members support museums, architects, and exhibit designers to create fully engaging, sustainable, state-of-the-art museum exhibits and environments.

Pucuda Leading Edge—521

*Madison, Connecticut,
United States*

netting.com

Leading Edge provides the most innovative netting products with an emphasis on quality, durability and value. We are proud to provide the leading edge of technology and products.

Pulseworks, LLC

JADE SPONSOR

Smyrna, Georgia, United States

www.pulseworks.com

Pulseworks, LLC, founded in 1998, is a world leader in motion simulators, motion simulation technology and interactive, immersive entertainment.

QuietPixel, Inc.—732

Madison, Alabama, United States

quietpixel.com

QuietPixel develops cutting-edge computer interactive simulations and exhibits. Come by and see our incredible HoloSands Augmented Reality Sandbox and our ExhibitBrowser software!

Richard Lewis Media Group—819

New York, New York, United States

rlmg.com

RLMG is an acclaimed digital design studio specializing in interactive installations, films, and custom applications for museums and public spaces.

Ripley Entertainment—511

Orlando, Florida, United States

www.ripleys.com

Our traveling shows are interactive, portable, one-of-a-kind experiences based on nearly 100 years of history, artifacts, intellectual property, and media—customized to meet your needs.

Roto—627

SILVER SPONSOR

Dublin, Ohio, United States

roto.com

Full-service planning, design, and production of custom and replicated interactive science exhibits. Extensive construction experience and operations background for front-end consultation through installation.

SC Exhibitions

SILVER SPONSOR

Bayreuth, Germany

www.sc-exhibitions.com

SC Exhibitions creates exhibitions that travel worldwide and hosts international exhibitions in Germany, Austria, and German-speaking Switzerland.

Science Museum Group—616

London, England, United Kingdom

**www.sciencemuseumgroup.
uk**

Our family of museums is world-renowned inspirational exhibitions—and many are now available for rent at your institution; we also offer Blueprints Packs that enable you to reproduce exhibitions.

Science Museum of Minnesota—830

St. Paul, Minnesota, United States

www.smm.org

The Science Museum of Minnesota offers a complete menu of services for organizations that need help developing, designing, and building educational exhibits.

Science North—611

DIAMOND SPONSOR

Sudbury, Ontario, United States

sciencenorth.ca/

internationalsales

At Science North, we deliver world-class, dynamic, and entertaining experiences every day. Traveling exhibits, multimedia, large-format films, consulting, tour management, and off-the-shelf exhibits.

SCIENCE PROJECTS—516

London, England, United States

science-projects.org

Science Projects delivers hands-on experiences for science centers around the world with our exhibits and exhibitions.

Sciencenter—914

Ithaca, New York, United States

sciencenterexhibits.org

Sciencenter provides educational, innovative, FUN hands-on traveling exhibitions. Collaborating with national sponsors, universities, and museums developing exhibitions for all ages. Discover the excitement of science!



Sponsors and Exhibitors *(as of August 23, 2019)*

Seiler Instrument/Carl Zeiss Planetariums—409

St. Louis, Missouri, United States
www.seilerinst.com/divisions/planetarium

More than 600 Zeiss Planetariums globally testify to their success providing the most realistic night sky possible and for surpassing simulation, educational, and entertainment needs.

SemiAxis, LLC—840

Saline, Michigan, United States
semiaxis.com

Telsa coil design and fabrication as well as electronics and embedded systems consulting.

SKOLNICK Architecture + Design Partnership—227

New York, New York, United States
www.skolnick.com

Integrated design firm specializing in architecture, exhibit design, graphic design, and master planning. LHSA+DP provides these services to museums, science centers, and educational institutions.

Space Telescope Science Institute—421

Baltimore, Maryland, United States
stsci.edu

NASA's Universe of Learning provides free resources that enable people to experience how science is done and discover the universe beyond our solar system.

Sphero—433

Boulder, Colorado, United States
www.sphero.com

We continue to explore new technologies in the realm of creative play. We firmly believe that playing is a powerful teacher, and as long as we're sparking imaginations around the world, we'll keep fueling that fire.

Spitz, Inc.—214

Chadds Ford, Pennsylvania, United States
www.spitzinc.com

Spitz, Inc., is the world's leading provider of projection domes, with more than 2,000 domes installed in giant screen cinemas, planetariums, and attractions worldwide.

Stage 2 Studios—737

Seattle, Washington, United States
stage2studios.com

Stage 2 Studios develops custom, science-themed apps and games and produces the new Science Planet line of affordable virtual reality experiences.

Stage 9 Exhibits—1027

Sacramento, California, United States
www.stageninedesign.com

Since 2005, Stage 9 Exhibits have engaged over two million visitors worldwide. We develop unique, pop-culture experiences that delight visitors of all ages.

STEM Learning Private Limited—534

Mumbai, Maharashtra, India
stemlearning.in

With Mini Science Centres, Tinker Labs, and more, we enhance students' aptitude towards science and math so that they embrace it and grow with it while relishing learning.

STEM Supplies—940

Edina, Minnesota, United States
www.stem-supplies.com

Our products are designed to promote creativity, inquiry, and collaboration while encouraging students to learn through discovery.

Tessitura Network—515

Washington, D.C., United States
www.tessituranetwork.com

Tessitura Software's customer relationship management platform powers all key areas of your business—memberships, admissions, education, development, and more—within one unified system.

Toronto International Film Festival—734

Toronto, Ontario, Canada
www.tiff.net

Come and check out what's new at digiPlaySpace, our wildly successful digital interactive exhibit for kids of all ages!

TOTAL Fine Arts—321

Toronto, Ontario, United States
www.total-transportation.com

Asset-based, specialized Canadian company offering domestic and international exhibition management, transportation, blankets, straps, decking, lift-gates, installation, rigging, storage, climate, and non-climate services.

Sponsors and Exhibitors *(as of August 23, 2019)*

Trivium Interactive LLC—634

*Boston, Massachusetts,
United States*

www.triviuminteractive.com

Trivium Interactive is a women-owned multimedia production firm specializing in developing interactive and immersive experiences.

Universal Services Associates, Inc.—1019

*Folcroft, Pennsylvania,
United States*

buildwithusa.com

USA, Inc., is a full-service exhibit fabrication firm specializing in museum exhibits, interactive displays, immersive environments, media and art installations, prototypes, model making, and more.

Virtual Science Center—921

*Sunnyvale, California,
United States*

www.virtualsciencecenter.org

VSC designs and creates interactive exhibits about emerging technologies. At ASTC 2019, come check out our prototypes for *Reinventing Reality*, a traveling exhibition exploring the science of virtual reality!

VRMicrotheaters—846

*University Place, Washington,
United States*

www.vrmicrotheaters.com

VRMicrotheaters are portable, freestanding exhibition environments that showcase the best in science, nature, and educational VR content.

Voya Financial

GOLD SPONSOR

New York, New York, United States

corporate.voya.com

Voya Foundation makes a meaningful difference in the community by investing in a focused and impactful way. We support programs with well-defined metrics and measurable outcomes that all work toward the same goal—to help create financially resilient youth.

Workinman Interactive LLC—847

Rochester, New York, United States

workinman.com

We don't make just games, we make the technology behind them, the absorbing concepts, the juicy animations, the kickin' audio, and the social draw.



Sponsors and Exhibitors by Category

(as of August 23, 2019)

Animals

GOLD SPONSOR Little Ray's Nature Centres—948

Architecture

GOLD SPONSOR PGAV Destinations Gyroscope, Inc.—517
SKOLNICK Architecture + Design Partnership—227

Associations

SILVER SPONSOR Giant Screen Cinema Association—414
American Alliance of Museums—741
American Association for the Advancement of Science (AAAS)—731
NISE Network—327

Audio/Visual

DIAMOND SPONSOR Panasonic
Budd Wentz Productions (Wentzscope Microscopes)—622
Digitalis Education Solutions, Inc.—309
Richard Lewis Media Group—819

Digital Equipment/Services

Evans & Sutherland Computer Corporation—215

Display Equipment

Billings Productions Inc.—435
BWC Visual Technology, Spherical Systems—532
The Elumenati, LLC—709

Educational Materials

American Association for the Advancement of Science (AAAS)—731
Boston Children's Museum—441
NASA Headquarters—907

NOAA, National Oceanic and Atmospheric Administration—843
Panelcraft—942
Sphero—433
STEM Learning Private Limited—534

Educational Programs

DIAMOND SPONSOR The Kavli Foundation

SUPPORTING SPONSOR

Imagination Playground
American Association for the Advancement of Science (AAAS)—731
Anatomage—415
BASE Hologram—836
Boston Children's Museum—441
CASEY CARLE, COMIC BUBBLE-OLIGIST—438
Creative Discovery Museum—817
EPlanetarium—529
KaBOOM!—620
Mattheatre—747
Museum of Science, Boston—609
NISE Network—327
NOAA, National Oceanic and Atmospheric Administration—843
Pathfinders Design + Technology—842
Sciencenter—914
Seiler Instrument/Carl Zeiss Planetariums—409
Space Telescope Science Institute—421
STEM Learning Private Limited—534

Exhibit Design

GOLD SPONSOR GES Events
GOLD SPONSOR PGAV Destinations

SILVER SPONSOR Group Delphi

SILVER SPONSOR Roto—627

JADE SPONSOR Pulseworks, LLC

SUPPORTING SPONSOR Praxis Museum Projects Group

3DS—Three Dimensional Services—522

Chicago Scenic Studios Inc.—727

The Children's Museum of Indianapolis—1037

Children's Museum of Pittsburgh—729

Eos Lightmedia—628

Field Museum—1023

Flying Fish Exhibits—509

Fun Exhibits—632

Gyroscope, Inc.—517

Hüttinger Interactive Exhibitions—635

Imagine Exhibitions Inc.—829

JRA—523

Luci Creative—821

NASA - Exploration System Directorate—809

Omaha Children's Museum—735

Oregon Museum of Science and Industry—929

Pucuda Leading Edge—521

Science Museum of Minnesota—830

SCIENCE PROJECTS—516

SKOLNICK Architecture + Design Partnership—227

Stage 2 Studios—737

Stage 9 Exhibits—1027

Exhibit Display Systems

Budd Wentz Productions (Wentzscope Microscopes)—622
FLEXHIBIT—749
Kubik Maltbie, Inc.—527

Sponsors and Exhibitors by Category

(as of August 23, 2019)

