



Roots of Wisdom Summative Evaluation

Professional Audience Impacts

September 2016

Prepared by:

Jill Stein, M.A., Lifelong Learning Group
Shelly Valdez, PhD., Native Pathways

Prepared for:

OMSI, in collaboration with Indigenous Education Institute, Confederated Tribes of the Umatilla Indian Reservation, Eastern Band of Cherokee Indians, Pacific American Foundation and the Waikalua Loko Fishpond Preservation Society, Smithsonian's National Museum of the American Indian, and Tulalip Tribes



This project was completed with support from the National Science Foundation (NSF-DRL#1010559).

LifelongLearningGroup.org

COSI | 333 West Broad Street | Columbus, Ohio 43215

Copyright © Oregon Museum of Science and Industry, 2016

OMSI acknowledges and gives thanks to the communities and participants involved in this evaluation study for sharing their knowledge and opinions. In respect for the partnership, the following organizations hold a perpetual license to reproduce and disseminate this report. Attribution must be given to OMSI and the authors when publishing or presenting substantial quotations and/or references from this report. In all cases this notice should remain intact.

Center of Science and Industry (COSI)

Hibulb Cultural Center and Natural History Preserve

Indigenous Education Institute (IEI)

Native Pathways

Pacific American Foundation

Revitalization of Traditional Cherokee Artisan Resources (RTCAR)

Smithsonian Institution National Museum of the American Indian (NMAI)

Smithsonian Institution Traveling Exhibition Service (SITES)

Tamátslikt Cultural Institute

Waikalua Loko Fishpond Preservation Society

Executive Summary

Roots of Wisdom (also known as *Generations of Knowledge*; NSF-DRL #1010559) is a project funded from 2010 to 2015 by the National Science Foundation. The collaborative project aims to engage Native and non-Native youth (ages 11-14) and their families in Traditional Ecological Knowledge (TEK) and western science within culturally relevant contexts that present both worldviews as valuable, complementary ways of knowing, understanding and caring for the natural world. The Oregon Museum of Science and Industry (OMSI) and its partner organizations, The Indigenous Education Institute (IEI), The National Museum of the American Indian (NMAI), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Tulalip Tribes, Pacific American Foundation and Waikalua Loko Fishpond Preservation Society (Native Hawaiians) and Eastern Band of Cherokee Indians, worked collaboratively to develop all aspects of the project, which includes the following deliverables: (a) a 2,000 square foot full exhibition, (b) a 100- linear-foot traveling graphic panel exhibition, (c) a website, (d) an activity kit for Native youth in informal and formal settings, and (e) opportunities and resources for reciprocal collaboration between informal science education (ISE) institutions and Native American partners.

The Lifelong Learning Group (Columbus, OH), in collaboration with Native Pathways (Laguna, NM), was engaged to conduct summative evaluation of the *Roots of Wisdom* (ROW) professional audience impacts, primarily over the last two years of the project¹. Evaluation questions focused on understanding how the collaborative partnerships unfolded, how different partners defined reciprocal collaboration and the extent to which the ROW project fulfilled their expectations, as well as lessons learned for future collaborations between science museums and tribal organizations. Key findings based on the main evaluation questions are summarized below:

Question 1: How successful was the project in achieving the intended professional impacts around reciprocal collaboration?

Overall the ROW project was quite successful in achieving intended professional impacts around reciprocal collaboration. These were defined in the project's logic model as 1) gaining **skills** in facilitating reciprocal collaboration between science museums and tribal communities and 2) increasing **confidence** in facilitating reciprocal collaboration between science museums and tribal communities. Both qualitative and quantitative data showed that partners² felt they gained skills and confidence in doing this work. Skills were defined by partners as including communication (learning how best to communicate with one another), listening (learning to listen to one another in

¹ The summative evaluation team was engaged throughout the GOK project (2010-2015), primarily as participants in meetings, in order for the team to have some context and build relationship in support of the summative evaluation. However, the bulk of the professional audience summative evaluation work occurred in 2014-2015.

² Throughout the report, the term "partners" is inclusive of OMSI, IEI, NMAI, and the four Native communities (Tulalip Tribes, Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Eastern Band of Cherokee Indians, and Native Hawaiians). Note that the evaluation team (LLG and NaPs) were, in the broadest sense, partners in ROW as well. This voice is included in the Evaluators' Reflections section at the end of the report.

different ways) and being able to work within a new set of cultural protocols, including tribal protocols and the way a science museum works and operates. Confidence was described by the OMSI team in terms of increased comfort and less anxiety around working with tribal communities, largely articulated in terms of the fears around making mistakes or “offending someone.” Tribal partners largely described this area in terms of gaining confidence in a western science institution’s ability to collaborate authentically and share ownership with a tribal community.

While these impact areas were strong, even more important were impacts around relationship and trust-building. Building relationship and trust over time and pushing ones’ own personal and cultural boundaries to understand other worldviews were the most salient impacts of the collaboration. These areas form the fundamental foundation on which other types of impacts (such as skills and confidence) can be built. In this type of reciprocal collaboration across worldviews, it is also important to look at the personal impacts in addition to professional ones, as western cultures separate “self” from “profession” in a way that Indigenous cultures do not. If we only look at professional impacts, we are missing an important part of the story.

Question 2: How do various partners define collaboration from their own cultural perspectives and to what extent and in what ways did the ROW collaboration fulfill their expectations?

There was a fair amount of overlap in terms of how individual partners defined collaboration from their own cultural or personal perspectives. Those speaking from an Indigenous cultural perspective talked about how the concept of collaboration is embedded in Indigenous paradigms, and encompasses core values such as relationship, reciprocity and respect. For them, collaboration is about inclusion of voice and is an ongoing process rather than an end “product.” While several partners commented that they were not familiar with the term “reciprocal collaboration,” the concept of reciprocity made the term accessible and relevant to multiple partners. The non-Native partners on the team tended to talk about reciprocal collaboration as “creating together,” conveying that collaboration is about inclusion of voice and mutual benefits for all partners involved.

For the most part, partners felt positively about the ROW collaboration, and rated the areas of inclusion of voice and respect very high on quantitative measures. Qualitative responses provided many examples of a positive collaborative process in which the partners’ input was included and respected. As one would expect with a collaboration of this type and complexity, there was much learning to be done – especially in the beginning – and a few misunderstandings and missed opportunities occurred along the way. This included decision-making around hiring of the formative evaluation team, as well as decisions around the logo design for the exhibit. Differences in communication styles as well as a tight, face-paced production timeline may have contributed to these instances.

Question 3: What did the various collaborations look like within ROW and how were they developed and nurtured/sustained over time?

Ultimately ROW was comprised of multiple collaborations rather than being one overarching collaboration. These were primarily collaborations between OMSI and the four tribal community

partners, as well as OMSI and IEI. While community partners met at annual meetings, there was not much opportunity, time or budget for supporting cross-partner collaborations, which could have brought additional richness and learning to the collaboration. Some of this did occur between Tamástslíkt and Hibulb cultural centers when the exhibit traveled to each site, as they shared knowledge and tips on how to best install the exhibit components, what worked, what didn't, etc., and the Hibulb partners made a couple of visits to Tamástslíkt for this purpose. These sites were also closest geographically to one another, with the other two sites being in Hawai'i and North Carolina.

The collaborations were all built on prior relationships, which was an essential component in their success. Face-to-face visits and initial in-person meetings helped to create the foundation for nurturing relationship and trust before fully "diving" into the project. Having some of this prior relationship, or a "bridge person" that connects partners together (e.g. through IEI), was extremely important in terms of allowing the relationships to grow positively over time. For the OMSI team, having the IEI partners as Co-PIs on the project provided significant guidance along the way, and helped the team develop skills and learn protocols that supported positive relationships with the tribal community partners.

Question 4: To what extent did partners feel their voices were included in the collaboration?

ROW partners generally felt there was a lot of effort by the lead institution to include their voices and perspectives, and they very much valued this process. In the exhibit design phase there was a great deal of time put into sharing designs and content, making changes and working through challenges so that everyone could agree on a solution. In the end tribal partners felt they had significant ownership over the way their community's story was told and represented in the exhibit, including language, design, materials and color. While there were compromises made along the way, partners felt that it was clearly communicated why certain choices were made, such as budget or logistical concerns.

The process of approving content and design proved to be a significant learning opportunity, especially for the lead institution. The OMSI exhibit team learned about the time it takes to gain approval through tribal channels and how much thought and process are put into these decisions; not just in terms of language and text but also that the materials used, colors and design choices all had significance from the tribal partner perspective, and had to be given attention and consideration in designing and building the exhibit.

Question 5: What contributed to successes and what were lessons learned for future cross-cultural collaborations? What were the limitations and constraints for different partners and how were they addressed?

There were several significant factors that contributed to success in the ROW collaboration. First, building off prior relationships held by the lead institutions (OMSI and IEI) was fundamental. This allowed for more initial trust and familiarity rather than a feeling of "starting from scratch." Including partners from the beginning of the project (that is, the proposal stage) or as early as possible, also helped to build trust and co-ownership of the project – rather than approaching the

community once ideas have been firmly established, which often happens when western institutions want to collaborate with tribal communities. Another important factor in success was that the focus on traditional knowledge and environmental/cultural sustainability was an area of importance for all partners. The framework of including four unique stories in the exhibit allowed each partner the space to address the topic in a way that was meaningful to their community, rather than having to fit into a larger overall narrative. Finally, it was clear that having multiple, synergistic projects funded by NSF made the “whole greater than the sum of the parts.” That is, ROW benefited from having had several staff members involved in the Cosmic Serpent professional development project, as well as having the Native Universe residencies coincide with the ROW project³. Paradigm shifts around worldviews are incredibly slow and need much time and attention in order to thrive and be sustainable.

