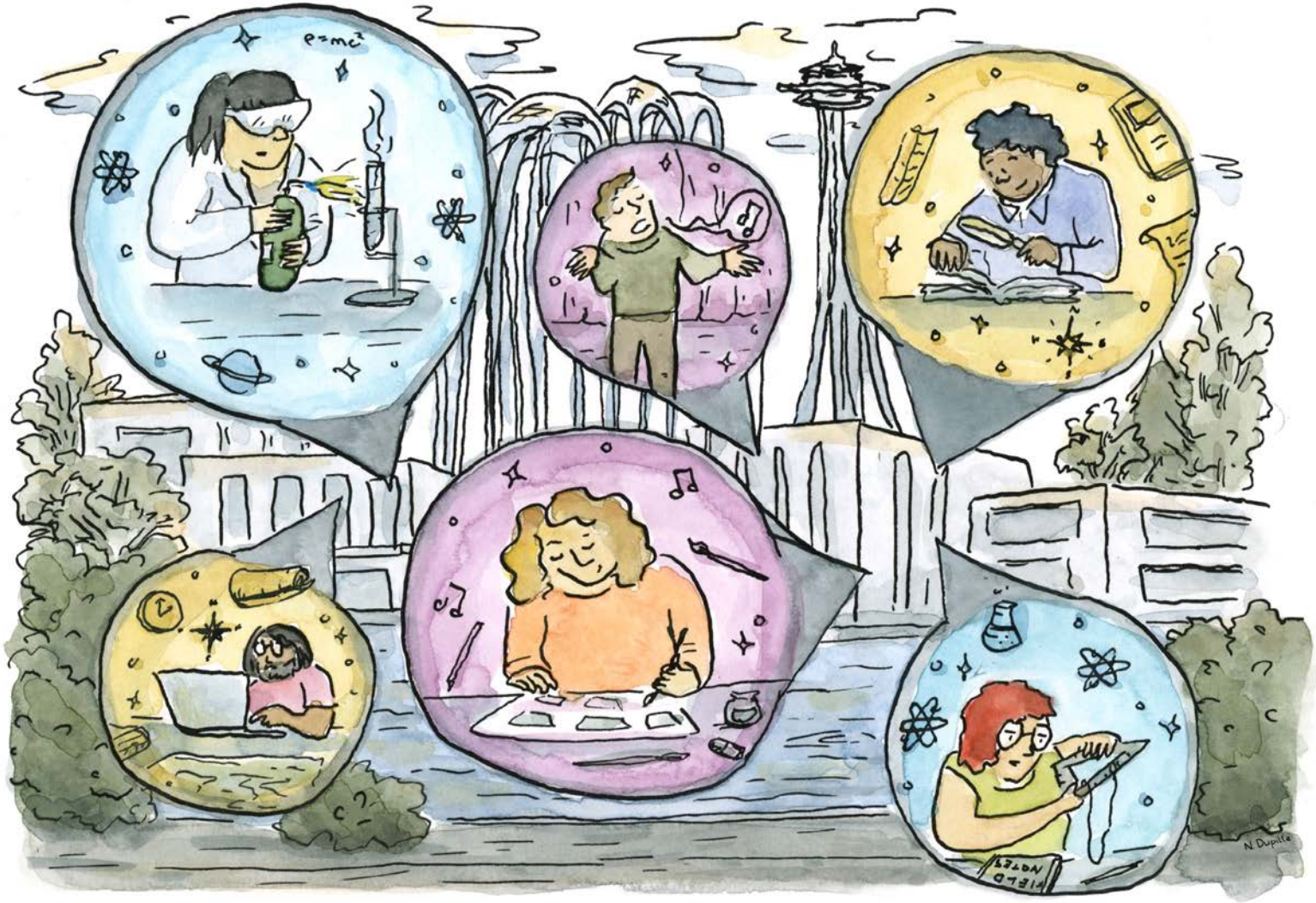
Cross-Disciplinary Content Experts

Partnerships for Creative Museum Programming



PACIFIC SCIENCE CENTER

CONNER PRAIRIE

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

INSTITUTE of Museum and Library SERVICES

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About this Document

This document is designed to be a useable resource for museum professionals working in art-, science-, or history-based institutions. It is part project report and part practical guide, describing an exploratory project carried out by three Partner Museums while communicating more general recommendations to others in the field through (what we hope are) easy-to-digest charts, lists, and visuals.

The focus of the project was to test the limits of the Portal to the Public approach, which, since 2007, has helped informal science organizations (such as science museums) bring scientists and public audiences together for conversations about research and innovation. The Portal to the Public framework has been adopted by more than 60 institutions across North America. If your organization is interested in fully taking on some of the work described in this document, we highly recommend acquiring the complete Portal to the Public Implementation Manual and Catalog of Professional Development Elements, available at popnet.instituteforlearninginnovation.org. Portal to the Public is described in more detail early in this document.

Acknowledgments

Special thanks to artist Natalie Dupille, who created the illustrations used on the cover and throughout the guide. Natalie was one of several artists who participated in this project through Pacific Science Center, going on to become one of the Science Center's first Artists in Residence. We appreciate her contributions to this document and the overall project enormously. Learn more about Natalie's work at nataliedupille.com.

Evaluation of this project was led by J. Sickler Evaluation. Special thanks to Jessica for her endless wisdom and supportive guidance. As with many Portal to the Public projects before this, her contributions cannot be overstated.

Finally, this project was made possible, in part, by the Institute of Museum and Library Services (MG-10-15-0083-15). Thank you to everyone at the Institute for their support of this work.

Project Summary

In 2015, Pacific Science Center (Seattle, Washington), University of Arizona Museum of Art (Tucson, Arizona), and Conner Prairie (Fishers, India) (collectively, the "Partner Museums") began a multi-year partnership to experiment with a model for creating high-quality, inclusive, cross-disciplinary experiences for visitors to their museums. Specifically, the project sought to design and implement:

- experiences that bring professionals and researchers from STEM (science, technology, engineering, and math) fields together with visitors to art and history museum spaces, and
- experiences that bring artists and historians together with visitors to science-based museums.

In each of these experiences, the cross-disciplinary content experts (the artists, historians, and STEM professionals) would facilitate conversations and activities with guests that connected to the real work the experts did every day related to their own professional field. (Throughout this guide we will use the term "cross-disciplinary content expert" to describe a professional who partners with a museum whose collections, exhibits, and/or programs focus on a different subject matter area than the expert's field of expertise.)

Over more than three years, we—the Partner Museums—each worked with dozens of cross-disciplinary content experts from our own communities. Our museums tested and refined different approaches to partnering with the experts and connecting them with public audiences in museum spaces. We tried out working with different types of experts and learned about their motivations and their interests. We experimented with what was needed to prepare cross-disciplinary content experts to lead educational experiences at their museums, and what was needed to maintain a productive partnership. Finally, we tested different public program formats, observing what appealed to visitors and learning what may (and may not) be sustainable for our institutions.

Although we learned much about making these cross-disciplinary experiences successful, at the end of the project we were still left with lingering questions and new possibilities to explore. We hope that those reading this guide will benefit from our experimentation but continue to grow and improve this work in the future.

About Portal to the Public

The development of these experiences was based on the Portal to the Public framework, a flexible model created at Pacific Science Center in 2007 and used at science museums around the country to connect visitors with real scientists for engaging conversations and hands-on activities. Extensive evaluation and research have demonstrated the positive impacts that Portal to the Public has on participating organizations and STEM professionals.

Created by and originally tested at Pacific Science Center, Explora, and The North Museum, Portal to the Public is now led by the Institute for Learning Innovation. The Portal to the Public framework has been implemented at 60 organizations that form the Portal to the Public Network (PoPNet), a community of practitioners dedicated to sharing ideas and strategies for scientist-and-public engagement. Through funding from the Institute of Museum and Library Services and the National Science Foundation, PoPNet has expanded to a range of informal science settings including science centers, museums, universities, zoos, aquariums, botanical gardens, and research organizations.


Project Overview!
THREE different institutions partnered to design & facilitate innovative, CROSS-DISCIPLINARY experiences for visitors to their museums
Pacific Science Center (PacSci)
Conner Prairie
University of Arizona Museum of Art (UAMA)
SPECIFICALLY, they developed experiences that bring together visitors and STEM professionals
hi!
in art & history-based museums...
AS WELL AS experiences that bring artists and historians together with visitors...
hi!
hi!
in science-based museums.
THIS PROGRAM was modeled after the national PORTAL to the PUBLIC project,
which was designed to connect science museums with current science in their communities.
We wanted to know...
WHAT WOULD IT LOOK LIKE TO APPLY THIS MODEL TO HISTORY & ART INSTITUTIONS?
COULD WE INTEGRATE CROSS-DISCIPLINARY EXPERTS & EXPERIENCES ACROSS THE BOARD?
THIS GUIDE reflects our experiences designing & implementing these cross-disciplinary programs.
WE'VE INCLUDED:
case studies!
recommendations!
lessons learned!
& more!

The Portal to the Public project developed a Guiding Framework ("framework") that organizations use to build programs that bring scientists and public audiences together for meaningful conversations and activities about science. The framework contains the building blocks needed to create a feasible, realistic institutional plan for scientist engagement. It is intentionally flexible, giving each organization the ability to design and scale the specific approaches and strategies best suited to that organization's vision, community, and overall goals.

This combination of specificity and flexibility makes the Portal to the Public Guiding Framework a unique tool that organizations of different types and sizes can use as they seek to create meaningful, sustainable projects. The framework is structured around three key components:

1. **Relationships** between informal science education staff and scientists from entities such as universities, businesses, and government agencies
2. **Professional development** that prepares scientists for conversations with public audiences
3. Face-to-face **public programs** in which scientists and public audiences interact

When employing the Guiding Framework, organizations first consider the desired impacts they want to have on scientists, on public audiences, and on the organization itself. With these desired impacts in mind, the organization then undergoes a conceptual planning process to create an actionable plan centered on the Guiding Framework's three key components. Each organization within PoPNet has used the Guiding Framework to develop and plan for their engagement programs that connect scientists with public audiences.

The project documented here was designed to test the limits of the Portal to the Public Guiding Framework. Would it work in museums not focused on science-related subject matter? Could it be extended to other kinds of working professionals – not just in STEM, but in the arts and humanities? What are the approach's limits?

About our institutions

Our three Partner Museums represented institutions of different sizes, geographical locations, and subject matter foci. We acknowledge that the unique characteristics of each of our institutions impacted our ability to deliver on project goals, just as they will impact any museum's ability to implement a new program.

