SMITHSONIAN K-12 SCIENCE EDUCATION

ACTION PLANNING INSTITUTE

2020 REPORT

Smithsonian
Science Education Center

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Acknowledgements

The Smithsonian Science Education Center (SSEC) is pleased to prepare the following report on the activities and achievements of the 2020 Smithsonian K-12 Science Education Action Planning Institute (API) held virtually from July 28-30, 2020. We are grateful to Johnson & Johnson, the Burroughs Wellcome Fund, the Gordon and Betty Moore Foundation, Shell Oil Company, General Motors, and Carolina Biological Supply Company for their support of this entirely new leadership development program. With their backing, the Smithsonian Science Education Center was able to conceive and carry out a fully virtual program and offer it at no cost to over 700 educators from around the world.

Smithsonian Science Education Center

The Smithsonian Science Education Center (SSEC) is an organization of the Smithsonian Institution dedicated to transforming K-12 *Education through Science*™ in collaboration with communities across the globe. To achieve our mission, we have four goals: (1) we promote authentic, inquiry-based, integrated K-12 science, technology, engineering, and math (STEM) teaching and learning; (2) we ensure diversity, equity, accessibility and inclusion (DEAI) in K-12 STEM education; (3) we advance STEM education for sustainable development (STEM4SD); and (4) we translate the research and collections of the Smithsonian into meaningful tools and convenings for K-12 teachers and students. We achieve our goals by: (a) building awareness for science education among school leaders; (b) promoting Leadership and Assistance for Science Education Reform (LASER); (c) supporting the professional growth of K-12 teachers and school leaders; (d) developing exemplary K-12 curriculum materials and digital resources (including our comprehensive research-based science curriculum programs: *Smithsonian Science for the Classroom*; *Science and Technology Concepts for Middle School (STCMS)*; and *Smithsonian Science for Global Goals*); and (d) engaging in research. At the heart of our work is the idea that all youth—regardless of gender, geography, or socio-economic status—should be given the opportunities to learn about the socio-scientific issues that challenge us. The Smithsonian, through the Smithsonian Science Education Center, plays an active role in sparking students' and teachers' interest in STEM to ensure a scientifically literate global citizenry.

To date we have impacted all 50 of the United States, Guam, Puerto Rico, and the District of Columbia, and supported the systemic needs of schools, districts, states, and ministries of education across 45 countries through our Leadership and Assistance for Science Education Reform (LASER) model, which has proven to lead to higher student achievement in science and improved science teaching and learning.[1]

[1] Zoblotsky, T., Bertz, C. Gallagher, B. & Alberg, M. (2017). *The LASER Model: A Systemic and Sustainable Approach for Achieving High Standards in Science Education: SSEC i3 Validation Final Report of Confirmatory and Exploratory Analyses*. Memphis, TN: The University of Memphis, Center for Research in Educational Policy. Summative report prepared for Smithsonian Science Education Center, Washington, DC.

Overview of the Action Planning Institute

The 2020 institute was designed to be a highly customizable experience for all educators with 13 optional content sessions book-ended by opening and closing plenaries and punctuated by 16 different small group coaching opportunities. The objectives over the three days were to:

- Identify the supports needed to continue the teaching and learning of science in a time of unprecedented challenges.
- Develop an action plan to guide science teaching and learning in the coming months.
- Exchange knowledge with other professionals committed to improving education for all students.

See Appendix A for the complete action planning institute program-at-a-glance. In the opening plenary, participants were introduced to the action plan template (Appendix B) and began to articulate their vision for the coming months within their locus of control. Through this exercise, attendees began to focus their goals for engaging in the three-day program. Participants were encouraged to complete session reflection guides (Appendix C) to organize their thinking and ultimately translate their learning to an action plan.

In 2020, 756 participants from 22 countries, 46 U.S. states, the District of Columbia, and Puerto Rico, including 65 teams, took part in the Action Planning Institute (see Appendix D for more participant details). According to their self-reported demographic data, attendees collectively impact 18 million students and 3.1 million teachers. Synchronous sessions were hosted on Zoom with live captioning, recorded, and made available for those unable to attend in real time. A Moodle course created for the institute hosted not only these recordings but also discussion forums and additional asynchronous files and resources. At the conclusion of the three days, 166 participants shared their action plans in Moodle.

> "As a teacher who works outside of U.S. I really appreciate the opportunity to share the resources and the experience of the institute during these three days. It's not easy to develop a variety of communication ways to different people, and we can take your example and provide at-home time to communicate and create virtual places to allow teachers to tell us how they feel, what they expect for the future and most important their fears."

Session Highlights

The following section outlines the thirteen unique content sessions comprising the institute. While each session focused on content, all sessions addressed the central themes of social emotional support, community building, and diversity, equity, accessibility, and inclusion, which have been key issues to arise in education around the world during the COVID-19 pandemic. These sessions were presented by staff across the Smithsonian Institution and external partners from Johnson & Johnson, the National Academies, and STEM Equity Alliance.