Exhibit Fabricators

ASTC 2019 Host Ontario Science Centre—937

SILVER SPONSOR Roto—627

Chicago Scenic Studios Inc.—727

Flying Fish Exhibits—509

Fun Exhibits—632

Kubik Maltbie, Inc.—527

LiteZilla—514

MadaTech, The Israel National Museum of Science, Technology, & Space—918

Museum of Discovery—939

Science Museum of Minnesota—830

SemiAxis, LLC—840

Exhibitions for Rent/Purchase

ASTC 2019 Host Ontario Science Centre—937

DIAMOND SPONSOR Science North—611

PLATINUM SPONSOR Experiential Media Group—827

GOLD SPONSOR GES Events

GOLD SPONSOR Imagine Exhibitions Inc.—829

GOLD SPONSOR Little Ray's Nature Centres—948

SILVER SPONSOR SC Exhibitions

SUPPORTING SPONSOR

Imagination Playground

3DS—Three Dimensional Services—522

American Museum of Natural History—837

Artisans of Florence—International Pty Ltd—828

Betty Brinn Children's Museum—1029

Billings Productions Inc.—435

BODY WORLDS—317

Bradbury Science Museum, Los Alamos National Laboratory—1031

California Science Center—823

The Children's Museum of Indianapolis—1037

Children's Museum of Pittsburgh—729

D3D Cinema and Birdly VR—427

DEA Museum and Visitor Center—222

The DoSeum—326

Evergreen Exhibitions—832

Exhibits Development Group—920

The Field Museum—1023

Grande Exhibitions—1025

Hüttinger Interactive Exhibitions—635

Ingenium - Canada Science and Technology Museum—439

KaBOOM!—620

Kubik Maltbie, Inc.—527

LiteZilla—514

MadaTech, The Israel National Museum of Science, Technology, & Space—918

Minnesota Children's Museum—1039

Minotaur Mazes—826

Museum of Discovery—939

Museum of Science and Industry—1035

Museum of Science, Boston—609

NISE Network—327

Omaha Children's Museum—735

Oregon Museum of Science and Industry—929

QuietPixel, Inc.—732

Ripley Entertainment—511

Running Subway Productions—1038

Science Museum Group—616

Sciencenter—914

SemiAxis, LLC—840

Stage 9 Exhibits—1027

STEM Learning Private Limited—534

Universal Services Associates, Inc.—1019

Virtual Science Center—921

Exhibition Promotion and Production

NASA Headquarters—907

Panelcraft—942

Film/Video

SILVER SPONSOR Giant Screen Cinema Association—414

BIG & Digital—416

Clark Planetarium—1015

D3D Cinema and Birdly VR—427

Northern Light Productions—916

nWave Pictures Distribution—614

Trivium Interactive LLC—634

VRMicrotheaters—846

Fundraising

GOLD SPONSOR Blackbaud, Inc.—220

Explorer Systems—815

Foldscope Instruments, Inc.—841

Matheatre—747

Tessitura Network—515

Graphic Design

GOLD SPONSOR PGAV Destinations

JRA—523

Luci Creative—821

SKOLNICK Architecture + Design Partnership—227

The Gold Group—629



Sponsors and Exhibitors by Category

(as of August 23, 2019)

Installation/Dismantling

Chicago Scenic Studios Inc.—727

Interactive

SILVER SPONSOR Roto—627

JADE SPONSOR Pulseworks, LLLC

3DS—Three Dimensional Services—522

Artisans of Florence - International Pty Ltd—828

Budd Wentz Productions (Wentzscope Microscopes)—622

CASEY CARLE, COMIC BUBBLE-OLIGIST—438

D-BOX Technologies—520

Fun Exhibits—632

Gyroscope, Inc.—517

Huttinger Interactive Exhibitions—635

Immotion Group—743

LiteZilla—514

Modular Robotics—538

Museum of Science and Industry—1035

NOAA, National Oceanic and Atmospheric Administration—843

Richard Lewis Media Group—819

SCIENCE PROJECTS—516

Space Telescope Science Institute—421

STEM Supplies—940

Toronto International Film Festival—734

Trivium Interactive LLC—634

Universal Services Associates, Inc.—1019

Large-format Films

SILVER SPONSOR Giant Screen Cinema Association—414

BIG & Digital—416

nWave Pictures Distribution—614

Lighting

Eos Lightmedia—628

Laser Fantasy—224

Motion Simulators

JADE SPONSOR Pulseworks, LLC

Workinman Interactive LLC—847

Museum Marketing

The Gold Group—629

Multimedia

DIAMOND SPONSOR Panasonic

DIAMOND SPONSOR Science North—611

Clark Planetarium—1015

Creative Discovery Museum—817

The DoSeum—326

EPlanetarium—529

Grande Exhibitions—1025

JRA—523

NASA - Exploration System Directorate—809

Northern Light Productions—916

Richard Lewis Media Group—819

SemiAxis, LLC—840

Space Telescope Science Institute—421

Universal Services Associates, Inc.—1019

VRMicrotheaters—846

Workinman Interactive LLC—847

Museum Store Merchandise

Foldscope Instruments, Inc.—841

Mapcards.net—533

Modular Robotics—538

Pathfinders Design + Technology—842

Planetariums

American Museum of Natural History—837

BIG & Digital—416

BWC Visual Technology, Spherical Systems—532

Clark Planetarium—1015

Digitalis Education Solutions, Inc.—309

EPlanetarium—529

Evans & Sutherland Computer Corporation—215

Laser Fantasy International—224

Seiler Instrument/Carl Zeiss Planetariums—409

Spitz, Inc.—214

Playgrounds

SUPPORTING SPONSOR

Imagination Playground

Digitalis Education Solutions, Inc.—309

Pucuda Leading Edge—521

STEM Supplies—940

Research and Evaluation

The Collaboration for Ongoing Visitor Experience Studies (COVES)—540

Sponsors and Exhibitors by Category

Robotics

Modular Robotics—538
Pathfinders Design +
Technology—842
Sphero—433
STEM Supplies—940

Shipping/Transportation

Action Moving Services—733
Flying Fish Exhibits—509
TOTAL Fine Arts—321

Simulations/Simulators

Anatmage—415
D3D Cinema and Birdly VR—427
Immotion Group—743
NASA - Exploration System
Directorate—809
nWave Pictures Distribution—614
QuietPixel, Inc.—732

Theater Planning and Design

Evans & Sutherland Computer
Corporation—215
Spitz, Inc.—214

Theatrical Science Shows

BASE Hologram—836
CASEY CARLE, COMIC
BUBBLE-OLIGIST—438
Matheatre—747
Running Subway Productions—1038

Ticketing Systems/Solutions

Gold Sponsor: Blackbaud, Inc.
Digonex Dynamic Pricing—315
Explorer Systems—815
Tessitura Network—515

Traveling Exhibitions

ASTC 2019 Host Ontario Science
Centre—937

DIAMOND SPONSOR Science North—611

PLATINUM SPONSOR Experiential Media
Group—827

GOLD SPONSOR GES Events

GOLD SPONSOR Imagine Exhibitions
Inc.—829

GOLD SPONSOR Little Ray's Nature
Centres—948

SILVER SPONSOR SC Exhibitions

American Museum of Natural
History—837
Artisans of Florence - International
Pty Ltd—828
BASE Hologram—836
Betty Brinn Children's
Museum—1029
Billings Productions Inc.—435
BODY WORLDS—317
Boston Children's Museum—441
Bradbury Science Museum, Los
Alamos National Laboratory—1031
California Science Center—823
The Children's Museum of
Indianapolis—1037
Children's Museum of
Pittsburgh—729
DEA Museum and Visitor
Center—222
Evergreen Exhibitions—832
Exhibits Development Group—920
The Field Museum—1023
Grande Exhibitions—1025
Ingenium - Canada Science and
Technology Museum—439
MadaTech, The Israel National
Museum of Science, Technology, &
Space—918
Minnesota Children's
Museum—1039
Minotaur Mazes—826
Museum of Discovery—939

Museum of New Zealand Te Papa
Tongarewa—1033

Museum of Pop Culture—633

Museum of Science and
Industry—1035

Museum of Science, Boston—609

Omaha Children's Museum—735

Oregon Museum of Science and
Industry—929

Ripley Entertainment—511

Running Subway Productions—1038

Science Museum Group—616

Science Museum of Minnesota—830

SCIENCE PROJECTS—516

Sciencenter—914

Stage 9 Exhibits—1027

The Gold Group—629

Toronto International Film
Festival—734

TOTAL Fine Arts—321

Virtual Science Center—921

Virtual Reality

BWC Visual Technology, Spherical
Systems—532
Immotion Group—743
OVRX—535
QuietPixel, Inc.—732
Sphero—433
Stage 2 Studios—737
The DoSeum—326
Virtual Science Center—921
VRMicrotheaters—846

Visitor Research/Services

The Collaboration for Ongoing
Visitor Experience Studies
(COVES)—540

Web Design

GOLD SPONSOR Blackbaud, Inc.



The new online journal from ASTC and the National Science Teachers Association highlighting STEM education experiences that bridge the gap between in-school and out-of-school settings.

Read the new issue, and subscribe for free, at csl.nsta.org



Connected Science Learning is supported by a generous grant from The Kavli Foundation. Funding to pilot and evaluate the effectiveness and demand for the first two issues was provided through a National Science Foundation (NSF) EAGER award (DRL-1420262).

Bring the Big Blue Blocks to Your Program!



*"Play is fundamentally important for learning 21st Century skills, such as problem-solving, collaboration, and creativity, which require the executive functioning skills that are critical for adult success."
- The Power of Play, American Academy of Pediatrics*



Imagination Playground is a premier child-directed play experience that supports STEM learning in all educational environments. Whether through open-ended free play, or within programming, the **Big Blue Blocks** offer endless opportunities to inspire creativity, communication, collaboration, and critical thinking.