Pacific Science Center

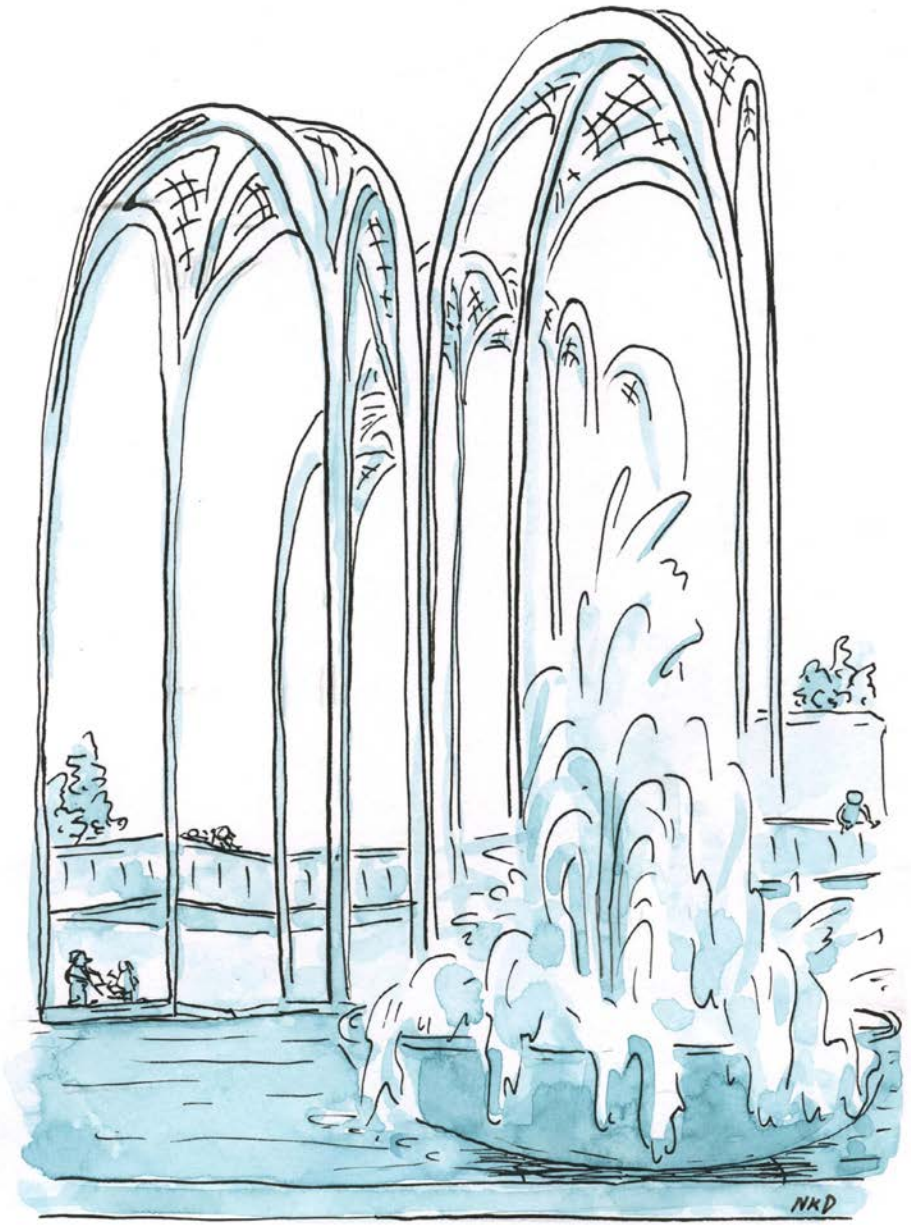
Location
Seattle, Washington

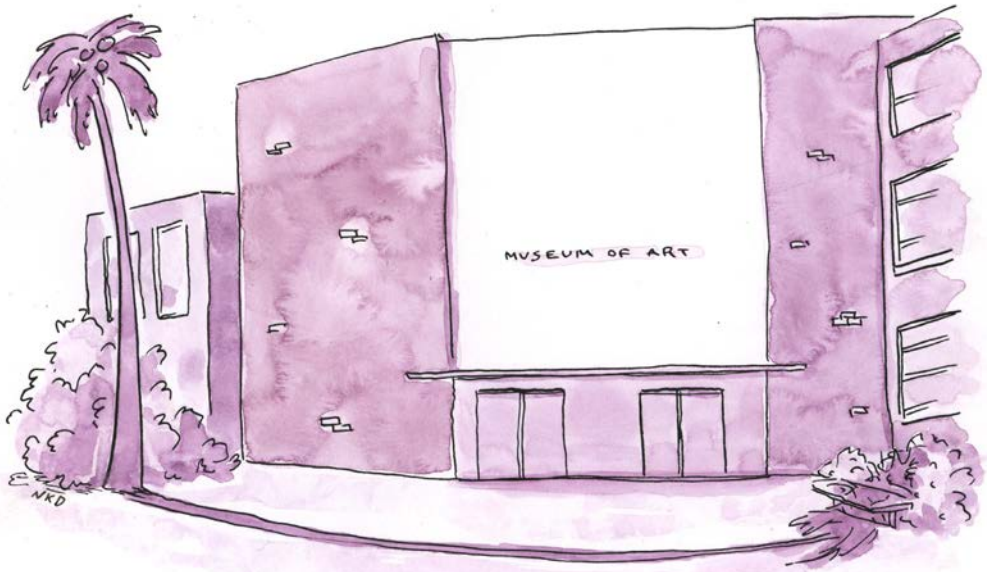
Institution Type
Private, non-profit science center

Size
250+ staff members

Subject Matter Focus
Science, technology, and engineering

Mission
Pacific Science Center ignites curiosity in every child and fuel a passion for discovery, experimentation, and critical thinking in all of us.





University of Arizona Museum of Art

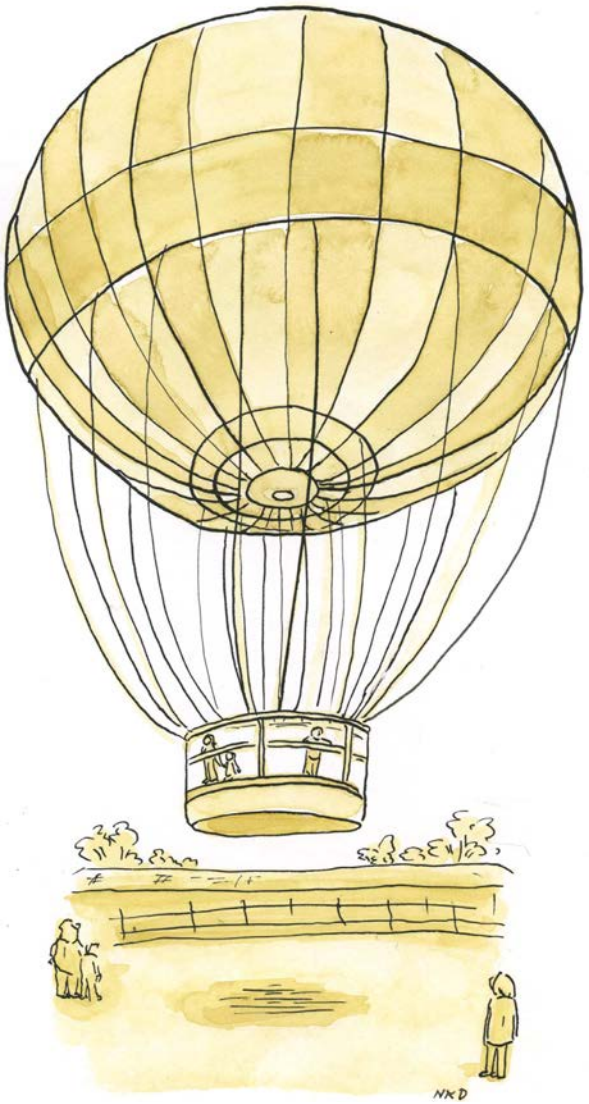
Location
Tucson, Arizona

Institution Type
University art museum

Size
11 full-time staff members

Subject Matter Focus
Art with an emphasis on European and American fine art from the Renaissance to the present

Mission
The University of Arizona Museum of Art engages diverse audiences, inspires critical dialogue, and champions art as essential to our lives.



Conner Prairie

Location
Fishers, Indiana

Institution Type
Private, non-profit, living history museum

Size
360 staff members

Subject Matter Focus
History, with a focus on Indiana history

Mission
Conner Prairie inspires curiosity and fosters learning about Indiana's past by providing engaging, individualized and unique experiences.

Determining Readiness and Identifying Impacts

The Portal to the Public framework, as with most philosophies of program design, recommends first cataloguing your organization's assets and determining your desired impacts before undertaking a new project. For this work, considering alignment and taking stock of our assets proved especially critical. This process helped shape project direction and create essential buy-in in from others in the institution, which was even more critical because the work was outside of each of our typical content focus areas. In many ways, however, our three institutions represented "best-case scenarios" to test out this exploratory project: prior experiences, institutional priorities, and/or specific organizational characteristics put each of us in a strong starting position. Below, each of our institutions describes the results of this initial self-inventory process.

Pacific Science Center

Pacific Science Center has used the Portal to the Public approach for nearly a decade to enrich the organization's hands-on, interactive exhibits and programs. Portal to the Public connects visitors with scientists and current science content, and helps builds stronger ties with STEM organizations in the community.

Assessing our readiness: What assets, resources, and experiences help set us up for success?

- **Home base for Portal to the Public:** Pacific Science Center was one of four original partner institutions that developed the Portal to the Public framework, and it was the lead organization of the Portal to the Public Network for nearly a decade. The significant institutional knowledge and experience make Pacific Science Center a natural fit to experiment with the traditional Portal to the Public approach.
- **Science Communication Fellowship:** The Science Communication Fellowship is a structured program that provides training and ongoing opportunities for local scientists and other science-based professionals to engage with the public at Pacific Science Center about their work. We have worked with hundreds of local scientists over the years, offering a successful model to build from for working with artists and historians, as well as a large base of potential volunteers to explore cross-disciplinary collaborations.
- **Large, urban science center:** Being at the center of a rapidly-growing city with numerous organizations that support arts and humanities nearby offers us plenty of potential partners.

Desired impacts: What do we want to accomplish?

We aim to use a similar approach with artists and historians to create new access points to science, engage visitors who may report having less affinity for science content, and help visitors use multiple disciplines to better understand complex events and concepts.

University of Arizona Museum of Art (UAMA)

University art museums are integral to student learning and provide opportunities for student and faculty research. In addition, they serve as learning laboratories that foster interdisciplinary collaborations across campus. They are an important public space that serves as a conduit between campus life and the surrounding local community.

Assessing our readiness: What assets, resources, and experiences help set us up for success?

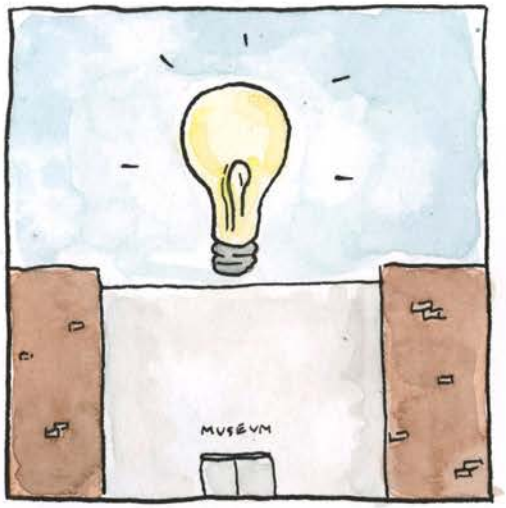
- **University connections:** Being part of a Research 1 university landscape means ready-made opportunities to connect with various departments on campus.
- **History of interdisciplinary programs and exhibitions**: The University of Arizona Museum of Art (UAMA) already has a long history of collaborative work among different disciplines, science-themed exhibitions, and public programs. We are always exploring new ways to connect with different audiences.

- **Campus-wide push for science communication**: Many departments on the University of Arizona campus now offer classes and workshops for science communication training. Students also now have the option to earn a certificate in science communication.

Desired impacts: What do we want to accomplish?

We aim to use Portal to the Public as a tool to demonstrate myriad connections between art and science, underscore the museum as relevant to campus and civic communities, and encourage new audiences to visit the museum.

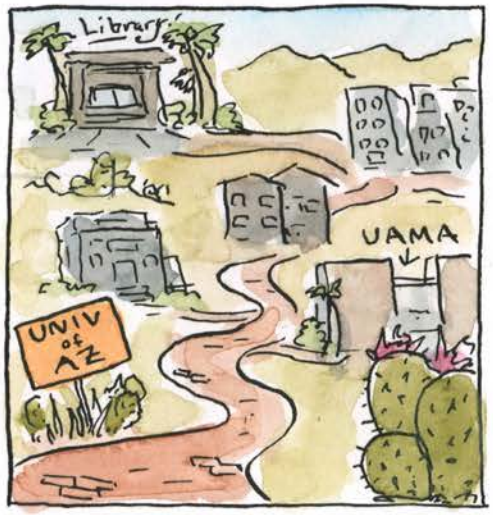
University of Arizona Museum of Art: Key Lesson



We've got big ideas, but we're a small institution.

When we began working with historians and scientists, we quickly realized we needed to take stock of our own resources.

It became clear that we could not provide either the technical or logistical support to help them buld hands-on activities.



Fortunately, navigating this led us to developing even more partnerships: we looked for other units on campus which would be easily accessible to both us and our cross-disciplinary partners.

We partnered wth the Main Library's Maker Studio that could provide tools, space, and staffing support.

Through these partnerships, we were able to provide a support system for our participants as they worked on their hands-on-activities.

Conner Prairie

Portal to the Public can help guests to Conner Prairie achieve the unique experiences championed in our mission.

Assessing our readiness: What assets, resources, and experiences help set us up for success?

- **Create-Connect:** Conner Prairie already has a major initiative focused on cross-disciplinary experiences for guests. Create-Connect is a national, exhibit-based initiative that mixes the best of science-center interactives with the compelling stories and programs of a history museum. It is designed to address a growing need for STEM-learning opportunities in central Indiana.
- **Aligned Interpretation Philosophy:** Conner Prairie's interpretation philosophy "Opening Doors" has a seamless connection to Portal to the Public. When new interpreters are hired, they go through a three-day training on Opening Doors. Opening Doors' main framework is built on starting engaging conversations with guests by following their interests through open-ended questions and hands-on activities. Additionally, we already have expertise in leading professional development.

- **Size and resources:** We have a wide reach, with ~300,000 visitors every year. We have over 1,000 acres of land on our property that can be utilized for a variety of programs.

Desired impacts: What do we want to accomplish?

We can bring in scientific and artistic content experts into our museum to provide important knowledge and insight that is beyond our daily interpretation.

We will be able to motivate more in-depth conversation with our staff and guests to institute a heart for the past, a head for the present, and an eye to the future in regards to history and how we are connected to the world around us. We see working with scientific content experts as a way to stay relevant to general visitors and especially visiting school groups, as increasingly schools push for STEM experiences for their students.

Relationships

At the outset of the project, Pacific Science Center planned to work with artists and historians, and the University of Arizona Museum of Art and Conner Prairie each set out to work with scientists. By the end of the three-year experiment, each of our institutions decided to expand and work with different or additional cross-disciplinary content expert-types than those we had originally planned for. The University of Arizona Museum of Art, for example, reached out to graduate students and faculty in the arts and humanities, not just the sciences. Conner Prairie, who encountered challenges in working with scientists from local companies, pivoted to partner with artists from a local arts collective. Pacific Science Center found that many artists and historians were interested in cross-disciplinary collaborations with scientists, and helped artists connect with their existing pool of Science Communication Fellows.

Effective, mutually-beneficial relationships have always been the foundation of a strong Portal to the Public project. Below, each of our Partner Museums details the specific relationships with cross-disciplinary content experts that we formed, and outlines some of the lessons we learned about making collaborations with cross-disciplinary content experts successful.

Who did you work with?

Pacific Science Center: Over the course of the project we worked with eight artists and three historians. Early in the project we learned that many artists were interested in collaborative projects with scientists, so we also brought in six scientist participants from our existing pool of Science Communication Fellows. These scientists had already gone through our communication/public engagement training, so weren't true program participants, but were excited about a collaboration with a professional from another discipline.

Conner Prairie: We started the project by trying to work with scientists at a local company, but the partnership didn't develop as hoped. The company continued to request a smaller and smaller amount of time for the workshop for their employees, and ultimately we weren't able to get the workshop arranged.

Eventually, we reached out to a local artist-serving group and ended up working with several artists who were interested in participating in our large-scale event, Curiosity Fair.

UAMA: We worked with graduate students from our university in the sciences and humanities. We also worked with a few faculty members, but the majority of program participants were PhD students.

How did you frame the experience?

Pacific Science Center: After a lackluster first attempt in which we tried to create a cohort of artists, scientists, and historians together, which we named "PacSci Connects", we called the experience the "Communicating Art and Science Workshop." When we learned more about the best way to engage artists long-term, the experience evolved into the Artist in Residence program.