Limitations and constraints included working within a relatively tight budget and timeline, which in many ways had to be product-focused rather than process-focused, making it hard to spend time outside of the grant funding to build relationship. Much time and focus was devoted to producing multiple large deliverables – which provided a context for collaboration, but could also be limiting and pushed things toward productivity instead of relationship-building at times. Finally, needing to build a deep, collaborative process with four very different, geographically-dispersed communities was challenging, lessening the ability to collaborate in person and also leading to a fairly fast-paced, timeline-focused process. Within these limitations all partners gave considerably extra time, energy and openness toward creating a respectful process and relationship. Intentions were viewed positively and the final products have been well received by all partners.

³ Cosmic Serpent and Native Universe are two NSF-funded projects in which many of the same partners were involved (OMSI, IEI, NMAI, Tulalip Tribes, CTUIR, NaPs, LLG). Cosmic Serpent was a professional development effort that brought together educators from ISE and tribal communities; and Native Universe focused on institutional change around inclusion of Indigenous Voice in science museums. MSI served as a case study site for Native Universe. All of these efforts have been overlapping and synergistic.

Table of Contents

Executive Summary	i
Question 1: How successful was the project in achieving the intended professional impacts around reciprocal collaboration?.....	i
Question 2: How do various partners define collaboration from their own cultural perspectives and to what extent and in what ways did the ROW collaboration fulfill their expectations?.....	ii
Question 3: What did the various collaborations look like within ROW and how were they developed and nurtured/sustained over time?	ii
Question 4: To what extent did partners feel their voices were included in the collaboration?.....	iii
Question 5: What contributed to successes and what were lessons learned for future cross-cultural collaborations? What were the limitations and constraints for different partners and how were they addressed?	iii
Introduction.....	6
Evaluation Process and Methods	6
Collaborative Evaluation	6
Study design.....	7
Evaluation Questions	7
Methods and data collection	7
Participants, Recruitment, and Consent.....	8
Terminology and Language	8
Results and Discussion.....	9
Professional Outcomes and Impact.....	9
Collaboration process, relationships	18
Lessons Learned.....	25
Conclusions	30
Recommendations.....	32
Evaluators’ Reflections.....	33
References	35
Appendix A – Instruments and Protocols.....	36
Partners Interview #1	36
Partners PhotoVoice and Group Reflection	39
Interview #2 and Relationship Map	42

Introduction

Roots of Wisdom (formerly known as “Generations of Knowledge”) is a five-year National Science Foundation project (2010-2015) aims to engage Native and non-Native youth (ages 11-14) and their families in Traditional Ecological Knowledge (TEK) and western science within culturally relevant contexts that present both worldviews as valuable, complementary ways of knowing, understanding, and caring for the world. The Oregon Museum of Science and Industry (OMSI) and its partner organizations, The Indigenous Education Institute (IEI), The National Museum of the American Indian (NMAI), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Tulalip Tribes, Pacific America Foundation and Waikalua Loko Fishpond Preservation Society (Native Hawaiians) and Eastern Band of Cherokee Indians, worked collaboratively to develop all aspects of the project, which includes the following deliverables: (a) 2,000 square foot traveling exhibition, (b) 100 linear foot traveling graphic panel exhibition, (c) website, (d) activity kit for Native youth in informal and formal settings, and (e) opportunities and resources for reciprocal collaboration between ISE and Native American partners. The Professional Collaborative component of the project aimed to bring together members of the partnering organizations to share resources, professional opportunities, and document their collaborative process.

Native Pathways (NaPs) and the Lifelong Learning Group (LLG / COSI) were engaged to conduct summative evaluation of the professional audience impacts. The following intended outcomes were used as a guiding framework for the evaluation:

- Professional audiences will **gain valuable skills** in facilitating reciprocal collaboration across science museums and tribal communities
- Professional audiences will **increase confidence** in facilitating reciprocal collaboration across science museums and tribal communities

Evaluation Process and Methods

Collaborative Evaluation

The summative evaluation team followed a collaborative, participatory process for developing and implementing the summative evaluation for the professional audience impacts. Following an Indigenous process for seeking input and support (or getting the blessings of one’s leadership and community), the summative evaluation team used a three-part process: 1) seek in-depth input from project leadership (akin to a tribal council) and strengthen the plan based on their advice; 2) with a strong foundation supported by the leadership, seek input and endorsement from the community partners, exhibit team and advisors (akin to the broader community or “the people”); and 3) solidify the plan and send it back out to leadership and the community to allow for any additional thoughts, questions or input before finalizing the plan (akin to validation or approval to move forward from “the people” or community).

Study design

The summative evaluation for the professional audience is a descriptive, qualitative, participatory study. While the design is primarily retrospective in nature (that is, reflecting on the first few years of the collaboration), we captured three different moments in time in order to allow for the broadest view of the collaboration process. The summative evaluation followed a joint evaluation process that brought together Indigenous and conventional evaluation practices to balance voices and worldviews, thereby mirroring the type of collaboration the project itself was designed to support.

Evaluation Questions

1. How successful was the project in achieving the intended professional impacts around reciprocal collaboration?
2. What did the various collaborations look like within ROW and how were they developed and nurtured/sustained over time?
3. How do various partners define collaboration from their own cultural perspectives and to what extent and in what ways did the ROW collaboration fulfill their expectations?
4. To what extent did partners feel their voices were included? What were the different levels of engagement of partners and tribal communities in approving the exhibits/products as being accurate and appropriate?
5. What contributed to successes and what were lessons learned for future cross-cultural collaborations? What were the limitations and constraints for different partners and how were they addressed?

Methods and data collection

Multiple methods were used to answer the evaluation questions: 1) Individual/group interviews (initial); 2) PhotoVoice and group discussion; and 3) Individual/group interviews and Relationship/collaboration map (final).

Initial Interviews – Individual and group interviews were conducted in March-April 2014. Where it was not possible to do an in-person visit, the summative evaluators arranged for a phone call or video conference. Interviews were recorded or typed, developed into transcripts and analyzed qualitatively to identify the range of themes.

PhotoVoice/ Focus Group – In July 2014, evaluators joined the advisor and partner meeting held at OMSI. They facilitated a 90-minute focus group, based on a PhotoVoice activity. The PhotoVoice method was based on the question, What is the evidence of the GOK collaborative partnership(s) in this exhibit? Each participant was asked to take or draw images that address this framing question, and then evaluators facilitated a group process and discussion that drew out multiple perspectives while also building a collective response.

Final Interviews and Relationship Map – A second round of interviews was conducted in June and July of 2015 and were designed to capture any changes or deepened awareness or learning based

on the final year of the project grant. The interviews were recorded or typed, developed into transcripts, and analyzed qualitatively to identify the range of themes. Participants were also asked to visually represent their perceptions of the ROW collaborative relationships from their own personal or cultural perspective. A few prompting questions were provided around where they fit into the partnership and where their organization fit in. These maps were analyzed qualitatively to provide support for interview data around the partners' assessment of the ROW collaboration.

Participants, Recruitment, and Consent

Participants for the professional audience evaluation were recruited following the process established through the project's umbrella IRB with Ethical and Independent Review Services. For the semi-structured interviews an email and consent form were sent to all project partners inviting them to participate in an interview about the GOK/ ROW collaboration. The email emphasized that participation was voluntary and optional and that their standing on the project would not be affected by their response. For partners who agreed to participate in an interview, a time was set up and a member of the evaluation team conducted the interview by phone or in person, where possible. At the beginning of each interview the evaluator reminded the participant about the purpose of the data collection, how data would be used and that data would be reported in aggregate and anonymously.

During the advisor/partner meeting held at OMSI in July 2014, the evaluation team invited partners to participate in a PhotoVoice activity and focus group discussion. Again, it was made clear that participation was optional and voluntary, and alternative plans were provided. At the beginning of the focus group, consent forms were collected from participants who had not previously completed one. The evaluator also asked for verbal permission to audio record the focus group for analysis purposes only.

Terminology and Language

This section defines some of the key terms that are used in the report to provide more clarification and context for the reader.

Collaborative partners – We use this term throughout the report to refer to OMSI, IEI, NMAI, and the four tribal community partners. When we refer just to OMSI, for instance, we use “OMSI project team.” When we refer to the community partners (Tulalip, CTUIR, Eastern Band Cherokee and Native Hawaiians) we use “community partners” or “tribal communities.”

GOK and ROW— GOK is the title of the original name of the project and title of the grant proposal and stands for Generations of Knowledge. During the exhibit development process, the project team chose Roots of Wisdom as the exhibition title. The team then shifted to calling the exhibit and the rest of the project by this name.

Reciprocal collaboration – There were multiple perspectives from partners on what reciprocal collaboration means (see **Collaboration process, relationships**, p. 18, for summary). We use reciprocal collaboration, collaboration, and participatory collaboration interchangeably throughout the reports. We also use “collaborative process” and “collaborative partnership” as appropriate.

TEK – this refers to Traditional Ecological Knowledge, which is a western-science term used to describe Indigenous Science. Tribal nations and communities tend not to use this term; so we

mostly use Indigenous knowledge and Native Science throughout the reports, except when referring to the intended project outcomes as articulated by the lead institutions in the grant.

Western science – this term refers to science and the scientific process as developed and practiced through the Western European tradition, academic disciplines and institutions. In this project and report, it is used to distinguish between science as practiced in the western European tradition and Indigenous or Native science, which is also sometimes referred to as TEK (see above).