"This institute was great for me in two different ways. First, it really helped me organize my ideas and come up with an implementation plan for my small district, something that I can take back and start working to begin the process of moving into a 3-D teaching model across all grade levels K-12. More immediately, though, this 3 day workshop gave me really great ideas, and resources to use and pass on as we are planning for a quite different learning/teaching experience due to the current pandemic."

Blended Learning or Bust: What models, assumptions, considerations, and processes are most important as you plan for this evolving school environment?

Brian Mandell, Division Director of Curriculum & Communications, Smithsonian Science Education Center
Eva Muszynski, Program Assistant, Smithsonian Science Education Center
Ryan Seymour, Digital Producer, Smithsonian Science Education Center

During this session, participants defined and considered various models for blended learning and explored the successes and challenges they have faced so far and will continue to address during the COVID-19 crisis. Participants compiled and organized both their assumptions and considerations pertaining to the many aspects of blended learning moving forward. Throughout the session, they explored themes of learning, pedagogy, software, equity, and teacher training and preparation in a large group setting and in smaller breakout groups.

When asked what their biggest takeaways from the institute were, one participant noted, "The meaning of Blended learning and its 4 models: rotation, flex, a la carte and enriched." Another said, "The resources and strategies will help improve my teaching. I am better prepared for developing distance and hybrid learning experiences for my students."

Reopening K-12 Schools During the COVID-19 Pandemic

Heidi Schweingruber, Director of the Board on Science Education, National Academies of Sciences, Engineering and Medicine

The NASEM (National Academies of Sciences, Engineering and Medicine) report, *Reopening K-12 Schools During the COVID-19 Pandemic: Prioritizing Health, Equity, and Communities*, which was released in mid-July, provides guidance on the reopening and operation of elementary and secondary schools for the 2020-2021 school year. The COVID-19 pandemic has presented unprecedented challenges to the nation's K-12 education system. States, districts, and schools are grappling with the complex and high-stakes questions of whether to reopen school buildings and how to operate them safely if they do reopen. These decisions need to be informed by the most up-to-date evidence about the SARS-CoV-2 virus that causes COVID-19; about the impacts of school closures on students and families; and about the complexities of operating school buildings as the pandemic persists. In this session, Heidi Schweingruber laid out the recommendations of this report to help districts and schools successfully navigate the complex decisions around reopening school buildings, keeping them open, and operating

them safely, then concluded with a question and answer portion. One participant said of the session, "I felt like the research on school reopening was the most eye-opening for me as an educator. Thank you."

Filling Instructional Gaps: Which resources are right for my students?

Beth Short, Science Curriculum Developer, Smithsonian Science Education Center
Katie Gainsback, Program Manager, Smithsonian Science Education Center

Participants reflected on their search for quality instructional resources during the COVID-19 pandemic and subsequent efforts to maintain educational continuity for students. This session led participants through identifying and recording their unique community and student needs to shape considerations for selecting future materials and resources. Participants left the session with a more strategic mindset, including a set of priorities to guide their educational continuity plans for the 2020-2021 school year. One participant noted that "there are many ways to engage students during remote learning that are equitable and inclusive. We need to plan with diversity and equity in mind and include all stake holders in the planning process." Another said, "It is amazing to connect with people from around the world that are having to confront the same barriers to Science instruction as we are. In addition, to be connecting in this pandemic with others who share the same frustrations really helps mentally to feel like we are not alone."

Once More With Feeling! Embedding Social and Emotional Practices into Daily Learning

Katherine Blanchard, Program Manager, Smithsonian Science Education Center
Heidi Gibson, Director, Global Schools First, Childhood Education International

This session served as a critical reflection on Social and Emotional Learning (SEL) practices both in and out of school, and how those practices can be tied directly to curriculum and classroom learning. During the session, participants began by defining SEL practices and identifying the SEL skills that they use in their own lives. They then explored who benefits from SEL and where it can be applied within their own school systems. Finally, participants practiced embedding and integrating SEL practices into one of their own STEM lessons that they plan to use with students or educators.

One participant said, "What stood out is SEL which starts with me as an educator. I realize that if I pay attention to this component of education, most of these terms—empathy, Inclusion, being connected, curiosity, creativeness, to name a few—will come out naturally in my teaching whether virtually or in class." Another participant noted that this session "brought to light that just teaching it [SEL] for 20 min. every other week is not enough. We all need to take SEL concepts and work them into our everyday lessons." A third participant remarked, "take care of all of your students but also of yourself - learning is a combined effort."