Pacific Science Center: Key Lesson

A few years ago, one brilliant PacSci staff member had the thought: what would happen if we expanded our scientist program to create a cross-disciplinary program for scientists, artists, & historians?

We laid out a plan and recruitment materials for program participants went out into the world! We waited for the applications to pour in...

...and they did. From scientists.

We realized we'd based our idea on the relationships we already had with scientists - but we didn't have that foundation with artists or historians.

We hadn't put in the time and energy to go out and talk to real people. They didn't know why they should participate, and we didn't know what kind of experiences they were looking for.

We needed to take a step back and focus on community partnership and relationship building before jumping into a training and public program. And we did!

UAMA: We called the program the "Science and Humanities Communication Fellowship." We made sure to list all of the requirements but also clarify that the experiences were free to participants.

Conner Prairie: We marketed the training workshop as "valuable and relevant" to their partnering work with Conner Prairie.

What methods did you use to build connections with experts?

Conner Prairie: We worked with an artists' group of which the director was a former, long-time Conner Prairie staff member. The existing relationship was valuable and the group already understood a lot about how Conner Prairie worked.

UAMA: We took advantage of a newly created group on campus focused on science communication, and mailed out directly to that group. Our second round received a lot of interest thanks to word-of-mouth from previous participants and from professors we had talked to about the program.

Pacific Science Center: Starting very small with people who seemed to be interested in the project worked best, as well as targeting emerging/early career professionals. We didn't see much interest from reaching out through arts departments at the local university, but had great success partnering with a local artist-serving organization (which turned into a fruitful, long-term partnership). We also reached out through staff and volunteers to see who they knew.

What were the biggest challenges?

Pacific Science Center: We faced two major challenges. The first was that we based our initial attempts at working with artists and historians on our pre-existing training program for scientists. This wasn't successful for us, and we learned that we really needed to spend more time on the relationship component with artists and historians and not just jump into what worked for scientists. The second big challenge was working with historians. Although we did partner with three fantastic historians who were enthusiastic about the project and helped put on great public programs, we couldn't garner enough interest to run the program as originally planned. A training targeted specifically to historians only received two applications. We attempted tabling at history-based events and participating in a local history conference to find potential candidates but couldn't really gain traction.

UAMA: We had trouble recruiting for our first round of the Fellowship, which we thought could have been because of the season or the timing of the requirements. When working within an academic institution it's extremely important to take the academic calendar into account.

Conner Prairie: Our biggest challenge was maintaining momentum and productive partnerships among staff turnover. For example, our main contact at the arts organization left, delaying our plan. We also faced internal staff turnover that impacted the project.

Did you provide stipends or honoraria to participating cross-disciplinary content experts?

Pacific Science Center: Yes, and we were fortunate to have space within our grant funding to do so. We learned early on that some kind of remuneration was particularly important to artists. We heard from artists that opportunities are often brought to them "for the exposure," and they understandably often don't feel like that exposure has a high return on their investment.

We ended up paying the first three artists and three historians we worked with an honorarium of $500 each, and asked them to each serve as both program participants and advisors, helping us think through what the work could look like with their peers. Each contributed many hours to the project by meeting with staff to talk about their field, testing the professional development activities, and participating in one or more public programs. Additionally, we received a small grant from the city's Office of Arts and Culture to pay stipends to subsequent artist participants.

We also found that in general, when you were seeking out people with a specific area of expertise (e.g., expertise that ties to a specific exhibit), they were more likely to expect compensation for their contributions, versus taking a more "open call" approach to recruitment.

UAMA: No, but we did provide refreshments during workshops and supplies for hands-on public program activities they developed.

Conner Prairie: No.

What else did you learn?

UAMA: We learned that word choices are important in recruitment materials. To recruit experts from the arts, we needed to call out the arts specifically: arts individuals didn't identify with the term "humanities."

We also learned that for our campus, a one-day professional development workshop was the most appealing: it was a more realistic schedule for potential participants than a multi-day training.

Pacific Science Center: We learned that especially when attempting to partner with new disciplines, we needed to be prepared to make some mistakes on how their department/organization/company works, who is the appropriate contact person, etc. We learned that if you take the time to build relationships with participants and ensure that they have a good experience throughout the program, they will most likely recommend the program to other colleagues and/or they will become advocates for the program. We recruited three different cohorts of artists and by building strong relationships with early participants, we have been able to adapt our partnering artist program to better serve the needs of local artists.

All Partner Museums agreed that is was important to own our own expertise: that we needed to be clear about the skills and knowledge we brought for potential partners and what our staff and organizations could offer them.

Lessons Learned: Artists

Who did we work with?

- Mostly visual artists; a poet (Pacific Science Center)
- Artisans & craftspeople (Conner Prairie)

What were their motivations for participating?

- Cross-disciplinary focus was compelling
- Reach new audiences
- Build skills
- Reputation of the museum

What were their barriers for participating?

- May not see what they have to contribute
- May have little to no flexibility in working hours
- Lack of funding or resources for their work

What else did we learn?

- Teaching artists may be more likely to participate in public engagement and may be a better fit for interactive programs
- Consider the work environment you're providing: a poet at Pacific Science Center found the environment distracting and difficult to focus on her work

"I think [cross-disciplinary programming] helps get people to think outside of the box and to move outside of their siloed information areas. I hope people realize how connected all of these disciplines really are and how interdependent they are even though it might not seem so."

"[The main benefit of participating was] learning some tools for initiating and sustaining conversations with non-artists (about art/my artwork process) to make art-related activities more accessible and interesting to them."

Lessons Learned: Historians

Who did we work with?

- Academic historians – graduate students and faculty (Pacific Science Center, UAMA)
- Research historian at a private consulting firm (Pacific Science Center)

What were their motivations for participating?

- Share their expertise
- Cross-disciplinary focus was compelling
- Build marketable job skills
- Show the relevance of history
- Get outside of academia for a while

What were their barriers for participating?

- May not see what they have to contribute
- Historians may already think of themselves as very articulate/good communicators
- Trade-off with other professional priorities

What else did we learn?

- Historians may be more familiar with, and therefore more interested in, exhibit development rather than public programming
- Public historians or recent college graduates might be more inclined to work with museums
- As a field, history may be evolving to become more collaborative and interdisciplinary

"I've always been interested in ways to make history more publicly accessible and this seemed like a good opportunity to explore ways to do that."

"The main benefit was getting to speak to the public in a new type of venue, and getting to share with them an insight I think the humanities can bring to somewhere like a science center."

Lessons Learned: Scientists

Who did we work with?

- Scientists from local industry (Conner Prairie)
- Predominantly campus graduate students and a few faculty members (UAMA)
- Existing scientist volunteers, as partners for artists (Pacific Science Center)

What were their motivations for participating?

- Build communication skills
- Share expertise: increase public knowledge and combat scientific misinformation
- Altruism: give back to community

What were their barriers for participating?

- Industry scientists have more work-related restrictions than academic scientists and may be harder to partner with
- Trade-off with other professional priorities

What else did we learn?

- In academia, grad students and new professors may be more likely to participate than more seasoned faculty
- Scientists working in industry may be much harder to partner with because of company limitations

"It sounded like this would be a great opportunity to figure out better ways to explain my very complex research to the general public and children. I recognized that I need help breaking things down."

"I think realizing that there are many ways I can make my research accessible to multiple age groups through hands-on activities, not just posters or lectures, was the main benefit. That it could be fun and engaging as well as educational."

Professional Development

Each of our Partner Museums used Portal to the Public's professional development curriculum as a starting point for our own efforts preparing cross-disciplinary content experts for their public program experiences.

Portal to the Public's professional development curriculum is designed to serve three functions: 1) improve the quality of the program experience for public audiences; 2) increase experts' confidence, helping them to feel more prepared, and 3) encourage expert participation and buy-in in the overall experience, as some individuals seek out training experiences to build their professional skillset.

Portal to the Public offers more than 25 professional development activities (called professional development or "PD" elements), which can be found in the Catalog of Professional Development Elements of the Portal to the Public Implementation Manual. The Implementation Manual can be purchased on the Portal to the Public Network's website here[1].

The Catalog of Professional Development Elements includes step-by-step instructions for each of the PD elements but encourages adapting them to better suit a particular institution's context, needs, or limitations.

1 http://popnet.instituteforlearninginnovation.org/resources

In this project, we experimented with modifications to the elements that would help them better apply to artists or historians or align within a non-science-museum context. We found that some activities worked well for all expert-types as written, with little or no modifications needed, while others required some adaptation.

We also added in new activities that aren't a part of the Portal to the Public suite but were well-suited to our institutional assets. Conner Prairie used activities from "Opening Doors," its guest engagement training program. UAMA included activities out on its gallery floor, incorporating artworks from their collection as key training materials. For example, in an activity called "I see, I think, I wonder," each expert chose a work in the gallery and completed those three prompts in response to the artwork. The activity was designed to demonstrate the value of making one's own discoveries and underscore the concept that there is no end point to an interaction: there is always more to question and discover.

Table 1 outlines the five Portal to the Public PD elements most used by the Partner Museums to prepare artists, historians, and scientists for public engagement as well as modifications made, if applicable.

Name of Professional Development Element	Objective	Summary of Activity	Observations and Modifications
Building a Common Vision	Participants experience what it is like to be a learner about an unfamiliar topic and reflect on concepts of prior knowledge and preconceptions. They identify appropriate strategies for conveying complex topics to others.	Participants take turns describing a simple line drawing to others in the group with the goal of having the others accurately reproduce it. The facilitator leads a discussion around successful and less successful strategies for "teaching" the drawing to others.	Pacific Science Center learned that some artists found this exercise (specifically the instructions to try to replicate the drawing as closely as possible) confusing. One artist described a drawing using abstract, flowery language instead of concrete language. Pacific Science Center learned that framing this activity clearly (emphasizing that the point was about being clear in your teaching techniques, NOT about teaching others to draw) was essential for artists.
Concept Mapping	Participants identify and develop the main concepts they would like to share with public audiences.	Participants use a visual brainstorming tool with various prompts to reflect on and plan approaches to a conversation with public audiences about their area of expertise.	Conner Prairie found that artists had a hard time with this exercise, but that it was worth the struggle.
Pleasure of Finding Things Out	Participants are reminded of the circumstances that drive exploration and of the joy of discovery.	Participants explore a "mystery box," trying to determine its inner contents.	All Partner Museums found that this activity worked well and that its takeaway message resonated with a variety of expert-types.
Questioning Strategies	Participants learn about the power of questions to facilitate inquiry-rich learning experiences.	Participants receive a toolkit of questions to use in public engagement, learning about the importance of question selection and sequence. They practice using the questions with a partner by facilitating a discussion about a "mystery object" (a small toy).	Instead of a small toy, UAMA demonstrated the main idea of this activity by using gallery art as the "mystery object," showing how questions (vs. a pre-written label) could be used to drive curiosity and inquiry. Pacific Science Center asked artists to bring a piece of their own artwork (an actual piece, print, or sample) to use for the practice component of this activity.
What's in a Word?	Participants learn to recognize jargon and other confusing language that may arise while talking about their area of expertise and identify alternatives as needed.	Participants generate jargon from their own fields and learn about different categories of jargon. They practice speaking with a partner, generating a list of potentially troublesome language and identifying alternatives as needed.	UAMA used the same jargon categories as outlined in the original activity, but included examples that were arts-based (e.g., "masterpiece," "positive and negative space.")

Table 1: A selection of Portal to the Public professional development activities used to train cross-disciplinary content experts in communication and public engagement in museum spaces

Conner Prairie: Key Lesson

Similar to the guidance provided by the original Portal to the Public project, we tested a number of approaches to providing experts with professional development, including short, one-time workshops of three hours or less, recurring workshops of three to four sessions, and one-on-one meetings. We found that one-on-one meetings, while time consuming, are extremely valuable in that they help with gaining a solid understanding the expert's content area, provide support in the development of a hands-on activity (if applicable), and build rapport.

Unsurprisingly, these one-on-one meetings could be intimidating for some museum staff, who typically had little to no familiarity with the subject matter of the cross-disciplinary content experts. The following are some approaches we tested and observations we made about one-on-one meetings and individualized support in creating hands-on activities:

- Pacific Science Center provided experts with a list of exhibits and programs with high potential for cross-disciplinary components as a starting point for discussion (e.g., an exhibit about play, an upcoming program about transportation).
- Pacific Science Center asked historians to meet and discuss their planned activities with other participating historians, which helped alleviate some of the pressure staff were feeling around not knowing much about their discipline.
- Conner Prairie found that for artists, focusing in on a single technique within their work (e.g., polishing metals for a jewelry maker) often made for a good hands-on activity.
- Conner Prairie found that in other instances, a strong activity could be built around the concept driving their art. For example, with an artist who was interested in the idea of "things out of place," an activity was made about placing plastic animal figurines in unusual landscapes.

Hands-on Activities

Because of the project's origins in interactive science centers, hands-on activities are a staple (but not a requirement) of Portal to the Public programs. Most science museums that use the Portal to the Public approach ask each participating scientist to create (with the assistance of museum staff) a hands-on activity that represents a key concept of their work. Hands-on activities are helpful learning tools and may also help experts come up with creative ways to discuss their fields of expertise.

All three of our Partner Museums tested having our partnering cross-disciplinary content experts create a hands-on activity, with varying levels of success. Pacific Science Center found that hands-on activities lent themselves especially well to artists but were more challenging with historians. University of Arizona Museum of Art found that helping an expert create a hands-on activity significantly increases the amount of staff time required, especially when you might not be immediately familiar with their discipline or with examples of what hands-on activities related to their discipline might look like. Based on our experiences, we recommend considering how much value a hands-on activity might bring to any given public program experience, and work backwards to determine whether it makes sense to ask your cross-disciplinary content expert partners to develop one.