Results and Discussion

Results are shared and discussed in three areas based on the main evaluation questions for the study: 1) Professional Outcomes and Impact; 2) Collaboration Process and Relationship; and 3) Lessons Learned.

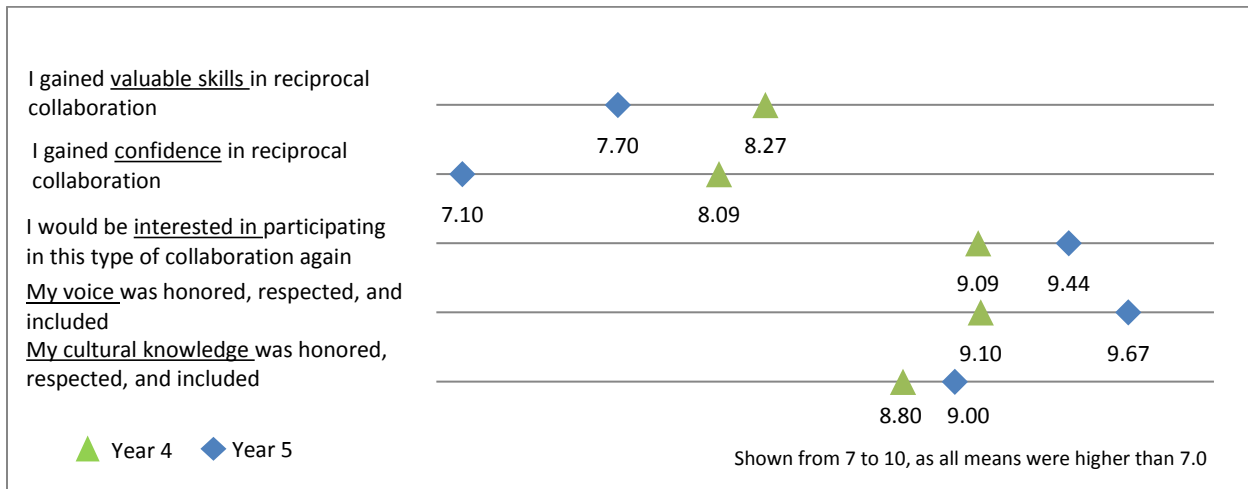
Professional Outcomes and Impact

1. How successful was the project in achieving the intended professional impacts around reciprocal collaboration?

Skills in facilitating reciprocal collaboration

Data suggested that partners at varied levels did increase their skills in facilitating reciprocal collaboration as a result of participating in ROW. In Year 4, partners rated skills as 8.27 on average (on a 10-point scale); in year 5, partners assessed their gain in this area as slightly lower, with skills being rated 7.70 on average. Qualitative data suggest that **some partners became more aware of their own learning curve over time around this area; so the lower ratings do not necessarily suggest that skills actually decreased**, but rather reflects that the deeper one gets in this work, the more one learns how much there is to know. Another factor in the decrease in ratings from Year 4 to Year 5 was the addition of several new partners, impacted by staff turnover at a couple of the partner organizations. Those individuals felt they had not been involved long enough in the project to experience any impact in this area (see Fig. 1 below). For example, one new partner suggested that they observed others learning new skills in various areas, but had not had enough time in the collaboration to feel that they themselves had gained skills.

Figure 1: ROW Partner Ratings on Professional Impacts (on 10-point scale) – Year 4 and Year 5



Collaborative partners provided rich, qualitative feedback on how they defined the skills gained through participating in ROW. **The primary skill they reported gaining was communication**, which included a variety of mechanisms (such as using more phone conversations and in-person meetings), as well as listening to, respecting, and honoring the other partners in the collaboration. Nearly all participants talked about gaining respectful communication skills that take other worldviews into account as one of the key skills of reciprocal collaboration. The following comments from participants help illustrate this point:

“One of the most important skills is communication skills, staying on top of emails and phone calls. (That’s) probably one of the best examples I could think of.”

“The biggest skill is open communication and being able to relate what your cultural protocols are and the importance of cultural protocols to someone who doesn’t know it or understand it or hasn’t experienced it before; but to convey it in a way that you’re not coming off as condescending or telling them they’re doing it the wrong way; but just saying ‘this is why we do things in certain ways and how.’ Communication is huge. You have to think more about that because of this project – how you’re going to say something and get it across.”

“In a way, I’m glad this project has been a long one, I’ve had time to really practice and develop the skills I gained, such as communicating with and about collaborators, avoiding misrepresentation, (including) Indigenously determined content and voice, and navigating differences in decision making.”

“I was able to exercise skills in having crucial conversations – meaning, because collaboration was such an integral part of this project, conversations needed to have sensitivity around them...I was able to learn more and stretch my skills in regard to conversations that were sensitive.”

Another skills-based outcome was **increased learning around cultural protocols** (both for science museums and for tribal communities). ROW partners stretched themselves and crossed boundaries to understand and honor diverse worldviews. Many partners, especially from the OMSI project team, focused on their cultural learning around partnering with Native communities, such as increasing face-to-face time, bringing gifts to reciprocate and honor knowledge shared, respecting elders and arranging for an opening and closing blessing for important events. For example, one participant commented, *“I’ve learned a lot about common practices in working with Indigenous communities like exchanging gifts and having some kind of opening...what are important protocols, figuring out how to include that. Also listening (to partners) and not making assumptions.”*

Similarly, several of the Native partners felt they had gained a **deeper understanding around the organizational culture and protocols of a large science museum** and how a large science museum operates, as well as skills related to the exhibit development process, decision-making, budgets and timelines. The following comments help illustrate this area:

“I think we learned how things worked in a major science center; how decisions were made, how different partners collaborated to make an exhibit, what were the decision making processes, what were the timelines, and how did they work together... learned a lot about how museums and science centers work, the foundations of how things are decided and brought into fruition.”

“[We learned a lot from] all the details involved, the planning, installing, getting ready for it, figuring out the layout, ADA requirements. There are so many aspects – insurance, security – this was the first time we’ve done something like this.”

“[We learned about] the process that a museum like that follows; how they set their deadline and how the work flow goes... To see how it was done with an exhibit final product, it was interesting to follow how that was put together. We could use [this knowledge] if we do something like that again. Then just working on interpretation skills, continually building those – making sure we’re representing the tribes, language, history and culture correctly; that’s ongoing skill that we have to work on. I can say the same old thing for 10 years but then realize there’s a different perspective; so I need to actively listen to other points of view, even in our own community.”

Some partners felt that ROW specifically helped them **gain skills around bringing together TEK and western science in museum settings**. This included the ability to make connections and bridges between a science museum and tribal communities, learning to unfold and describe the science embedded in Indigenous ways of knowing, and learning immersive, hands-on ways to bring these knowledge systems to life in an exhibit setting. Following are a couple of comments that support this point:

“So perhaps the collaboration has created a greater opportunity to see consensus, similarities and shared values as (opposed) to polarity of ... comparing and contrasting. I believe the unity is to

clarify your thinking that is a continuum. It is not a black and white or 'either/or'; it is the way Nature is and can be if you see things from a collaborative experience, so that collaboration is really an integration and not so much an inclusion. It is actually taking so much and being able to integrate it and then make something successful out of it. It's seamless."

"This project is super unique in that we're trying to put out, validate and send around the country not just science content but another way of knowing. This huge cultural aspect to science. And we're putting that on a science museum floor, which is not typical. I feel confident promoting cross-cultural collaboration, putting things on the museum floor that show different perspectives, which are worth highlighting and valid, and so important to educate people on."

"What I took away from the project, and the exhibit itself, was an understanding of the traditional knowledge which although very different from western science, it's complementary; it's sort of familiar in some ways as well; we all make observations, the realization that (TEK) is just as valid as what we learn in school with the scientific method. That was a strong message for me."

Other skills, mentioned by fewer than three participants each, included learning to **advocate for including Indigenous knowledge in a science museum**, and "soft" skills such as **flexibility, patience and open-mindedness**. The following are a couple of comments to illustrate these areas:

"On a fundamental level I've been able to develop skills in advocating for Native partners and advocating for voices to be heard and come out in the work, internally and externally as well. I had no idea how to do that before."

"In many ways it's similar to any partnership development scenario; being clear of your needs and wants and being very open and receptive to understanding what your partners' needs and wants are, and that's how it becomes reciprocal. Allowing time for relationship building – and the skills of being flexible, patient, and open. Soft skills."

Several participants expressed that the "skills" of collaboration were difficult to define and did not feel like this was the right way to express what was most beneficial about the ROW collaboration. The following quotes help illustrate this point:

"I feel like 'skills' is a western thing – it's more about the relationships than the skills... Being able to build a relationship and have them is a skill, but it's hard for me to think of it as 'skills.' It's so much more important that we have these relationships... It's not about how I can communicate or impress people, but how I am building a relationship."

"Specific skills, it's hard to define what those skills are; I learned a lot, and I used that knowledge; (but it's) not a tangible skill; it's more about knowledge and understanding and comfort level."

Confidence in facilitating reciprocal collaboration

Participants were also asked to articulate the degree to which they gained **confidence in facilitating reciprocal collaboration** as a result of being part of ROW. Overall, partners indicated moderately high increase in confidence. In Year 4, partners rated confidence as 8.09, on average; in year 5, partners assessed their gain in confidence as slightly lower, 7.10, on average. Similar to skills, this decrease is likely due both to increased awareness of their own steep learning curve, as well as the addition of some new partners who had not had time to experience significant increase in this area. For example, one partner noted:

“I feel like I’m still learning; and that there’s such a diversity of cultures, and it just seems like it’s a pretty ambitious field to attain proficiency in. And I’m apt to make mistakes because it’s really easy to default to your own culture; so you really have to be mindful. I feel way more comfortable now – when I first started I was pretty nervous about making mistakes and about the history between the cultures, the historical trauma, and dealing with that, not knowing how to navigate that. The best thing I’ve gained is lots of practice and getting comfortable.”