Recovering Forward: Keeping a focus on cultural proficiency and equity

Arthur Mitchell, Executive Director, STEM Equity Alliance
Cheryl Rush Dix, Principal Director, STEM Equity Alliance

While in the midst of the COVID-19 pandemic and a time of national unrest, reflection, and action regarding racial disparities, we have an unparalleled opportunity to affirm robust approaches to science education. We simply cannot go back to "normal", but instead must *Recover Forward* as we rethink and accelerate learning for our most vulnerable populations. Science is often side-lined from equity conversations that focus on the biases or disparities of other content areas. In this session, an equity lens illuminated that all students are not provided with equal opportunities to learn science in student-centered, culturally responsive classrooms, and instead provided the foundational model of *Recover Forward* to begin with analysis of self and system. Throughout this session, participants deepened their understandings of Cultural Proficiency and Equity, while receiving resources, collaboration time, and frameworks to help them take on this work.

Participants acknowledged, "The education community is amazing and resilient! I love how we are "failing" forward and making real changes, even in this challenging time." And that through this, and other sessions, "I received a nice constellation of practices and resources that can support teachers to lead remote learning with students. I'm encouraged to keep an explicit focus on antiracist leadership."

User-Centered Approaches to Designing Solutions

Ruki Neuhold-Ravikumar, Acting Undersecretary for Education, Smithsonian Institution
Somi Kim, Senior Director, Healthcare Solutions, Johnson & Johnson

This session supported participants in thinking differently about the sudden and rapidly changing needs of students, educators, and education systems through the lens of design. The presenters began by identifying what user-centered design is and why it is relevant to our society in this historic moment. They described their own experiences incorporating user-centered design approaches for consumers and museum patrons, and the process of making their own organizations more human-centered. Ruki and Somi then framed the current challenges that students and educators are facing as an opportunity to integrate design. In breakout groups participants considered how educators might center students in their work, even when limited by technology or other circumstances. By focusing on making the process participatory and no longer designing *for* students but instead designing *with* them, participants could apply user-centered design to distance learning experiences.

> "Knowing there are other teachers and individuals that are just as concerned as I am at providing equity to students regardless of gender, race, socioeconomic, or type of learner and doing something to make it happen is so amazing!"

Participants said, "The presentations were very good. Some of my favorite presenters were […] Somi Kim and Ruki Neuhold-Ravikumar, who were excellent panelists. I am very grateful to have been able to be part of this course and it made me feel less alone with all these challenges with the Pandemic."

Cultivating Partnerships Between Schools and the Community: Creating mutual value and shared learning

Katherine Blanchard, Program Manager, Smithsonian Science Education Center
Tami McDonald, Program Specialist, Smithsonian Science Education Center
Vickie Hunter, Pricing Manager, Johnson & Johnson

Partnerships between schools and communities are valuable ways to engage the community, support teachers, and enhance students' educational experiences, but they are often underutilized. Through this session participants explored different 'levels' of engagement by partners, be it a one-time visitor, a consistent classroom volunteer, or a vanguard advocating for education inside and outside of the school. Participants also investigated the value of school-community partnerships, ways that they can engage people in partnering, and identify some possible partners that may already exist in their community. During COVID-19, we have learned that a volunteer's value is not exclusively in their physical presence within a classroom. Students can explore new spaces that are otherwise inaccessible, meet different people, and see the world of work in action. Participants discussed how to take these new tools of engagement and feed them forward when classes are back in session. Participants had an opportunity to hear perspectives from both the SSEC's Tami McDonald, who is a former classroom teacher, and from Johnson & Johnson's Vickie Hunter, an active partner in her community.

> "I loved the accessibility piece, not only the session but also the time and energy that was put into every session (as in the captions)."

One participant noted, "I now feel more prepared to develop partnerships with community members and science professionals" while another said, "having a growth mindset and seeking collaboration from my colleagues and my local community members will be essential in overcoming the challenges associated with virtual science teaching and learning."

Accessible and Inclusive Distance Learning

Eva Muszynski, Program Assistant, Smithsonian Science Education Center
Sherrell Lewis, Program Manager, Smithsonian Science Education Center
Nejra Malanovic, Program Assistant, Smithsonian Science Education Center
Ashley Grady, Senior Program Specialist, Access Smithsonian
Chris Kenny, Manager, Elementary Mathematics, District of Columbia Public Schools
Deborah Taub, Owner/Operator, OTL Education Solutions

During this session, participants explored accessibility and inclusion practices for distance learning. Using the principles of Universal Design Learning (UDL), in addition to considerations about the accessibility of instruction, curriculum, materials and method of delivery, participants discussed how to transition all aspects of a traditional classroom into an accessible and inclusive distance learning experience. The session culminated with participants determining how accessibility and inclusion will need to be implemented in all elements of their action plan in order to best serve students in their locality.