Public Programs

Compelling, interdisciplinary public programs in which cross-disciplinary content experts engaged directly with guests were the end goal of each institution's project. Pacific Science Center experimented with a wide range of public program formats, from table-top activities to interactive presentations to a semi-permanent exhibit space for artists. UAMA also tested out both table-top activities and presentations, while Conner Prairie opted for table-top activities. Some formats were integrated into existing, large scale programs, like annual expo-style events, and others were tested as one-off programs or small-scale guest experiences. Table 2 describes a selection of the programs tested in more detail.

Achieving "fit" was more of a challenge with interdisciplinary programming than with programming with content more traditional to the institution. Each of our institutions took a broad approach to expert recruitment, calling for experts from a general discipline (e.g., the humanities), instead of a specific expertise (e.g., an expert in the history of the local parks system) – this approach seemed to be more successful in garnering applicants. However, this led to an occasional struggle to identify the right programming opportunity for the participating experts. For example, Pacific Science Center worked with an enthusiastic Ph.D. student with expertise in the use of trenches during World War I. Although a fascinating topic, staff were challenged to think of an appropriate format to share this expertise in our science center which sees a large number of young children visit. The student ended up creating an experience related to her other area of expertise, geography (see "Interactive Map Presentation" in the table below).

	Interactive Map Presentation *Pacific Science Center*	Artist in Residence *Pacific Science Center*	Family Day: Arts and Science! *UAMA*	Pop Talks *UAMA*	Curiosity Fair *Conner Prairie*	Artist at Expo Event *Pacific Science Center*
Who?	**Expert:** Graduate student studying history **Audience:** General visitors	**Expert:** Various artists, mostly early career **Audience:** General PacSci visitors	**Expert:** Three scientists and one artist **Audience:** Local families with young children	**Expert:** Nine graduate students in the sciences and humanities **Audience:** Targeted to UAMA students	**Expert:** Artists from a nearby arts organization **Audience:** General Conner Prairie visitors	**Expert:** Photographer **Audience:** General visitors
What?	Called Mapping Our World, a presentation that projected various maps throughout history on the Science on a Sphere®, with a discussion of what each map told us about the people who made it and the world at the time it was made.	Artists actively created while inviting guests to have conversations about their artwork and their process.	Numerous hands-on activities led by participating scientists with additional activities like face painting, story time, and live music.	Short, Pecha Kucha-style "pop talk" presentations within an open house & exhibit reception	Various activities and booths on a variety of topics, from history to science to sports. Artists presented activities they developed that represented an aspect of the process of their artwork.	Presented during an expo with the theme "engineering," a photographer presented her images of local, historic apartment buildings and talked with visitors about the aesthetics of architecture and their meaning.
Where?	At Science on a Sphere® within the museum's exhibit hall	In a new, 20' by 24' designated exhibit space called the Artist Living Studio	Within the museum's galleries	In the auditorium	On Conner Prairie's grounds	Within the museum's exhibit halls
When?	20-minute presentations during open hours; 4 presentations total	Ongoing "open studio hours"	One-time, three-hour event	One-time event	One-time, weekend-long event	One-time, weekend-long event
Extras	The historian passed out printed maps and crayons for younger audiences.	One artist created a temporary installation during the open studio hours.	Attendees collected stamps at each station to earn a "Junior Arts and Science Badge"	Talks presented in two 45-minute segments with a 30-minute break.	Some of their work involved tech and science	The artist created coloring pages of her photographs to engage younger children

Table 2: A selection of interdisciplinary program formats tested by Partner Museums

What Did We Achieve?

"Being able to see what the artists are doing and how we have incorporated them into our exhibit, … Being able to offer different programs, meet and talk to an artist, that has been impactful for guests, staff, volunteers. Everyone wants to talk about it – I've heard a lot of good feedback. As an institution I think we are really proud of it."

—Pacific Science Center staff member

"We have higher visibility across campus. There's a greater sense of value and appreciation for the skill-set of the staff, being able to work outside of our perceived content area expertise."

—University of Arizona Museum of Art staff member

"It's been helpful to look at Conner Prairie as a whole and see that we're doing lots of these science, nature, and art programs, so why don't we make it part of our operations structure? Not just a weekend festival, but make it a year-round part of experience."

—Conner Prairie staff member

Visitors

Collectively, visitors indicated high satisfaction with their experiences at the cross-disciplinary programs across the Partner Museums. The majority of visitors reported learning something new during the programs, with most naming a specific idea or fact, some naming a process or tool, and others commenting on the connections between art and science. Additionally, the vast majority indicated that the topics presented were interesting to them and would recommend the program to friends and family.

As with the participating experts, the cross-disciplinary focus was a draw for visitors. More than half surveyed indicated that they were extremely interested in programs that combine science, art, and history, and more than half reported that they would visit the museum more often if there were more cross-disciplinary programs.

For more details on evaluation results, see the Executive Summary in the Appendix A.

Major Takeaways

In this exploratory project, we tested numerous combinations of content experts, public program formats, and visitor-facing activities. Although we can say with confidence that these cross-disciplinary efforts have the power to attract new partners to the institution and engage visitors in a way that they find interesting, we did not test any other single approach enough times to develop a replicable, vetted model (although we did produce a rough framework that can be used for planning; see the documents in Appendix A). We also feel that not condensing all of this project's work into a single model makes sense within the context of this project, as we determined that the nature of this work is so dependent on the players involved, it can't be turned into a cookie cutter, one-size-fits-all approach.

Instead, we close this document with a series of collective takeaways based on more than three years of iteration and experimentation. We hope these takeaways will be valuable if your institution decides to pursue similar work.

Takeaway One: Partnering with cross-disciplinary experts for public programs boils down to the individual relationships involved. When pursuing partnerships based in a new or unfamiliar subject matter, time for building relationships and deepening understanding is critical. Investment of this time up-front will likely pay off by developing enthusiastic advocates for similar efforts in the future.

Making a Portal to the Public project successful has always come down to the ability to form positive working relationships with each partner by navigating their individual needs and wants. This turned out to be even more important when working cross-disciplinarily. Across much of our work, it took significant effort up-front to overcome the initial barriers to developing these positive working relationships with partners who, in many cases, were new to us and the institution.

Why would it be even more challenging with cross-disciplinary content experts? For one, chances are that most staff responsible for developing and hosting public programs at any given museum feel confident, or at least comfortable, discussing the core subject matter or focus area of their museum. They may feel far less comfortable, or even intimidated, conversing about another discipline, especially with partners who are experts in that field. It takes time to increase this comfort enough to be able to develop positive working relationships. A second reason is that pursuing partnerships with cross-disciplinary experts may require a significant expansion of staff's existing professional network. It may also require time to understand the training and engagement opportunities already available to the experts, in order to identify what gaps one's museum might be able to fill.

Although this document has aimed to jumpstart your work by capturing many of the lessons the Partner Museums learned about working with experts from different fields, pursuing this work on your own will still require time and dedicated resources to learn about your own local partners and the unique context in which they operate. This learning period should likely include the following goals:

- **Understand perspectives.** For example, Pacific Science Center learned artists are frequently asked to present their work with the benefit of "exposure." For many of them, exposure alone is not worth their investment, and advertising exposure as the main benefit to their participation in a program may result in many artists not taking partnership with your institution seriously.
- **Develop a common language.**
- **Identify shared goals.** For example, the University of Arizona Museum of Art connected with science communication groups on campus to help identify common goals and how best their institution could contribute to those goals.
- **Build trust.**
- **Figure out what you can offer.** This could include stipends, membership to your museum, physical working/studio space, equipment, access to collections or partners, or valuable (as determined by your partners!) networking connections.
- **Assess the local landscape as it relates to other opportunities for your potential partners.** For example, Conner Prairie learned that other institutions in their region provided similar science communication training to what they were offering industry scientists, so they had to reassess their program model and marketing plan.

Takeaway Two: Especially if cross-disciplinary programs are not a strategic priority for your institution, internal advocacy is essential to program longevity. Just as you must consider the unique needs of your external partners, you must think about how to communicate with and build advocates in various internal players across your institution.

The main idea of Takeaway One – that taking the time to understand and build relationships with partners - isn't only true for those outside the institution. For this kind of cross-disciplinary work to happen, prioritizing internal relationships and how this work can serve other departments' goals is essential. It may be especially true for efforts like this one, as cross-disciplinary programming might be viewed as an "extraneous activity."

However, cross-disciplinary programs allow for exciting new opportunities for other internal teams, depending on an institution's structure and priorities. Consider how you might collaborate with other internal teams to advance cross-disciplinary work:

- Development/fundraising team: Cross-disciplinary programs allow for exciting new avenues for donors and grantmakers with different interests: meet early on with your fundraising staff to discuss possible opportunities. Consider discussing ways to bring new partners into the development pipeline, or take advantage of relationships their team already has.
- Marketing team: Talk with your marketing team about overlapping impacts. Are they trying to reach new audiences? Attract a younger crowd? Feature more family-oriented programming? Cross-disciplinary programming offers lots of new stories to tell.
- Senior leadership: Focus on the benefits for visitors and the possibility to attract visitors with different interests or lapsed members eager for a new experience.
- Front-line staff: Pacific Science Center found that many front-line staff members were artists themselves and built up a lot of internal enthusiasm for bringing more art into the institution. However, some felt excluded when the institution looked externally for artists instead of calling upon internal staff members, so be thoughtful in how you might frame the potential for collaboration.
- Docents: Some docents may be excited about this work, but others might disagree with bringing in other experts with a different lens. Consider meeting with docents early on to build understanding of your goals and increase the likelihood of earning their enthusiasm and buy-in.

Takeaway Three: Start small, be opportunistic, and simplify when and where needed.

A common tendency for excited program staff is to sit down, design a new program from beginning to end, and set it into motion, only ever making small refinements to the original idea. We found that in this work, this tendency wasn't one that typically led to great success.

As described earlier in this document, Pacific Science Center encountered early failure when trying to recreate its longstanding Science Communication Fellowship Program (based on the Portal to the Public framework) for artists and historians. The new program was (they thought!) well-structured and sound. Unfortunately, the energy put into program development proved to be a waste because they didn't follow the learnings described in Takeaway One: they failed to invest the time and energy in really understanding and connecting with their new potential partners.

Instead, when they took a step back and worked with a small number of enthusiastic artists and historians, they were able to develop a number of small projects that both excited the experts and appealed to visitors. Some of these small projects did end up as only one-off experiences. Others, however, really stuck. The Artist in Residence program, for example, was born from an idea brought by two early artist participants. Pacific Science Center staff started small, working with the two enthusiastic artists as initial partners and seeking out in-kind donations to furnish a small space on the museum floor. Eventually, they were able to integrate these efforts into regular operations, as visitors voiced appreciation for the program, more and more staff became excited about the project, and leadership connected it to various strategic priorities.

The University of Arizona Museum of Art took a different approach, starting with a formalized Fellowship program for graduate students and faculty in university science departments. Although there were many successes in their initial attempts, they found that the approach was too resource-intensive for their small staff to maintain. For later iterations, they streamlined the program, cutting out portions that took too much staff time, reducing the length of professional development trainings, and simplifying the public program design for the experts. This simplified version proved much more sustainable for their institution and allowed for them to be more nimble in its implementation.

Takeaway Four: When thinking about connecting cross-disciplinary experts with program opportunities, you don't necessarily need to find the "perfect fit." Visitors probably aren't too concerned with it, and it will help lighten the load of this sometimes intensive work.

In program design and planning, it was tempting to approach the whole process as matchmaking: either starting with a specific public program or event in mind, and then searching endlessly for the perfect cross-disciplinary expert to enhance it; or, starting with a specific expert, and bending over backwards to create a program experience that perfectly connects their expertise with an exhibit or event.

Such a matchmaking approach can result in some exciting programs. But we observed that programs were still successful and appealing to most visitors even if the connection between the expert's area of knowledge and the program experience they participated in was a little fuzzy. When considering what the museum field knows about museum visitors and why they visit, this observation makes sense. If the cross-disciplinary programs are meeting visitors' goals for visiting - adding to their enjoyment, sparking their child's imagination, or teaching them something new, for example – they will likely be satisfied with the experience.

Our recommendation to others in the field is to focus on thinking about how cross-disciplinary expertise can serve your museum's mission or institutional priorities broadly: by delighting guests, engaging diverse audiences, or providing more in-person experiences, for example. This approach might lead to programs that are more sustainable in the long-term (if that is indeed your ultimate goal for this work).

Customizing each experience is much more resource-intensive than a model that can be broadly applied to a wide range of expert-types and programs, exhibits, or other experiences. It eases recruitment efforts, allowing numerous individuals to participate in the same type of experience.

Furthermore, if your budget prevents you from providing experts with honoraria (and let us reiterate here that you should talk with cross-disciplinary content experts to determine what other benefits you are able to offer, if not a financial benefit!), then seeking out expertise in specific content areas to enhance a specific exhibit or program may not be a successful strategy, as those experts may request remuneration.

This advice may seem to oppose Takeaway One, which recommends taking the time as you initiate this type of work to learn the needs and wants of your potential partners. However, what we suggest here is working towards developing program experiences in which the precise content area that an expert provides to your museum is interchangeable: a historian with expertise in China's Han Dynasty can just as easily participate in your cross-disciplinary program as a historian with expertise in women's suffrage in the United States. As individuals, the experts themselves are not interchangeable, and should never feel as though they are.

