

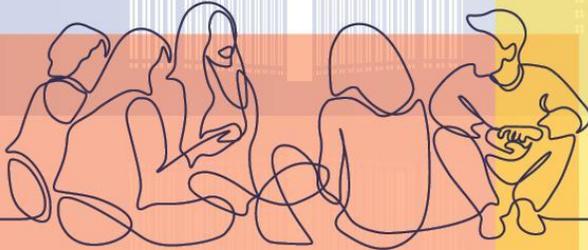
VSA

Visitor Studies Association

34TH ANNUAL
VISITOR STUDIES ASSOCIATION CONFERENCE

CREATING SPACE & Coming Together

OMAHA, NE • JULY 12-14, 2022



CONFERENCE ABSTRACTS

VSA

Visitor Studies Association

Introduction

Welcome to the 2021 Visitor Studies Association Annual Conference Abstracts!

The Abstracts serve as a preview of the vibrant conversations that will take place this year as we explore reimagining and rebuilding after a year of change.

The Abstracts also serve an important role in recording the conversations for the future.

Previous Conference Abstracts are available online at

<https://www.visitorstudies.org/past-conferences>

The 2022 VSA Conference Abstracts were compiled by Kari Ross Nelson.

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Tuesday, July 12

11:00 AM – 12:00 PM Concurrent Sessions

Viva Social Impact: Updates and Conversations Around Measuring Social Impact

Kari Ross Nelson, Thanksgiving Point
Michelle Mileham, Utah Division of Arts and Museum
Susan Foutz, Children’s Museum of Indianapolis
Karen Breece, Conner Prairie

Panel Presentation

Purpose and Importance: In 2003, museum thought leader Stephen Weil observed, “over time, the museum field will need to develop... richer and more persuasive ways to document and/or demonstrate the myriad and beneficial outcomes that may occur for their individual visitors and have impact on the community beyond.” The Measurement of Museum Social Impact (MOMSI) project is seeking to meet this need by bringing together 30+ museums to create a validated instrument to measure social impact in museums in terms of Life-long learning, valuing diverse communities, strengthened relationships, and health & well-being.

This session will explore measuring social impact through the diverse experiences of the MOMSI research team and project manager, two MOMSI host museums, and attendees. The presentation will emphasize MOMSI as an important, multi-institutional project intended to contribute knowledge to the field of visitor studies and informal learning. The MOMSI team will review our methodology and survey design, our host museum recruitment and selection process; summarize preliminary social impact findings to date; and describe the development of – and welcome input on – the resulting social impact toolkit that will be available in 2023.

Abstract: MOMSI is an IMLS-funded project with the purpose of creating a validated instrument to measure social impact in museums of all types and sizes. At the 2021 VSA conference the MOMSI administrative team described the work and findings at each level of development that led to the MOMSI study. Now that the study is fully underway with 30+ museums across the country hosting it, representatives from two participating museums will reflect on their experiences with the project as they share wins and challenges; how they recruited diverse visitors to participate; and how their museums intend to use the social impact findings for work ranging from building evaluation capacity to expanding outcomes-based evaluations.

We will invite the attendees to join the conversation about the preliminary findings, as well as their own work, hopes, and questions around measuring or evaluating social impact. This invitation to contribute their own experiences, will give attendees insight into different kinds of social impact data and how they might use it to better understand their organizations' audiences.

In some ways this presentation will be both a follow up and continuation of our 2021 presentation. In that presentation, attendees provided important feedback that has helped us increase rigor in the development of the social impact measurement tool. This year, we will engage the audience in ways that will help us increase usability to the resulting toolkit.

References:

Weil, Stephen E. "Beyond Big & Awesome Outcome-Based Evaluation." *Museum News* (November/December 2003): 40-45, 52-53.

Additional Links:

<https://museumsocialimpact.org/>

Unpacking the CRaTE: Measuring Visitors' Cultural Relationships and Topical Exploration

Laura Weiss, COSI's Center for Research and Evaluation

Donnelly Hayde, COSI's Center for Research and Evaluation

Hosted Presentation

Purpose and Importance: Our research investigates the role culture plays in informal learning. All visitors coming to a museum enter with a unique viewpoint that derives from personal experience and cultural background. Knowing how these varied viewpoints affect interest and learning can help museum professionals create better learning experiences. Despite clear indications of its importance (National Research Council, 2009; Lee, 2008) little, if any, research has focused directly on the effect of a learner's cultural relationship to a topic. Here, we define "culture" beyond ethnic affiliation, to include a "dynamic-constructivist conceptualization" (Hong, 2009) of interconnected norms, values, and behavioral dispositions that stem from collective group experiences, memories, and meanings (Briley, Morris, & Simonson, 2000).

Through a multi-phase validation process, we developed CRaTE, a suite of questionnaires that together reflect elements of a research model about cultural relationships and topical exploration that we are currently exploring as part of the NSF-funded Snow project (#1810778). In the context of a visit to a museum exhibition, our model organizes potential relationships between the associations people bring to learning about the exhibition topic, how motivated they expect to feel in an exhibition about that topic, and their motivation to learn more about the topic after their visit.

Abstract: The elements of our model are as follows: a) visitors' entrance narratives, articulated as cultural associations and value schemas related to a specific topic; b) visitors' anticipated motivational experiences, i.e., expected sense of competence, relatedness and personal choice in the context of topic-focused learning; c) learning experience quality; d) cultural alignment, or a visitor's personal relationship to the interpretive elements of the exhibition; and e) visitors' motivation to continue learning.

Our research project explores potential relationships between these elements by combining the validated questionnaires into one instrument - thereby collecting data from visitors that can address each of the associated constructs. With data in hand, we aim to answer the following question: How do varied cultural relationships with a topic (in our case, snow) predict how a learning experience affects motivation to learn more about the topic and its related complex environmental issues? Answering this question involves testing four hypotheses: 1) that cultural associations with snow will be associated with value schemas related to snow; 2) that these cultural associations and value schemas will be associated with anticipated responses to learning about snow); 3) that these anticipated responses will be associated with learning

outcomes; and 4) that the quality of the learning experience will mediate the relationship between anticipated responses and learning outcomes.

Although we developed the questionnaires to explore our specific hypotheses, we anticipate that they may be useful in other visitor studies contexts. As individually validated questionnaires, each one can be used independently of the others in situations where it is necessary to measure a single construct, and they can be used in differing combinations. In the last phase of our research, we will also begin to articulate the potential predictive utility of the individual questionnaires as the relationships between constructs become clearer.

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Briley, D. A., M. W. Morris, and I. Simonson (2000), Reasons as Carriers of Culture: Dynamic versus Dispositional Models of Cultural Influence on Decision Making, *Journal of Consumer Research*, 27, 157-178, doi:10.1086/314318.

Hong, Y. (2009), A dynamic constructivist approach to culture: Moving from describing culture to explaining culture, in *Understanding Culture: Theory, Research and Application*, edited by R. S. Wyer, & Y. Hong (Eds.), pp. 3-23, Psychology Press, New York.

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National Research Council. (2009). *Learning Science in Informal Environments: People, Places, and Pursuits*. Committee on Learning Science in Informal Environments. Philip Bell, Bruce Lewenstein, Andrew W. Shouse, and Michael A. Feder, Editors. Board on Science Education, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Additional Links:

<https://cosi.org/about-cosi/cosi-cre>

<https://www.informalscience.org/snow-museum-exhibit-educational-outreach-and-learning-research>

<http://ourwinterworld.org/>

<https://omsi.edu/products/snow-tiny-crystals-global-impact>

11:00 AM – 11:30 AM

Relationship-Building Through Evaluation: Multi-Session Engagements with Families

Amy Niedbalski, Saint Louis Zoo
Nette Pletcher, Beez Kneez Creative

Paper Presentation

Purpose and Importance: Saint Louis Zoo is currently reimagining their former Children’s Zoo exhibit area. To cultivate relationships and to foster feelings of ownership and pride, a diverse group of families were invited to conduct a series of in-person “engagement sessions” about the new space. Various local community organizations that serve children were intentionally selected to ensure representation from often over-excluded groups. Using a variety of approaches, an independent consultant and Zoo audience research and evaluation staff facilitated a series of three engagement sessions with the same 20 families in late 2021 and the first half of 2022. The Zoo’s exhibit designers are now utilizing the findings from these sessions to guide the design of experiences, messages and accessibility in the exhibit. Learning outcomes for the audience will include learning about an evaluation technique including the multi-session methodology and descriptions of approaches utilized during the engagement sessions. Additionally, attendees will have an awareness of successes and challenges of building and sustaining relationships with research/evaluation participants. Finally, audience members will learn one way an institution welcomed and embraced a varied pathway in community research and evaluation. Broader implications include the adoption of this type of evaluation technique in the wider museum community.