One participant said, "Overall, I would say that the accessibility and inclusivity session provided the confidence I needed to create science instruction that meets the needs of a range of students. I've always felt under-prepared for this task and the exchange of ideas really helped." Another participant acknowledged, "a critical first step to designing an effective lesson/instructional activity is to consider my assumptions of my learners. Doing this will prompt me to incorporate the appropriate accommodations/ modifications that will ensure equitable access to the primary content and materials for all learners."

Meeting the Needs of K-12 STEM Teachers Through Virtual Professional Development

Amy D'Amico, PhD, Division Director of Professional Services, Smithsonian Science Education Center
Shannon Baldioli, Education Coordinator, Smithsonian National Air and Space Museum
Holly Baldwin, Teacher Trainer/Instructional Coach, OCMBOCES
Laura Blanton, Holt Scholars Program Coordinator, Smithsonian National Air and Space Museum
Nejra Malanovic, Program Assistant, Smithsonian Science Education Center
Nichole Thomas, Aerospace Educator, Steven F. Udvar-Hazy Center

This session supported participants in identifying and implementing virtual professional development (PD) for K-12 STEM educators. During the session, participants identified their individual and team needs for virtual PD through discussions. Presenters then introduced best practices for implementation in formal and informal educational settings. During the session various resources and tools that are helpful in supporting the delivery of virtual PD were shared and introduced. In this session, participants gained knowledge to aid in the creation of their action plans by focusing on continuous PD and supports for educators.

Strengthening Caregiver-School Partnerships During Blended Learning

Sherrell Lewis, Program Manager, Smithsonian Science Education Center
Eva Muszynski, Program Assistant, Smithsonian Science Education Center

In this session, participants considered various models of family-educator partnerships and reflected on the successes and challenges they have faced since COVID-19. Participants collaboratively reviewed the activities already present in their action plans which offer the greatest opportunities for family engagement. This was then followed by guided, independent revisions of the action plan to enhance caregiver-educator partnerships and strengthen outcomes.

Participants said, "The most important takeaways were the COVID-19 lessons, how to connect with parents as well as keeping them informed of what we are teaching. This was a big problem last spring. The resources, information, and suggestions will make my plan a success." Another attendee claimed, "I learned the importance of checking in with families during distance learning to see if any adaptations to the lessons need to be made since you can't observe the students working in this mode of teaching."

Introduction to the Smithsonian Learning Lab

Darren Milligan, Senior Digital Strategist, Smithsonian Center for Learning and Digital Access

In this session, Darren Milligan, Senior Digital Strategist at the Smithsonian Center for Learning and Digital Access, showed participants how to use the Smithsonian Learning Lab, a free platform that gives users access to millions of digital resources (images, videos, texts, and more) from across the Smithsonian and the tools to create learning experiences with them. Darren walked through how the site works, showcased ways that museums, classroom teachers, and more are already using the Lab to create lesson plans and digital exhibitions, and discussed methods to connect content to the audiences who need it, especially in the context of distance learning.

Participants were thrilled by the Learning Lab and identified the session as offering "Magnificent resources/tools to share with colleagues." One individual said, "I am very excited to try making a curated collection with the Smithsonian Learning Lab! I think I may even be able to blend the learning lab with the partnership session and see if I can get a parent or two to create collections/lessons for my class based on their expertise and knowledge."

Teaching Youth Ages 8-17 About COVID-19: How can we best prepare students for the "New Normal"?

Dr. Carol O'Donnell, Director, Smithsonian Science Education Center
Logan Schmidt, Curriculum Developer, Smithsonian Science Education Center

As districts develop plans for their 2020-21 school year, science educators will play an important role in educating students about COVID-19 and the underlying science and social science of the pandemic. At the Smithsonian, we hypothesize that students will be better able to accept the unusual circumstances if they understand the science of *why* school procedures have changed. To that end, the Smithsonian Science Education Center collaborated with the World Health Organization (WHO) and the InterAcademy Partnership to develop a free hands-on guide for parents, caregivers and children to use together as a way of preparing for the return to school: https://ssec.si.edu/covid-19. The guide has been translated into 25 languages. This session demonstrated some of the hands on activities science educators and families can do with children to help them better understand COVID-19 and addressed the role science educators will play in helping students to protect themselves and others as they return to their "new normal" this fall.

One individual said, "in the Teaching Youth about Covid-19 session, I started to relax as I saw each experiment (water droplets, hand washing with butter) because now I have a tangible way to explain transmission while focusing on a basic health practice. Learning the science really can mitigate anxiety." Another said, "I definitely will implement the module of Teaching Youth COVID-19, for I know that this knowledge will result in responsible actions of all, teachers, parents and students."