Lingering Questions and Directons Still to be Explored

Across our three partner museums, we experimented a lot in three years. There were still some challenges we weren't able to resolve, and new efforts we would like to try in the future, including:

- How can museums incorporate disparate disciplines into their "DNA", and not just host artists/scientists/historians within pre-established programs? What does true integration look like?
- How do we include our local museum partners that focus on other subject matter areas? Similarly, how do we ensure that we aren't competing with them and the experiences they might already offer to both experts and to visitors?
- Pacific Science Center had some early success with fostering cross-disciplinary collaborations between artists and scientists, but never felt like they figured out the exact right amount of support needed for the collaboration process. What is the right amount of structure for these collaborations, and how can we make sure that they are meeting a community need?

We hope our peers at other museums will continue this work, evolving how we as a field can better attract, inspire, and serve our local communities through cross-disciplinary programming with expert partners.

Appendices

The following appendices provide resources and documents developed by the Partner Museums, which you are welcome to adapt and improve to develop and implement your own cross-disciplinary program.

Appendix A: Planning

Visual Framework for Planning Cross-Disciplinary Public Program

This diagram is a visual representation of a framework for working with content experts in the sciences, arts, and humanities to create cross-disciplinary public programs in museums. The process begins in the center of the circle and moves outward, with each ring representing a critical stage of the process.

The stages include:

- Stage 1: Determine Readiness and Identify Impacts
- Stage 2: Understand and Recruit Content Experts
- Stage 3: Design and Deliver Professional Development
- Stage 4: Design and Deliver Cross-Disciplinary Programs

The purple and green rings are each split into three parts representing different expert-types and institution-types, respectively. Professional development that prepares experts for engaging with public audiences in museum settings looks similar across expert-types and institution-types, and thus is displayed as a single ring.

To see a list of questions to ask yourself as you move through each stage of the planning process, see the Program Planning Worksheet. More information on each stage, including possible approaches, helpful tips, and lessons learned by the three initial partner organizations, can be found in the Guide.

Pacific Science Center, Conner Prairie, University of Arizona Museum of Art. Portal to the Public: Diversifying the Framework, Expanding the Network. IMLS-MG-10-15-0083-15

Program Planning Worksheet for Designing Museum Programming Featuring Cross-Disciplinary Experts

Program Planning Worksheet for Designing Museum Programming Featuring Cross-Disciplinary Experts

Determine Readiness and Identify Impacts

- *Do we have the **capacity, resources, and enthusiasm** to do this? How might cross-disciplinary programming support our **mission, strategy, and core values**? What **internal assets and external relationships** do we already have?*
- *What **impacts** are we hoping to have on our visitors? On our institution? On the experts with whom we partner*?
- *What **constraints or limitations** will impact our project*?

Understand and Recruit Content Experts

- *What **types** of content experts do we want to work with? Where will we find them?*
- *Will they bring general content **expertise**, or are we seeking very specific expertise (to align with a certain program, exhibit, or initiative)?*
- *What do we need to learn about these content experts and their field in order to **work with them effectively**? How will we learn it?*
- *What will **incentivize** experts to participate with us?*

Design and Deliver Professional Development

- *What kinds of **skills** will experts need to engage with visitors in our museum? What **activities or exercises** will grow those skills?*
- *What professional development **format** will we use?*

Design and Deliver Cross-Disciplinary Programs

- *What public program **format** will we use? Will we create a new program, or embed experts into an existing program?*
- *Will the public program be large-scale or small-scale? On-site or off-site? One-time or recurring?*
- *How will we **promote** the program and secure good attendance, to ensure that experts feel their time with us is well-spent?*

Pacific Science Center, Conner Prairie, University of Arizona Museum of Art. Portal to the Public: Diversifying the Framework, Expanding the Network. IMLS-MG-10-15-0083-15

Program Planning Worksheet for Designing Museum Programming Featuring Cross-Disciplinary Experts *(continued)*

Determine Readiness and Identify Impacts

Consider: capacity, resources, enthusiasm; mission, strategy, core values; impacts; constraints or limitations

Understand and Recruit Content Experts

Consider: types; expertise; how to work with them effectively; incentives

Design and Deliver Professional Development

Consider: skills; activities and exercises; format

Design and Deliver Cross-Disciplinary Programs

Consider: format; program qualities; promotion

Pacific Science Center, Conner Prairie, University of Arizona Museum of Art. Portal to the Public: Diversifying the Framework, Expanding the Network. IMLS-MG-10-15-0083-15

Executive Summary: Summative Evaluation

J. Sickler Consulting

PoP: DFEN Summative Evaluation

Impact of a Model for Cross-Disciplinary Public Engagement

September 29, 2019

Prepared by:
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Prepared for:
Pacific Science Center

PACIFIC SCIENCE CENTER

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Executive Summary: Summative Evaluation *(continued)*

Executive Summary: Summative Evaluation of PoP: DFEN

Portal to the Pubic: Diversifying the Framework, Expanding the Network (PoP:DFEN) was a collaboration between Pacific Science Center (PSC), Conner Prairie Interactive History Park (CP), and the University of Arizona Museum of Art (UAMA). The goal of the project was to build upon the established Portal to the Public (PoP) model for incorporating scientists into science museum programming and experiment with approaches to connect STEM professionals with art and history museum visitors and to connect artists and historians with science center visitors. The partners experimented and tested approaches from 2015 to 2019.

This report presents results from summative evaluation of the project, led by J. Sickler Consulting. The study sought to address: 1) to what extent targeted outcomes were achieved with museum professionals, visitors, and science/art/history (SAH) professionals; 2) in what ways the PoP framework needed to adapt; 3) and the potential merits for the museum field at large. The study incorporated data sources that included: pre/post interviews with museum staff; post-program surveys of SAH professionals and visitors; mid-point interviews with SAH professionals; and interviews with external museum peer reviewers.

PoP:DFEN increased the comfort and skills of museum staff at working across disciplines and led enjoyable and educational programs for visitors.

Staff at the partner museums reported increased comfort- and skill-levels working with and creating programs to feature professionals from outside of their museum's discipline. Evidence of gains was seen in ratings of comfort level before and after the project and in their personal descriptions of how skills evolved over the three years. PoP:DFEN also seemed to deepen and underscore beliefs in the value of cross-disciplinary programming, both as an approach for museums to stay relevant in society and as a way to push museum professionals to think differently about what is possible. There was evidence that creating PoP:DFEN broadened these professionals' awareness of museum practices and pushed many of them to reexamine their own assumptions and the standard practices.

Institutionally, the project did not meet its target that 2 of 3 sites would commit to continued programming. After three years, all three sites had some uncertainty about whether cross-disciplinary, PoP-style programming would continue, due to external issues of funding, staffing priorities, and institutional leadership changes. Nevertheless, visitors who attended the PoP:DFEN achieved project goals. Visitors were extremely satisfied with the programs they attended and were interested in more cross-disciplinary programs. Nearly all visitors felt they learned something new, which were mainly facts or ideas encountered in a professional's talk or activity. However, smaller segments learned about process or tools (often from artist presenters) or about inter-disciplinary connections (mostly about art-science and from PSC programs that purposefully focused on those connections).

Goals for SAH professionals were also met; they felt they had gained skills and understanding, and were interested in continued work with museums.

More than 80% of the SAH professionals who were involved in the project reported they better understood learning in informal settings and that they gained skills to be better able to communicate with the public. Similarly, the majority felt that the main benefit of participation was that it helped them learn effective communication techniques. The SAH professionals also felt the experience was valuable, with more than 90% indicating that the experience was worth the time and effort they put in and that it is something they would recommend to others. The majority also strongly agreed that they were interested in continued work with museums for public engagement. In addition, evidence indicated that PoP:DFEN dramatically reduced the number of SAH professionals who felt that they couldn't do public engagement work because they lacked skills, felt their work was too difficult to convey to the public, and/or that they felt too junior in their career to engage the public.

Data also suggested that artists and historians may have been more attuned to the value or importance of the project's cross-disciplinary focus. Artists and historians more often mentioned the cross-disciplinary focus as a motivation than scientists did, and when describing the value of combining art, science, and the humanities, artists and historians more often described value in terms of breaking down silos and showing connections. While almost half of scientists also mentioned this cross-disciplinary idea, half focused more on a more instrumental value – the idea of using other disciplines as a hook or way of relating to varied public interests.

Executive Summary: Summative Evaluation *(continued)*

Each partner ultimately implemented a variation of the PoP framework, but it required substantial adaptations, particularly in terms of the distinct views of science, art, and history professionals.

By the end of the project, all three partner museums were successfully able to implement the core elements of the original PoP framework – relationship-building, professional development, and public programs in a way that met their individual institution's views of success. While they were able to implement the core elements of PoP, how those elements manifested often varied substantially from the most common formats of "traditional" science-based PoP. Public programs were a key example; program formats ranged from table-top, hands-on activities (as is most commonly used in PoP) to theater-style formats (lighting talks or fireside chats) to an in-exhibit, artist-in-residence program. These adaptations were made to reach different audiences or accommodate disciplines, where partners sometimes struggled to identify relevant, hands-on experiences. For training, sites who worked with scientists were able to generally apply the PoP PD model with minor variations, PSC's work with artists and historians required a more customized, one-on-one approach; it was successful, but difficult to scale for the long-term.

The biggest underlying limitation of the original PoP framework was its embedded assumptions about the values, priorities, and context for public engagement work within scientific fields. PoP:DFEN revealed that public engagement is not nearly as well-established among artists and historians, and they bring very different professional viewpoints about what engagement can be, who does it, and whether it brings value to their professional goals. Without understanding these viewpoints and strategically building recruitment, training, and programming to be responsive to each audience, a site will struggle to even recruit participants. Relationship-building required far more time and effort than was foreseen by all three sites. In the end, partners felt that the adapted model could work in some circumstances, but required substantial effort. The advice was for museums to enter into a process purposefully, with time for planning, and investment in staff and at least some financial support for the SAH professionals to acknowledge their investment in the process.

Museum peer reviewers saw many merits in the PoP:DFEN model, but its unique investment needs may constrain its use to institutions where it is most aligned with existing goals and activities.

Museum peer reviewers responded very positively to an overview of the PoP:DFEN model, identifying many strengths of the updated framework, as well as merits about how it could contribute to their museum's larger goals. In particular, professionals saw how PoP:DFEN could be a route to building or leveraging new community relationships that are of interest – from engaging local museums of different disciplines to having productive ways to connect with students or faculty at local or affiliated universities. Reviewers saw ways that this approach might further their museum's mission and strategic priorities, which were not necessarily explicitly cross-disciplinary. For instance, some reviewers connected with a goal of expanding or reaching new audiences. The idea of working across disciplines seemed to many to be an approach for appealing to broader, more diverse audiences than sticking with the traditional approaches for their field. Central to the feedback of these professionals was the idea that PoP:DFEN programming would need to be done in a way to enhance their mission – whether through interpreting collections, exhibitions, or through programming.

Of the 10 reviewers, just over half thought the idea was something they could definitely see their institution pursuing, while the others felt it would be considered, but they had greater reservations. The potential limitations that reviewers observed aligned with several of the challenges experienced by museum partners. In particular, all reviewers noted potential roadblocks of working across disciplines. Concerns ranged from recruitment and establishing credibility with professionals from another discipline to getting internal buy-in from staff or leaders who might resist an activity that felt it would be moving away from the importance of the content at the institution's core. Along these lines, reviewers noted limitations of finding topical or collections-based connections with particular disciplines. For museums, the value is not in simply bringing in a professional from another discipline, but in how that external view can enhance public understanding of or connection with the focus of their mission, collection, and/or institution.

Executive Summary: Summative Evaluation *(continued)*

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Executive Summary: Summative Evaluation *(continued)*

Appendix B: Partnership and Recruiting

Pacific Science Center Communicating Art and Science Workshops application

Interested in partnering with a scientist and building your communication skills? Join the Pacific Science Center community!

With support from the Institute of Museum and Library Services and in partnership with the University of Arizona Museum of Art, Pacific Science Center is holding a summer workshop series on public engagement with art and science. The workshop series will give you the opportunity to (1) partner with a scientist and (2) learn and practice skills for communicating your work with the local community. The culminating event for the workshop series is a Science in the City event during which artist-scientist pairs will present their work and talk about their experience with a public audience.

Scientist participants will be drawn from our pool of Science Communication Fellows, scientists from multiple disciplines who participate in public engagement opportunities at Pacific Science Center. Upon acceptance into the program, artists will be given brief bios of potential scientist partners and will be able to indicate their preference for a partner.

Artist and scientist participants will attend three in-person workshops to get to know each other, develop presentation skills, and practice. Workshops are provided at no charge to participants. Artists are expected to begin a new piece based on their conversations with the scientist (but need not finish it by the time of the event). Each artist will receive a $100 stipend for supplies and will have the opportunity to display one to two previous pieces of work of their choice at the culminating event.

Workshop and Culminating Event dates:

- Wednesday, August 16, 6:30–8:30 p.m. (Workshop 1: Collaboration)
- Wednesday, August 30, 6:30–8:30 p.m. (Workshop 2: Crafting your Presentation)
- Wednesday, September 6, 6:30–8:30 p.m. (Workshop 3: Dress Rehearsal)
- Wednesday, September 13, 6:00–9:00 p.m. (Event)

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INSTITUTE of Museum and Library SERVICES

PACIFIC SCIENCE CENTER

Pacific Science Center Communicating Art and Science Workshops application *(continued)*

Program Philosophy

Pacific Science Center has a long history of working with practicing scientists and we are excited to invite artists to join our community. The processes of science and art share many similarities. Both rely on creativity, experimentation, dedication, and technical skill. One discipline may spark an interest in the other; one may help a person understand the other more deeply.

The mission of Pacific Science Center is to ignite curiosity in every child and fuel a passion for discovery, experimentation, and critical thinking in all of us. Our award-winning, interactive programs reach more than 1.1 million people each year—in their communities, classrooms, and on our campus. While we often use scientific content as the platform for our mission, we recognize that multiple disciplines support this goal. For many members of the public, a cross-disciplinary approach not only enhances their experience but provides a more holistic and realistic view of the world.