Abstract: In 2020, the Children's Zoo area of the Saint Louis Zoo was forced to operate with additional safety measures that greatly limited the typical guest experience. It was deemed to be an opportune time to close the exhibit and begin an already planned reimagining of the space. Frontend exhibit evaluation was conducted with a largely homogenous convenience sample of Zoo members, and it was decided to conduct additional frontend and formative evaluation using a more equitable approach. With goals of inclusion, building personal relationships, and providing feelings of pride and ownership in the creation of the new area, staff opted to host a series of engagement sessions with area families. Families were recruited utilizing a “snowball” sampling technique that started with staff contacts at community organizations willing to provide referrals to potential participants. Community organizations that serve children, along with those that also serve neurodivergent children, immigrant or ESL families, children with low vision and/or hearing, and BIPOC children, were intentionally selected to ensure representation from often over-excluded groups. This presentation by an external consultant and a staff member who facilitated the project will discuss participant

recruitment, approaches and activities used in the engagement sessions, differences in feedback between the more homogenous and more diverse participant pools, and the outcomes of having more than simply a transactional experience with research participants. Depending on audience feedback, discussions may go in the direction of ways of avoiding session attrition and the continuation of relationships, institutional support of equitable evaluation, and the utilization of findings in the final exhibit design, particularly in regard to accessibility. The topic lends itself to the conference themes of inclusion and accessibility and embracing varied pathways to guest and community research.



11:30 AM – 12:00 PM

The Social and Contextual Mechanisms of Children’s Learning in Museums

Lindsay Maldonado, Northern Illinois University

Paper Presentation

Purpose and Importance: Museums provide social learning opportunities that encourage and support science learning (NRC, 2009). This is particularly true for young children and families. A report by IMLS, *Growing Young Minds*, recognized that museums “form an extensive, diverse infrastructure of informal learning that is equipped to deliver critical early learning resources to young children and families” (Institute of Museum and Library Services, 2013, p. 5). The current session focuses on research that explores the associations between exhibit design, mother-child conversational interactions, and children’s learning. To date, research in this area has not systematically investigated mother-child conversational interactions across different types of exhibits. The current findings contribute to this gap in knowledge by offering a systematic analysis of the same families across multiple exhibits, comparing their conversational interactions across high and low immersion exhibits, and investigating the role of both the physical and social context on children’s learning. Findings from the current study support the notion that both contextual mechanisms like exhibit design and social mechanisms like mother-child conversational interactions are related to children's learning.

Abstract: This paper discusses the results of a study that examined the associations between immersive exhibit design (Bitgood, 2011), mother-child conversational interactions (Haden, 2010), and children’s learning. Mother-child dyads were video and audio-recorded as they visited four different exhibits. Children were interviewed immediately following the visit, and mothers were surveyed. Results showed that children asked more open-ended questions in exhibits with more immersive design features (i.e., high immersion) while mothers and children spent more time making associations to prior knowledge, naming and describing animals and habitats in exhibits with fewer immersive design features (i.e., low immersion). Despite more talk in low immersion exhibits, children reported more learning from high immersion exhibits, mentioning these exhibits more than low immersion exhibits in response to interview questions. Children talked more about animals from high immersion exhibits both in naming animals and describing animal habitats. Results also showed that design elements found in high immersion exhibits, like props, were positively related to children’s learning.

Regardless of exhibit type, children’s explanatory responses and mother-child joint talk were positively related to children’s learning, while mother’s naming was negatively associated with children's learning. These findings suggest that not all talk equally supports learning and that

conversational interactions that include descriptive talk and labeling may not be enough to support children's learning immediately after the visit. Findings add to the growing body of work that elaborative conversations are an important social mechanism for children's learning, and they provide new evidence that high immersion exhibits serve as an important contextual mechanism that support conversational interactions; and, that the exhibit itself may also serve to scaffold children's learning. For this reason, the exhibit becomes an important contextual mechanism for engagement, conversational interactions, and learning, as it provides the 'tools' from which children can construct their experience.

References:

- Bitgood, S. (2011). *Social design in museums: The psychology of visitor studies*. (Volume 2). Edinburgh, UK: MuseumsEtc.
- Haden, C. A. (2010). Talking about science in museums. *Child Development Perspectives*, 4(1), 62-67.
- Institute of Museums and Library Services, *Growing Young Minds*, Washington, D.C. 2013
- National Research Council. (2009). *Learning science in informal environments: People, places, and pursuits*. Committee on Learning Science in Informal Environments. Edited by P. Bell, B. Lewnstein, A. W. Shouse, & M. A. Feder. Washington, DC: The National Academies Press. Retrieved from http://www.nap.edu/catalog.php?record_id=12190

Uncovering the Impacts of Environmental Identities, Worldviews and Cultural-historical Contexts on Adulthood's Perceptions on Local Marine Issues

Shu-Min Tsai, Oregon State University

Shawn Rowe, Oregon State University

Paper Presentation

Purpose and Importance: Museums and aquariums provide a good environment to study how EID constructed by previous knowledge, worldviews, and culture affects learning experience concerning complex environmental issues, and the interpretation or awareness of these issues. This project targets adolescents who visit museums and aquariums internationally seeing how EID affects their learning of local marine issues. In this discussion, the participants will be able to understand the principles and practices of learning in informal environments, and how adolescents learn and shape their worldviews and identity in informal settings regarding their existing knowledge and cultural-historical contexts. Also, they will be able to brainstorm and figure out the power of personal meaning mapping, a powerful tool for exploring people's knowledge and awareness of specific topics especially in informal learning settings. And hopefully we are able to come out with an efficient way to combine it with other data collection tools such as in-depth interview to facilitate visitor studies.

Abstract: Environmental Identity is an important concept in current research on environmental education and development and with environmental worldview, both are critical to promoting environmental stewardship and science learning. Yet, both remain understudied. Also, we know that identity encompasses both individual and social and cultural elements, but research usually favors either the individual explanation (traditional psychological research) or the social and cultural (traditional sociological or anthropological research). This study targets adolescent visitors to museums from three cultural groups (Americans, Brazilians, and the Taiwanese) to test what factors shape environmental identity as well as worldview and explore how these shape learning experiences regarding critical environmental issues in free-choice learning settings. Identity and worldview are analyzed by survey using existing scales, while engagement and learning will be analyzed through qualitative approaches such as personal meaning mapping (PMM) and in-depth interviews. The focus is on how identities and worldviews affect future actions (e.g., learning experiences, willingness to learn, decision making, etc.) and cognitive development. In this context, early adolescents were interviewed about marine experiences that they have and program impacts on their environmental identities and free-choice learning experiences. Results were analyzed through a sociocultural lens and a narrative approach to provide an appropriate framework for my research into environmental identity in

informal learning experiences. In those contexts, awareness of local marine issues is created through the interaction between people (including stakeholders and interpreters or experts) and exhibits that represent both individual and socio-cultural perspectives, and individuals' identities are constructed and refined in that interaction. Results showed that study participants in Taiwan develop their environmental identity and worldview (EIW) in their daily life including in their neighborhoods, at school, with animals, and family events. And free-choice learning experiences such as beach cleanup, marine activities (i.e., snorkeling, fishing, canoeing, etc.), observing the local environment, and exploring nature with family, have connected these adolescents with the environment in different ways. Finally, it is interesting that the way in which they connect with the ocean demonstrate that having an EIW does not always equal enjoying time spent in nature or having awareness of local environmental issues, especially marine issues in this study.