Order by
November 15, 2019
and Get 20% Off*
with Code
ASTC2019

*Some restrictions apply,
contact us for details

Join Our Play Community:

-  /imaginationplayground
-  @imaginationplayground
-  @imgplayground
-  /imgplayground
-  /imgplayground

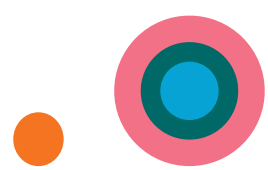
Contact Us:

-  1-678-604-7466
-  imaginationplayground.com/ASTC
-  contactus@imaginationplayground.com

OUR BLOCKS ARE



MADE IN THE USA



Sessions and Posters by Content Tag Index

21st Century Skills

Advancing Homeschooling Education through Museums: Parents Promote Computational Thinking and Engineering in Children	73
Building an ISL Profession that Has the Skills Needed for the Future	65
DAIE and Organizational Change	61
Evolving Teen Programs—Enter the Solution Room.....	61
Hearts and Minds: Creating Exhibits that Challenge and Change Mindset.....	79
How to Take Over the World through Off-site Engagement	67
Make-A-Vis: Come Build a Data Visualization from the Ground Up	46
Planting the Seed ... Creating Wonderment and Fascination.....	108
Playing with the Future: Creating Exhibits and Programs that Immerse Visitors in Futures Thinking.....	46
Practice What You Preach: Training Staff on STEM Practices.....	91
STEAM and the Integration of Formal and Informal Learning.....	103
STEM Justice 101: Redefining STEM as a Tool for Addressing Systems of Oppression	45
Team Tools for Creative Idea Generation and Reflection.....	115
To Infinity and Beyond! Enduring Connections with Youth Along the Career Ladder	68
U.S. Federal STEM Education Strategic Plan—An Ask Me/Tell Me Session ...	95
The Wave of Data Science Has Arrived: Preparing Youth for the “Data Future”.....	86
Youth-led Civic Action	68

Accessibility

Addressing Barriers to Participation: Making the Museums of the Future Equitable, Inclusive, and Accessible.....	54
Bring Out the Creativity in Children—Welcome to the Playcraft!	74
Family Science Nights: Shaping the Future of Family Engagement	78
Science Centers: Leaders in Promoting Participation for All.....	103

Administration

Getting the Most from Your Volunteer Program, or How to Train Your Dragons	113
The Middle: Manager-led Institutional Change.....	109
Up the Learning Curve: Tips and Networking for New CEOs and Senior Leaders.....	41
Your Galaxy of Stars: Recruiting Talent with the Right Stuff.....	112

Adult Engagement

An Artist Walks into a Science Museum ... Approaches for Bringing Artists and Visitors Together	60
The Future of Cannabis: Science, Health, Public Policy in Canada and the World.....	40
How to Take Over the World through Off-site Engagement.....	67
Museum after Dark: Capturing the Elusive Millennial	81
Practice What You Preach: Training Staff on STEM Practices	91
The Science of Cannabis: Critical Thinking, Emerging Science, and Social Context.....	48
Science on Tap Philadelphia: How to Get Your City Talking about Science	57

Advanced Technology (AR, VR, etc.)

Case Study: Special Science Exhibition Collaborated with National Science Museums in Korea	75
Designing a Situated Mobile Game to Enhance Informal Science Learning.....	39
Equipping Your Center for NASA’s Moon and Mars Missions	78
Extending the Lifelong Learning Experience in Giant Screen Films.....	62
From Flintstones to Jetsons: Pushing the Future of Interactive Experience Design	106
How to Present a Universe of Data through OpenSpace	40
Virtual Reality and Immersive Technologies: A Roadmap for New Forms of Audience Engagement.....	64

Board Management

Scaling Up: Positioning Your Museum for Its Next Campaign.....	63
--	----

Business Development

Fifty Years and Counting: Two Seminal Science Centers Look to the Future.....	90
From Pop-ups to Partnerships—New Models for Ancillary Revenue Streams.....	90
NIH SEPA Funding for ISE Exhibits—Program Overview and Grant Writing Workshop.....	57
Xs and Os: Connecting Visitor Experience Data and Operational Data to Drive Institutional Change.....	64

Business Intelligence

Exploring U.S. Federal Funding Opportunities—Part I	102
Exploring U.S. Federal Funding Opportunities—Part I	107

Sessions and Posters by Content Tag Index

Career Development

- Reflecting Critically on Our Beliefs about Learning 66
- Saving Mr. Spats: Strategies for Supporting Small-Museum Employees and Their Many Hats 115
- STEM Justice 101: Redefining STEM as a Tool for Addressing Systems of Oppression 45

Communications

- Advocacy: Doing It Your Way 100
- Artlab: Intersection of Art and Science 74
- Exhilarating Experiments and Dramatic Discoveries: How to Tell Riveting Science Stories Like an Artist 41
- How to Take Over the World through Off-site Engagement 67
- Ignite Your Audience: Creating an Interactive Science Show 121
- Lights, Camera, Action! Speaking Science in the Spotlight 43
- Putting It on Paper: The Power of an Equity and Inclusion Statement 66

Community Impact

- ASTC Alumni Diversity Fellows Present: Drive-by Discussions with the Future Leaders of Tomorrow 98
- Beyond the Walls—Building Community with Offsite Camps 89
- Bridging the Opportunity Gap 111
- Collaborations Gone Wild: How Community Buy-in Can Make or Break Program Scaling 112
- Discovering Alaska's Soundscapes through K-12 Outreach 76
- Enabling a Climate-Resilient Future through Community Partnerships 90
- Ensuring a Gender Equity Lens in STEM Programming 78

- Even Space Shuttles Have Expiration Dates: Gracefully Ending Successful Programs 101
- Family Feud—Informal Education Edition 120
- Forward to the Moon: Inspired NASA Museum Collaborations Build Future Communities 113
- The Future of Entrepreneurship in Science and Technology Engagement: Being an Acceleration Hub 67
- Hearts and Minds: Creating Exhibits that Challenge and Change Mindset 79
- How a Collaborative Network Co-Created a Science Exploration and Research Center on the Border 56
- Investigating Science with Children and Their Caregivers: A School District and Science Center Collaborative 102
- More than the Child: The Impacts of Museum STEM Programs 80
- Museums in Service to Young Multilingual Learners: A National Needs Assessment 81
- The Power of Small: A Strategic Advantage 96
- Public Libraries and Citizen Science: Fictional Moonshot or Nonfiction Bestseller? 92
- Science Centers: Leaders in Promoting Participation for All 103
- Science on a Sphere, Data in the Classroom and Other NOAA Data Resources—A Coevolution of Data Visualization and Modern Education 83
- Stop, Collaborate, and Listen: Co-creating the 21st Century Exhibit Experience 104
- Teens Connecting to Their Communities through the STEM Involved in Natural Disaster Response 85
- Tu Museo: Meeting the Needs of Latino Audiences 97

- Unexpected Outcomes: Three Exhibitions Aiming to Impact Visitors and Transform Their Own Institutions 98
- We Need a Giant Leap in Climate Communication ... What Steps Move the Field Forward? 109

Customer Service

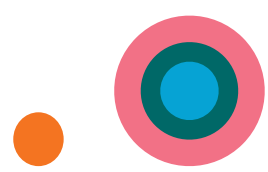
- Design Thinking for Exceptional Visitor Experiences 75
- The Guest Is Never Wrong, but Not Always Right 108

Design Thinking

- Artlab: Intersection of Art and Science 74
- Design Thinking for Exceptional Visitor Experiences 75
- Engineering Explorations: An NGSS-aligned Museum-based Engineering Education Program with Classroom Extensions 77
- From Flintstones to Jetsons: Pushing the Future of Interactive Experience Design 106
- Informal STEM Education and Science Communication: Branches of the Same Tree, Invasive Species, or Complementary Niches in an Ecosystem? 63
- Iterating on Design Thinking in Museums 91
- Raspberry Pi and Digital Making in a WWII Aircraft Carrier 82
- Science Outreach at the Cutting Edge: Design-A-Palooza 103
- Using Narratives to Create Inclusive and Engaging Museum-based Engineering Experiences 68

Diversity and Equity

- Addressing Barriers to Participation: Making the Museums of the Future Equitable, Inclusive, and Accessible 54

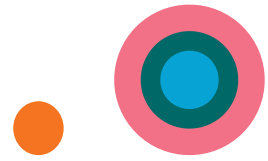


Sessions and Posters by Content Tag Index

Amplify: Managing Microaggressions and Countering Stereotypes against Women and Girls in STEM..... 106	Museums in Service to Young Multilingual Learners: A National Needs Assessment.....81	Computational Thinking and Engineering for 5- to 7-Year-Olds: An Exhibit Designed to Broaden Participation for a Better Future..... 75
ASTC Alumni Diversity Fellows Present: Drive-by Discussions with the Future Leaders of Tomorrow..... 98	Overcoming the Challenges of Ambitious and Complex Collaborations among University, Museum, and Community Partners..... 82	Early Learning and STEM—Opportunities Ahead!..... 89
Bridging the Opportunity Gap 111	Putting It on Paper: The Power of an Equity and Inclusion Statement 66	Highlighting STEM for Young Children while Keeping the Tinkering Intact: Program Development, Facilitation, and Environments..... 66
Choosing the Moon: Transforming Science toward Equity and Justice 111	Recognizing Realities: Explore Strategies for Serving the Immigrant, Migrant, and Refugee Communities..... 102	Investigating Science with Children and Their Caregivers: A School District and Science Center Collaborative 102
Computational Thinking and Engineering for 5- to 7-Year-Olds: An Exhibit Designed to Broaden Participation for a Better Future..... 75	Rising Stars in a Homogeneous Galaxy— Navigating a Career Trajectory as Someone Who Is Different..... 92	Move2Learn—Embodied Learning for Preschool Scientists 80
The Distributed Conference: Indigenous Knowledge Systems..... 104	SciGirls Strategies: Gender Equitable Teaching Strategies for STEM Programs 83	Museums in Service to Young Multilingual Learners: A National Needs Assessment.....81
Engaging Young Museum Professionals in a Global Learning Ecosystem77	STEM Justice 101: Redefining STEM as a Tool for Addressing Systems of Oppression 45	Risks and Rewards: How to Incorporate Vital Risky Play at Science Centers... 92
Ensuring a Gender Equity Lens in STEM Programming..... 78	Using Narratives to Create Inclusive and Engaging Museum-based Engineering Experiences..... 68	Emerging Technology
Family Feud—Informal Education Edition..... 120	The Whole Young Person: Social Emotional Learning in Youth Development 97	Emotion in the Science Center: Applying Affective Theory, Research and Technologies in Designed Experiences..... 42
Family Science Nights: Shaping the Future of Family Engagement 78	Tu Museo: Meeting the Needs of Latino Audiences 97	Virtual Reality and Immersive Technologies: A Roadmap for New Forms of Audience Engagement..... 64
Getting Them in the Door—Effective Recruitment Strategies..... 55	Unexpected Outcomes: Three Exhibitions Aiming to Impact Visitors and Transform Their Own Institutions 98	The Wave of Data Science Has Arrived: Preparing Youth for the “Data Future”..... 86
Handing Over the Controls: Co-Creating Exhibits with Community Partners ... 66	You Never Get a Second First Day, Week, Year—Starting New Team Members Off Right..... 104	Exhibit Design
In a Good Way ... Decolonizing Science Education..... 45	Your Galaxy of Stars: Recruiting Talent with the Right Stuff 112	Are We Promising the Moon?— Lessons Learned on Group Visitor Engagement 106
Informal STEM Education and Science Communication: Branches of the Same Tree, Invasive Species, or Complementary Niches in an Ecosystem? 63	Early Childhood	Beyond the Museum’s Walls: NMNH’s Do-It-Yourself Exhibits Program 74
iPAGE Professional Development: A Framework and Evidence for Igniting Change in Museum Workplace Culture..... 79	Advancing Homeschooling Education through Museums: Parents Promote Computational Thinking and Engineering in Children 73	Bring Out the Creativity in Children— Welcome to the Playcraft! 74
Launching Moonshots: Broadening Participation in Deep-dive, Maker-based STEM Programs through Strong Partnerships 56	Bring Out the Creativity in Children— Welcome to the Playcraft! 74	Computational Thinking and Engineering for 5- to 7-Year-Olds: An Exhibit Designed to Broaden Participation for a Better Future..... 75
More than the Child: The Impacts of Museum STEM Programs..... 80		