Who Should Apply?

We welcome artists from all creative disciplines, including visual, literary, and performance arts. Although prior work focused on scientific ideas is not a prerequisite, an interest in science and openness to discussion is necessary. No scientific knowledge is required.

Artists will be asked to create a new piece of work based on their conversations with the scientist. The piece may be related to the scientist's area of research or the processes of science and art, but we welcome additional ideas. Pairs do not have to have the piece completed by the Science in the City event on September 13 but it should be in progress. All participants—artists and scientists—will be asked to present about their experience and the piece itself at the event.

What are the benefits?

- Improve and practice skills in communicating about your work in an engaging and participatory workshop setting.
- Partner with a scientist.
- Reach new audiences and help build community support for the arts.
- $100 supplies stipend.
- Display 1–2 pieces at the event on September 13 (some restrictions apply).
- Opportunities for additional press, including invitations to be featured in the Pacific Science Center's Member newsletter or podcast.

What are the requirements?

- You must be a working artist (any creative discipline welcome).
- Attend all three workshops and culminating event.
- Work creatively and collaboratively with a scientist partner. Time is allotted during workshops for conversations but it may require additional time outside of the workshops.
- Assemble and practice your presentation outside of workshop time.
- Begin work on a new piece based on the collaboration.
- We will help you build presentation skills, but you must be willing to speak in front of a large audience.

This project is funded through a three-year National Leadership Grant from the Institute of Museum and Library Services. This funding covers workshop costs for participants.

Name: _____

Affiliate Institution / Company (if applicable): _____

Website / Social Media (if applicable): _____

Phone number: _____ **Email Address:** _____

Current Mailing Address: _____

Page 2 of 3

Pacific Science Center Communicating Art and Science Workshops application *(continued)*

Why are you interested in this opportunity?

Please briefly describe your body of work:

Pacific Science Center is committed to expanding the inclusivity, diversity, equitability and accessibility of our programs and institution. How would you support these efforts?

How did you find out about this opportunity?

Participant Commitments and Workshop Schedule:

Please review the commitments and check the box below to indicate that you are available for all of the program requirements.

- **Participate in three workshops at Pacific Science Center and speak at culminating event.** Attendance is expected at all sessions. Additional time will be needed outside of the workshop times at your own convenience.Wednesday, August 16, 6:30–8:30 p.m., Wednesday, August 30, 6:30–8:30 p.m., Wednesday, September 6, 6:30–8:30 p.m., and Wednesday, September 13, 6–9 p.m. (Event)
- **Partner with a scientist to develop a new piece or work. Concept development support will be provided by Pacific Science Center staff as needed.**
- **Develop and give a presentation that shares your experience collaborating and producing the new piece.**

Participant Agreement

☐ **I understand and agree to the commitments described above.**

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Pacific Science Center Artist in Residence Program Call for Artists application

Artist in Residence Program

Application submission deadline: September 23, 2019

Pacific Science Center (PacSci) invites applications from local artists for a six-month residency. The Artist in Residence (AiR) program, launched in July 2018, offers local artists an opportunity to develop, expand, and apply their skills to explore connections between STEAM (science, technology, engineering, art, and mathematics) disciplines.

The mission of PacSci is to ignite curiosity in every child and fuel a passion for discovery, experimentation, and critical thinking in all of us. Our award-winning, interactive programs reach more than 1.1 million people each year – in their communities, classrooms, and on our campus.

While we often use scientific content as the platform for our mission, we recognize that multiple disciplines help us achieve it. For many members of the public, a cross-disciplinary approach not only enhances their experience, but also ignites their curiosity while increasing understanding of the natural connections between art and STEM disciplines. We believe that the processes of STEM and art share many similarities. Both rely on creativity, experimentation, dedication, and technical skills. One discipline may spark an interest in the other; one may help a person understand the other more deeply.

* Required

Seattle

Program Overview

The AiR program provides a unique opportunity for artists to advance their creative practice while growing their skills related to communication, public engagement, and teaching. Throughout the residency, artists deepen their creative practice through STEM exploration, public engagement, and knowledge-sharing.

In addition to receiving support from PacSci staff, artists will have the opportunity to collaborate with scientists from our Science Communication Fellowship program, who are active academic or industry researchers or other science-based professionals in the Puget Sound region.

What the residency offers you

- Access to studio space with a physical workstation, secure storage space, a cozy living room, and activity tables for the public to engage with your creative practice. The studio space is within publicly

Pacific Science Center Artist in Residence Program Call for Artists application *(continued)*

accessible exhibit space and can be accessed by artists during PacSci's normal staff hours (7 am - 7 pm)

- A $450 honorarium

- Access to a wide variety of materials, electronics and small-scale prototyping tools including soldering irons, 3D printers, vinyl cutter, and basic woodworking tools. PacSci staff can provide training on how to use electronics and small-scale prototyping tools, but artists are expected to use these tools for their projects independently

- Collaboration with and access to Science Communication Fellows and PacSci staff

- Opportunities to be featured in marketing materials published by PacSci, including our podcast, blog, and social media

- Improved communication and public engagement skills

- Opportunity to reach new audiences and help build cultural value for art and STEM integration

- PacSci membership during period of residency for up to two household members. Benefits include: 12 exhibit guest passes, 15 documentary IMAX passes, 12 special engagement IMAX passes and 12 evening laser show passes. Discounts at the PacSci Store, Café, and IMAX concessions

- Free parking and bus passes, only when used to get to and from PacSci on days when public engagement sessions are scheduled or when working at the studio space

Studio Space

Artist Commitments

- Work on a creative project that relates to STEM content or employs STEM tools (e.g. virtual art, bio-art, digital art, light art, and environmental art). The purpose of connecting with STEM is not to explain scientific topics, but rather to ignite curiosity and explore the natural connections between disciplines. You will be expected to work on one or multiple projects, but not required to complete a project during the residency period

- Document your work thoroughly with photos and/or video, so the public can observe how your project progresses over time in the studio space. PacSci staff will work with the artist to display visual documentation in the studio

Pacific Science Center Artist in Residence Program Call for Artists application *(continued)*

- With support from PacSci staff, develop one simple activity for guests to engage with your creative practice when you are not present. Activities are meant to be low-cost and easy to execute; activity supplies will be paid for by PacSci (up to $100/artist)

- Attend a full day New Colleague Orientation

- Participate in brief bi-weekly check-ins and public engagement support with project coordinator

- With support from PacSci staff, develop a format for public engagement sessions (e.g. drop-in workshops to share your creative practice, open studio hours to show work-in-progress and receive feedback, short informal presentation to share project ideas, performance followed by Q&A). The format for these sessions will vary based on individual artists' interests and creative practice, but most likely will involve:
  • Inviting the public to see and discuss works-in progress
  • Initiating and engaging in meaningful conversations with the public about their creative practice

- Within Pacific Science Center's open hours, establish and follow a public engagement schedule:
  •Start public engagement sessions 1.5 months after initiating the residency
  •Anticipated time commitment: 2.5 hours x 4 events = 10 hours (over 4.5 months)
  •Schedule at least two of the public engagement sessions on weekend days

- Participate in the evaluation of the residency

Who Should Apply?

Given the nature of the AiR program and the studio space, we've found the program to be best suited for visual artists; however we welcome artists from all mediums. Although prior work focused on scientific ideas is not a prerequisite, an interest in STEM and public engagement is necessary. Ideal candidates have a desire to explore STEM content, are able to discuss new or existing projects with the public, and are comfortable facilitating exploration with people of all ages and backgrounds.

Application and Selection Process

To be considered, please complete the online application by 5 pm PDT on September 23, 2019. Applications will be reviewed by a selection committee composed of PacSci staff who are artists, informal educators and exhibit designers. Selection criteria will include, but is not limited to:

- quality of artistic work
- interest in STEM exploration
- interest and/or experience in public engagement
- ability to demonstrate independence and flexibility
- commitment to support PacSci's efforts to expanding the inclusivity, diversity, equitability, and accessibility of our programs

Program timeline

A small pool of finalists will each participate in a short phone interview between October 9 and 11. Two Artists in Residence will be selected and notified by October 14. Selected artists will start their residency by November 4.

During the first 1.5 months, selected artists will have the opportunity for open-ended exploration of exhibits, conversations with PacSci staff, and/or collaborations with Science Communication Fellows. Throughout this period artists are encouraged to develop an idea for a STEM project or incorporate STEM content into existing projects.

By December 18, artists will submit a schedule for public engagement sessions, which will take place between January and May 2020. PacSci staff will work closely with the artists to develop the format for the public engagement sessions.

Pacific Science Center Artist in Residence Program Call for Artists application *(continued)*

Application

1. **Name** *

2. **Website, social media, or web link with samples of your work** *

3. **Phone number** *

4. **Current mailing address** *

5. **Email address** *

6. **Why are you interested in participating in our Artist in Residence program?** *

7. **Please briefly describe your body of work** *

Pacific Science Center Artist in Residence Program Call for Artists application *(continued)*

8. **Describe any previous experience you have with engaging the public in your artistic practice. If no previous experience, please describe why you think public engagement is important.** *

9. **Pacific Science Center is committed to expanding the inclusivity, diversity, equitability and accessibility of our programs and institution. How would you support these efforts?** *

10. **Please describe any interest you have in collaborating a with scientist and/or PacSci staff**

11. **Please describe any interest you have in specific PacSci programs, exhibits, or resources**

12. **How did you find out about this opportunity?** *

13. **If selected for a brief phone interview, please describe your general availability between October 9 and 11, 2019** *

Pacific Science Center Artist in Residence Program Call for Artists application *(continued)*

14. **Please review the "Artist commitments" section and check the box below to indicate that you agree with the program requirements.** *

Check all that apply.

☐ I understand and agree to the commitments described in the "Artist Commitments" section.

Pacific Science Center Hands-on Workshop: Communicating History of Science and Technology application

Interested in reaching a wider public and building your communication skills? Join the Pacific Science Center community!

With support from the Institute of Museum and Library Services and in partnership with Conner Prairie Interactive History Park, Pacific Science Center is holding a winter workshop series on public engagement with the history of science and technology. The workshop series will give participants the opportunity to:

1. Learn and practice skills for communicating history to diverse audiences through face-to-face, conversation-based interactions.
2. Learn how to develop a hands-on educational activity or table-top exhibit to communicate history in a fun and interactive way.
3. Reach a wider public for their work and promote appreciation of history in our community.

The culminating events for the workshop series are two *Meet a Historian* events, which will take place at Pacific Science Center in parallel to our *Meet a Scientist* event. During *Meet a Historian*, workshop participants will present their hands-on educational activity or table-top exhibit to a public audience.

Historian participants will attend two in-person workshops to learn, practice communication skills, and develop a hands-on activity or table-top exhibit. Workshops are provided at no charge to participants. Each historian will receive a $50 stipend for supplies. After basic requirements are met, other public program opportunities can be developed based on participants' interests and may include the Willard Smith Planetarium, NOAA's Science On a Sphere, Science in the City, and more.

Workshop and Culminating Event dates:

- Saturday, March 17, 9:30 a.m.–12:30 p.m. (Workshop 1)
- Optional individual phone/Skype meeting (between Workshops)
- Saturday, April 7, 9:30 a.m. –12:30p.m. (Workshop 2)
- Saturday, April 28, 1–4 p.m. (Event 1: *Meet a Historian*)
- Participate in a second event before May 26 (Event 2: *Meet a Historian*)

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INSTITUTE of Museum and Library SERVICES

PACIFIC SCIENCE CENTER

Pacific Science Center Hands-on Workshop: Communicating History of Science and Technology application

Program Philosophy

Pacific Science Center has a long history of working with practicing scientists and we are excited to invite historians into our community. The processes of science and history share some characteristics. Both disciplines are open to alternative hypotheses and explanations, and rely on evidence to support an idea, theory or a model. Both historians and scientists are trained to develop the capacity to think critically and to solve complex problems. One discipline may spark an interest in the other; one may help a person understand the other more deeply.

The mission of Pacific Science Center is to ignite curiosity in every child and fuel a passion for discovery, experimentation, and critical thinking in all of us. Our award-winning, interactive programs reach more than 1.1 million people each year—in their communities, classrooms, and on our campus. While we often use scientific content as the platform for our mission, we recognize that multiple disciplines support this goal. For many members of the public, a cross-disciplinary approach not only enhances their experience but provides a more holistic and realistic view of the world.

Who Should Apply?

We welcome historians from multiple areas of specialization. Although prior work related to science/technology is not a prerequisite, an interest in science and openness to discussion is necessary. Historians will be asked to design a hands-on activity or table-top exhibit that explores the history of a science and technology-related topic. Pacific Science Center staff can provide guidance in selecting an appropriate topic. All participants will be asked to present their hands-on activity or table-top exhibit twice at *Meet a Historian*.

What are the benefits?

- Improve and practice skills in communicating about your work in an engaging and participatory workshop setting.
- Reach new audiences and promote appreciation of history in our community
- $50 supplies stipend.
- Opportunities for additional press, including invitations to be featured in the Pacific Science Center member newsletter or podcast.
- Exhibits and IMAX® passes for future use.

What are the requirements?

- You must have experience doing historical research and/or identify as a professional working in the humanities.
- Attend both workshops and culminating events.
- Develop a hands-on activity or table-top exhibit related to history of science and technology with support from our Pacific Science Center staff.
- Use your activity in at least two *Meet a Historian* events.

This project is funded through a National Leadership Grant from the Institute of Museum and Library Services. This funding covers workshop costs for participants.

Name: _____

Affiliate Institution / Company (if applicable): _____

Website / Social Media (if applicable): _____

Phone number: _____ **Email Address:** _____

Current Mailing Address: _____

Pacific Science Center Hands-on Workshop: Communicating History of Science and Technology application

Why are you interested in this opportunity?