Development of Visitor Personas using Psychographic Profiles of Potential Visitors

Alyssa Carr, Nelson-Atkins Museum of Art

Rachel Nicholson, Nelson-Atkins Museum of Art

Emily Bray, Slover Linett

Tanya Treptow, Slover Linett

Hosted Presentation

Purpose and Importance: In this session speakers from Slover Linett Audience Research and The Nelson-Atkins Museum of Art will discuss what psychographic profiles are and how they are being used at the Nelson-Atkins. The background and process for developing psychographic profiles will be discussed including data collection and evaluation using cluster analysis to create 4 distinct psychographic profiles. Presenters will discuss how psychographic profiles have been used to create visitor personas for use in the development of programs and activities. Since implementation, programming at the Nelson-Atkins has been developed with groups of visitors with varying interests and needs in mind. The discussion will cover the use of profiles to gain interest from new or infrequent visitors. This session aims to allow participants to think about increasing visitation in non-traditional visitors as well as being mindful of designing programs for all segments of audiences. Questions we will consider during the presentation include: How did our initial assumptions and/or analyses change because of this process? In what ways has this process impacted visitors? And how will we use these profiles in the future?

Abstract: In 2018 the Nelson-Atkins Museum of Art received a 3-year grant from IMLS to conduct research on visitors and non-visitors. The museum partnered with Slover Linett Audience Research as outside evaluators.

The first phase of research utilized qualitative exploration. The second phase of research used quantitative investigation to survey respondents. This survey was used to quantify awareness, perceptions, preferences, and barriers to museum attendance as well as identify psychographic segments of the museum's potential audience through cluster analysis. Four distinct attitudinal segments or psychographic profiles were identified based on different combinations of leisure time preferences and how respondents spend their time engaging or interacting with art.

The museum used this research to focus on three target audience segments and turned the profile for each segment into a Visitor Persona to better visualize the needs and priorities for each group. These personas are used in brainstorming and goal setting and help to determine activities and programming within the museum to ensure we are meeting the needs of all visitors. For multiple projects in 2021 and 2022, internal staff held brainstorming meetings where staff were encouraged to identify experiences that we may or may not currently offer that would be of interest to each persona.

Museum initiatives have been created with these personas in mind including a new space called the “Creativity Studio”. The Creativity Studio is tied to the museum’s special exhibition. It was designed with Social Art-Goers and Personal-Impact Creatives in mind to allow them to have something hands-on and interactive. The focus of the Creativity Studio changes as the museum’s current offering of exhibitions changes.

1:15 PM – 1:45 PM

Sensory-Based Museum Programs for Older Adults With Cognitive Impairment During the COVID-19 Pandemic

Joy (Wei-Tung) Chiang

Paper Presentation

This study aimed to understand the impact of museum programs on older adults with cognitive impairment during the COVID-19 pandemic in the UK and Taiwan. The objective of this research was to determine the cultural differences between the two museums running different older adult programs in the UK and Taiwan. The research highlighted discrepancies including program planning, protocols, and implementation methods. Moreover, the study showed that, in addition to history museums and art galleries, natural history or science museums could provide services and education programs for older adults with cognitive impairment. Finally, the research shed light on museum programs that benefited older adults with cognitive impairment and their companions. Moreover, it should be stressed that staff training is crucial for offering senior programs to create an age-friendly environment in museums.

Abstract

This study aimed to understand the impact of museum programs on older adults with cognitive impairment during the COVID-19 pandemic in the UK and Taiwan. The immediate short-term impacts of virtual and in-person museum programs through lockdown and beyond were evaluated while considering issues such as volunteering and opportunities around Social Prescribing. A range of research methods were used to evaluate the impact of museum program participation comprising interviews, questionnaires, and observation. This study interviewed participants, including older adults and their companions, about their experiences. Participants were recruited through Tyne & Wear Archives and Museums, the National Taiwan Museum, and other project partners. The objective of this research was to determine the cultural differences between the two museums running different older adult programs in the UK and Taiwan. The research highlighted discrepancies including program planning, protocols, and implementation methods. Moreover, the study showed that, in addition to history museums and art galleries, natural history or science museums could provide services and education programs for older adults with cognitive impairment. Finally, the research shed light on museum programs that benefited older adults with cognitive impairment and their companions. Moreover, it should be stressed that staff training is crucial for offering senior programs to create an age-friendly environment in museums. To sum up, the research will provide recommendations for good practice regarding the provision of high-quality creative activities for older adults with cognitive impairment. It will synthesize evidence from creative engagement to feed into post-lockdown

strategic planning at the local and national levels. By working with participants and museums, learning from this research will be used to enable organizations to support their communities as they adapt to post-lockdown Britain and Taiwan.

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Thomson, L.J., Gordon-Nesbitt, R., Elsdon, E. & Chatterjee, H. (2021). The role of cultural, community and natural assets in addressing societal and structural health inequalities in the UK: future research priorities. *Int J Equity Health* 20(249). <https://doi.org/10.1186/s12939-021-01590-4>

Additional Links:

Culture, Health, and Wellbeing Alliance website: <https://www.culturehealthandwellbeing.org.uk/>

National Academy for Social Prescribing website: <https://socialprescribingacademy.org.uk/>

Social Prescribing Network website: <https://www.socialprescribingnetwork.com/>

1:45 PM – 2:15 PM

Designing Visitor Studies to Include Youth with Learning Disabilities

Rebecca Rosen, University of Rochester
Amanda Cook, EdTogether, inc.

Paper Presentation

Purpose and Importance: This session will share findings from an exploratory study focused on aspects of informal science learning (ISL) design that are most salient in experiences of intrinsic motivation and engagement among young visitors with Learning Disabilities (LD) at science museums. There are two purposes for this session: 1) to identify lessons learned about inclusive research design to ensure accessibility, validity, and enjoyment of young people with LD in visitor studies; and 2) to share initial research findings about this population's experience of intrinsic motivation and engagement with a variety of museum exhibits. Session participants will gain an understanding of and best practices for making self-directed informal learning experiences more inclusive, engaging, and motivating for youth with LD; such strategies seek to support the motivational beliefs, autonomy, competence, and needs of diverse youth with LD in informal ISL spaces. Participants will also learn tools to consider effective approaches for research that includes youth with LD in ISL settings.

Abstract: This session presents findings from an exploratory study examining the engagement and intrinsic motivation of adolescents (ages 10-17) with Learning Disabilities (LD) when interacting with exhibits at two science museums. This study combines the principles of Universal Design for Learning (UDL) – a design approach to creating exhibits for all visitors by providing supportive options for interaction with design strategies that support Self-Determination Theory (SDT; Deci & Ryan, 1985) – a theory of human motivation emphasizing self-directed learning. We embrace the potential tension between design for autonomy – a feeling of “choicefulness” regarding one’s activities and goals – and design for competence – a feeling of efficacy that facilitates intrinsic motivation and deep engagement (Deci & Ryan, 1985).

Data were collected via survey, interview, and observation as youth individually interacted with exhibits purposefully selected to reflect varied approaches to autonomy and competence. We will describe how we attended to accessibility and enjoyment of the research experience for this population of young people, who may experience particular challenges in typical study methods, by using multiple modalities and ways of describing experiences. Measures addressed emotions felt, motivation, and engagement. Data analysis included both descriptive statistics and coding of interview transcripts.

Presenters will share findings about how the open-ended, autonomy- supportive design of informal science learning spaces facilitate, sustain, or impede the engagement and motivation

of youth with LD. Presenters will highlight recommendations for how practitioners can construct inclusive designs in a variety of museum settings. Such strategies, in turn, will broaden the participation and support positive experiences for visitors with LD. Presenters will also share how study findings informed experimental testing of inclusive design strategies to improve the accessibility, inclusivity, and usability of ISL designs for youth with LD.

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Three Stories of Turning Community Vision into Action

Sarah Lukowski, Science Museum of Minnesota
Megan Goeke, Science Museum of Minnesota
Eleanor Hill, Denver Museum of Nature and Science
Josh Gutwill, Exploratorium

Panel Discussion

Purpose and Importance:

Community engagement, and turning the voice of community into action was a priority of many professionals in our field pre-pandemic, during the pandemic, and as we look to the future. Panelists reflect on where we have been, where we are now, and where we are going in community informed research and practice through sharing three exemplars from different institutions. Participants are encouraged to reflect, share, and ask questions about how to engage their community in research and design.