Sessions and Posters by Content Tag Index

Controversy in Science Museums: Reimagining Exhibition Spaces and Practice..... 39	Touch Anywhere to Begin: Meta-Evaluation of Touchscreen Interactives..... 87	Not Everybody Can Be an Astronaut: The Cast Supporting the Launch 114
Emotion in the Science Center: Applying Affective Theory, Research and Technologies in Designed Experiences..... 42	Facilities Operations	One Giant Leap for Shipping Practice..... 107
Engagement Opportunities with the Launch of NASA's James Webb Space Telescope 76	From Pop-ups to Partnerships— New Models for Ancillary Revenue Streams 90	Planting the Seed ... Creating Wonderment and Fascination..... 108
Equipping Your Center for NASA's Moon and Mars Missions..... 78	Fundraising	Preparing for NASA's Next Moonshot: An Interactive Discussion about NASA's James Webb Space Telescope..... 47
Evolution: The Conversation Continues..... 61	Can't We Be Friends? Bringing Development and Programming Together for Better Results and Job Satisfaction 93	Xs and Os: Connecting Visitor Experience Data and Operational Data to Drive Institutional Change..... 64
Flexible Methods for Formative Evaluation 42	Scaling Up: Positioning Your Museum for Its Next Campaign..... 63	Global Perspective
Free and Open-Source Software for Museum Exhibits..... 78	Future Planning	Closed but Not Out: What Happens when a Science Center is Undergoing a Complete Renovation? 101
From Flintstones to Jetsons: Pushing the Future of Interactive Experience Design 106	Building an ISL Profession that Has the Skills Needed for the Future 65	Engaging Young Museum Professionals in a Global Learning Ecosystem..... 77
Handing Over the Controls: Co-Creating Exhibits with Community Partners ... 66	Closed but Not Out: What Happens when a Science Center is Undergoing a Complete Renovation? 101	The Future of Cannabis: Science, Health, Public Policy in Canada and the World..... 40
Moonshots in the Museum: Creative Ways to Engage Museum Audiences in Big Challenges..... 96	The Dark Side of the Moon: Exploring Our Failures, Foibles, and Fantasies 58	Global Outlook on the Future of Science Centers—Toward 2030 and Beyond 55
Move2Learn—Embodied Learning for Preschool Scientists 80	Engagement Opportunities with the Launch of NASA's James Webb Space Telescope..... 76	Integrating Indigenous Cultural Experiences and Content in our Science Centers/Museums 114
Playing with the Future: Creating Exhibits and Programs that Immerse Visitors in Futures Thinking..... 46	Even Space Shuttles Have Expiration Dates: Gracefully Ending Successful Programs 101	Science on a Sphere, Data in the Classroom and Other NOAA Data Resources—A Coevolution of Data Visualization and Modern Education 83
Sprouting STEM Museum Magnet School Exhibit Design Training Workshop and Museum Integration Program 84	Fifty Years and Counting: Two Seminal Science Centers Look to the Future..... 90	We Need a Giant Leap in Climate Communication ... What Steps Move the Field Forward? 109
Stop, Collaborate, and Listen: Co-creating the 21st Century Exhibit Experience..... 104	From Modest to Moonshot: What's Next for Museum R&D? 95	Grant Writing
Storytelling through Play Space 84	The Future Is Here: Youth Voices on Innovation..... 58	Enabling a Climate-Resilient Future through Community Partnerships 90
Study of the Effects of the Museographic Environment on the Perceptive Experience of Visitors..... 85	The Future of Entrepreneurship in Science and Technology Engagement: Being an Acceleration Hub..... 67	Exploring U.S. Federal Funding Opportunities—Part I 102
There's No Time: Rapid Front-End Reporting with Infographics..... 86	Global Outlook on the Future of Science Centers—Toward 2030 and Beyond..... 55	Exploring U.S. Federal Funding Opportunities—Part I 107
Tinkering with Maker and Chemistry-based Activity Facilitation Frameworks..... 86	Making the Case 57	



Sessions and Posters by Content Tag Index

NIH SEPA Funding for ISE Exhibits—
Program Overview and Grant Writing
Workshop..... 57

Impact Measurement

Are We Promising the Moon?—
Lessons Learned on Group Visitor
Engagement 106

Developing Interest in STEM & STEM
Careers through Museum
Programming..... 65

Leveraging Camp Evaluations to
Maximize Program Impact..... 95

Long-term ISE Programming, and
Persistence in STEM..... 80

Making Observations: Identifying,
Observing, and Communicating
Local Learning Values 107

Research-Practice Partnerships: Museums
and Researchers Working Together for
Mutual Benefit 96

Thinking Like an Evaluator: Capacity-
building Efforts at Three Museums.. 97

What Happens when an Organization
Evaluates Its Own Learning?..... 87

Inclusive Workforce Development

ASTC Alumni Diversity Fellows Present:
Drive-by Discussions with the Future
Leaders of Tomorrow..... 98

DAIE and Organizational Change 61

iPAGE Professional Development:
A Framework and Evidence for
Igniting Change in Museum
Workplace Culture..... 79

NASA Resources for You!..... 81

Reflecting on Practice Coaching Workshop:
Blending In-person and Online..... 45

Rising Stars in a Homogeneous Galaxy—
Navigating a Career Trajectory as
Someone Who Is Different 92

You Never Get a Second First Day,
Week, Year—Starting New Team
Members Off Right 104

K-12 School Collaboration

Creating, Re-Designing Professional
Learning Experiences for Teachers
and Museum Educators: Creating
Collaborations, Utilizing Best
Practices..... 65

Creating Sustainable Partnerships with
Schools: Innovative Extensions to Your
Professional Learning Programs 112

Designing a Situated Mobile
Game to Enhance Informal
Science Learning..... 39

Discovering Alaska's Soundscapes
through K-12 Outreach 76

Engaging Children in Science Inquiry Skills
with Interactive, Digital Comics..... 77

Engineering Explorations: An NGSS-
aligned Museum-based Engineering
Education Program with Classroom
Extensions 77

Family Science Nights: Shaping the
Future of Family Engagement 78

Got a Teacher PD Problem? Let's Shoot
for the Moon and Solve It! 113

Launching Moonshots: Broadening
Participation in Deep-dive, Maker-based
STEM Programs through
Strong Partnerships..... 56

Outreach Live 118

Recognizing Realities: Explore Strategies
for Serving the Immigrant, Migrant, and
Refugee Communities..... 102

Sprouting STEM Museum Magnet School
Exhibit Design Training Workshop and
Museum Integration Program 84

STEAM and the Integration of Formal and
Informal Learning..... 103

Leadership

Choosing the Moon: Transforming Science
toward Equity and Justice 111

The Distributed Conference: Indigenous
Knowledge Systems..... 104

In a Good Way ... Decolonizing Science
Education 45

Up the Learning Curve: Tips and
Networking for New CEOs and Senior
Leaders..... 41

Learning Research

Can Live Interactive Video Positively
Influence Student Interest in
Science?..... 74

Climate Change Program and Exhibit
Showcase..... 73

Controversy in Science Museums:
Reimagining Exhibition Spaces and
Practice..... 39

Developing Family Programs for
Museums—Findings and Best Practices
from Four Partnerships..... 101

Developing YOUth! Year Three Results
of a Longitudinal Study of STEM Youth
Development Program Alumni..... 76

Emotion in the Science Center:
Applying Affective Theory, Research
and Technologies in Designed
Experiences..... 42

Engaging Children in Science Inquiry Skills
with Interactive, Digital Comics..... 77

Evaluating the Outcomes of Informal
STEM Learning: Will We Ever Figure
It Out? 54

Extending the Lifelong Learning
Experience in Giant Screen Films..... 62

From Modest to Moonshot: What's Next
for Museum R&D?..... 95

Informal STEM Education and Science
Communication: Branches of
the Same Tree, Invasive Species,
or Complementary Niches in an
Ecosystem? 63

Introduction of Creative Café:
The Theme-based Maker Space 79

Leveraging Camp Evaluations to Maximize
Program Impact..... 95

Let's Do Chemistry: Designing and
Facilitating Chemistry Activities to
Increase Interest, Relevance, and
Self-efficacy..... 43

Sessions and Posters by Content Tag Index

Long-term ISE Programming, and Persistence in STEM.....	80
Make-A-Vis: Come Build a Data Visualization from the Ground Up	46
Making Observations: Identifying, Observing, and Communicating Local Learning Values	107
Move2Learn—Embodied Learning for Preschool Scientists	80
Practice-based Facilitation: A Framework for Advancing Visitor Learning through Engagement in STEM Practices.....	44
Research-Practice Partnerships: Museums and Researchers Working Together for Mutual Benefit.....	96
Science on a Sphere, Data in the Classroom and Other NOAA Data Resources—A Coevolution of Data Visualization and Modern Education	83
SciGirls Strategies: Gender Equitable Teaching Strategies for STEM Programs	83
Staff Affect and Science Learning in Citywide Summer Youth Programs	84
Tinkering with Maker and Chemistry-based Activity Facilitation Frameworks.....	86
Using Narratives to Create Inclusive and Engaging Museum-based Engineering Experiences.....	68
The Wave of Data Science Has Arrived: Preparing Youth for the “Data Future”.....	86
What Happens when an Organization Evaluates Its Own Learning?.....	87