Highly Immersive STEM Learning Experiences: Engaging students in immersive experiences from afar

Katherine Blanchard, Program Manager, Smithsonian Science Education Center
Alexa Mogck, Program Assistant, Smithsonian Science Education Center
Emily Porter, Manager, Lifelong Learning, Friends of the National Zoo
Erika Novak, Manager, Digital Learning Experiences, Friends of the National Zoo
Karen McDonald, Education Program Coordinator, Smithsonian Environmental Research Center
Dr. Kay Taylor, Vice President of Education, US Space & Rocket Center
Cynthia Brown, Manager, Collections, Education and Access, Smithsonian Gardens
Kate Fox, Educator, Smithsonian Gardens

This session introduced educators, administrators, and community members to alternate ways of engaging students of all ages in highly immersive STEM learning experiences when they are unable to be physically present. Panelists from organizations hosting highly immersive STEM education experiences provided insight into their own experiences and discussed some of their successes and challenges. This session included collaborators from the Smithsonian Environmental Research Center, Smithsonian Gardens, Friends of the National Zoo/The Smithsonian National Zoological Park, and the US Space & Rocket Center in Huntsville, Alabama., a Smithsonian Affiliate.

Participants recognized the incredible resources available to them, saying "science education can be engaging, effective, equitable, accessible, and inclusive whether in classroom, via distance, or a hybrid model. Many resources exist, including through the Smithsonian Institut[ion]! Another remarked, "Increasing engagement through my lessons is one of my main goals not just for distance learning, but also for when we go back to in-person classes. I am very comforted to learn from all of the sessions I have attended during this Action Planning Institute that there are many resources to increase engagement, as well as activities that do not require much materials but are nevertheless safe and informative to the students."

Participant Resources

During the three-day institute, participants were provided with access to additional resources through the Smithsonian's Moodle platform. This space served as a repository for PowerPoint slides and recordings of each session for those interested in participating asynchronously. It also served as a location for additional resources mentioned or used by presenters, and a place for participants to exchange ideas via discussion forums. Participants engaged in conversations about f the institute themes and were able to connect regionally, or on specific topics of interest like using STEM in afterschool spaces, engaging middle schoolers in distance learning, and the unique challenges faced by rural schools during the pandemic. Presenters were encouraged to use Padlet (padlet.com) throughout the institute as a user-friendly interface, with many applications for audience engagement. The Moodle course, session recordings, and Padlet links will be available to participants indefinitely.

> "These resources are a treasure! I enjoyed the padlet chats during the sessions and I continue to interact with other participants in the discussion forum even after the training is over. This makes me feel connected locally and internationally. Because each presenter came prepared, organized and professional, I witnessed educators modeling how to teach. That was a lesson too!"

In addition to the digital resources provided, participants were offered optional, more focused one-on-one coaching times with Smithsonian staff and presenters who have attended SSEC programming in the past and are familiar with the Smithsonian's model and approach. These sessions proved incredibly valuable to the participants who chose to take advantage of them. Each coach provided unique approaches to the coaching sessions.:

- Juan Carlos Andrade, Project Manager, INNOVEC, Mexico City, Mexico
- Julia Fregoso, Project Assistant, INNOVEC, Mexico City, Mexico
- Meagan Mahaffy, Education Coordinator, Cooper Hewitt, New York, New York
- Kirsten McNally, Manager of Education Programs, Cooper Hewitt, New York, New York
- Arthur Mitchell, Executive Director, STEM Equity Alliance, Philadelphia, Pennsylvania
- Caroline Kiehle, Director, Logan Center for Education, Seattle, Washington
- Wayne Strickland, Science Specialist, AMSTI, Auburn, Alabama
- Jim Bader, Executive Director, Leonard Gelfand STEM Center, Cleveland, Ohio
- Karen McDonald, Education Outreach Coordinator, SERC, Edgewater, Maryland

Next Steps

At the conclusion of the institute, participants were invited to remain engaged with the Smithsonian Science Education Center through several channels. Attendees were encouraged to keep in contact with both the SSEC staff and each other through the Moodle platform. In the month since the institute concluded, over 5,000 new posts have been created and the course pages have been viewed more than 12,000 times. Many attendees also made direct contacts with one another, with presenters, and coaches to follow up by email, phone, or social media. The SSEC will continue to engage attendees via email as well, inviting them to join the mailing list, and sharing new resources and program opportunities as they become available.

Aside from engaging attendees from around the world who would have been unable to participate otherwise, the Action Planning Institute offered the opportunity to experiment with a new delivery model. Since the live event, a fully asynchronous Moodle course has been created to offer limited resources generated during the institute to wait listed registrants.

Finally, the SSEC garnered new interest in future Strategic Planning Institutes from Action Planning Institute participants whose interest was piqued by past SPI attendees speaking highly of the experience. The Smithsonian's longtime partners and collaborators agreed that the two institutes serve different purposes. While a virtual Action Planning Institute can serve a broader audience and acts as an introduction to strategic planning and the LASER model, it is no substitute for the opportunity to craft a STEM-specific plan as a team during the robust, week-long leadership development event that is the Strategic Planning Institute.