Qualitative descriptions of increased confidence help paint a rich picture of how confidence was defined and experienced by partners. For several tribal partners in particular, confidence was defined as **increased trust towards a, non-Native science institution** to represent their story, their voice and their community in an inclusive and respectful way. This outcome can be seen within the historical context of mistrust by Native communities of western museums and institutions, which historically have represented Native peoples and cultures without their input and/or in disrespectful, inauthentic ways. In the ROW collaboration, confidence was built over time through relationship and action – such as experiencing the way in which partners and advisors were included, respecting advice on suggested changes for exhibit environments, and how communication was frequent and clear. Following are a couple of comments to support this area:

“I know in the past, science museums have always had the reputation for creating an exhibit on Native Americans without the view or voice of Native Americans. In the past, exhibits typically depicted the stoic Indian or savage Indian, in display cases or dioramas; but I have to say from the beginning of the (ROW) project, I’ve always had confidence right from the start just because we were asked to be involved with the project. It’s an honor that we were approached in person to partake in the development of the exhibit. It’s just so great that a science museum, along with other museums, are now incorporating the Native voice, the Native viewpoint. That’s why I’ve always had confidence in the collaboration from the start.”

“I gained confidence that (the exhibit team) will represent our thoughts and feelings to the highest degree and fidelity. I base that on the relationships we built with them. They only brought us together once but they were always sensitive and mindful throughout the process to make changes and give input and bounce ideas off. We didn’t always agree but this was fine because the process led us to a high integrity and this was fine.”

Several partners, mostly from the OMSI project team, expressed increased confidence in terms of their **comfort levels and familiarity with cultural protocols**, reducing their fear of making mistakes, being able to converse with Native partners with mutual respect for knowledge shared, and through the experience itself of working on a project together – that is, the process and experience of collaboratively creating an exhibit brought a sense of confidence that they could engage in a similar collaboration in the future. The following quotes help illustrate these areas:

“I would definitely say I’m more confident now – I was so unsure of how it would work. We were working with four different cultures, people with different ideas about the best ways for this project to unfold; that seems very challenging to work with developing the exhibit with four different partners; there’s a lot that could go wrong, and I didn’t want to damage our relationships with any partners. I wanted it to be beneficial and positive, so I worried we would make some misstep, not intentionally.”

“I think I was able to articulate in a sentence the confidence I have – “being comfortable with being uncomfortable” – rationally, it’s a concept that you can understand but really internalizing and knowing it and acting on it (is different).”

“When we started the project, I had a lot of worries about doing it badly or having conflicts arise or making mistakes and not knowing how to work with another culture; part of that is I didn’t have a background. [We had] a lot of worries that we could mess up and frustrate people we were working with; that was a big barrier to doing the work. A lot of people working in museums - they want to avoid the conflict so they don’t attempt to include the community when they’re creating or doing work that’s even about Native communities. With any diverse community you have that anxiety. To me the wonderful thing is that it was really good to get over that. That’s really a barrier and you can’t listen to that, you have to think about why you’re reaching out to communities who have good intentions and really be open to not having control over everything; for me personally, it’s really stretched me to realize that it’s really doable, and it wasn’t as difficult as we imagined it would be. Maybe we were doing the worst-case scenario or being perfectionist – but this was a big area of growth for me.”

Relationship and trust

Participants articulated many important outcomes beyond those articulated as “intended outcomes” of the collaboration, primarily building relationship, mutual trust and respect. From an Indigenous paradigm, these outcomes indicate a **high level of success** for the *Roots of Wisdom* collaboration, even more so than do those outcomes articulated in the project’s logic model (skills and confidence). From an Indigenous worldview, without relationship you cannot find place, and without relationship you cannot establish trust. Relationship must come first before the process of collaborative partnerships can evolve.

Almost all partners talked about **building relationship as one of the most important outcomes** of the collaboration. This area will be discussed in more detail in the section “Collaboration Process and Relationship.” It is important to include in the professional impacts section because so many

partners talked about relationship as a primary outcome of Roots of Wisdom – both the ability and opportunity to develop relationships across different settings and worldviews, and the relationships themselves, which for many have continued through other projects and initiatives. The following quotes help illustrate this important area:

“What I feel like I learned more and more through every project is the importance of building relationships...those are critical to do any meaningful work...I’ve shown my interest and willingness, I’m here to do this together; to do this collaborating; most important thing to keep having these kinds of projects so we can maintain these relationships and build on them... It’s not different from any other relationship; it’s about respecting, listening carefully to what they bring to the table; but also bringing something to the table myself. It needs to be reciprocal and everyone is getting something out of it. If anything it’s me learning what I can bring to the table to build on the project. I don’t think it’s different than anything else, just given me more opportunity; so much cultural backstory and conflicts, adds another layer of difficulty, even if basic concept and foundation is the same.”

“To me that was the biggest benefit, the friendships and personal relationships that I did not expect to have that happen... Having those opportunities to bond and see them on a regular basis; we created these friendships and we may never have met otherwise. To me that was invaluable.”

Gaining awareness and understanding of diverse perspectives

Many partners expressed increased awareness and understanding as a result of participating in ROW, mainly around the content area and focus of the project itself. This included deeper awareness and understanding of diverse perspectives of nature, environment, and sustainability; and increased awareness around Native histories, cultures and communities. For some non-Native partners who had little prior experience or understanding of Native communities or tribal histories in this country, this area presented a steep learning curve. Following are some comments to support this point:

“I feel like just what I’ve learned about TEK and traditional knowledge has given me a deeper way and different way of looking at the natural world ... When you’re doing science you don’t always realize you’re setting up boundaries – you feel you’re looking at these things and trying to be objective and logical. It’s very interesting to bring different (perspectives), to see more connections, see the ways that science is cultural, and the ways that science doesn’t consider every connection or every way of looking at something.”

“It’s been a really positive experience professional-growth wise as well as personal. Thinking about the environment and my relationship to the environment...I never thought about my relationship to the environment that way before, and I’ve definitely had that moment myself...The project has really reached me in a personal way.”

"[I gained a] changing worldview, all the experiences I had. And reflecting on science as a way of knowing and the different approach that I may not have had without working on this project, the lens of viewing science through, which then I can take to other projects as well."

"I feel like I learned some strategies, and that you can't extrapolate across any group or community, Indigenous or not, that this is how to approach it. While there were issues with working with 4 groups at once, we did see a variety of ways to work and preferences, a lot of different types of collaboration; it was great to see it wasn't just one organization or one tribe, and then this is the one experience."

Organizational and community impact

While the intended outcomes for ROW were defined in terms of individuals, discussions with the ROW partners indicated that understanding organizational and community outcomes would also be important. All of the partners were able to identify ways in which participation in the collaboration had impacted their organization or community in some way. These areas included the following:

Transferring knowledge, lessons learned and relationships to other projects. Partners shared multiple ways in which they had already transferred the learning gained and the relationships developed through ROW to other projects and initiatives. OMSI team members in particular shared ways in which their involvement in ROW, as well as the NSF-funded projects *Cosmic Serpent* and *Native Universe*⁴, has influenced their practice and approach in other work. The following comments help illustrate this point:

"I'm approaching (a new exhibit development project in partnership with Native Alaskan communities) so differently. Before I would have been "get the stories, we'll put them in the exhibits." Now I'm asking who's telling the stories, how are we getting them, how do we know they're accurate, how are we presenting them, are we using Native words, how are we framing them?"

"The YAB (Youth Advisory Board) that was formed for GOK – not the same kids, but the notion of that board has now been integrated into additional projects; that relationship is one that feels very firm (with the PPS Indian Education Program); that relationship is understood to be an organizational asset."

Deepened trust by tribal organizations around working with a non-Native institution. A couple of the tribal partners suggested that one benefit to their organization or community was an increased trust for working with non-Native, western institutions. This can be seen in the context of

⁴ Cosmic Serpent and Native Universe are two NSF-funded projects in which many of the same partners were involved (OMSI, IEI, NMAI, Tulalip Tribes, CTUIR, NaPs, LLG). Cosmic Serpent was a professional development effort that brought together educators from ISE and tribal communities; and Native Universe focused on institutional change around inclusion of Indigenous Voice in science museums. OMSI served as a case study site for Native Universe. All of these efforts have been overlapping and synergistic.

a historical mistrust by Native peoples as often their stories and voices are not accurately conveyed by western museums and institutions, even when there has been input from Native communities. Because of this, the nature of Native community members has been to shy away or create barriers to engagement with non-Native institutions. This is a history that has been repeated in many cases. With the ROW project, the increase in trust-building has come from the time and effort that partners have given to listen and to embrace what is being shared so that they could accurately include the community voice and story. While there were challenges, there was still an increase in trust. Having a positive experience in which partners felt they were consulted and included along the way may help pave the way for future collaborations. The following comments help illustrate this area:

“For (our community), it gives us a sense of trust working with non-Native organizations – there’s been a lot of non-trust in the past, what do they want from us? OMSI was very respectful, not just trying to get something out of it. That opens the door, that window to future collaborations for other partners.”

“For so many years, museums have written the history of Native Americans, and in literature, Department of Transportation projects, interpretive science... these have always been written by non-Natives. (Now we) see it changing, and we are getting approached by a lot of organizations. We are thankful that OMSI approached us.”