Please describe your historical research interests.

Pacific Science Center is committed to expanding the inclusivity, diversity, equitability and accessibility of our programs and institution. How would you support these efforts?

How did you find out about this opportunity?

Participant Commitments and Workshop Schedule:

Please review the commitments and check the box below to indicate that you are available for all of the program requirements.

- **Participate in two workshops at Pacific Science Center and present your activity in at least two *Meet a Historian* events in the first year:** Saturday, March 17, 9:30 a.m.–12:30 p.m. (Workshop 1); Saturday, April 7, 9:30 a.m.–12:30 p.m. (Workshop 2); Saturday, April 28, 1–4 p.m. (Event 1: *Meet a Historian*); participate in a second event before May 26 (Event 2: *Meet a Historian*).
- **Develop a hands-on activity or table-top exhibit that explores the history of a science and technology-related topic. Concept development support will be provided by Pacific Science Center staff as needed.**
- **Work on you hands-on activity or table-top exhibit outside of workshop time.**

Participant Agreement

☐ **I understand and agree to the commitments described above.**

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UAMA Science and Humanities Communication Fellowship flyer

Science and Humanities Communication Fellowship

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

Are you an artist, historian, scientist, or researcher looking to share your work with the public? Join us!

The University of Arizona Museum of Art, a partner in the Portal to the Public Network, is now recruiting science and humanities experts for its Fall program! Become a **Science and Humanities Communication Fellow** and develop skills and experience to help you connect with your audience and share your work with the broader public. Participants from various research and expertise backgrounds train together to encourage the sharing of ideas, insights, and expertise.

Who are Fellows?

Science and Humanities Communication Fellows are scientists, graduate students, researchers, visual artists, poets, creative writers, historians, linguists, and philosophers who have been certified through Portal to the Public as current science and humanities ambassadors and excellent communicators.

What is involved?

Participate in the Communication Workshop:

- **Friday, August 31, 10:00-4:00pm**
  (Lunch Provided! The group will adjourn at Gentle Bens and appetizers are on us!)

ALL fellows MUST participate in the Public Event:

- **Thursday, September 6, 2:30-4:30pm, UAMA Student Open House "PoP Talks"** (Pecha-Kucha presentations)

You must apply by June 1. Use this link: **Communication Fellowship Application**

What are the benefits?

Free Professional Development

- Learn from Museum Educators—trained in the Pacific Science Center's Portal to the Public methods— how to effectively communicate your work to diverse audiences. *Visit http://popnet.pacificsciencecenter.org/ for more information.*
- Enhance your communication skills in a dynamic, engaging, and participatory workshop setting.
- Work collaboratively to develop communication skills related to your current work.

Free Programs for the Public

- Present your Pecha-Kucha presentation to UA students and general public audiences at fun Open House event.
- Take your presentation to schools, conferences, and other educational or professional settings.
- Demonstrate the broader impacts of your work through fun, engaging, education and outreach.
- Receive professional documentation suitable for sharing with supervisors and for grant reporting.

INSTITUTE of Museum and Library SERVICES

This program is made possible by funding from the Institute of Museum and Library Services

PORTAL to the Public

UAMA Arts and Science Communication Fellowship flyer and application

Arts and Science Communication Fellowship

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

Are you a artist looking to share your work with the public? Join us!

The University of Arizona Museum of Art, a partner in the **Portal to the Public Network** is now recruiting science and art experts for its Fall program! Become a **Science or Arts Communication Fellow** and develop a **fun hands-on** activity focused on your research! Science and arts experts train together to encourage the sharing of ideas, insights and expertise.

Who are Fellows?

Science and Arts Communication Fellows are scientists, engineers, graduate students, researchers, other science-based professionals, visual artists, poets, creative writers who have been certified through Portal to the Public as current science and arts ambassadors and excellent communicators.

What is involved?

Participate in the Communication Workshops:

- Attend ALL (3) Professional Development Workshops:
  Friday, Sept 8, 15, 29, 12:00-4:00pm
  (Food and coffee will be served!)

ALL fellows MUST participate at one Public Event:

- **FAMILY DAY: Saturday, Oct. 21 10:00am-1:00pm**
  OR
- **READING DAY: Thursday, Dec. 7 10:00am-1:00pm**

What are the benefits?

Free Professional Development

- Learn from Museum Educators—trained in the Pacific Science Center's Portal to the Public methods— how to effectively communicate your work to diverse audiences. *Visit http://popnet.pacificsciencecenter.org/ for more information.*
- Enhance your communication skills in a dynamic, engaging, and participatory workshop setting.
- Work collaboratively or individually to develop a hands-on activity related to your current work.
- NOTE: Artists need NOT be working with science concepts.

Free Programs for the Public

- Present your hands-on activity to general public audiences through various programs at the UA Museum of Art.
- Take your activity "on the road" to schools, conferences, and other educational or professional settings.
- Demonstrate the broader impacts of your work through multigenerational STEAM education and outreach.
- Receive professional documentation suitable for sharing with supervisors and for grant reporting.

UAMA Arts and Science Communication Fellowship flyer and application *(continued)*

Science and Arts Communication Fellowship

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

Name:	
Departmental Affiliation:	
Position:	
Phone Number:	
Email Address:	

Please briefly describe your current work in science/arts and/or your area of scientific/arts expertise. (attach additional page if necessary).

How do you think this program will benefit you?

To ensure this program is a good fit for you and your schedule, please review the commitments and **CHECK THE BOX BELOW** to indicate that you are available for **ALL** the program requirements.

1. Attend **all (3)** Professional Development Workshops.
   - **Friday, September 8, 12:00 – 4:00 pm**
   - **Friday, September 15, 12:00 – 4:00 pm**
   - **Friday, September 29, 12:00 – 4:00 pm**
2. Participate with your activity at one of UAMA's public events, Family Day (family audience) or Reading Day (college audience). **Circle your preference**.
   - **Family Day Saturday, October 21 10:00am-1:00pm**
   - **Reading Day Thursday, December 7 10:00am-1:00pm**

[ ] I UNDERSTAND AND AGREE TO THE COMMITMENTS DESCRIBED ABOVE.

Return to Olivia Miller (millero@email.arizona.edu) June 30, 2017. All applicants will be notified by July 14, 2017.

INSTITUTE of Museum and Library SERVICES

This program is made possible by funding from the Institute of Museum and Library Services

Conner Prairie Communicating with the Public Workshops flyer

Communicating with the Public Workshops

CONNER PRAIRIE

Conner Prairie is partnering with the Portal to the Public Network to offer an exciting opportunity for art professionals to develop their communication and public engagement skills. By combining the lessons and activities from Portal to the Public with Conner Prairie's Opening Doors training methods, artists can develop the skills needed to captivate their audiences in public settings.

Why participate in the training?

Face-to-face interactions between art professionals and public audiences are important opportunities for improving public awareness and understanding of the art field and current work taking place in Indiana.

What are the benefits?

- Enhance your communication skills
- Meet other professionals interested in public engagement
- Discover opportunities to connect with the community

What is involved?

Participate in three workshops:
9 a.m. – noon March 5, 7, 9
(Food and coffee will be served)

Participate at one public event:
Curiosity Fair, June 9-10
Demonstration at Conner Prairie TBD

How can I participate?

For more information or to register for a training contact:
Gail Brown (gbrown@connerprairie.org) or 317-214-4723

INSTITUTE of Museum and Library SERVICES

This program is made possible by funding from the Institute of Museum and Library Services

Appendix C: Professional Development

Pacific Science Center Communicating Art and Science Workshop series goals and overview

Pacific Science Center's *Communicating Art & Science* Workshop Series

Workshop Goals

Participants will:

- Collaborate with a practicing artist/scientist
- Gain new perspectives on their work
- Practice and improve presentation skills
- Enhance ability to talk about their own work
- Along with Pacific Science Center (PSC) staff, co-develop a fun and engaging program for Pacific Science Center guests that inspires curiosity and excitement

Overview of Workshop Series and Event

Workshop 1: Wednesday, Aug. 16, 6:30-8:30 pm. Meet the PSC team, other participants, and most importantly, your partner! During this meeting we will focus on allowing you and your partner to get to know each other.

Check-Ins: Aug. 16-Aug. 30. The PSC staff will be checking in with each of you during these two weeks by email or telephone to check in on your progress and offer assistance. *We highly encourage you to continue to talk with your partner during this time!* You may want to find additional in-person meeting time or talk on the phone.

Workshop 2: Wednesday, Aug. 30, 6:30-8:30 pm. During this meeting, we will focus on crafting your presentation, including describing your work and its value, developing the content of your talk, and preparing for an effective presentation.

Prepare your presentation: Between workshops 2 and 3, you should prepare and practice your presentation.

Workshop 3: Wednesday, Sept. 6, 6:30-8:30 pm. This workshop will give you the opportunity to practice your presentation with your partner in the event venue and receive feedback.

Science in the City event: Wednesday, Sept. 13, 6:00-9:00 pm. Each pair will give a brief presentation (10-15 min/pair) describing their area of science/body of work, the piece created, and their process working together. Presentations will be followed by facilitated Q&A.

Contact Us

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PACIFIC SCIENCE CENTER

Pacific Science Center Artist in Residence Program workshop agendas

Artist in Residence Workshop| Spring-Summer 2018 Cohort

Friday, May 25, 2018

Time	Agenda Item	Time	Leader
9:00- 10:00am	**Arrival and Logistics**	**15-20 min**	**CC**
	- Let reception know about arrivals; arrange parking - gather workshop materials - Set up room and review agenda - Welcome participants at reception and lead them to room		
10:00-10:15am	**Welcome and Introduction**	**5 min**	
	- GLOs - Making Meaning		**AJ**
10:15-10:45am	**Personal Learning**	**30 min**	**CC/AJ**
10:45-11:30am	**Building a Common Vision**	**30 min**	**CC**
11:30-12:00pm	**Exploring the Exhibit Floor & Break**	**30 min**	**CC**
12:00-12:45pm	**Question Strategies**	**60 min**	**AJ**
12:45-1:15 pm	**Invitations to Participate**	**30 min**	**CC**
1:15pm-1:30pm	**Concept Mapping, What's in a Word – take homes**	**10 min**	**AJ**

Pacific Science Center Artist in Residence Program workshop agendas *(continued)*

Artist in Residence

Guest Engagement Workshop and HR Orientation

10:30-10:50 am- Welcome and Introduction to the AiR program; staff introductions

10:50- 11:10 am- Participant introductions and Postcard Icebreaker

- Pick a postcard that relates
  - to your work as an artist
  - to your personal interests
  - to how you feel about this experience

11:10-11:55 am- GLO's

- Concept Mapping

11:55 – 12:25 pm- Check the Artist Living Studio

12:30- 1:00 pm – Lunch (Board Room)

- Expectations and collaboration with Science Communication Fellows

1:00- 1:15 pm- Break

1:15 -1:40 pm – Personal learning

1:40 pm- 2:25 pm- Question Strategies

2:25- 2:45 pm - Invitations to Participate

2:45- 3:00 pm – Next steps

3:00 – 3:45 pm PSC Tour (HR)

3:45 -4:30 pm – HR Orientation (Policies, Safety, Security, etc.)

Materials and Worksheets

- Name tags
- Sharpies and pens
- post-its (big and small)
- camera
- Postcards
- Fish is fish
- Top and bag of toys
- Concept Mapping
- GLO's
- Invitations to participate

UAMA Science and Humanities Communication Fellowship workshop agenda

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

PORTAL to the Public

Portal to the Public: Science and Humanities Communication Fellowship

August, 31, 2018

10:00-10:45 am

- Making Meaning
- Welcome and Introductions
- Portal to the Public (PoP) Overview

10:45-11:15 am

- Personal Learning

11:15-11:45 am

- Learning in the Museum Galleries

11:45 am-12:30 pm

- Lunch (provided)

12:30- 1:30pm

- The Pleasure of Finding Things Out

1:30- 1:45 pm

- Break

1:45-2:45 pm

- Building Common Vision
- Expert Blind Spot

2:45- 3:10 pm

- What's in a Word?

UAMA Science and Humanities Communication Fellowship workshop agenda (continued)

3:10- 3:40 pm

- Question Strategies

3:40- 4:00 pm

- Evaluation
- Walk to Gentle Bens

Homework:

1. Concept Map
2. Prepare and practice Pecha-Kucha presentation

September 6, 2:30-4:40 pm, UAMA Student Open House "PoP Talks"

UAMA Arts and Science Communication Fellowship workshop series schedule

Use the PoP training to break down academic institutional barriers and boundaries between practitioners and the general public.

September 8

12:00-12:30 Introductions

12:30-12:40 Introduction to Portal to the Public

12:40-1:25 Tour of museum

1:25-1:35 Break

1:35-2:35 The Pleasure of Finding Things Out

2:35-3:20 Project Demonstrations

3:20-3:50 Concept Mapping

3:50-4:00 Share Concept Maps

Homework: Continue to work on concept map

September 15

12:00-12:10 Concept Map

12:10-1:00 Building a Common Vision

1:00-1:15 Getting Past Your Expert Blind Spot

1:15-2:15 Questions, Types, and Sequences

2:15-2:25 Break

2:25-4:00 iSpace

Homework: Brainstorm-Materials, Questioning Strategies Handouts

September 29

12:00-12:25 What's in a Word?

12:25-12:45 Invitations to Participate

12:45-1:45 Talk to Your Neighbor Activity

1:45-2:15 Break

2:15-4:00 Time to work/plan activity

Conner Prairie Nickel Plate Arts Workshop agenda

Portal to the Public
Nickel Plate Arts Workshop: Draft Outline

Date: March 2018
Days: TBD
3 workshops, 3 hours each + one practice demonstration day

Day 1:
Welcome & Informal Learning
Orientation (Who, What & Why)

Ice Breaker

Exploring Natural Curiosity
- Finding Things Out
Our learners discover the positive aspects of inquiry. They experience how finding things out involve aspects of personal histories, emotions, acquired attitudes, curiosity, inferences, risks, and many other factors that constitute elements of learning.