Making and Tinkering

Hearts and Minds: Creating Exhibits that Challenge and Change Mindset.....	79
Highlighting STEM for Young Children while Keeping the Tinkering Intact: Program Development, Facilitation, and Environments.....	66

Introduction of Creative Café: The Theme-based Maker Space	79
Making a Maker Future.....	44
Making Observations: Identifying, Observing, and Communicating Local Learning Values	107
Tinkering with Maker and Chemistry-based Activity Facilitation Frameworks.....	86

Making the Case for Science Centers

Advocacy: Doing It Your Way	100
Closed but Not Out: What Happens when a Science Center is Undergoing a Complete Renovation?	101
Conquering Complexity with Active Engagement	93
Engaging Young Museum Professionals in a Global Learning Ecosystem	77
Global Outlook on the Future of Science Centers—Toward 2030 and Beyond.....	55
Making the Case	57
Risks and Rewards: How to Incorporate Vital Risky Play at Science Centers...	92
Scaling Up: Positioning Your Museum for Its Next Campaign.....	63
We Need a Giant Leap in Climate Communication ... What Steps Move the Field Forward?	109

Management

Fifty Years and Counting: Two Seminal Science Centers Look to the Future.....	90
The Guest Is Never Wrong, but Not Always Right.....	108
The Middle: Manager-led Institutional Change	109
Up the Learning Curve: Tips and Networking for New CEOs and Senior Leaders.....	41
What Happens when an Organization Evaluates Its Own Learning?.....	87

You Never Get a Second First Day, Week, Year—Starting New Team Members Off Right.....	104
---	-----

Marketing

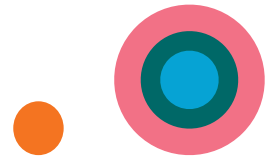
Lights, Camera, Action! Speaking Science in the Spotlight	43
Museum after Dark: Capturing the Elusive Millennial	81
Reviews and Reputation: How to Respond to Negative (or positive!) Social Media Reviews.....	67

Member Engagement

Advocacy: Doing It Your Way	100
Exhilarating Experiments and Dramatic Discoveries: How to Tell Riveting Science Stories Like an Artist	41
Moonshots: Make Your Membership Program Reach for the Stars!	114
Museum after Dark: Capturing the Elusive Millennial	81

Outreach

Artlab: Intersection of Art and Science.....	74
Beyond the Museum’s Walls: NMNH’s Do-It-Yourself Exhibits Program	74
Discovering Alaska’s Soundscapes through K-12 Outreach.....	76
Exhilarating Experiments and Dramatic Discoveries: How to Tell Riveting Science Stories Like an Artist	41
NEON: National Education Outreach Network.....	44
Outreach Live	118
Recognizing Realities: Explore Strategies for Serving the Immigrant, Migrant, and Refugee Communities.....	102
Science on Tap Philadelphia: How to Get Your City Talking about Science	57
The “Scientific Leadership” Program as a Home for Teenagers to Articulate and Negotiate Science Identities.....	85



Sessions and Posters by Content Tag Index

STEM Celebrations! Moon Landings, Earth Day 50th Anniversary, International Year of the Periodic Table, Solar Eclipses 82	Exploring U.S. Federal Funding Opportunities—Part I 107	Research-Practice Partnerships: Museums and Researchers Working Together for Mutual Benefit 96
Teens Connecting to Their Communities through the STEM Involved in Natural Disaster Response 85	Forward to the Moon: Inspired NASA Museum Collaborations Build Future Communities..... 113	Science on Tap Philadelphia: How to Get Your City Talking about Science 57
Partnerships	The Future of Entrepreneurship in Science and Technology Engagement: Being an Acceleration Hub..... 67	Science Centers Connect the Dots..... 83
Amplify: Managing Microaggressions and Countering Stereotypes against Women and Girls in STEM..... 106	Getting Them in the Door—Effective Recruitment Strategies..... 55	Science Centers: Leaders in Promoting Participation for All..... 103
An Artist Walks into a Science Museum ... Approaches for Bringing Artists and Visitors Together..... 60	Handing Over the Controls: Co-Creating Exhibits with Community Partners ... 66	STEAM and the Integration of Formal and Informal Learning..... 103
Beyond the Walls—Building Community with Offsite Camps..... 89	How a Collaborative Network Co-Created a Science Exploration and Research Center on the Border..... 56	STEM Celebrations! Moon Landings, Earth Day 50th Anniversary, International Year of the Periodic Table, Solar Eclipses 82
Bringing Chemists and Chemistry Experiments into Your Museum and Out into Your Community..... 89	Integrating Indigenous Cultural Experiences and Content in our Science Centers/Museums..... 114	Thinking Like an Evaluator: Capacity-building Efforts at Three Museums..... 97
Can't We Be Friends? Bringing Development and Programming Together for Better Results and Job Satisfaction..... 93	Iterating on Design Thinking in Museums 91	U.S. Federal STEM Education Strategic Plan—An Ask Me/Tell Me Session..... 95
Case Study: Special Science Exhibition Collaborated with National Science Museums in Korea 75	Launching Moonshots: Broadening Participation in Deep-dive, Maker-based STEM Programs through Strong Partnerships..... 56	Pricing and Sales
Collaborations Gone Wild: How Community Buy-in Can Make or Break Program Scaling..... 112	More than the Child: The Impacts of Museum STEM Programs on the Family 80	From Pop-ups to Partnerships—New Models for Ancillary Revenue Streams 90
Conquering Complexity with Active Engagement 93	Not Everybody Can Be an Astronaut: The Cast Supporting the Launch 114	Program Evaluation
Developing Family Programs for Museums—Findings and Best Practices from Four Partnerships..... 101	One Giant Leap for Shipping Practice..... 107	Can Live Interactive Video Positively Influence Student Interest in Science?..... 74
Engineering Explorations: An NGSS-aligned Museum-based Engineering Education Program with Classroom Extensions 77	Out of this Solar System! Take II: Programming around NASA's Universe of Learning Astronomy Resources..... 108	Designing and Evaluating Programs for Family Audiences..... 46
Ensuring a Gender Equity Lens in STEM Programming..... 78	Overcoming the Challenges of Ambitious and Complex Collaborations among University, Museum, and Community Partners..... 82	Developing Interest in STEM & STEM Careers through Museum Programming..... 65
Even Space Shuttles Have Expiration Dates: Gracefully Ending Successful Programs 101	Practice-based Facilitation: A Framework for Advancing Visitor Learning through Engagement in STEM Practices..... 44	Free and Open-Source Software for Museum Exhibits..... 78
Exploring U.S. Federal Funding Opportunities—Part I 102	Public Libraries and Citizen Science: Fictional Moonshot or Nonfiction Bestseller?..... 92	How to Communicate Climate Change: Key Takeaways from Program Evaluation 56

Sessions and Posters by Content Tag Index

Thinking Like an Evaluator:
Capacity-building Efforts at
Three Museums..... 97

Project Management

The Dark Side of the Moon: Exploring
Our Failures, Foibles, and
Fantasies 58

Getting Them in the Door—Effective
Recruitment Strategies..... 55

The Middle: Manager-led Institutional
Change 109

NIH SEPA Funding for ISE Exhibits—
Program Overview and Grant Writing
Workshop..... 57

Not Everybody Can Be an Astronaut:
The Cast Supporting the Launch 114

Overcoming the Challenges of Ambitious
and Complex Collaborations among
University, Museum, and Community
Partners..... 82

Take a Break from Building the Plane
while Flying It 63

Prototyping and Piloting

Collaborations Gone Wild: How
Community Buy-in Can Make or
Break Program Scaling 112

Creating Sustainable Partnerships with
Schools: Innovative Extensions to
Your Professional Learning
Programs 112

The Dark Side of the Moon: Exploring Our
Failures, Foibles, and Fantasies 58

Engagement Opportunities with the
Launch of NASA's James Webb Space
Telescope..... 76

Engaging Children in Science Inquiry Skills
with Interactive, Digital Comics..... 77

Flexible Methods for Formative
Evaluation 42

From Modest to Moonshot: What's
Next for Museum R&D?..... 95

Introduction of Creative Café: The
Theme-based Maker Space..... 79

Iterating on Design Thinking in
Museums 91

Let's Do Chemistry: Designing and
Facilitating Chemistry Activities to
Increase Interest, Relevance, and Self-
efficacy..... 43

Moonshots in the Museum: Creative Ways
to Engage Museum Audiences in Big
Challenges..... 96

Out of this Solar System! Take II:
Programming around NASA's
Universe of Learning Astronomy
Resources..... 108

Pocket Demonstration Showcase..... 121

Practice What You Preach: Training Staff
on STEM Practices..... 91

Preparing for NASA's Next Moonshot: An
Interactive Discussion about NASA's
James Webb Space Telescope..... 47

Public Libraries and Citizen Science:
Fictional Moonshot or Nonfiction
Bestseller?..... 92

Unexpected Outcomes: Three Exhibitions
Aiming to Impact Visitors and Transform
Their Own Institutions 98

Public Programs

Amplify: Managing Microaggressions and
Countering Stereotypes against Women
and Girls in STEM..... 106

Bringing Chemists and Chemistry
Experiments into Your Museum and Out
into Your Community..... 89

Climate Change Program and Exhibit
Showcase..... 73

Designing and Evaluating Programs for
Family Audiences..... 46

Developing Family Programs for
Museums—Findings and Best Practices
from Four Partnerships..... 101

Evolution: The Conversation
Continues..... 61

Forward to the Moon: Inspired NASA
Museum Collaborations Build Future
Communities..... 113

Highlighting STEM for Young Children
while Keeping the Tinkering Intact:
Program Development, Facilitation,
and Environments..... 66

How to Communicate Climate Change:
Key Takeaways from Program
Evaluation 56

How to Present a Universe of Data through
OpenSpace..... 40

Ignite Your Audience: Creating an
Interactive Science Show..... 121

Let's Do Chemistry: Designing and
Facilitating Chemistry Activities to
Increase Interest, Relevance, and
Self-efficacy..... 43

Moonshots in the Museum: Creative Ways
to Engage Museum Audiences in Big
Challenges..... 96

NASA Resources for You!..... 81

Playing with the Future: Creating Exhibits
and Programs that Immerse Visitors in
Futures Thinking..... 46

Preparing for NASA's Next Moonshot:
An Interactive Discussion about NASA's
James Webb Space Telescope..... 47

Risks and Rewards: How to Incorporate
Vital Risky Play at Science Centers... 92

The Science of Cannabis: Critical
Thinking, Emerging Science, and
Social Context..... 48