One partner offered a couple of examples of how this trust and communication took place. *“We saw some design stuff and there were some poles that were holding up the TV panels, and there were some other design things that we didn’t really feel as a group – at least the tribal partners – we didn’t feel it represented the tribes very well. We asked for those to be taken out and for the most part they were. Also you’ll notice there are curved lines around most of the text panels and there aren’t a lot of rigid lines except for where they hit the base – that was another thing that we as tribal partners had asked them to cut out any of the rigid corners and angles, things like that.”* In another instance, the partner described a decision over which word to use on the introductory design panel for their community’s section. They chose the word for “water” as this is most important from a community value perspective:

“Everything for us begins and ends with water – we felt that if we were going to put a word on there that that would be the one we’d want to use. So it’s just the fact that we had that dialogue back and forth, it was maybe not assumed ...And also some of the imagery that was on there. We talked about our sacred foods, and that we wanted those represented on there but we didn’t want it called out... I just thought it was a good back-and-forth. We worked through that to get it the way we wanted it.”

Value in tribal communities seeing their community’s story through their own voice. Another community benefit was the opportunity for Native youth and other community members to see their culture represented in a museum exhibit, especially one created on a national scale. As one partner noted:

“For our community, it was great to know that our history, language and culture, knowing we were represented in an OMSI exhibit. The components about (environmental restoration) from our point of view, plus photos and stories and cultural information from here, they were excited.”

Some institutional level learning and awareness about what it takes to nurture an authentic collaboration. There was some evidence that the learning around cross-cultural collaboration on ROW is influencing how the institution thinks about and engages with Native communities. While partners addressed challenges around sustaining these efforts (see Lessons Learned), there are signs of shifting attitudes as well. The following comments help illustrate this point:

“I should add that we have worked with Salmon Camp and Salmon Club, several projects before with NAYA, and I really feel that our growth (on ROW) was different. In terms of our understanding – the difference was – due to the external partners that were advising us on how to behave that were respectful. Before we were using our own instincts – with a partner someone could say you need to do this, or don’t do that; they don’t tend to critique you and tell you the hard stuff; we set this partnership up as this is what we want, advice and mentorship; we’ve done this work before, but we grew more this time.”

“Speaking toward evaluation team, we have learned a lot about Indigenous approaches to evaluation through working [with external evaluators], and reading books and articles – capacity of our team has grown.”

“This is tenuous still but if we continue through complementary projects like Native Universe and others; people have seen and understood that they need to work differently, beyond the project team.”

Collaboration process, relationships

2. *How do various partners define collaboration from their own cultural perspectives and to what extent and in what ways did the GOK collaboration fulfill their expectations?*

Personal and culture-based definitions of reciprocal collaboration

Qualitative responses showed that there is a fair amount of overlap in how the ROW partners define reciprocal collaboration. Some partners shared that they had not been familiar with the term “reciprocal collaboration” prior to the project. This suggests that more work could have been done to find a mutually shared term among the partners. While not familiar with the term prior to the project, partners did find the idea of *reciprocity* as meaningful and grounded in Indigenous values. The idea of **respecting** one another, **honoring** one another’s voice, and **taking great care** of the collaboration, are all internal core values among Indigenous peoples.

Definitions from partners focused on the following areas:

- Shared goals

- Mutual benefits, respect, and reciprocity
- Positive spirit; embracing the knowledge without judgment or being negative to ideas
- Focusing on working together for the betterment of the whole; “coming to the middle together”
- Sharing knowledge and allowing oneself to open up to knowledge of others
- Respecting the knowledge and experience of others
- Honoring and making room for individual strengths and voice
- Honoring strengths and limitations;

To help illustrate these areas, we offer the following range of quotes from partners describing their view of reciprocal collaboration:

“That’s not a term that I’m familiar with...Reciprocal usually means to me that one entity does something and one receives something, but understanding that both entities will benefit. It’s usually used in reciprocal relationship in Native perspectives. For example, if you’re hunting, you do certain things to honor the deer, this is in (my culture), so that you’re giving something back (because he’s) giving his life to you. Reciprocity is very big in Native relationships; it is more understood and not talked about a lot, as far as human relationships go. (In ROW, we’re) dealing with tribes that have that as part of their traditional knowledge; if you’re working cross-culturally, it needs to be explained more.”

“It means there has to be shared goals and mutual benefits, so that the point of collaborating is you have to be thoughtful about that. It’s not just something that might happen but that you’re thinking it through and that it’s intentional. You’re making sure that all the partners benefit based on everyone’s definitions (of benefit), not just based on “oh, we’ll give you these free passes” – but that it’s arrived at in a collaborative way. That’s the ideal.”

“Collaboration is more than one person working on something or another organization to do something – just the word alone doesn’t imply equal ways or voices. But adding the term reciprocal makes it more (about) making sure that both parties are benefiting from the collaboration. That could be by giving their input and having it be heard.”

“[Reciprocal collaboration] is a genuine and authentic collaboration. Everyone at the table learns from the project and contributes to the project equally; all partners influence and shape the project. That is no small feat.”

“It’s also addressing the difficulties, when there are difficult cultural aspects or personalities that may be difficult, whether its concepts that might be difficult – different team members that you can trust and honestly ask questions of, and have an honest line of communication open – even when it’s difficult. And then when it’s positive, you have the celebratory spirit when things are going well; and not negatively working against each other, but working for the greater good of what the project may be. You also understand people’s roles and know when to defer and when to interject – you understand who has knowledge in certain areas, and they have the knowledge and

they know how to move forward. You acknowledge what you don't know and that you don't have expertise in it."

There were varied perspectives on **how the ROW collaboration fit** into this model of reciprocal collaboration. Overall there was a consensus among partners of mutual respect and shared learning toward a common goal. Partners also suggested that the ROW collaboration supported positive relationship building. While some partners shared initial challenges in understanding one another's goals and perspectives, these were better understood and to some degree overcome as the project progressed. The importance of continued communication with all partners for areas where input was needed was important to honoring the reciprocal collaborative environment. When the partners physically came together the reciprocation was heightened. One of the key areas of the reciprocal environment was the long-lasting relationships that unfolded through the pathway of ROW. Following are a few comments which help illustrate this area:

"There's been a lot of collaboration, definitely more than any other project I've worked on here. Much more collaboration than how we've collaborated on other projects – doesn't mean we did a good job or used the best structure, but there was more collaboration. In terms of making the exhibit a real thing...we ran all the imagery by our partners, asked them about the colors we were choosing – just put that in front of them and tried to get their input; typically I wouldn't have gone that far – I would have presented a design and said this is what we're gonna do. Wouldn't typically expect them to comment on colors and that level of detail – (so we were) opening the door much wider to have them give input into not just the content, but what is this thing that were doing, what does it look like?"

"For those of us who work the most in collaboration, it could have been frustrating to us once in a while when things weren't as collaborative as we wanted; but they didn't have to adopt all of our ways to work; there's a way that we can all meet in the middle. I loved watching it grow as OMSI people were starting to make decisions. The way they brought in advisors and used them throughout the project, I give them an A+ for that. As far as letting partners and advisors know of things as they were coming up, people were doing a really good job of that. It was always on their mind. Because the Indigenous way is a lot more flexible on time and deliverables – but OMSI has some really strict deadlines they have to stick to –that didn't cause frictions, but it seemed like they had to struggle to learn how to do that, but we would see growth there too."

"I feel like as we tried to use that model, we've been challenged a lot, we've had to grow a lot; it wasn't something we started doing with a clear idea of how it was going to work, or how we would manage the expectations OMSI has with being as fully collaborative as we wanted to be with partners; there was a tension there; I think we've made progress. We've not gotten completely there, but we've moved closer and closer to figuring it out."

"[For my culture,} the teachings are that you should always have a good heart and a good mind, working on everything for others; with GOK, I feel like everyone came to the meetings with a good heart and good mind. All the work that was done was done for the betterment of the exhibit."

“The key turning point as it relates back to reciprocal collaboration, we initially did everything by technology. The gate changer was when we all came physically together. We’ve had at least 3 with the entire group. From an Indigenous standpoint, it requires the physical sharing of space and time together. The face to face collaboration and sharing was key. OMSI was very astute about the importance of that. It was really good, and then the relationships were able to be built off the face to face experience and to me everything flowed easier. To me it lends itself to understanding there are different levels of collaboration. The highest was sharing time and space and we are able to build.”

A few areas where partners suggested **reciprocal collaboration did not work as effectively** included logo development and the formative evaluation process for the professional audience. In some instances, decision-making became a challenge because of the importance of including and respecting all voices – for many this was a new grounding in terms of the time it takes to allow this process to unfold, as well as how to balance different perspectives. Cultural differences in communication styles and the learning curve around deep listening also impeded decision-making at times. The reality of staff turnover within institutions and limited time and resources at certain points hindered the reciprocal process at some levels.

3. What did the various collaboration(s) look like within ROW and how were they developed and nurtured/sustained over time? To what extent and in what ways did reciprocal collaboration occur among and across the different partners?

Descriptions of relationships and how they developed over time across the collaboration partners.

Partners generally indicated positive perspectives on how relationships were developed and nurtured over time; including **increased comfort in collaborating, familiarity, trust and mutual transferring of knowledge**. Other examples included informal visits and invites to other outreach opportunities; and the seeding of understanding each voice and person has important knowledge to contribute. For some the paradigm shift of letting go of control was a huge learning curve.