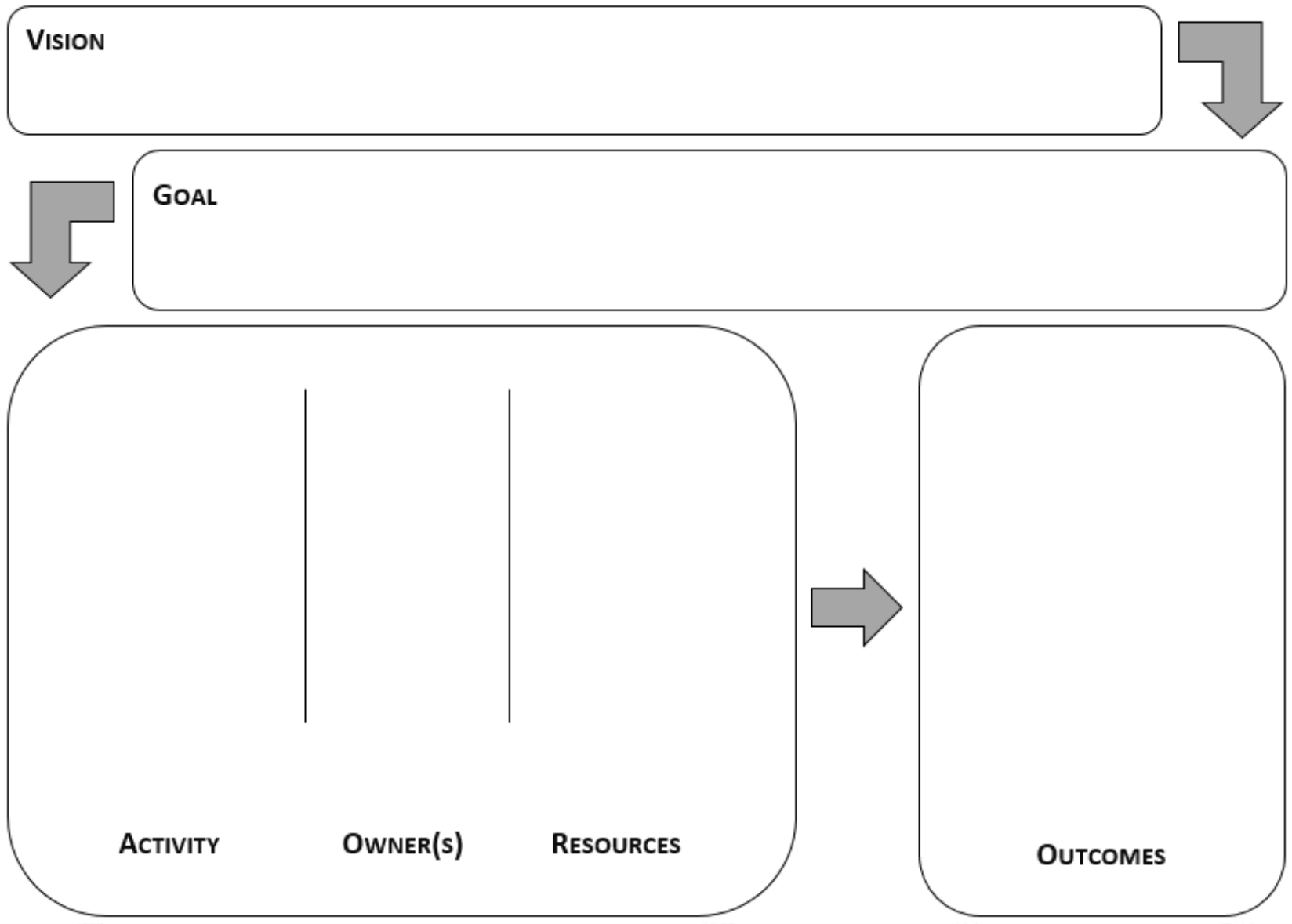
> "I have to say that all of the presenters were top notch and the Smithsonian staff were unbelievably helpful. This is probably top three of all the conferences I've ever attended, including [face-to-face]. Thank you for planning and delivering such high-quality PD for STEM teachers!! Thank you to the sponsors who helped to make it free. I'm so glad to have had this once-in-a-lifetime opportunity."