Participants will:

1. Learn and reflect on the community engagement spectrum; reflect on mechanisms and tools to collaborate with knowledge-holders
2. Practice our professional commitment to sharing and refining methods for community engagement in research and design of visitor experiences
3. Share, ask questions about, or brainstorm strategies for community engagement opportunities in projects that session attendees are currently working on or will be working on.

Abstract: The Science Museum of Minnesota has been developing exhibits and experiences around making since 2013, with the recent Cardboard City exhibition in summer 2021 as the latest (but not last) iteration. We will share the through-lines from earlier making and equity work that identified values of local BIPOC community members in making the more recent exhibition. Reflecting on where we are now, in our model of community-informed research and design, we will also look ahead to current projects in summer 2022 and beyond through the lens of community-informed design.

The Denver Museum of Nature & Science embarked on the development of our new Space Odyssey exhibition in 2015. Collecting the visions of thousands of individuals through a variety of different qualitative and quantitative methods, the exhibit design was steeped in community needs, interests, and values as they relate to space. We will share the design process through the lens of the Museum's Community Engagement Spectrum (adapted from a national model of community engagement published by the Center for Disease Control), lessons learned, and

some key findings from the exhibit summative evaluation – designed to measure our effectiveness of turning community vision into action.

The Exploratorium has been engaging with local communities for some time to collaboratively develop exhibitions, particularly for installation in their neighborhoods. For the past year, we have been building a partnership with several community-based organizations interested in climate change education, using a community engagement model developed by the Department of Health and Human Services (Snow, 2012). Through the partnership, we have begun co-designing a formative assessment system for a youth climate program created by one of the partners. We will share what we've learned about the community engagement model and our practical experiences in the hopes of helping others who wish to do this kind of work.

References:

McCloskey et al. (2011). Community Engagement: Definitions and Organizing Concepts from the Literature, Principles of Community Engagement: Concepts and Definitions from the Literature. https://www.atsdr.cdc.gov/communityengagement/pce_intro.html

John Snow, Inc. (2012). Engaging Your Community: A Toolkit for Partnership, Collaboration, and Action. https://publications.jsi.com/JSIInternet/Inc/Common/_download_pub.cfm?id=14333&lid=3

The work of a lifetime: Effecting change in your organization

Renae Youngs, Minnesota Management and Budget

Rita Deedrick, Independent Consultant

Sena Dawes, Missouri Historical Society

Facilitated Discussion

Purpose and Importance: The 2022 Visitor Studies Association conference theme considers change in the informal learning field. Attendees are prompted to react to change, reflect on it, build on it, and enact it. This session posits another starting point: the truth that effecting change is HARD. The presenters will adapt a needs assessment approach to consider the changes we may want to see in organizations, identify and grapple with barriers to those changes, and envision paths forward.

Attendees of the session will come away with awareness of issues surrounding organizational change in relation to community and employee needs, and confidence in their ability to assess the landscapes of needs and changes around them. By the end of the session, everyone should feel less alone in thinking about institutional change, and perhaps part of a community of changemakers.

From rookies to seasoned staff, from entry-level to the C-suite, everyone can effect change. But it is critical to be clear on both the goals and the approach, including one's own needs, when taking on the role of changemaker. This session should help anyone with museum work in their heart to reflect on the change they wish to see and choose to engage in.

Abstract: No matter how energizing the moment of opportunity, organizational change requires getting clear about needs, acknowledging barriers, and striving toward solutions together. Everyone can effect change to some extent. But why is it so hard? And why does it always seem to take too long? Certainly much institutional change has happened in the past two years. And much is yet to be done. Many museum professionals aim to make the world better through (and within) the institutions we love and respect, and that sometimes frustrate us to no end.

This session adapts a needs assessment approach to examining our institutions, their communities, and the people who actuate the mission (especially staff). It challenges participants to envision and describe "what should be," acknowledge "what is," and explore barriers to closing the gap between the two. Participants will walk through stages of assessing needs to address those questions.

The group will first envision when an institution fulfills its mission and is "doing right" by the workers who make it happen. These descriptive visions will be shared, compiled, and visible in

the session. Then, participants will describe their current institutional realities. Because responses to this prompt may be sensitive or even traumatic examples of harm done to museum workers, individuals will contribute these comments more privately in writing, rather than discussion.

Comparing the results will highlight the gaps between vision and reality, as well as barriers to closing those gaps. With insight into the gaps and barriers, attendees will next explore potential paths forward including strategies to help individuals navigate a changemaker role sustainably and healthily. By facilitating authentic discussion in a needs analysis frame, the session will generate insight and energy into problem-solving, and equip participants with confidence and tactics to move forward as changemakers.

References:

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Frosslien, L., Duffy, M.W. (2022). Stop Telling Employees to Be Resilient. MITSloan Management Review. <https://sloanreview.mit.edu/article/stop-telling-employees-to-be-resilient>

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Weisberg, R.J. (2022, February 22). The positivity of negativity in museum Work. Museum Human.
<https://www.museumhuman.com/the-positivity-of-negativity-in-museum-work/>

Additional Links:

Murawski, M. (2022, January 20). Reflecting on our relationship with change. Agents of Change. <https://agentsofchange.substack.com/p/reflecting-on-our-relationship-with>

Murawski, M. (2022, February 8). Is feeling alone part of being an advocate for change? Agents of Change. <https://agentsofchange.substack.com/p/is-feeling-alone-part-of-being-an>

Murawski, M. (2022, February 24). Relationships are everything. Agents of Change. <https://agentsofchange.substack.com/p/relationships-are-everything>

3:30 PM – 4:00 PM

Evaluating Youth Perceptions of Climate Action with Personal Meaning Mapping

Scott Randol, Oregon Museum of Science and Industry

Paper Presentation

Purpose and Importance: This session will explore the use of Personal Meaning Mapping (PMM) as an evaluation tool. PMM provides an opportunity for evaluators to capture participants' ideas about a topic in a way that does not overly limit or shape their responses. It is a tool that can generate rich data, both qualitative and quantitative, and can be used with exhibits, programs, lessons, and a variety of other informal learning endeavors. Participants in this session will become familiar with what PMM is and how it can be administered by creating their own Personal Meaning Maps.

This session creates a space for Visitor Studies professionals to come together as a community to discuss a rich data collection methodology that can be used with a variety of informal learning opportunities. Through this sharing and discussion of approaches to using evaluation tools and methods such as PMM, we hope to provide an opportunity for members of the Visitor Studies community to build on each other's work and experiences to potentially expand their repertoire, improve their practice, and strengthen connections across the field.

Abstract: Youth Lead the Way (YLTW) is an NSF-funded, two-year early-stage Innovations in Development project led by the Oregon Museum of Science and Industry (OMSI) in Portland, Oregon, in collaboration with local and national partners. The project is developing and evaluating a Youth Advisory Research Board model to equip and support youth and informal STEM education institutions to conduct evidence-based research on local climate impacts and communicate the findings of their research to their communities. Using a cohort model, the participating youth conducted research on various local climate impact topics while concurrently serving in an advisory role at OMSI, where they participated in shaping relevant museum programs and practices. The youth developed and presented climate stories, a communication approach based on storytelling, to raise public understanding and awareness about local climatological changes and impacts. Personal Meaning Mapping (PMM) was used in the evaluation of the project as a way to better understand how the youth think about climate action and their role related to it.

During the session, participants in this session will become familiar with what PMM is and how it can be administered by creating their own Personal Meaning Maps. Presenters will provide a brief overview of the Youth Lead the Way program and will outline the process by which

participating youth created personal meaning maps. A description of how those maps were analyzed to document changes in the breadth and range of concepts associated with Climate Action, as well as the connections participants perceived between concepts and key findings from the evaluation will be discussed. In addition, presenters and session participants will have the opportunity to share their thoughts on and experiences with PMM as an evaluation tool, the opportunities and challenges of PMM, lessons learned and tips for using this methodology effectively.