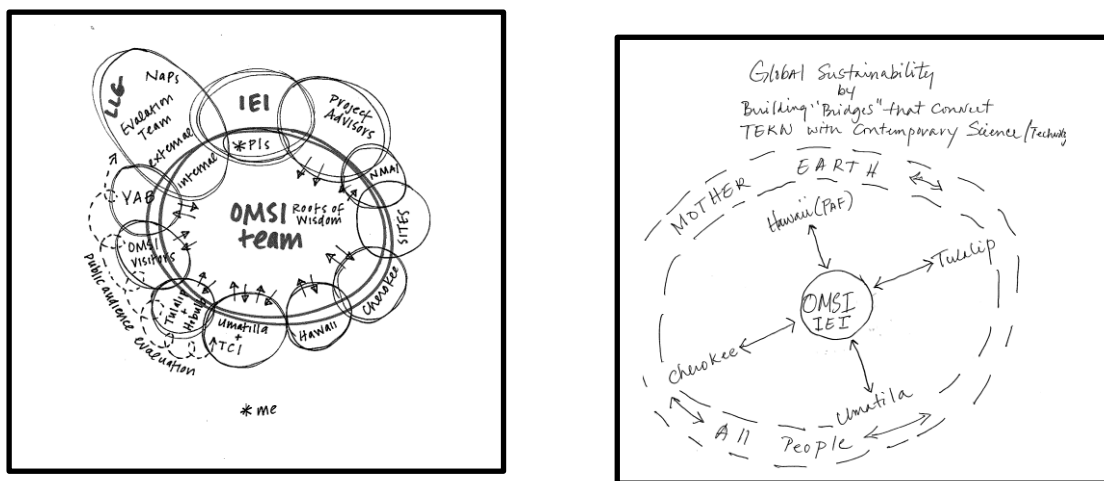
Some partners felt that the relationships solidified or deepened despite the ending of the project funding. A few partners struggled with defined timelines found within funding cycles and the idea of continuous partnering. With the project coming to an end, these partners indicated that they will miss the partnerships, without looking at possibilities of continued relationships, which is different from a Native worldview of lifelong connections. Other challenges included feeling overwhelmed with all the steps taking place to build the exhibit and, on another level, feeling overwhelmed with the balance of obtaining all partners voices and making things happen within the tight production timeline. Providing some initial, baseline understanding of Indigenous worldviews – including the emphasis on relationship, process and reciprocity – was viewed as important but was also overwhelming to some at times, because of the steep learning curve for those new to working with tribal nations or communities.

Most described the structure as “many collaborations,” primarily with OMSI in the center. Over the past year, there has been some connection between partners who were able to visit and share knowledge around installing the traveling exhibit. The three partner/advisor meetings were also seen as important opportunities to deepen relationships among one another, and to learn from other tribal museums and communities. A few partners explicitly expressed that even more in-person time and meetings with all partners would have been helpful to strengthen the process of reciprocal collaboration.

Access to networks has been important to growing other opportunities around bridging Indigenous knowledge and western science. Several partners indicated the process is applicable to other communities and they are working towards introducing the process through other pathways and potential continued partnerships with several partners from the ROW project.

Based on the relationship map activity, there were multiple perspectives of the ROW interconnections and relationships. There were two representations that emerged from the activity: 1) Most participants saw the partners as equal players in the process, with the exhibit being the nucleus that bridged them all together; 2) A few individuals displayed more of a hierarchy, with OMSI as the nucleus -- and in one instance OMSI and IEI together as the nucleus -- in connecting all partners. In at least two cases, the participant explained this choice as representing their own perspective of time spent at OMSI, and not the relative importance of the organizations. These participants felt they would have represented the partnership differently were it framed as a “bird’s eye view.” In one case, the participant showed the geographical distance of all partners but still showed the Oregon area (OMSI) as the central locale for partners.

Figure 2- Examples of ROW Relationship Maps



Vision for future growth and development of relationships and partnerships beyond the ROW project.

Partners expressed interest in continuing the relationships and partnerships developed in ROW, while there was also a strong sense of uncertainty in this area – particularly related to the need for Lifelong Learning Group

funding to continue project work. This differs from an understanding of relationship from an Indigenous worldview, where relationship is resonated as life-long connections. For example, within Pueblo worldview, when a person is invited into a family's home for feast time, they literally become part of the extended family and the relationship is seen as a life-long connection or relationship. There are no boundaries or defined closures that cut off the connections.

Several partners are moving towards applying the process to other collaborative efforts they are involved in and within their local communities. There were some good examples of continuing relationships, such as through a continued collaborative process in developing the project's legacy document and staff guide; developing conference presentations together; and by bringing the ROW partners into other projects as advisors for new projects, exhibits, and/or programming, such as *Lenses on the Sky*, an OMSI planetarium project focused on presenting the night sky from multiple cultural perspectives. In addition, OMSI has initiated a strategic direction to focus on better serving the state of Oregon through outreach, and one staff member felt that Tamástsiłkt could be a strong partner for helping to facilitate this goal.

4. *To what extent did partners feel their voices (cultural protocol, exchange of knowledge, worldview) were included? What were the different levels of engagement of partners and tribal communities in approving the exhibits/products as accurate and appropriate?*

Quantitative data suggested that **partners felt included and respected in the collaboration**; and quantitative ratings related to these areas increased from Year 4 to Year 5 (see **Error! Reference source not found.**), suggesting that partners felt an increased sense of inclusion over time. For example, partners rated the statement "I felt my voice was honored, included and respected in the ROW collaboration" 9.10 on average (out of 10) in Year 4, and 9.67 on average in Year 5. Partners rated a similar statement ("I felt my cultural knowledge was honored, included and respected in the collaboration") as slightly lower (on average, 8.80 in Year 4, and 9.00 in Year 5), mostly because some partners felt it was not part of their role to share their cultural knowledge. For example, some OMSI staff saw their role more as helping to tell the community stories in the exhibit, rather than sharing their own knowledge. Other non-Native partners interpreted this statement as sharing western science knowledge or knowledge of exhibit development.

Tribal partners conveyed through interviews that the **collaboration supported a sense of ownership and direction** over how their community's story was told, including content, text, images, colors and graphics. They felt they were consulted and asked for feedback and input regularly. In some cases, this perspective was put within the context of the negative history between museums and Native communities; expressing that the ROW collaboration was about building a positive relationship. Following are several quotes to help illustrate this area:

"Any feedback or suggestions we have are always represented in the new drafts that we receive."

“OMSI went out of their way (to include us) - and they'd sometimes have to wait on us because they'd say, Ok, here is the photos or the text or whatever we're going to go with, get back to us by such and such date. Then we'd be 2-3 days over that date, and they'd say we're still waiting, whenever you get a chance... They were very patient with us.”

“The face to face (time) - this was well done, and we never felt rushed. We always had opportunities to share our ideas. When we were not face to face, the OMSI staff was good in allowing us to give input and it's why it's so successful. At the end, everyone had a high level of ownership in the outcome and end product.”

“They well-represented our knowledge – OMSI didn't write the text for us, they allowed each individual community to put it in their own words and provide their own content, and that's important for Native communities especially.”

“[One partner] talks about it as “their exhibit” which I really like; they don't talk about it as an OMSI exhibit; (which implies) there's a feeling of ownership and investment. I haven't had that experience before – we go to venues that are hosting an OMSI exhibit; they are a venue, they view it as OMSI provided or created this exhibit. They really consistently used that language (“our exhibit”).”

One partner felt that the inclusion of cultural stories and songs made the exhibit particularly rich from a cultural perspective: *“During the last partner meeting that was last year or the year before, (somebody) was saying that our stories and songs should be included in the exhibit. It was a good point; so those have been integrated... We have one of our stories and one of our songs in one of the exhibit portions. Those are very important for our cultures; the teachings are passed down from generation to generation through the stories.”*

Partners also **indicated a learning curve around how best to be inclusive of multiple voices** in the process. This included the time it takes for decision-making in a tribal community, which did not always fit into tight production timelines; as well as being sensitive to details around language, images, color schemes and materials, which all influenced the authenticity of the story being told. In one case, a partner noticed by chance that an image in their section was not actually part of their land. While an unfamiliar eye would not recognize this error, a community member would instantly see the image as inaccurately telling their story and place. For example, one partner commented, *“It was a learning experience for both sides, and once we were able to get past some of that initial space between us, then it was great.”*

A few of the non-Native partners expressed that their role was not to bring their own knowledge or voice to the collaboration as much as listen to and respect the voices of Native partners. Some noted that the project intentionally emphasized traditional ecological knowledge, as it would be less familiar to science museum visitors and historically has been given limited voice in these settings. Following are a few comments that address this area:

“I feel like because of the dominant place that western science has in the world, I think we actually tried to include more Indigenous culture – but I don’t know if we succeeded. I feel like in the exhibit, because we felt it was harder for visitors to understand the Indigenous culture and that they were less familiar with it, we put more effort into explaining the TEK than the western science. Another reason is that if the exhibit is situated in a science museum, there’s a lot in the museum that’s interpreting western science, it’s not the only opportunity. We probably tried to make it more about TEK in more depth than the science for those reasons.”

At another level, one non-Native partner felt disappointed that western science wasn’t given as much exposure in the exhibit. This person commented:

“Generally, I will say that I was disappointed that Western Science - which I consider to be my voice - took such a back seat on this project. The reasoning that was expressed to me by a variety of internal and external collaborators is that in order to give emphasis to Traditional Knowledge it was important to obscure or avoid the dominant cultural sensibility - Western Science. I feel like this is contradictory to the big idea of this project that both of these knowledge bases are equally relevant and valuable. I feel that they should have been given equal weight. For example, why not show the Latin scientific names next to the Indigenous names for plants and animals? What a strong statement that would have made.”