Appendices

Appendix A: Action Planning Institute Program

Date / Time (ET)	Tuesday, July 28, 2020		Wednesday, July 29, 2020		Thursday, July 30, 2020			Date / Time (ET)
	Synchronous Learning	Self-guided/ Planning Time	Synchronous Learning	Self-guided/ Planning Time	Synchronous Learning	Self-guided/ Planning Time		
8:00-8:30a		Access to online asynchronous modules						8:00-8:30a
8:30-9:00a					Strengthening Caregiver-School Partnerships			8:30-9:00a
9:00-9:30a			Recovering Forward					9:00-9:30a
9:30-10:00a					Introduction to the Smithsonian Learning Lab	Jim Bader		9:30-10:00a
10:00-10:30a	Opening Session		User-Centered Approaches to Designing Solutions					10:00-10:30a
10:30-11:00a					Teaching Youth Ages 8-17 About COVID-19			10:30-11:00a
11:00-11:30a			Cultivating Partnerships b/t Schools and the Community	Wayne Strickland				11:00-11:30a
11:30a-12:00p		INNOVEC				Wayne Strickland		11:30a-12:00p
12:00-12:30p				Jim Bader				12:00-12:30p
12:30-1:00p	Blended Learning or Bust					CHDM		12:30-1:00p
1:00-1:30p			Accessible and Inclusive Distance Learning	Jim Bader				1:00-1:30p
1:30-2:00p	Reopening K-12 Schools During COVID-19				Highly Immersive STEM Learning Experiences	Wayne Strickland		1:30-2:00p
2:00-2:30p				INNOVEC				2:00-2:30p
2:30-3:00p	Filling Instructional Gaps	CHDM				Karen McDonald	Jim Bader	2:30-3:00p
3:00-3:30p			Meeting the Needs of K-12 STEM Teachers thru Virtual PD	Wayne Strickland				3:00-3:30p
3:30-4:00p		Arthur's rapid prototyping protocol			Closing Session			3:30-4:00p
4:00-4:30p				Caroline Kiehle				4:00-4:30p
4:30-5:00p	Once More with Feeling!	Caroline Kiehle						4:30-5:00p
5:00-5:30p								5:00-5:30p