Additional Links:

<https://youthleadtheway.org/>

<https://www.informalscience.org/2021-poster-youth-lead-way>

Wednesday, July 13

12:30 PM – 1:30 PM Concurrent Sessions

Evaluating the Role of Museums in Sparking Female Science Self-Efficacy

Meghan Kroning, Exploratorium
Hsin-Yi Chien, Exploratorium
Kari Nelson, Thanksgiving Point Institute

Panel Presentation

Purpose and Importance: Gender equity in STEM has always been an important goal for the science education community. Research in the field of formal education has provided an abundance of evidence that science self-efficacy plays an important role in supporting people's science learning performances as well as their motivation to engage in a science-related major/career (e.g., Andrew, 1998; Lent et al., 1986; Zimmerman et al., 1992). What is also widely noted in this line of literature is that women and girls often possess far lower confidence in their science abilities than their male counterparts (e.g., Else-Quest et al., 2010; Huang, 2012). In this regard, increasing women's and girls' science self-efficacy is an important step towards achieving gender equity in STEM. This is where informal learning environments enter the equation—informal learning environments offer a relaxed, non-competitive environment in which learners are provided with opportunities for positive sources of science self-efficacy without adverse academic or professional consequences (Gutwill, 2018).

Abstract: This session presents two studies that examine the role of informal science learning in increasing gender equity in STEM by enhancing science self-efficacy in learners, young women and girls in particular.

The first study—Cultivating Confidence—is from the Exploratorium. Cultivating Confidence is inspired by prior research at the Exploratorium which found that while a visit to a science museum positively influenced both men's and women's science self-efficacy immediately after the visit, the long-term effect was only significant among women. Cultivating Confidence employs a longitudinal experimental design and recruits young adult learners as its study participants to test if the gender difference found in the prior study would be replicated. In addition, Cultivating Confidence will examine the mechanisms through which a science museum visit might affect learners' short-term and long-term science self-efficacy.

The second study is from Thanksgiving Point. Researchers there will share their efforts to evaluate their Girls Who Code (see <https://girlswhocode.com/>) and Girls in Science clubs,

looking particularly at changes in participants' perceptions of scientists and participants' science self-efficacy. The evaluation process is an ongoing challenge that requires experimenting with and refining longitudinal tools that are the right fit for the setting, content, and especially the youth participants.

Building on these studies, session participants can have a fruitful discussion on how informal science education contributes to gender equity in STEM, and how to best measure or evaluate this. Presenters will engage the audience by opening discussion about the challenges of designing and refining research and measures. Presenters will invite participants to brainstorm creative solutions to these challenges and/or discuss how the learning from the two studies can be applied to attendees' projects.

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- Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal*, 29(3), 663–676. doi:10.3102/00028312029003663

Creating a Culture of Inclusion: The Deaf Culture Project

Alyssa Carr, Nelson-Atkins Museum of Art

Cecilia Garibay, Garibay Group

Hosted Presentation

Purpose and Importance: In this session speakers from Garibay Group and The Nelson-Atkins Museum of Art will discuss a case study of experiences creating and evaluating an inclusive environment for visitors who are d/Deaf or Hard of Hearing (D/HH). This presentation will focus on sharing the Deaf Culture Project as a model for other cultural institutions wishing to incorporate accessible content and inclusive environments. Our goals for this session will be to discuss the responsibility art museums have to their entire community to be a welcoming and inclusive space for all visitors. We will offer tips for inclusive evaluation. Tips for creating more inclusive programs and presentations. Attendees will take-away information on culturally responsive approaches to evaluation as well as findings specific to the Deaf Culture Project. Participants will be encouraged to discuss what they are doing at their own institutions for visitors who are d/Deaf and hard of hearing. They will also be encouraged to discuss what accessibility steps they take in evaluation. The presentation will be captioned for equitable access.

Abstract: The Deaf Culture Project centered around developing high quality inclusive programming at The Nelson-Atkins Museum of Art for visitors who are d/Deaf and hard of hearing. Funded through an IMLS grant, the project built engagement, learning, and empowered community members to fully access, enjoy, and understand the museum's collections and programs. The program intended to increase perception of the museum as an accessible and inclusive community resource where everyone feels welcome and respected. Activities were created to build capacity among museum staff and volunteers to positively engage with members of the d/Deaf and hard of hearing communities.

Building upon already established connections with the d/Deaf and hard of hearing communities, the museum began by conducting several formative evaluations. Surveys, and focus groups helped to identify public perception of d/Deaf and hard of hearing culture, d/Deaf and hard of hearing visitors' perception of the museum, and the direction for future strategies to meet our goals.

Garibay Group was engaged in 2018 as an external evaluator to conduct a summative evaluation using a culturally responsive approach. Their evaluation focused on: The value of the project for the d/Deaf and hard of hearing communities; the nature and quality of the community collaboration; the overall success of the Deaf Cultural Day; and the extent and ways in which the project built staff capacity.

Lessons-learned will be discussed with an emphasis on ways this project helped promote institutional transformation and build a culture of inclusion. These include learnings about representation, captioning, staff training, access across the institution, internal and external evaluation. Participants will be encouraged to think about accessibility in their own institutions and reflect upon areas they are doing well and areas they can continue to build upon.

Additional Links:

<https://nelson-atkins.org/nelson-atkins-at-home/deaf-cultural-festival/>

Museums, Emotions and Science Engagement

Luisa Massarani, SciDev.Net and Fundação Oswaldo Cruz
Shawn Rowe, Oregon State University

Hosted Presentation

Purpose and Importance: Emotions are central to the learning process and are at the heart of formal and informal education as they shape cognition, memory, motivation, interest, engagement, and attitudes in relation to science. We will propose a methodological approach for exploring emotions in science museum visitor interactions and share results of two studies.

Abstract: The objectives of this session are to 1) share knowledge about the place of emotions in visits to science centres & museums, 2) provide useful examples of emotion shaping engagement of visitors with science, and 3) propose a theoretical and methodological framework that accounts for cultural, social, and interactional aspects of emotion in addition to psychological. In this session, we will propose a mediated action and sociocultural approach for exploring emotions in science museum visitor interactions, followed by the presentation of findings of such approach in two locations in Brazil: in Museu Goeldi in Belém, in the Amazon region, and Museu da Vida in Rio de Janeiro. We will highlight methodological issues in studying and putting in practice emotion in science communication, to share outcomes and examples from different contexts, and to discuss the benefits of a social and cultural approach to emotion. The main questions under focus will be: 1) which are the essential ingredients to understanding and working with emotions in museums?, and 2) what is the most useful way to conceptualize emotions in the visitor experience for research and programming purposes? The three presenters, Luisa Massarani, Grazielle Scalfi (Brazil) and Shawn Rowe (USA), have been working together in the scope of the Brazil's Institute of Public Communication of Science and Technology, as part of a partnership between Oswaldo Cruz Foundation and the Oregon State University for developing the approach to be shared.

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Broadening Participation Through Co-created Inclusive Museum Audio Interpretation

Audrey Bennett, University of Michigan
Alison Eardley, University of Westminster
Vanessa Jones, Smithsonian Institution

Panel Presentation

Purpose and Importance: If the Covid pandemic has shown the museum sector anything, it is the need for digital access. Within this sector, one of the leaders is Smartify, a website that facilitates remote interaction with over 2 million works of art, of which very few are audio-described. For blind or partially blind (BPB) visitors, the provision of recorded audio description (AD) is essential to experiencing museum collection because AD provides oral summaries of artwork typically accessed solely through vision. However, only 5% of museums in the UK mention an AD provision on their websites; yet, both the UK and the US have equitable access to culture enshrined in law. We will present a new model for co-created inclusive AD, piloted at the Smithsonian National Portrait Gallery (US) and Watts Gallery (UK). The creative process was led by partially blind participants working with blind and non-blind collaborators. Our model challenges current AD practice, which relies on sighted curators and docents producing AD for BPB visitors. It reflects professional guidelines for using subjectivity, positionality, interactivity, and intersectionality in inclusive audio interpretation, based on audience experience and the respective roles of aesthetics, interpretation, and multimodality in the cross-cultural communication of art with diverse museum visitors.

Abstract: In our panel presentation, we will discuss the development of the Workshop for Inclusive Co-created Audio description (W-ICAD) model. This model is underpinned by the three axioms of Blindness Gain (Thompson, 2017); 1) BPB people benefit from access to a multisensory way of being that stimulates inventiveness, imagination, and creativity, 2) non-visual living is an art and 3) accessible approaches developed by and for blind people can benefit non-blind people. This model has looked at how AD can be enriched by novel ways of experiencing paintings that rethink traditionally 'sighted' ways of appreciating art and the renewal of the neglected art of ekphrasis, specifically the description of visual arts in non-visual ways.