Into to Informal Learning
- Making Meaning
This activity encourages our professionals to reflect on informal learning experiences from their own lives, and to identify specific qualities that made those memories meaningful. It also reinforces how people learn and generates an appreciation for the power of informal learning.

- Activity Showcase
Instructors will share a few activities developed at Conner Prairie and explore and discuss what makes them memorable and meaningful.

What's Your Story?
Make me care, make me wonder.
- Concept Mapping
This is an exercise to help identify and develop the main concepts our learners would like to share with public audiences. They are guided to think about strategies they might use to communicate their work. If they are developing a hands-on activity, the concept map can help focus and define the activity's scope.

Next Steps
*At home, think about your story and finish your concept map.
* Identify one of your pieces or an object from your life that can help tell your story and could fit into your concept map. If easily portable, please bring it to our next the next workshop.

Day 2:
What's Your Story & Styles of Discovery
Story of your Work
- "Tell me more." Using your piece or prop, we will begin exploring your story.

Opening Doors

Conner Prairie Nickel Plate Arts Workshop agenda *(continued)*

- Activity TBD

Personal Learning
- This is an introduction to the idea that individuals enter situations with their own personal sets of experiences, interests, curiosities, motivations, misconceptions, and understandings. We will explore how you can create engaging and meaningful experiences by acknowledging and accommodating what individuals bring with them.

Building a Common Vision
- This activity puts our workshop attendees in the position of being learners about a subject they don't know well. It shows that we all come into learning situations with different prior knowledge and preconceptions. It provides an effective introduction for identifying appropriate strategies for conveying complex concepts to each other.

Building & Illustrating your Story
- We will explore other personal stories and explore shared stories with our audience. We will discuss how to illustrate your story through hands-on activities.

Next Steps
- Outline your story and begin developing your activity concepts.

Day 3:
The Hook & Putting it all Together

Invitation to Participate
- Finding the language or appropriate strategy to spark initial conversation with guests can be challenging. This element provides an overview of different strategies to use when they first begin an interaction.

Questioning Strategies
- This activity highlights the power of using questions to facilitate inquiry-rich experiences with guests. Through a series of role-playing activities, learners use questions to support guests in making their own discoveries.

Talk to your Neighbor
- Guests bring their own unique interests, prior knowledge, and motivations into any learning experience. This activity allows learners to practice discussing concepts related to their activity or background with different audiences and to explore communication strategies that support learning.

Activity Outlines

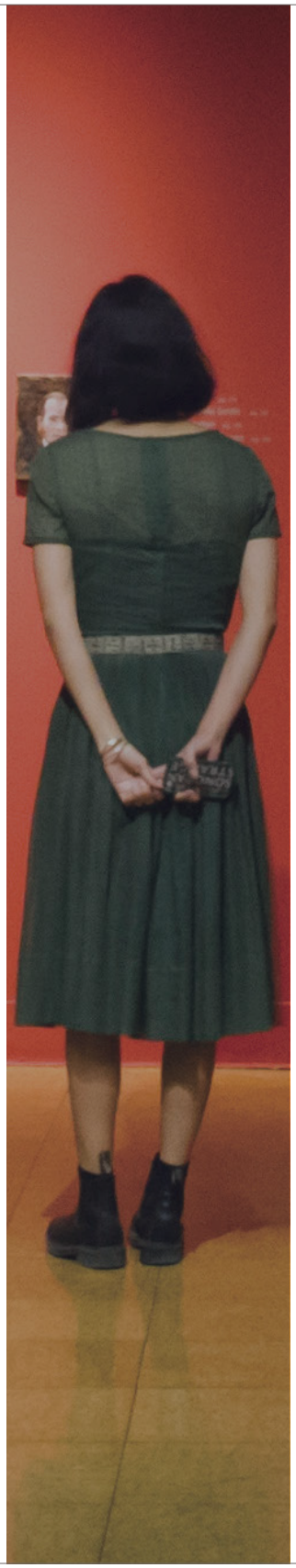
Next Steps
- Develop your activity and presentation. Contact us with follow up questions, etc.
- Schedule a time to present your activity to guests at Conner Prairie.

Day 4:
Show Time

We will find a time for you to present your activity at Conner Prairie. During that time we will observe and provide feedback on your presentation. We will also talk with guests about their experience and obtain further feedback that we will share with you.

Appendix D: Public Programs Marketing

UAMA Open House/PoP Talks flyer



The University of Arizona

MUSEUM OF ART

OPEN HOUSE
& EXHIBITION RECEPTION

Celebrate art, expression, and all things Museum!

Thursday, September 6

Open House 9:30 AM - 7:00 PM

Exhibition Reception 5:00 - 7:00 PM

Burhan Doğançay, *Brooklyn Bridge*, New York, USA, 1986

Richard Slechta, *Inflection Point*, 2016, Chromogenic Photogram

Come and meet our curators, take a behind-the-scenes tour, and learn how you can engage with the Museum. We'll have PechaKucha talks by Portal to the Public participants, live mural painting with local artist Mel 'Melo' Dominguez, and entertainment by DJ Butta Fly.

At 5 PM, join us for a reception featuring *Picture The World: Burhan Doğançay As Photographer* and *Richard Slechta: Cascades*. UA PhD candidate Taylor Miller will present in conjunction with *Picture the World*, and artist Richard Slechta will speak about his work.

For more information, visit **www.artmuseum.arizona.edu**

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

THE UNIVERSITY OF ARIZONA Research, Discovery & Innovation

1031 N. Olive Road
520-621-7567

UAMA Family Day poster

UAMA Family Day flyer

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

Research, Discovery & Innovation

FAMILY DAY

ARTS AND SCIENCE!

Saturday, October, 21 | 10:00 am – 1:00 pm

The University of Arizona Museum of Art

Learn from working artists and scientists.
Explore art and science with hands-on activities.
Face painting, story-time, live music and more!

This program is made possible by The Stanley Glickman Outreach Endowment and a grant from The Institute of Museum and Library Services.

THE UNIVERSITY OF ARIZONA MUSEUM OF ART

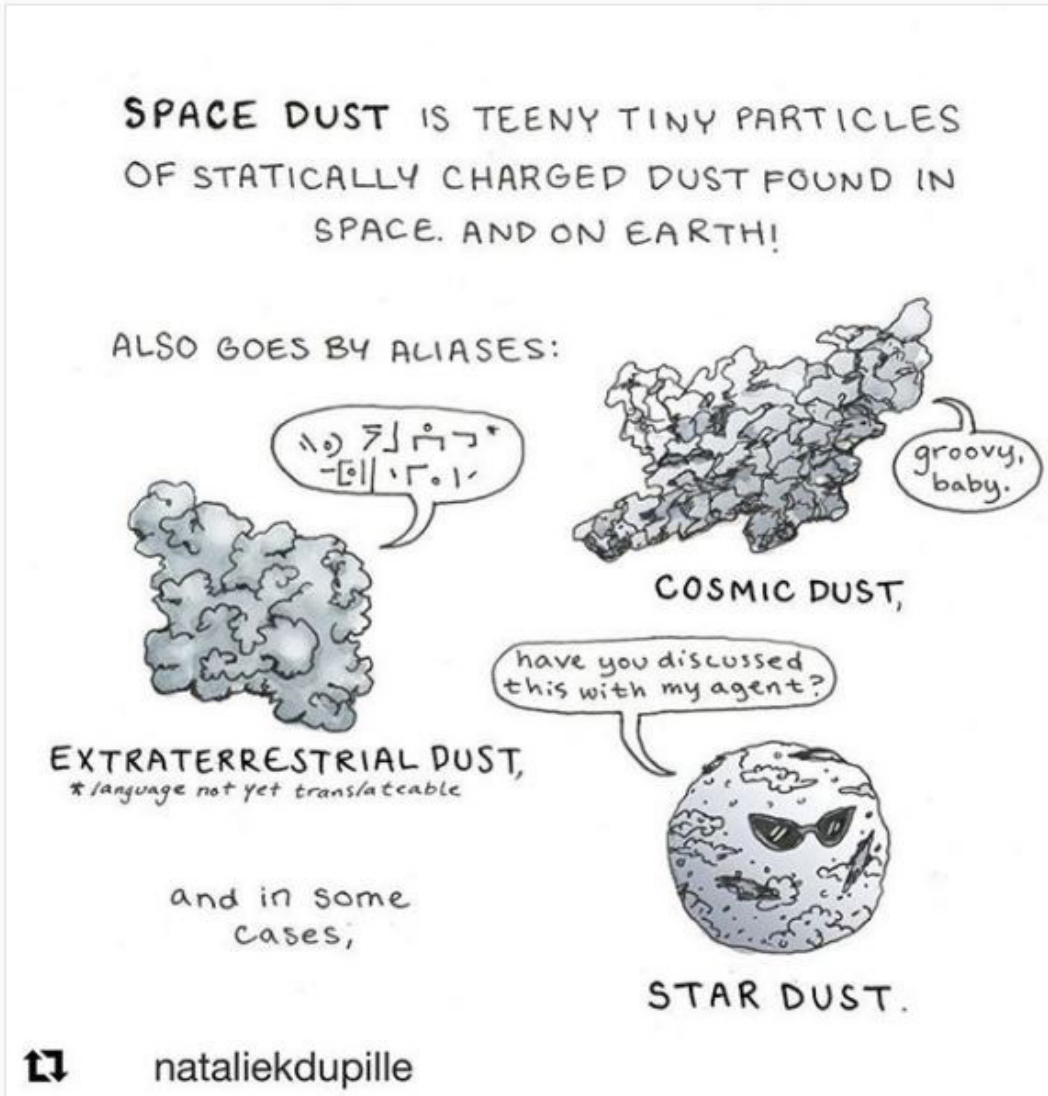
Research, Discovery & Innovation

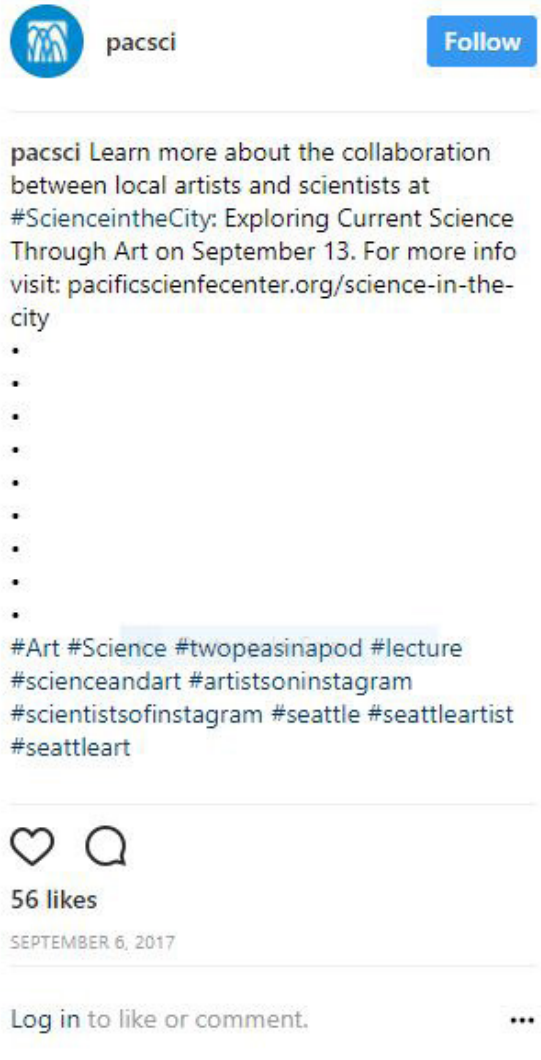
Institute of Museum and Library Services

PACIFIC SCIENCE CENTER

PORTAL to the Public

Social media posts advertising Pacific Science Center public programs





SEP
13

Exploring Current Science Through Art

Public · Hosted by Pacific Science Center

Interested

Wednesday, September 13 at 7:00 PM - 9:00 PM PDT
about 2 months ago

Pacific Science Center
200 2nd Ave N, Seattle, Washington 98109

Show Map

Details

A laboratory, a studio – what happens in these spaces is similar. Both scientists and artists make observations, ask questions, and record information to learn about our world. With support from the Institute of Museum and Library Services and in partnership with the University of Arizona Museum of Art, Pacific Science Center is experimenting with what happens when artists and scientists work together. Three local artists have each been paired with a different local scientist. Through conversation and time spent together, each artist has developed a unique piece of art inspired by their interpretation of the scientist's work. Come hear about their experiences at The Process: Exploring Current Science Through Art.

About the speakers:
The Artists:
Elizabeth Schiffler is a filmmaker and most of her work is rooted in the intersection of science, myth, and magic. She develops short, experimental narrative films that explore nature and science.

Lana Blinderman is a graphic designer, photographer and mixed media artist. Her mixed media art combines photography with thrift store finds to create ironic miniatures.

Natalie Dupille is a cartoonist, illustrator, and arts educator. She specializes in watercolor, ink illustration, and comics but works in a wide range of mediums.

The Scientists:
Lisa Voelker is interested in understanding how animals change their behavior throughout their lives. She uses worms to study the changes in neural circuits that underlie behavior dynamics.

Gaby Tosado is passionate about renewable energy. She works with thin film solar panels which are in liquid form and create the potential for printable solar panels to decrease the cost of solar renewable energy.

Erika Harnett's area of expertise is planetary science. She is particularly interested in how radiation in space interacts with small planets and the moon over time.

Doors open: 6:40 p.m.
Location: PACCAR Theater
Cost: $5 general admission, free for Members