Appendix B: Action Plan Template

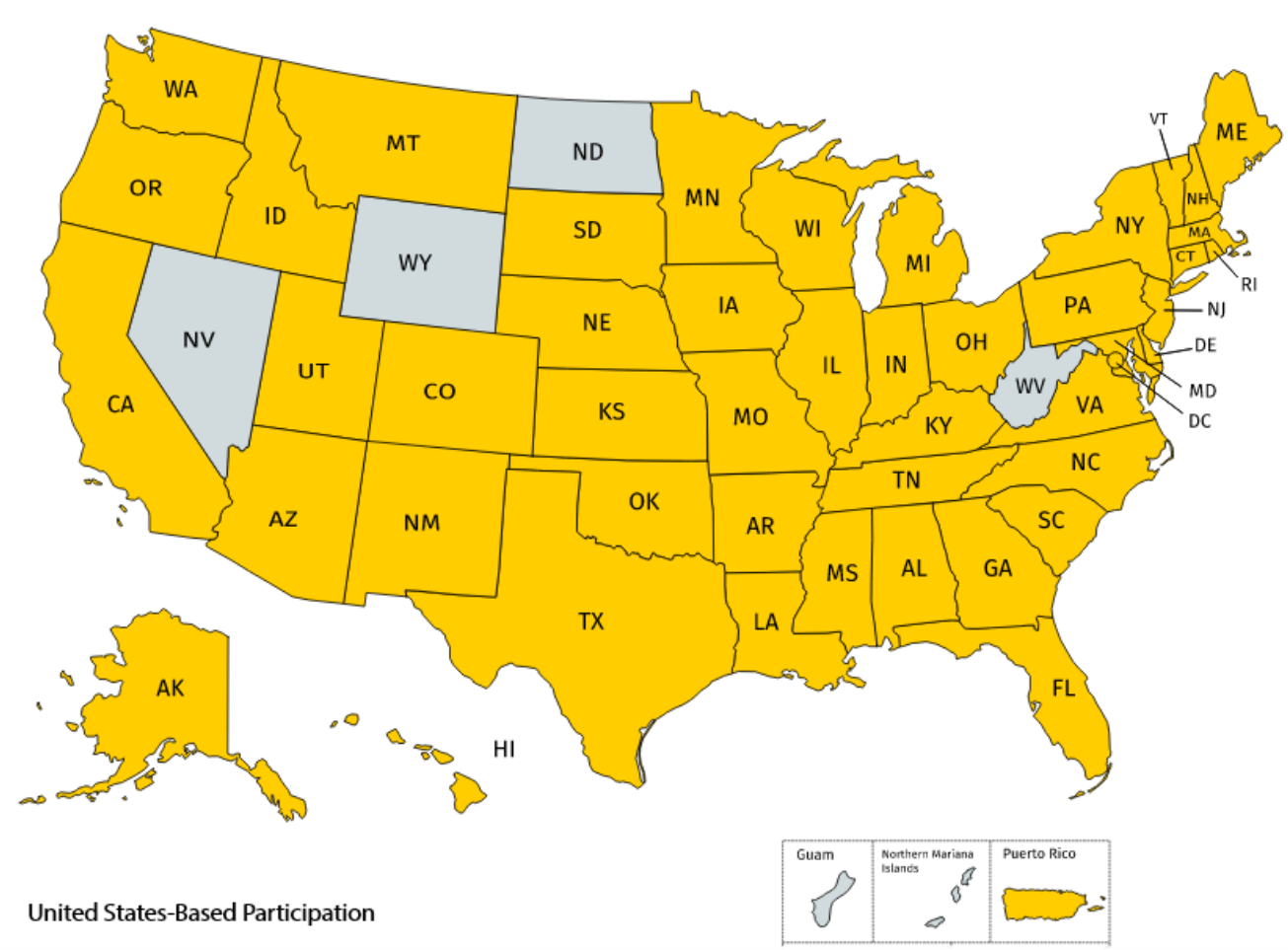


Appendix C: Session Reflection Guide

As you participate in a session, use this guide for organizing your thinking to help inform your action plan.

Session Title	
What do you hope to learn from this session?	
Notes	**Resources** *Any tools or strategies modeled or mentioned to investigate further?*
Reflections *How will you integrate this content into your own practice? What questions do you still have?*	
Next Steps *How does this session impact your action plan? What are you or your team's next steps?*	

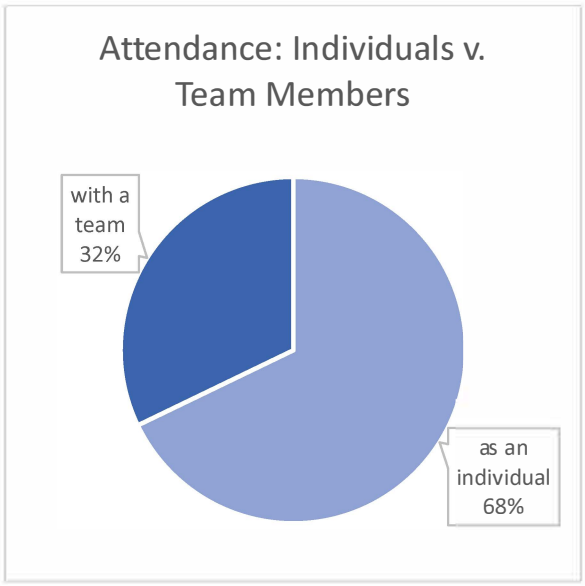
Appendix D: Participant Details[2]

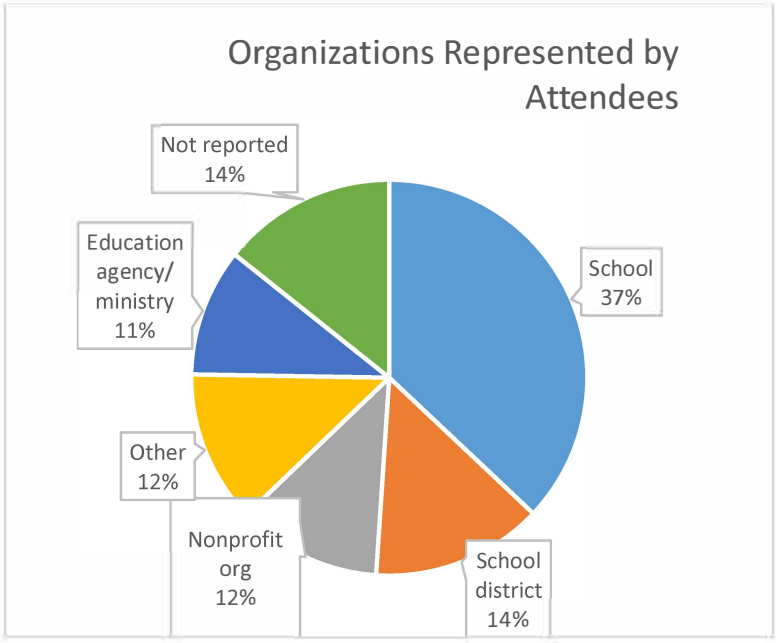


United States-Based Participation

International Participation	
Country	**#**
United States	603
Not reported	35
Pakistan	28
Brazil	23
México	18
Philippines	11
Nigeria	9
Costa Rica	5
Argentina	4
United Kingdom	2
Vietnam	2
Bangladesh	2
India	2
Uganda	2
Iran	2
Indonesia	1
Guatemala	1
Malaysia	1
Bahamas	1
Canada	1
Egypt	1
Ukraine	1
Kenya	1

[2] All data is self-reported.


Attendance: Individuals v. Team Members
with a team 32%
as an individual 68%


Organizations Represented by Attendees
Not reported 14%
Education agency/ ministry 11%
School 37%
Other 12%
Nonprofit org 12%
School district 14%