Lessons Learned

5. *What contributed to successes and what were lessons learned for future cross-cultural collaborations? What were the limitations and constraints for different partners and how were they addressed?*

Partners provided a variety of rich perspectives on what supported and nurtured the ROW collaboration, as well as offering guidance for developing successful collaborations between science museums and tribal organizations in the future. Many of the same themes emerged across these conversations, suggesting that partners are generally in agreement around the nature of the collaborative process. These themes are identified and explained in more detail below.

Build on existing relationships, start forming the collaborative partnership early, work on multiple projects together.

Many partners talked about the importance of building on existing relationships and developing new relationships early in the process. Historically, when western museums and institutions have approached Native communities to participate in a project this has happened very late in the process – once the concept has already been developed and the funding has been approved, and sometimes far later than that. Partners noted that for the most part Roots of Wisdom was built on prior relationships developed through Cosmic Serpent and strengthened through Native Universe. For example, the ‘Imiloa Intensive for Native Universe (in which OMSI staff participated) had a significant impact on key members of the ROW project team, especially those who were not part of Cosmic Serpent, and deepened the partnership with Hawai’i, as staff were able to visit some of the fish ponds in person while there for the ‘Imiloa intensive. The Native Universe residency at OMSI

also served to strengthen their relationships with the local urban Indian community and fostered the Youth Advisory Board experience. One team member commented, *“Cosmic Serpent and Native Universe were both professional development projects to foster how to work with two worldviews and bring Indigenous voice to museums. So OMSI had the chance to prepare, learn, and reflect about this sort of cross-cultural collaboration in community with other organizations before starting (on Roots of Wisdom) and during this big project with major public deliverables.”* Two of the partnering communities were included in the ROW/ GOK proposal development process, and two were invited once the project was funded based on feedback from the National Science Foundation to include a more geographically and culturally diverse set of stories in the exhibit. Following are a few comments from partners to help illustrate these areas:

“Going back to the relationship (idea), the fact that we’ve had this string of projects and the same team has been involved. It’s morphed slightly from project to project, but having some constants that are connected in the Native communities. We now have lots of context with other people, scholars, friends, colleagues – that’s made it much more possible. At least at OMSI, we jump from project to project and each has a different team; I feel like that doesn’t work very well in this context.”

“I think that it’s very important to start the dialogue with partners – anyone that you want to work with – at the very earliest stages of whatever you’re trying to do. Actually, in a way we didn’t do this, we knew we wanted to do an exhibit about TEK and western science. (But then) it’s really important to ... find out what’s important to them and make sure that they’re really shaping what you’re doing. “

“Be sure that there is at least one (prior relationship), and have the key partnerships in place from the beginning – as early as possible, so that decisions are being made in the incubation stage. What is it? What are we trying to do?”

“If you’re going to approach a tribe or group like us, they need to understand that every tribe or group works differently; we’ll not all do things the same way; there’s a certain amount of time you need to spend to get to know the community, before jumping in to do this or that; time spent with members of the communities or a representative to figure what can be put into an exhibit; what interpretation can be provided; what the community would like the final product to look like or how it would come together. Communication and time investment that has to happen – and not to come in with an idea of how the project is going to be; it might morph into something completely different; to be flexible with ideas; and be flexible with time and deadlines up to a certain point.”

Several Native / tribal community partners commented on the **high caliber of partner leads** in the Roots of Wisdom project as being an essential component to its success. They felt that bringing together a team of highly respected, knowledgeable and experienced people, each with their own area of expertise, was extremely important. Others commented on the importance of having “bridge people” on the project, such as the role played by Indigenous Education Institute. This role was

essential in initiating the collaborative relationships, bringing partners together and providing important guidance on cultural protocols.

Extensive face-to-face time; allowing time for relationship building, decision making.

Almost all of the partners talked about the importance of face-to-face meetings, and time to allow for the complexity of project decision-making. Partners greatly appreciated the time built into ROW for in-person meetings, and felt there should be additional time and budget included for in-person time to strengthen the collaborative process. Several partners noted a disconnection between the ideals of reciprocal collaboration and the time and budget constraints of the grant cycle (see *Limitations and Challenges* below for more). Following are a few comments that address this area:

“To me what I’ve seen is a reinforcement of some of the things we’ve been talking about. We need to listen to each other, and so I’ve seen that; we didn’t come in there with an agenda; we didn’t come together with some predetermined ideas. We pretty much came together open, with an open mind, and we learned how to respect each other; respect and acknowledge the different knowledge systems and how they can be put together in a museum setting. The openness and flexibility is important – that allows creativity on both sides; knowledge that that can be done, or agreeing that can be done is important...And then this whole work had its own pace, very slowly; if we were to have to put it together the first year, it wouldn’t happen. It took some years. I think everyone was comfortable with that pace; it wasn’t too fast of a pace or too slow.”

“If you look at the partners, everyone comes from a different life experience, but in the setting provided for us, everyone was honored and treated fairly. They spent a lot of time providing opportunities for us at a human level first, before we focused on content. From the cultural standpoint, relationship is everything. And for them it will be something long lasting.”

“We had initially been doing everything without face to face (and that) was difficult. Once we had the face to face it got better. From a funding standpoint it was expensive to bring people together, but the times we came together were really good.”

Flexibility and openness to create relationship; deep listening; clear and ongoing communication; search for common ground.

Many partners discussed the need for flexibility, openness, and learning to listen and communicate clearly in order to find common ground across Indigenous knowledge and western science. All partners were stretching outside their “comfort zones” and it was important to recognize this and be open to doing things differently. Following are a few quotes to help illustrate this point:

“There was a real example in which a couple partners came back and said you can’t use any metal in the exhibit; (but the exhibit team said) we need to be able to use metal, it’s a traveling exhibit or it will fall apart. So they came up with a common ground: can we use natural materials for

anything that's visible? Can we cover the metal? It's not helpful to freak out and say they won't let us use metal. Let's explain where this is coming from."

"It's very important to manage expectations because everyone is coming from different life experience and the team did that very well. Having the expectations beforehand was good because everyone felt they weren't being pushed. Managing and making sure expectations were clearly communicated was very important."

Additional areas mentioned by partners as **contributing to the project's success** included:

- Recognizing differences within and across communities
- Including many voices, especially include youth voice (such as through the *Roots of Wisdom* Youth Advisory Board)
- Building on local connections; which can allow for more face-to-face time and relationship building and more sustainability of the partnership
- Continuing to honor the relationships, both professionally and personally
- Building commitment of administration and key individuals in programs.

As in any collaboration, *Roots of Wisdom* faced **limitations and constraints** to the collaborative process. The primary limitation mentioned by partners was focused on budget and timeline, and how to balance the need for deep collaborative work within a fast-paced, production-oriented timeline. For many this posed a tension between facilitating an "ideal" reciprocal collaboration and meeting the requirements of the grant and the lead institution. Following are a few quotes to illustrate this point:

"I think we vastly underestimate the time it takes to do reciprocal collaboration; we build in extra time but not nearly enough. Maybe (there were) too many different groups of people we were trying to work in and it could have been more successful with a smaller number. (I would tell people to) take the amount of time you think you'll need and quadruple it; that's not an exaggeration."

"More time to develop relationships where we didn't already have relationships would have really helped; especially for those that are far away... If an organization, museum, or tribal group; if they are thinking of starting this kind of collaboration, start building the relationship locally; the time you have together physically, even if just on the phone, your confidence in the relationship is so much greater when you can meet in person, share meals, joke about movies; as well as talking about common goals for this project."

Geographical distance across partners.

Many of the partners reflected on the geographical distance being challenging at times, particularly in light of the need for ample face-to-face time. Some felt that starting with local partnerships, such as 1 or 2 local tribal communities, would have aligned better with the principles of reciprocal collaboration. The need to broaden the exhibit to four communities came primarily from the idea of ROW being a traveling exhibit that could have broad, national reach. Including multiple

communities also helps convey to non-Native visitors the diversity of Native cultures. Yet this created challenges in developing relationships with multiple communities (the closest being 3 hours away by car), and also didn't allow the tribal partners enough chance to connect with and learn from one another. Following are a few comments from partners that address these areas:

"More time to develop relationships where we didn't already have relationships would have really helped; especially for those that are far away; (other challenges and limitations?) If an organization, museum, or tribal group; if they are thinking of starting this kind of collaboration, start building the relationship locally; the time you have together physically, even if just on the phone, your confidence in the relationship is so much greater when you can meet in person, share meals, joke about movies; as well as talking about common goals for this project."

"A limitation in building the relationship (is) the distance – we can only get so far in having those relationships when you don't see each other face to face. That is a giant limitation. And a limitation on involving our local communities; had we chosen in some way, like the Grand Ronde, to be in Portland, and met them face to face all the time, we would have a really strong personal relationship by now – by choosing people who weren't local we put that limitation on ourselves."

"Fewer partners would have been easier; for our first try, this was pretty ambitious...none of them were local, even our closest (partner) was at least 3 hours away. It's hard to build relationships by phone; if we could start out smaller and more local, but NSF may not have funded that. We were trying to have a big impact and be ambitious. We had the limitation of it being a traveling exhibition – they purposefully picked diverse geographic locations to appeal to a wider audience as it traveled around. That's why we expanded to four. It was an important rationale for the project."