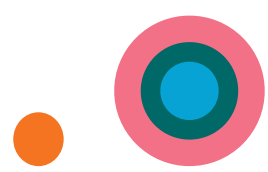
Science Outreach at the Cutting Edge:
Design-A-Palooza 103

STEM Celebrations! Moon Landings,
Earth Day 50th Anniversary, International
Year of the Periodic Table, Solar
Eclipses 82

Science Shows

Can Live Interactive Video Positively
Influence Student Interest in
Science? 74

Evolution: The Conversation
Continues..... 61



Sessions and Posters by Content Tag Index

Ignite Your Audience: Creating an Interactive Science Show..... 121

Lights, Camera, Action! Speaking Science in the Spotlight 43

NEON: National Education Outreach Network..... 44

Outreach Live..... 118

Pocket Demonstration Showcase..... 121

Small Museums

Extending the Lifelong Learning Experience in Giant Screen Films..... 62

How a Collaborative Network Co-Created a Science Exploration and Research Center on the Border 56

NASA Resources for You! 81

Pocket Demonstration Showcase..... 121

The Power of Small: A Strategic Advantage..... 96

Saving Mr. Spats: Strategies for Supporting Small-Museum Employees and Their Many Hats 115

Social Justice

Choosing the Moon: Transforming Science toward Equity and Justice 111

The Distributed Conference: Indigenous Knowledge Systems..... 104

The Future of Cannabis: Science, Health, Public Policy in Canada and the World..... 40

In a Good Way ... Decolonizing Science Education..... 45

Putting It on Paper: The Power of an Equity and Inclusion Statement 66

Rising Stars in a Homogeneous Galaxy— Navigating a Career Trajectory as Someone Who Is Different 92

The Science of Cannabis: Critical Thinking, Emerging Science, and Social Context 48

Social Media Engagement

Moonshots: Make Your Membership Program Reach for the Stars! 114

Reviews and Reputation: How to Respond to Negative (or positive!) Social Media Reviews..... 67

Talent Management

Building an ISL Profession that Has the Skills Needed for the Future 65

DAIE and Organizational Change 61

Getting the Most from Your Volunteer Program, or How to Train Your Dragons 113

Reflecting on Practice Coaching Workshop: Blending In-person and Online..... 45

Saving Mr. Spats: Strategies for Supporting Small-Museum Employees and Their Many Hats 115

Team Tools for Creative Idea Generation and Reflection..... 115

Your Galaxy of Stars: Recruiting Talent with the Right Stuff 112

Teacher Professional Development

Climate Change Program and Exhibit Showcase..... 73

Creating, Re-Designing Professional Learning Experiences for Teachers and Museum Educators: Creating Collaborations, Utilizing Best Practices..... 65

Creating Sustainable Partnerships with Schools: Innovative Extensions to Your Professional Learning Programs 112

Got a Teacher PD Problem? Let's Shoot for the Moon and Solve It! 113

Investigating Science with Children and Their Caregivers: A School District and Science Center Collaborative 102

Raspberry Pi and Digital Making in a WWII Aircraft Carrier 82

Sprouting STEM Museum Magnet School Exhibit Design Training Workshop and Museum Integration Program 84

Teen Programs

Developing YOUth! Year Three Results of a Longitudinal Study of STEM Youth Development Program Alumni..... 76

Evolving Teen Programs—Enter the Solution Room..... 61

The Future Is Here: Youth Voices on Innovation 58

Long-term ISE Programming, and Persistence in STEM..... 80

Raspberry Pi and Digital Making in a WWII Aircraft Carrier 82

The “Scientific Leadership” Program as a Home for Teenagers to Articulate and Negotiate Science Identities..... 85

Staff Affect and Science Learning in Citywide Summer Youth Programs.. 84

Take a Break from Building the Plane while Flying It..... 63

Teens Connecting to Their Communities through the STEM Involved in Natural Disaster Response 85

To Infinity and Beyond! Enduring Connections with Youth Along the Career Ladder 68

Youth-led Civic Action 68

Temporary and Traveling Exhibits

Beyond the Museum's Walls: NMNH's Do-It-Yourself Exhibits Program 74

One Giant Leap for Shipping Practice..... 107

Storytelling through Play Space 84

Virtual Reality and Immersive Technologies: A Roadmap for New Forms of Audience Engagement..... 64

Sessions and Posters by Content Tag Index

Visitor Experience

Addressing Barriers to Participation: Making the Museums of the Future Equitable, Inclusive, and Accessible.....	54
An Artist Walks into a Science Museum ... Approaches for Bringing Artists and Visitors Together.....	60
Are We Promising the Moon?— Lessons Learned on Group Visitor Engagement.....	106
Case Study: Special Science Exhibition Collaborated with National Science Museums in Korea.....	75
Conquering Complexity with Active Engagement.....	93
Controversy in Science Museums: Reimagining Exhibition Spaces and Practice.....	39
Design Thinking for Exceptional Visitor Experiences.....	75
Designing a Situated Mobile Game to Enhance Informal Science Learning.....	39
Equipping Your Center for NASA's Moon and Mars Missions.....	78
Family Feud—Informal Education Edition.....	120
Flexible Methods for Formative Evaluation.....	42
The Guest Is Never Wrong, but Not Always Right.....	108
Integrating Indigenous Cultural Experiences and Content in our Science Centers/Museums.....	114
Moonshots: Make Your Membership Program Reach for the Stars!.....	114
Planting the Seed ... Creating Wonderment and Fascination.....	108
Practice-based Facilitation: A Framework for Advancing Visitor Learning through Engagement in STEM Practices.....	44
Reviews and Reputation: How to Respond to Negative (or positive!) Social Media Reviews.....	67
Stop, Collaborate, and Listen: Co-creating the 21st Century Exhibit Experience.....	104
Storytelling through Play Space.....	84
Study of the Effects of the Museographic Environment on the Perceptive Experience of Visitors.....	85
There's No Time: Rapid Front-End Reporting with Infographics.....	86
Touch Anywhere to Begin: Meta- Evaluation of Touchscreen Interactives.....	87
Tu Museo: Meeting the Needs of Latino Audiences.....	97
Xs and Os: Connecting Visitor Experience Data and Operational Data to Drive Institutional Change.....	64

Volunteer Management

Getting the Most from Your Volunteer Program, or How to Train Your Dragons.....	113
---	-----

Working with Higher Education

Bringing Chemists and Chemistry Experiments into Your Museum and Out into Your Community.....	89
Make-A-Vis: Come Build a Data Visualization from the Ground Up....	46
Science Centers Connect the Dots.....	83
Science Outreach at the Cutting Edge: Design-A-Palooza.....	103

Youth Development

Beyond the Walls—Building Community with Offsite Camps.....	89
Bridging the Opportunity Gap.....	111
Developing Interest in STEM & STEM Careers through Museum Programming.....	65
Developing YOUth! Year Three Results of a Longitudinal Study of STEM Youth Development Program Alumni.....	76
Enabling a Climate-Resilient Future through Community Partnerships....	90
Evolving Teen Programs—Enter the Solution Room.....	61
The Future Is Here: Youth Voices on Innovation.....	58
How to Present a Universe of Data through OpenSpace.....	40
The “Scientific Leadership” Program as a Home for Teenagers to Articulate and Negotiate Science Identities.....	85
Staff Affect and Science Learning in Citywide Summer Youth Programs..	84
Take a Break from Building the Plane while Flying It.....	63
To Infinity and Beyond! Enduring Connections with Youth Along the Career Ladder.....	68
The Whole Young Person: Social Emotional Learning in Youth Development.....	97
Youth-led Civic Action.....	68



The best thing we can
invest in is curiosity.

Voya Financial® celebrates our partners' efforts in educating our children.

Nothing is more important than ensuring the security and success of our children. At the Voya Foundation, we are proud that a key part of our mission is to empower the people in our communities. By educating our children, we give them what they need to improve their grades, their lives and their communities for years to come.

For more information about our educational initiatives, please visit: VoyaFoundation.com

PLAN | INVEST | PROTECT

VOYA
FINANCIAL®

© 2018 Voya Services Company. All rights reserved.

ASTC Board of Directors

Executive Committee and Officers

Guy Labine

CHAIR

Science North
Sudbury, Ontario, Canada

Larry Dubinski

CHAIR-ELECT

The Franklin Institute
Philadelphia, Pennsylvania,
United States

William Harris

INCOMING CHAIR-ELECT

Space Center Houston
Houston, Texas, United States

Linda Conlon

IMMEDIATE PAST CHAIR

International Centre for Life
Newcastle upon Tyne,
United Kingdom

Stephanie Ratcliffe

SECRETARY

The Wild Center
Tupper Lake, New York,
United States

Kirsten Ellenbogen

INCOMING SECRETARY

Great Lakes Science Center
Cleveland, Ohio, United States

Sarah George

TREASURER

Natural History Museum of Utah
Salt Lake City, Utah, United States

Tim Ritchie

INCOMING TREASURER

The Tech Interactive
San Jose, California, United States

Matt Fleury

EXECUTIVE COMMITTEE

MEMBER-AT-LARGE

Connecticut Science Center
Hartford, Connecticut,
United States

Margaret Honey

INCOMING EXECUTIVE COMMITTEE

MEMBER-AT-LARGE

New York Hall of Science
Queens, New York, United States

Catherine Horne

INCOMING EXECUTIVE COMMITTEE

MEMBER-AT-LARGE

Discovery Place
Charlotte, North Carolina,
United States

Cristin Dorgelo

PRESIDENT AND CEO

Association of Science and
Technology Centers
Washington, D.C., United States

Directors

Frederic Bertley

COSI

Columbus, Ohio, United States

Dean Briere

(term begins September 24, 2019)

Sciencenter

Ithaca, New York, United States

Maurice Bitran

Ontario Science Centre

Toronto, Ontario, Canada

Rena Dorph

(term begins September 24, 2019)

The Lawrence Hall of Science

Berkeley, California, United States

Robert Firmhofer

Copernicus Science Centre

Warsaw, Poland

JoAnn Newman

(term begins September 24, 2019)

Orlando Science Center

Orlando, Florida, United States

Jeff Rudolph

California Science Center

Los Angeles, California,
United States

Curt Simmons

(term begins September 24, 2019)