We also discuss how, within the W-ICAD model, partially blind, blind and sighted co-creators are encouraged to embrace, acknowledge, and integrate their diverse voices within descriptions, challenging the colonial underpinnings that arguably prioritize one authoritative museum voice within digital audio interpretation (Bennett, 2002; in press; Thompson, 2017). This will allow interrogation of the traditional focus on objectivity in museum AD (e.g., Hutchinson & Eardley, 2019).

Participants in the session will be asked to explore co-created audio descriptions themselves to enhance understanding of the process and facilitate discussion of the potential benefits and difficulties in implementing inclusive co-created audio descriptions as standard practice within museum interpretation, within galleries, and online.

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Bennett, A. (2002). Dynamic interactive aesthetics. *Journal of Design Research*, 2(2), 91-104.

Bennett, A. (2021). "Agentic Design: An Emergent Approach to Generative Justice." *New Design Ideas* 5(1): 5-20.

Bennett, A. (forthcoming 2022) "Designing multimodal technical instructions for cross-cultural resonance using a culturally inclusive approach."

Hutchinson, R., & Eardley, A.F. (forthcoming) Visitor Experience: multidisciplinary methods for understanding the impact of inclusive museum AD experiences. In C.Taylor & Perego, E. (Eds.) *The Routledge Handbook of Audio Description*. Routledge.

Hutchinson, R. & Eardley, A.F. (2021). Inclusive museum audio guides: 'Guided looking' through audio description enhances memorability of artworks for sighted audiences. *Museum Management and Curatorship*, <https://doi.org/10.1080/09647775.2021.1891563>

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Waddington, K., Donaldson, K., Husbands, D., & Bonaparte, B. The added value of positive organizational psychology interventions: Enhancing Black and Minority Ethnic (BME) student attainment and employability in a higher education context. *European Journal of Work and Organizational Psychology in Practice*, Vol. 9 (2018).

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Taking the museum experience outside: Evaluating outdoor art spaces

Caitlin Tracey-Miller, Cincinnati Art Museum

Discussion

Purpose and Importance: This session will explore outdoor evaluation on the Art Climb at the Cincinnati Art Museum and use this case study to launch discussion about the evaluation of outdoor spaces, including best practices, outcomes, pitfalls, and ongoing engagement. Outdoor art spaces have become increasingly important to institutions and thinking about how these spaces reach new audiences and contribute to the mission of organizations is essential.

Abstract: With the ongoing health concerns posed by the COVID-19 pandemic, a growing number of arts and cultural organizations are investing in outdoor experiences. Cincinnati Art Museum's Art Climb, which opened in summer 2020, includes sculpture, gardens, programming, and a grand staircase physically connecting the museum with its neighbors. I will discuss how the museum has evaluated this space as well as ways the experience is the same and different from indoor spaces. This case study will launch the group into a facilitated discussion about the goals of outdoor spaces and how best to evaluate them.

The Cincinnati Art Museum's Art Climb evaluation included observation studies, intercepts, interviews, and Babbage TruTrade data based on cell phones, including dwell time, demographics, distance traveled, and heat maps. The maps include indoor vs. outdoor geographic reach as well as competitor reach. I will discuss how the museum is interpreting and learning from this data and how it is informing thinking about the future of programming on the Art Climb.

This will lead into discussion about the anticipated outcomes of outdoor spaces and how to evaluate them. We will discuss challenges and pitfalls of outdoor evaluation as well as what works well. Those who have outdoor spaces can share their experiences. Participants will leave with tools and ideas for future evaluation and thinking about these experiences.

The presentation will open with a brief presentation about the Cincinnati Art Museum's Art Climb evaluation. Afterwards, the group will engage in small and large group discussion.

References:

Diamond, Judy. (2016) Practical Evaluation Guide: Tools for Museums and Other Informal Educational Settings. 2nd Addition. Altamira Press.

Serrell, Beverley. Exhibit Labels: An Interpretive Approach. 2nd Edition. Rowman and Littlefield Publishers.

Additional Links:

2:30 PM – 3:00 PM

“Visions of the Capitol”: Examining the Complexity of Visitor Knowledge

Paul Sturtevant, Smithsonian Institution

Laura Qin, U.S. Capitol Visitor Center

Paper Presentation

Purpose and Importance: *The “big idea”:* Visitor knowledge of your institution and subject matter area is complex and multifaceted, and exploring the nuances of their knowledge can reap benefits across many parts of an institution.

The research questions central to the study: For the first part of this study: “What does the US Capitol mean to its visitors?” The study took an open-ended approach to this question, allowing visitors to define the terms of the discussion. For the second part: “How do US Capitol Visitor Center staff perceive what the US Capitol means to its visitors?”

Learning outcomes: We will be discussing 1) the benefits of conducting broad, open-ended qualitative studies of visitors’ “knowledge” about your institution and its subject matter; 2) how robust engagement with visitor research of this kind can bring unexpected benefits for an institution’s operations.

Abstract: This presentation is a collaboration between Smithsonian Organization and Audience Research (SOAR) and the U.S. Capitol Visitor Center (CVC). Since 2015, SOAR has partnered with the CVC to conduct extensive audience evaluations. One series, called the “Visions of the Capitol,” aimed to gain a deeper understanding of how visitors conceptualize the U.S. Capitol prior to their visits and apply this knowledge to CVC offerings.

In this presentation, Paul Sturtevant (SOAR) will offer an overview of the Visions of the Capitol study, its open-ended qualitative constructivist approach, and some of its top-level findings. Laura Qin (CVC) will discuss how this study’s findings have been received by the CVC, and how this study has generated staff engagement—particularly during the challenging pandemic.

The study consisted of two phases: first, SOAR interviewers asked CVC visitors what came to mind when they thought about the Capitol, and what meanings it held for them. By using broad open-ended qualitative interviews within a constructivist framework, the study explored the prior knowledge visitors brought to their visit, the way they incorporated their experiences, and the impact this had. The second phase focused on CVC staff members and their perceptions of how visitors see the Capitol.

The results have shown two things: first, each visitor brings a unique perspective on what the Capitol means. This directly informs their motivations, expectations, and assumptions about their visit. Second, when taken in totality, visitors’ understandings of what the Capitol means is

complex. These studies have helped CVC staff to reflect on their own understandings of the Capitol, allowing them to better meet visitors where they are and tailor experiences to satisfy their needs.

3:00 PM – 3:30 PM

IMLS: Planning for a National Museum Survey

Helen J. Wechsler, Institute of Museum and Library Services

Hosted Presentation

Purpose and Importance: There is a longstanding need for foundational, statistically valid, high-level data on the U.S. museum community to inform policymakers, practitioners, and the public. The pandemic has further demonstrated the need for this data.

Abstract: Drawing on lessons learned from past efforts and the success of IMLS's long-lived Public Library Survey, the agency has begun a deliberate and consultative process to launch such a survey. This session will report on the collaborative planning and design work of IMLS staff, subject matter experts, and survey research consultants, including vision and theme drafting, population frame development, respondent research, and pilot survey development.

Thursday, July 14

11:30 AM – 12:30 PM Concurrent Sessions

Understanding Family Science Engagement in “Usual” Places with Unusual Methods

Evelyn Christian Ronning, Science Museum of Minnesota

Taylor Loiselle, Science Museum of Minnesota

Scott Van Cleve, Science Museum of Minnesota

Amy Grack Nelson, Science Museum of Minnesota

Hosted Presentation

Purpose and Importance: We know that family conversations about science continue after leaving museum spaces, but we are often limited to collecting this data with retroactive interviews and surveys (Borun et al., 1994). What if we were able to capture family conversations around science during natural moments, such as while driving in the car post-visit? Researchers at the Science Museum of Minnesota have undertaken a four-year NSF-funded study to investigate families’ joint media engagement and informal STEM learning while listening to the child-focused STEM podcast, Brains On!, in the setting where families tend to listen to this podcast together: their automobile. Through iterative collection and testing of equipment, we have learned much about how to set up video- and audio-recorded research in a vehicle-based setting. Although this study focused on family conversations while listening to a podcast, we believe the methodological techniques could be useful for a broad range of researchers and evaluators wanting to collect data in a non-traditional fashion.