Science Center of Iowa

Des Moines, Iowa, United States

Silvia Singer

MIDE, Museo Interactivo

de Economía

Mexico City, Mexico

Rosalia Vargas

Ciência Viva

Lisbon, Portugal



ASTC Conference Program Planning Committee

Kirsten Ellenbogen**COMMITTEE CO-CHAIR**

Great Lakes Science Center
Cleveland, Ohio, United States

Karen Hager**COMMITTEE CO-CHAIR**

Ontario Science Centre
Toronto, Ontario, Canada

Daniel Bateman

Exploration Place
Wichita, Kansas, United States

Heather Cain

Carnegie Science Center
Pittsburgh, Pennsylvania,
United States

Mary Jane Conboy

Ontario Science Centre
Toronto, Ontario, Canada

Megan Dempsey

Connecticut Science Center
Hartford, Connecticut,
United States

Benjamin Dickow

Columbia Memorial Space Center
Downey, California, United States

Elizabeth Fleming

Roto
Dublin, Ohio, United States

Eric Godoy

Denver Museum of Nature
& Science
Denver, Colorado, United States

Christian Greer

Michigan Science Center
Detroit, Michigan, United States

Maya Halevy

Bloomfield Science Museum
Jerusalem, Israel

Jessica Lausch

Carnegie Science Center
Pittsburgh, Pennsylvania,
United States

Chip Lindsey

Pittsburgh Children's Museum
Pittsburgh, Pennsylvania,
United States

Andy Lloyd

International Centre for Life
Newcastle upon Tyne,
United Kingdom

Andrea Motto

Yale Peabody Museum of
Natural History
New Haven, Connecticut,
United States

Kellen Nixon

Nixon & Company Consulting Group
Charlotte, North Carolina,
United States

Heather Norton

Discovery Place
Charlotte, North Carolina,
United States

Talance Orme

The Tech Interactive
San Jose, California, United States

Barbara Punt

Punt Consulting Group
Redondo Beach, California,
United States

Stephanie Ratcliffe

The Wild Center
Tupper Lake, New York,
United States

Kalie Sacco

The Lawrence Hall of Science
Berkeley, California, United States

Allison Schwanebeck

Science Center of Iowa
Des Moines, Iowa, United States

Tifferney White

Discovery Place
Charlotte, North Carolina,
United States

Karen Wise

Wise Strategic Advising
Santa Monica, California,
United States



ASTC Staff

Melissa Ballard

Senior Manager
of Communications
mballard@astc.org

Jamie Bell

CAISE Project Director
jbell@informalscience.org

Julian Boaitay

Senior Manager of Finance
and Administration
jboaitay@astc.org

Rachel Diamond

Manager of Operations and
Board Relations
rdiamond@astc.org

Cristin Dorgelo

President and CEO
cdorgelo@astc.org

Jamie Durana

Coordinator of Communications
jdurana@astc.org

Amanda Fisher

Manager of Gender
Equity Initiatives
afisher@astc.org

Wendy Hancock

Senior Manager of Programs
and Events
whancock@astc.org

Todd Happer

Senior Manager of
Member Engagement
thapper@astc.org

Ann Hernandez

Senior Manager of
Inclusion Initiatives
ahernandez@astc.org

Nina Humes

Manager of the ASTC
Annual Conference
nhumes@astc.org

Erica Kimmerling

Senior Advisor for Science-
Engagement Policy
and Partnerships
ekimmerling@astc.org

Lesley Markham

Senior Manager of
Impact Initiatives
lmarkham@astc.org

Christofer Nelson

Chief Operating Officer
cnelson@astc.org

Kellie Shevlin

Sales Manager
kellies@astc.org

Susan Straight

Senior Manager of
Communications and Managing
Editor, *Dimensions* Magazine
ssstraight@astc.org

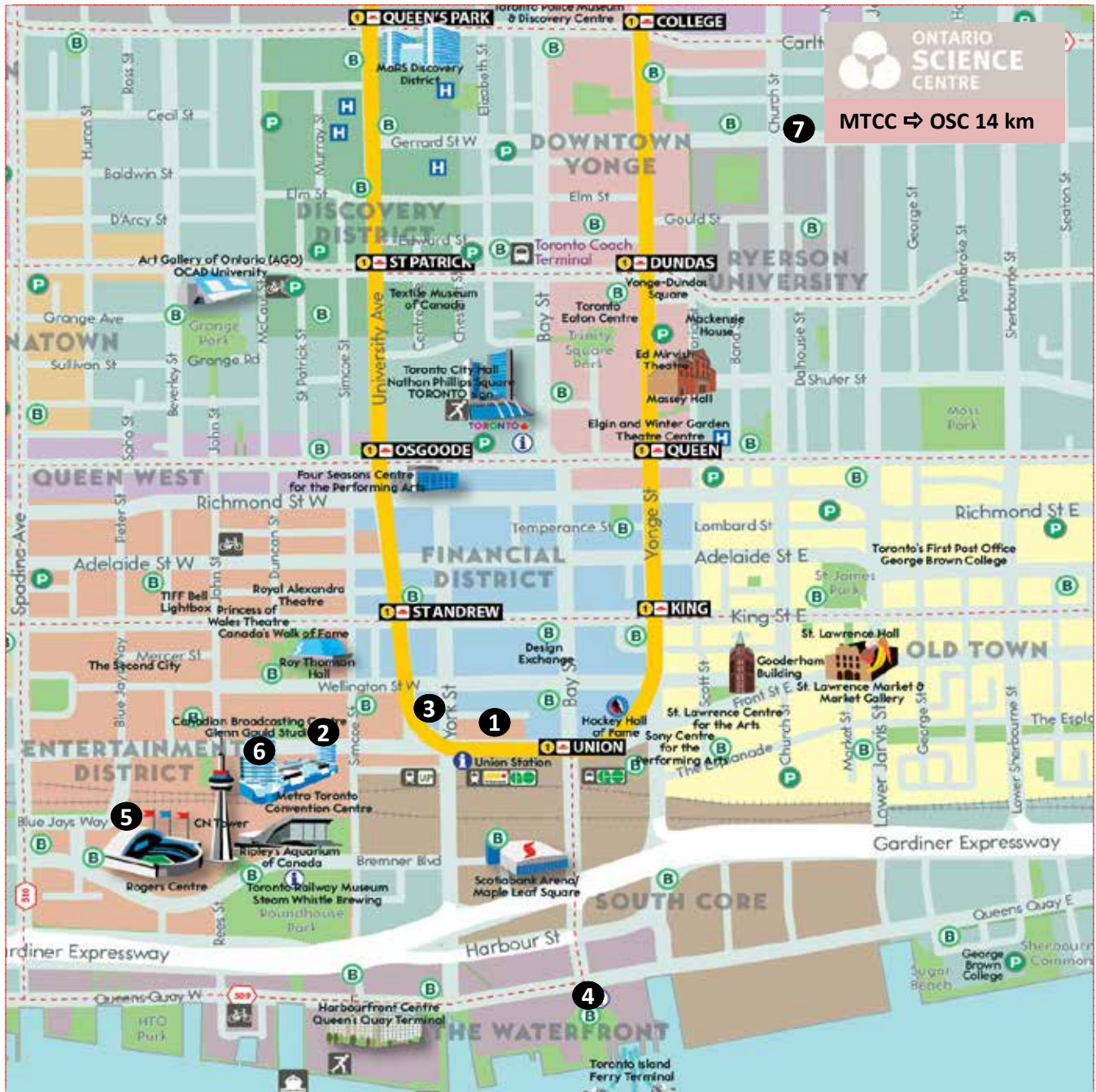
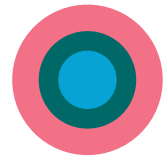
Walter Staveloz

Senior Advisor for
Global Challenges
wstaveloz@astc.org

Gaby Wilson

Coordinator of Member Services
and Conference
gwilson@astc.org

Map of Toronto



ASTC Official Hotels & Venues

- | | |
|---|-------------------------------------|
| 1 Fairmont Royal York Hotel | 5 Toronto Marriot City Centre Hotel |
| 2 InterContinental Toronto Centre Hotel | 6 Metro Toronto Convention Centre |
| 3 The Strathcona Hotel | 7 Ontario Science Centre |
| 4 Westin Harbour Castle Hotel | |





BOOTH
827

The Story King.

We believe that exhibitions are a powerful way to educate, entertain, and enlighten communities. After hosting our experiences in more than 100 venues globally we understand not only how local, long-term members engage with content but how to defy expectations. We provide exhibitions that range in size and scale, but whose stories are still impactful. We go beyond the traditional exhibition experience and bring our content in a fully supportive package to partners, while listening to your needs and executing joint objectives.

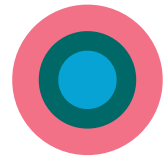
Come visit us in booth 827 to learn more.



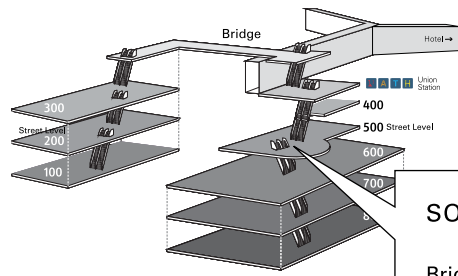
**EXPERIENTIAL
MEDIA GROUP**



www.emgroup.com

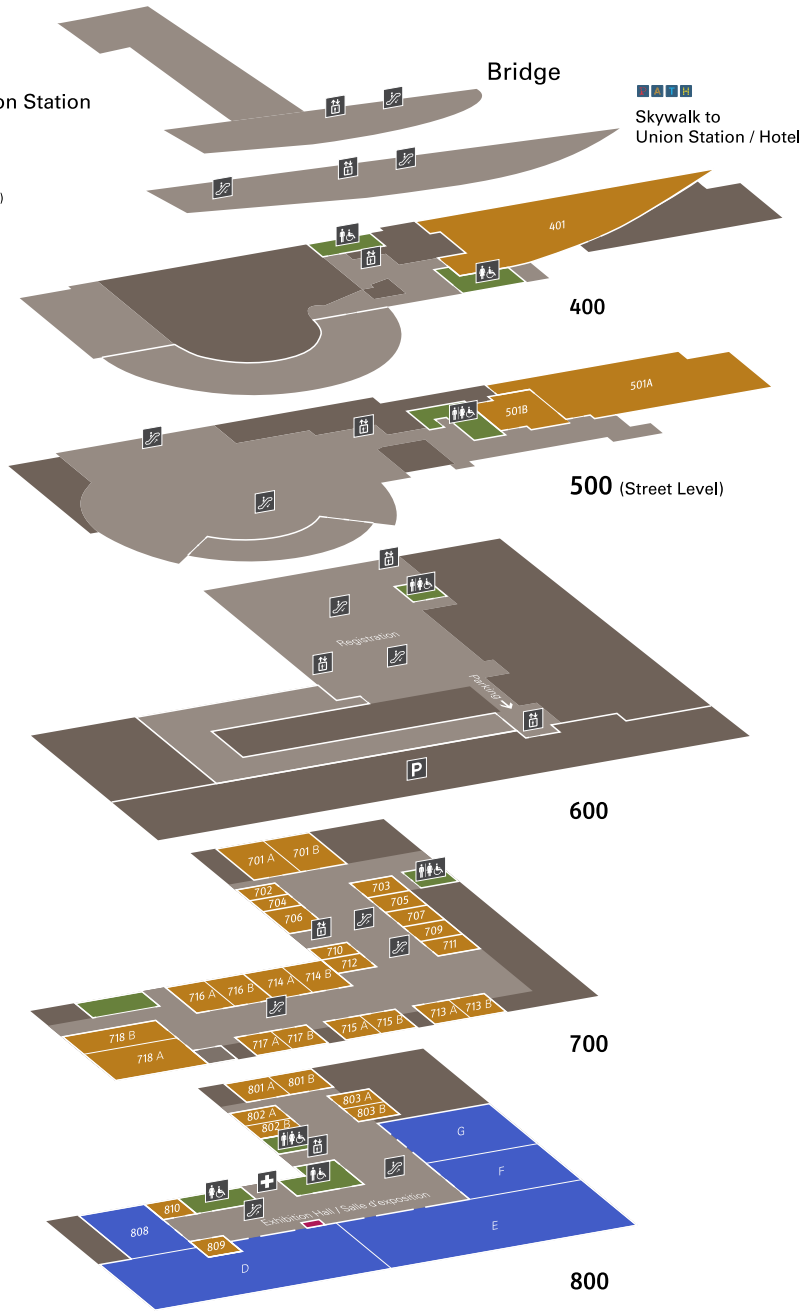


Map of Metro Ontario Convention Centre



SOUTH

- Bridge
- Union Station
- 400
Terrace View 401
- 500 (Street Level)
Park View 501
Information
- 600
Registration
Parking
- 700
701-718
- 800
Halls / Salles D-G
801-803
808-810



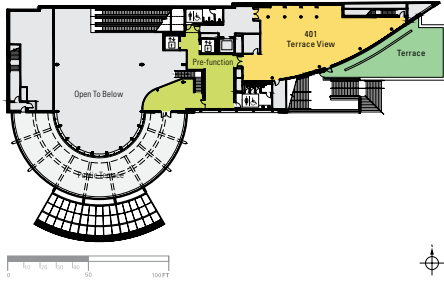
Legend

- Meeting Rooms / Salles de réunion
- Exhibition Halls / Salles d'exposition
- Exhibitor Services / Business Centre
- Washroom
- Cafe
- Information
- Parking
- Escalator
- Taxi
- Elevators
- First Aid

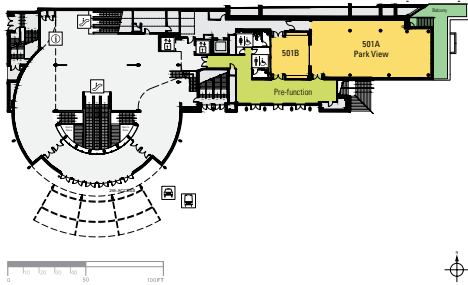


Map of Metro Ontario Convention Centre

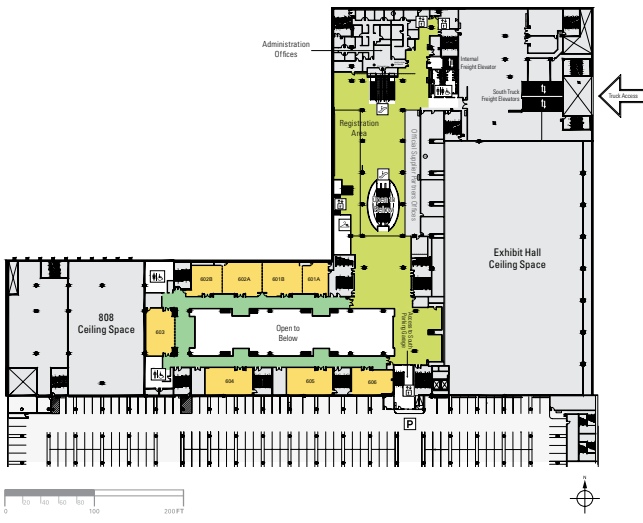
Level 400



Level 500



Level 600



Level 700



Level 800



Because the future is in their hands.



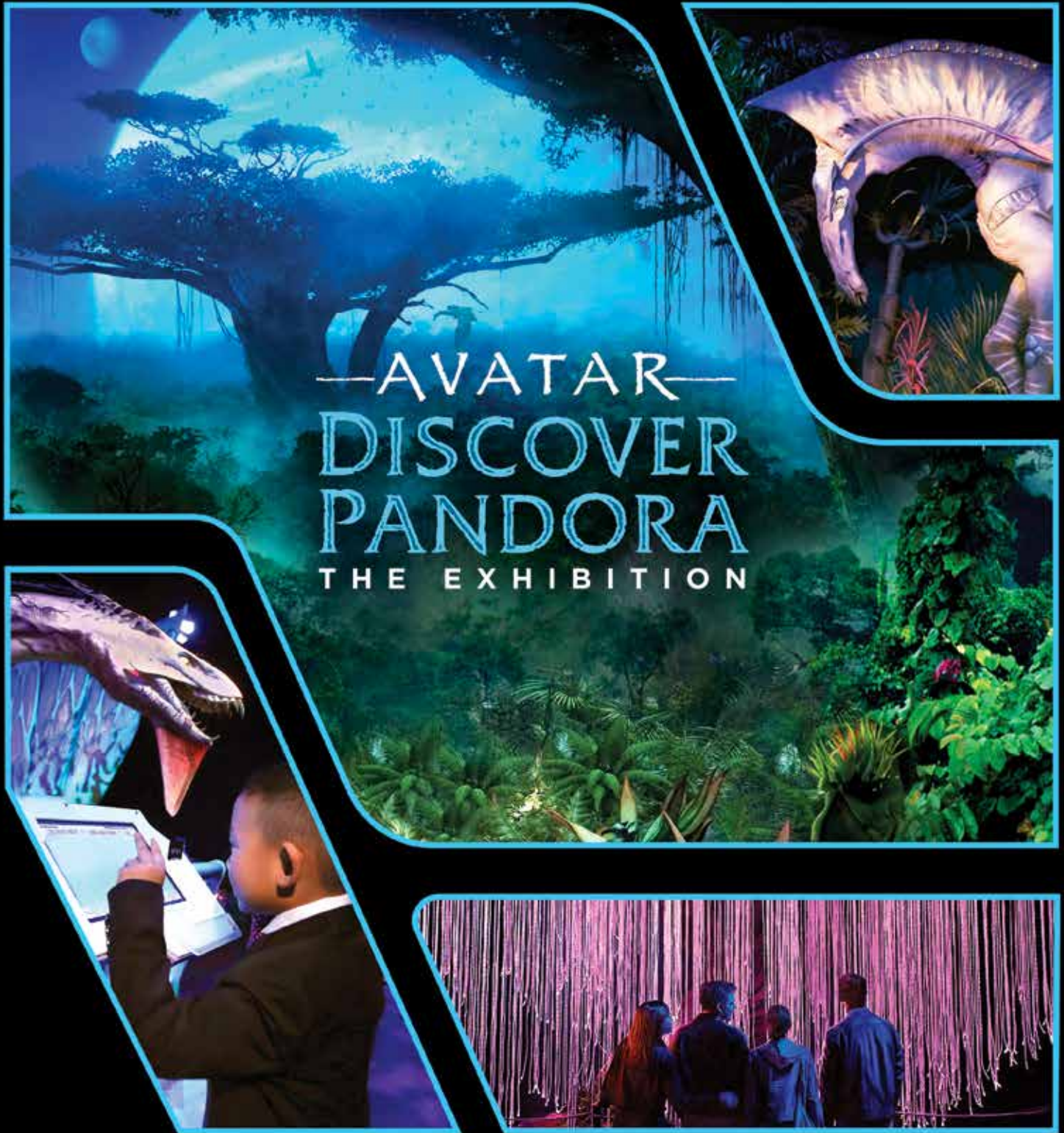
GROUP **DELPHI**

Creating museum experiences that inspire.

www.groupdelphi.com | 800.536.4545

EXPERIENCE THE SCIENCE AND THE WONDER

FROM JAMES CAMERON'S BLOCKBUSTER FILM AVATAR



For bookings and inquiries, please contact Lisa O'Keefe | Lokeefe@ges.com | +1.630.254.1174

EXPERIENCE THE ARTISTRY OF THE WORLD OF WESTEROS



GAME OF
THRONES

THE TOURING
♦ EXHIBITION ♦

For bookings and inquiries, please contact Lisa O'Keefe | Lokeefe@ges.com | +1.630.254.1174



©2019 Home Box Office, Inc. All Rights Reserved. HBO and related trademarks are the property of Home Box Office, Inc.



Advertiser Index

2019 ASTC Diversity and Leadership Development Fellows.....	128
2020 ASTC Annual Conference in Pittsburgh.....	124-125
Blackbaud.....	18
<i>Connected Science Learning Journal</i>	145
<i>Dimensions Magazine</i>	10
Experiential Media Group.....	162
GES.....	166-167
Giant Screen Cinema Association.....	130
Group Delphi.....	165
Hands On! Studio.....	6
Imagination Playground.....	146
Imagine Exhibitions.....	50
Little Ray's Nature Centres.....	52
The Kavli Foundation.....	14
Panasonic.....	32
PGAV Destinations.....	70
Pulseworks LLC.....	130
Roto.....	Back Cover
SC Exhibitions.....	126
Science North.....	116
Voya.....	157



Plan Design Build

Developed, designed and built by Roto in collaboration with the Science Museum of Virginia — The Forge is part maker space, part interactive exploration, part community innovation sandbox.



RECENT CLIENTS

- | | |
|-----------------------------------|----------------------------|
| Discovery World | Adventure Science Center |
| The Scientific Center of Kuwait | Science Museum of Virginia |
| Denver Museum of Nature & Science | Orlando Science Center |
| Museum of Discovery & Science | Cincinnati Museum Center |

SERVICES

- | | |
|-------------------------------------|------------------------------------|
| Museum master planning | Exhibit development & evaluation |
| Exhibit & graphic design | Interactive engineering & media |
| Interpretive planning & development | Fabrication & turnkey installation |
| Theming & environmental design | Single-source accountability |