Abstract: Collecting data in naturalistic settings poses unique opportunities as well as challenges. We have to take into consideration what kind of technology and procedures will best suit the types of data and analysis we want to capture. In this session, we will share the technical and procedural aspects of data collection in a unique space (an automobile), but a space that families feel comfortable in during the research collection. We will describe and share our planning tools, technical set-up, and instruments. After a brief description of our planning and tools, session participants will follow presenters through a data collection event from planning all the way to the follow-up, video-cued interviews conducted via Google Meet. We will outline roles for researchers, equipment specifications, as well as lessons learned –the tools that might be needed for participants to set up similar collections. Session participants will work in teams to practice using the equipment in a hands-on exercise. Throughout the session, we hope to have a discussion about any feedback, questions, or concerns that session participants may have about this type of methodology, as well as explore other opportunities to

be able to use this type of vehicle-based data collection to understand the informal learning. We hope that session participants will be able to leave with tools and support to leverage and adapt this non-traditional methodology across a broad range of research and/or evaluation settings.

References:

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Cybil, C. (2015). *Technology and the family car: Situating media use in family life*. (Unpublished doctoral dissertation), Brunel University London.

Cybil, C., Perry, M., Laurier, E., & Taylor, A. (2013). 'Eyes free' in-car assistance: Parent and child passenger collaboration during phone calls. Paper presented at the MobileHCI Conference, Munich, Germany.

Ellenbogen, K., Luke, J., & Dierking, L. D. (2004). Family learning research in museums: An emerging disciplinary matrix? *Science Education*, 88, S48-S58.

Haddington, P. (2012). Movement in action: Initiating social navigation in cars. *Semiotica*, 191(1/4), 137-167.

Additional Links:

Brains On! <https://www.brainson.org/>

Brains On! the Move project:

<https://www.informalscience.org/brains-move-stem-podcasts-facilitators-automobile-based-family-learning-experiences>

Thinking Inclusively: Building Capacity for Inclusive Autism Spectrum Experiences

Monae Verbeke, Institute for Learning Innovation

Nicole Claudio, Institute for Learning Innovation

Facilitated Discussion

Purpose and Importance: As we continue to expand our creation of equitable and inclusive spaces in our museums, we are faced with the challenges of effectively building organizational change. During this session, partners from the Building Capacity for Autism project will discuss how we have worked together to build inclusive experiences for teens on the autism spectrum. We will spend time particularly looking at how we can apply the project inclusion model within each of our own institutions.

Abstract: This session will provoke discussion about how science museums can truly offer inclusive learning experiences for neurotypical people, especially for teens on the autism spectrum who may engage with our museums differently than we anticipate. The session will bring together autism practitioners, informal learning researchers, and museum staff from the Building Capacity for Inclusive Informal STEM Learning Opportunities for People with Autism Spectrum Disorder project, to discuss the learning and activity that has happened to date – as well as to provide advice to other teams who may be grappling with similar concerns. We all agree that museums can be terrific places to learn: many experiences are hands-on – you do it rather than just listen or read. But we also know that museums do not work equally well for all people. To meet the needs of those on the autism spectrum, we realized we would need to form authentic relationships between museums, community experts, and informal learning researchers. Four museums, The Arizona Science Center, Pueblo Grande Museum Archeological Park, the i.d.e.a. Museum, and the Arizona Museum of Natural History have joined us in this pilot to form a Community of Practice that thinks deeply about what it means to be inclusive for neurodiverse people. To do this work we are starting with thinking deeply about serving teens on the autism spectrum. To do this work, we have formed a collaboration with the Southwestern Autism Research and Resource Center (SARRC) who are experts in helping educators and parents learn how to shape effective learning opportunities for individuals on the autism spectrum.

As part of the discussion, we will share the project's inclusion model, including the successes and challenges of utilizing this model to meet our goals, including (a) how PD can be leveraged to help institutions embed inclusionary practices, (b) initial evidenced-based approaches for inclusion of individuals on the Autism spectrum in mainstream informal environments, (c) the takeaways from museum collaboration when engaging in working like this, and (d) providing insights the current state of accessibility programs in ISL venues nationally. By the end of the session, we hope to share the tools we've found useful, build a clearer idea about what the truly

crucial methods and learnings were in doing this DEIA work, and how we might scale this effort up to reach museums across the country.

2:00 PM – 3:00 PM Concurrent Sessions

Training and Measuring Rural Library Staff Capacity in STEAM

Kathryn Boyd, CIRES Education and Outreach, University of Colorado Boulder

Claire Ratcliffe Adams, University of Colorado Boulder

Christine Okochi, University of Colorado Boulder

Megan Littrell, CIRES Education and Outreach, University of Colorado Boulder

Brooks Mitchell, University of Colorado Boulder

Hosted Presentation

Purpose and Importance: The We are Water project uses a collaborative process to design informal STEAM experiences for visitors of tribal and rural libraries and provides support for these experiences through professional development training for library staff and a community of practice. This session will describe the collaborative process of integrating training development and Community of Practice support structures with research instruments designed to measure: - changes in library staff self-efficacy to host the We are Water Exhibition, facilitate STEAM learning experiences, and utilize learning resources; - and changes to library staff thoughts and awareness of creating welcoming spaces for diverse communities, diverse perspectives, and ways of knowing.

Education researchers, evaluators, practitioners, and program developers who work in informal learning environments can benefit from our process to advance informal science learning scholarship through a culturally responsive approach when understanding the role of libraries and library staff as part of informal STEAM learning ecosystems. We hope that the lessons we have learned through our process and the instruments and methods we have designed will inform and inspire others who work with libraries in rural communities and who seek ways to address diversity and inclusion in informal learning environments.

Abstract: The We are Water project uses a collaborative process to design informal STEAM experiences for visitors of tribal and rural libraries, creating opportunities for individuals and families to engage in conversations about their personal and community connections to water.

The success of the We are Water project hinges on relationships with, and support systems for, library staff who host the exhibition at their library in the Four Corners Region of the United States. The presenters will highlight how a partnership between three core groups—host library staff; partners from the Space Science Institute who train library staff; and researchers and evaluators from CIRES Education & Outreach who provide infrastructure support and

educational research expertise—collaborated to develop professional training aligned with project research outcomes.

Presenters will describe how they pivoted from in-person to virtual training as a response to keep individuals safe in the midst of a COVID-19 surge. Presenters will describe the process of creating and reimagining the training modules and research instruments given a growing understanding of rural library settings, rural library staff experiences with STEAM, and rural library staff connections to Indigenous and Latinx communities. Presenters will describe quantitative methods developed and reflective practices used to understand the experiences of library staff. Presenters will also share how the COVID-19 pandemic impacted rural library staff, in particular, diminished resources for libraries with increased community responsibilities, and how that affected expectations and anticipated outcomes for library partners in the project. The project partners hope that sharing the lessons they have learned through their process, and the instruments and methods they have designed, will inform and inspire others who work with libraries in rural communities and who seek ways to address diversity and inclusion in informal learning environments.

References:

Mitchell, B., Laconte, K., & Ratcliffe, C. (2020). STEAM learning in public libraries: A guide on the side approach for inclusive learning. Association for Library Service to Children, 18(3), 7-10. <https://par.nsf.gov/servlets/purl/10273985>

Verbeke, M., Falk, J. H., Brown, K., & Meier, D. (2019). A study of rural librarians' self-efficacy in facilitating and developing adult science programs. *The Library Quarterly*, 89(2), 116-136. <https://www.journals.uchicago.edu/doi/pdf/10.1086/702195>

Additional Links:

<https://wearewater.colorado.edu>

<https://www.starnetlibraries.org/>

2:00 PM – 2:45 PM Concurrent Sessions

Visitor *Sense of Belonging* in Museums: Towards a Fieldwide Definition

Evelyn Christian Ronning, Science Museum of Minnesota

Lauren Applebaum, Museum of Science and Industry, Chicago

Sarah Lukowski, Science Museum of Minnesota

Facilitated Discussion

Purpose and Importance: The concept of *sense of belonging* is resonating as a potentially useful concept in the museum field, with many museums interested in adapting this concept to better understand things like the visitor experience and the impact of DEAI initiatives on potential and current visitors, to name two examples. Belonging as a concept is underdefined for visitor-focused contexts, likely requiring careful attention to cultural difference in its application. Emerging models for conceptualizing belonging in visitor-focused contexts provide some guidance for how museums can take up the concept of belonging to advance fieldwide goals around authentic inclusion, broadening participation in disciplinary fields with inadequate representation of diverse experiences/perspectives, and diversifying museum visitorship. This discussion focuses on current thinking on belonging, with participants imagining the utility of the concept for visitor-focused institutions.

Abstract:

Foundational Work

An array of disciplines have sought to conceptualize a sense of belonging in institutional contexts: higher education, formal (K-12) education, and psychology. Within the visitor studies and informal education fields, belonging had been taken up initially by history museums to analyze and carefully plan representations of individual/collective memories of particular geographic places and events. Visitor-facing institutions have done much work on inclusion in terms of identity, learning, and the social/physical context of their spaces; more recently, belonging as a concept has emerged as another way to understand how inclusion and welcoming impact the experiences they intend to provide.

Session Focus

We will frame the concept of belonging using two models developed by the Museum of Science and Industry, Chicago and the Science Museum of Minnesota, which are based on review of these literatures. These examples (with associated methods and measures available to participants) will provide the grounding for a facilitated discussion about approaches in conceptualizing and operationalizing belonging in a visitor-focused context. The session will support discussion by centering participants in their own thinking about the concept of belonging, through small group sharing, as well as through large group discussion of key questions related to unpacking this concept in a museum context. The session is designed to

support participants to employ the concept in their own work and to encourage communal intellectual engagement in an emerging area of interest for visitor studies. We hope, by discussing how evaluation can play a role in ensuring museum contexts are places where “all are welcome” *and* feel belonging, session participants will join in the fieldwide conceptualization of belonging underway.

References:

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- Fortune, D. (2020). Envisioning museums as welcoming spaces for belonging. In T. D. Glover & E. K. Sharpe (Eds.), *Leisure communities: Rethinking mutuality, Collective identity and belonging in the new century* (pp. 181–191). Routledge.
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Additional Links:

Museums and Inclusion: Understanding Visitors' Sense of Belonging in Science and Natural History Museums Project Page

<https://www.informalscience.org/museums-and-inclusion-understanding-visitors-sense-belonging-science-and-natural-history-museums>

A Survey to Measure a Sense of Belonging at Museums and Cultural Centers provides links to the survey and toolkit to analyze survey data

<https://www.informalscience.org/news-views/survey-measure-sense-belonging-museums-and-cultural-centers>

2:00 PM – 2:30 PM

“Going Down the Wormhole!”: Co-creating Intergenerational Meaning in Immersive Exhibits

Katie "KT" Todd, Children’s Museum of Pittsburgh

Bridget Kiger Lee, University of Pittsburgh

Joshua Lee, Carnegie Mellon

Paper Presentation

Purpose and Importance: The field of Visitor Studies is constantly drawing on methods from varied sources of knowledge and learning; this session provides a case example of how a project navigates the expertise of visitors, museum professionals, architects, and developmental psychologists—inviting reflection on how to find richness and coherence amidst the tensions of diverse approaches to knowledge generation. The session focuses on the process of collaboratively developing narratives and counter-narratives about visitor experiences, attending to power dynamics of age, ability, researcher-visitor, and other factors that influence agency in an exhibit and research process. In addition to interacting with multi-method research techniques and examples, the session will discuss the affordances and challenges of the triangulation and analysis process of integrating multiple sources of data and leading a co-creative research process in museums. There will be an emphasis on how others could adapt the processes to their own visitor studies contexts.

Abstract: The pandemic abruptly forced the Visitor Studies field into new directions, moving away from physical, interpersonal interactions towards remote, individual experiences. As museums reopen their doors, this research provides further evidence of the unique advantages, challenges, and DEAI implications of face-to-face interaction through immersive experiences offered by exhibits like Gymlacium, a three-story art piece.

Gymlacium was created by artist Manca Ahlin and consists of an intricate environment made of rope lace, including a bridge, hammocks, ladders, tubes, and hills that visitors (ages 10 and up) can walk, climb, or roll through. Researchers from multiple institutions are working with people with diverse ages and abilities to engage in multi-modal meaning making and story-telling. The work draws on literature from architecture and education—including reception theory, risk perception theory, and sociocultural theory—to illuminate visitors’ agentic moves through which they act and interact in the space (Brussoni et al., 2012; Holub, 2013; Lave & Wenger, 1991; Obee et al., 2020; Sparf & Öhman, 2014).

Data collection involves visitors engaging with Gymlacium in social groups while wearing point-of-view video and audio recording devices and three-dimensional GPS trackers. After participants leave Gymlacium they develop narratives about their experiences, attending to power dynamics and articulating different ways of interpreting their data through different

lenses as individuals, group members, and as people with agency (Miller et al., 2020). The presentation will include video recordings, three-dimensional spatial maps, and rich examples of the stories visitors create about their experiences from multiple perspectives. This approach challenges the traditional research concept of objectivity and research expertise. Instead, in an effort to center equity, this work uplifts and co-mingles multiple truths that are generated by the participants themselves as artists and co-researchers in our process.

References:

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Holub, R. C. (2013). *Reception theory*. Routledge.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge university press.

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Additional Links:

<https://museumlabor.org/explore/gymlacium/>

2:30 PM – 3:00 PM

Ways Visitor Studies Helped Museums During a Pandemic

Ross J. Loomis

Paper Presentation

Purpose and Importance: Visitor studies during the Pandemic will be described and longer lasting outcomes suggested. Included are tracking online visitation with Google Analytics, using online surveys, interviews, focus groups and smaller samples sometimes done outside of the building. Attendees will be asked to share ways they did studies during the virus onset. Audience participation will be encouraged using a worksheet with prompts for sharing how their work helped their institution cope with the pandemic caused changes in audiences.

Abstract: Museums and other visitor-based places were challenged during COVID 19 to reach audiences when forced to close and then experienced times of changing restrictions on attendance. Also, health standards such as wearing masks, keeping social distance, and no touching participative exhibits were required. Decreased attendance continues to happen to some museums (AAM, 2022). This presentation will report on three ways visitor studies helped museums meet these Pandemic based audience challenges. Importantly, there have been some positive developments both for attracting visitors and using visitor studies to show that museums still have audiences. In addition, changes in how studies are done may have some longer-term benefits. One way to reach audiences when closed was the growing importance of online or digital (eLearning) visitation (Loomis, R. J., 2020a). All already in place, online programs and exhibits let museums reach out to their publics during restricted in-person attendance. One of the best indicators of digital resources to museums is MuseWeb (<https://www.museweb.net/>) with conferences on applications of digital and web learning. Dominguez-Flores, et.al. (2021) conducted a VSA discussion session reviewing how museums have coped with online programs and their impacts on visitors. The first way visitor studies helped by using evaluation methods like Google Analytics to track visitor use of online exhibits/programs and Dashboard to organize and report outcomes (Loomis, R. J., 2020b). A second way of help was looking at traditional methods anew with development of online visitor surveys, interviews, and focus groups, and smaller sized samples for front-end and formative work (Kroning, et.al.,2021; Hackshaw, 2008; Loomis,2021b; RK&A, Inc.,2020). Finally, a third source of help was looking beyond the museum building to exhibits in community settings (Chien, et.al., 2020) and completing formative studies outside the building.

References:

American Alliance of Museums (2022). National Snapshot of COVID-19 Impact on United States Museums

<https://www.aam-us.org/2022/02/08/national-snapshot-of-covid-19-impact-on-united-states-museums-fielded-december-2021-january-2022/>

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Loomis, R. J. (2020b). Evaluation tools for changing times: Tracking online visitor behavior. InterpNEWS, 9(6), pp. 17-20.

Loomis, R. J. (2021a). Evaluation tools for changing times: Online surveys, interviews, and focus groups. InterpNEWS, 10, (2), pp. 92-96.

Loomis, R.J. (2021b). Evaluation tools for changing times: Making use of limited samples with in-person visitor studies during a pandemic. InterpNEWS, 10, (6), pp. 78-82.

RK&A, Inc. (2020). Remote audience research for museums. [White paper].

<https://rka-learnwithus.com/wp-content/uploads/2020/05/Remote-Audience-Research-for-Museums.pdf>