Differences in worldviews, paradigms, and protocols

At the heart of this work is developing a creative process for bridging worldviews, paradigms and protocols. Partners came from diverse organizations and cultures in which they work and approach areas in different ways. One key area was addressing the differences between a western-oriented institution and tribal protocols, which can take time in order to be inclusive of voice and following a proper process. As one tribal partner noted they had to *"go through a chain of command in order to get decisions made. That's why sometimes when (OMSI was) waiting on us it's because (one of us was) trying to get answers back from the higher-ups, and I was waiting to see what (they) said - that was a challenge for us."*

There were a couple of instances shared around **decision-making processes** which seemed to break down. Several partners indicated that in certain instances they felt not all voices were included or heard in the decision-making process. Sometimes communication styles and differences between the partners may have led to miscommunication and different understandings of how decisions would be made. The first example was around the formative evaluation process for the professional audience, which utilized a talking circle approach that did not sit well with several partners. They felt it seemed out of context and they weren't sure of its overall purpose; some also

felt it was confusing to have so many different evaluation teams on the project. The second example shared was related to the ROW logo; a couple partners mentioned that they would have preferred a different process and approach for creating the logo, such as using a traditional design created by an Indigenous artist. These partners felt they were not adequately included in decision-making around the exhibition's logo.

Despite the few challenging areas, partners described a positive collaboration in which multiple **strategies or approaches** were used to overcome limitations. These included:

- Focusing on building trust, openness and flexibility
- Advocating and educating within one's own organization
- Viewing the collaboration as a learning process
- Focusing on relationship and process
- Being open to learning and reflecting on one's own cultural assumptions

Conclusions

Conclusions are shared holistically, while using the evaluation questions as a guide, to address three main areas: 1) professional impacts as a result of participation in ROW; 2) the nature and process of reciprocal collaboration; and 3) successes and lessons learned for future collaboration.

Professional Impacts

There were many positive environments and processes created throughout the ROW project. This included the opportunity for collaborative partners to learn and grow from one another, gain new perspectives and understandings, and develop relationship and trust over time. The intended outcomes for the professional audience that were defined in the project's logic model (skills and confidence in facilitating reciprocal collaboration between science museums and tribal communities) were achieved for the most part. However, it turned out that the **more salient outcomes were around building relationship, trust and deeper understanding** of different cultural or institutional processes and protocols. Partners clearly felt they gained skills and confidence in doing collaborative work; but it was the relationship and trust-building that served as the foundation for these other outcomes and supported the positive growth and learning on the project. In future work of this type, relationship and trust-building should be considered as primary intended outcomes.

One of the most significant outcomes of engaging in the ROW project were the relationships that evolved between partners and organizations, which are unfolding into new opportunities to continue the relationships. Geographic proximity is a key factor in establishing and sustaining relationships, given the time and care it takes to nurture reciprocal collaboration. For example, there were more opportunities for OMSI to visit the Tulalip and CTUIR partners, and vice versa, and this is evident in the relationships developed with these community partners as well as in the sense of future possibilities for collaboration.

The professional impacts were supported by the fact that the collaborative process began early –at the proposal stage for two of the partners– and many of the ideas, concepts and design were co-

developed with partners. Attention to communication styles and protocols also supported learning – such as through in-person meetings, frequent communication (especially via phone conversation), and the fact that the partners were all brought together through prior relationships and partnerships. In other words, some trust had already been created, and bridge people (such as IEI partners) helped to nurture and facilitate these relationships from the beginning of the project and throughout.

Overall, all partners stretched outside their “comfort zones” and crossed boundaries in order to facilitate a collaborative process. Each partnering organization gained new awareness and understanding of a different cultural paradigm and found ways to establish common ground and practices. As a result, all partners felt open and more prepared for engaging in similar collaborations in the future.

Reciprocal Collaboration

The foundation of the collaboration’s success was that it started from an Indigenous process based on relationship. Many of the partners had already been working together through the NSF-funded project *Cosmic Serpent* when OMSI was first introduced to the Tulalip Tribes and Hibulb Cultural Center. Additional partners were brought on board through prior relationship and connections, facilitated through the Indigenous Education Institute. This allowed for an initial sense of trust and credibility for everyone involved and opened up the pathway for a collaborative process.

The idea of “reciprocal” collaboration resonated with most of the partners, although it was not a familiar term for most. The emphasis on reciprocity, mutual benefits and respect fit well within Indigenous paradigms and was also well understood by non-Native partners. Adding the idea of “reciprocity” to collaboration emphasized for the partners that all must benefit and have significant voice and input, and this framework did result in many of the non-Native partners deepening their understanding and practice of what it means to participate in a truly collaborative process.

Participating in a cross-cultural, reciprocal collaboration through exhibit development was an enriching experience for partners and led to increased understanding and ability to collaborate across multiple institutions and perspectives, particularly in bridging Indigenous knowledge and Western science. The context of producing multiple deliverables within a relatively short time period created some tensions and limitations that shifted the focus toward productivity and meeting deadlines, making it challenging for some to follow what they felt were the ideals of reciprocal collaboration.

Successes and Lessons Learned

The ROW partners clearly gained a great deal of respect for one another and created a process that allowed everyone to feel some pride and ownership of the project. While everyone acknowledged a steep learning curve, and shared that there were certainly some bumps along the way, it was also apparent that partners felt the collaboration was valuable, productive and successful in a variety of ways. One “unexpected” success shared by many was the inclusion of Native youth in the planning and development process through the Youth Advisory Board created by OMSI and the Portland Public Schools Indian Education program. Opening events held at OMSI and at the Hibulb Cultural Center also showed a high degree of support from Native community and tribal members. Youth

expressed pride in having their culture reflected in the exhibit and tribal partners felt that their own voices were included and listened to, as reflected in the final products.

Given the unique and new opportunities presented through this collaboration, it is natural that many lessons learned emerged along the way. Including multiple geographically and culturally diverse communities in the partnership was beneficial in terms of learning around the diversity of Native cultures and perspectives, and this diversity of stories broadened the content and learning for visitors. Yet from a collaboration perspective it was ambitious for a science museum to engage four very different and geographically distant tribal communities at the same time, particularly since most of the OMSI team members had limited experience working directly with tribal communities. This limitation also made it difficult for the tribal partners to connect with one another, other than at the three partner/advisor meetings, and also pushed the emphasis toward productivity and meeting deadlines and away from relationship building at times.

Recommendations

Based on the summative evaluation of the ROW professional audience impacts, following are recommendations for future collaborations involving science museums and tribal organizations or communities:

- Consider building partnerships on a locally-based level, where there can be more face-to-face time and relationship building. One of the challenges of ROW was exhaustion of team members in stretching themselves to work with four different, geographically dispersed tribal communities. For future collaborations, it might be best to start small, and more local, and then grow from there to engage other tribal communities outside the regional area. Building local relationships also makes sustainability of the relationship more possible;
- Take into account the considerable time needed for reciprocal collaboration when developing budgets; consider the budget to be inclusive of Native worldviews and to consider the time and space needed to create relationship. This includes the idea that much time should be built in up front for relationship-building before any work on a project or product begins;
- Focus on fewer deliverables, and invest more time in the collaborative process and what it takes to support that;
- Continue building on existing relationships and projects to springboard off of, build synergy within one organization or across one group of partners by connecting multiple projects and initiatives focused on worldviews of science;
- Be considerate of the evaluation process and create a cohesive environment that lessens confusion among partners. For example, instead of a traditional front-end/formative/summative model, a developmental evaluation model (cf. Quinn Patton, 2011) might be more appropriate for this type of collaborative work.
- Ensure that all partners have due time and process to weigh in on important decisions. Be especially considerate of communication styles and the need for deeper listening when cross-cultural collaboration is involved.

Evaluators' Reflections

This section is written from the lens of the evaluation team while the rest of the report reflects the lenses of the participants involved in the ROW collaboration. Together they create the balance of the participatory evaluation process as modeled through the evaluation activities. Because the model of evaluation for ROW was to include the summative evaluation team (LLG and Native Pathways) from the early stages of the project, there is important learning to be shared that was not necessarily the primary focus of the evaluation questions. In order to contribute to this ongoing learning process, we would like to share the following reflections:

- Because of the geographically dispersed locations of the project partners, it was challenging for the evaluation team to build relationship with all the partners in order to create a deeper participatory evaluation process.
- Due to time and budget constraints to produce the exhibit and other deliverables, the main portal of communication was through OMSI, as opposed to having a cross-pollination of communication among all the partners, including evaluation. Ideally this would have allowed for more growth and a deeper collaboration and evaluation process.
- While including multiple evaluators (for front-end, formative, and summative) was rich in bringing diverse perspectives and expertise to the evaluation, it also created confusion for project partners and created a fragmented evaluation process at times.
- The uniqueness and genuine need for this type of project is clear – it is crossing boundaries in terms of collaborating with science-focused museums and cultural centers. These types of collaborations are needed to strengthen the voices of Native communities within STEM fields.
- The more that is invested in supporting the same partners and partnerships, the deeper the impact can be over time. The fact that many of the same partners were involved in Cosmic Serpent and Native Universe was a significant factor in evolving and growing over time. Pockets of funding invested in individual projects can lead people to thinking in a certain way only for a particular project, and then not carrying or deepening this perspective throughout other work.
- In order to model a true collaboration process, all areas, including evaluation, need to include all voices. While we all recognize and appreciate this ideal of collaboration, it can be much more challenging to implement in practice. While budget and time constraints are real limitations, it may be even harder to recognize and change the way we each participate in and practice true collaboration. Work on self-reflection around worldviews and cultural assumptions are fundamental here.
- All partners seem to have entered the collaboration with an open heart and mind, and willingness to grow; yet paradigm shifts are slow in relationship to a 5-year project

timeline, and we can find ourselves slipping into old patterns and practices that limit a true paradigm shift. Also, individuals are embedded in institutional structures and practices that can make it hard to change the way things are done, especially within a short timeline.

References

Patton, M. Q. (2011). *Developmental evaluation: Applying complexity concepts to enhance innovation and use*. Guilford Press.

Appendix A – Instruments and Protocols

Roots of Wisdom – Professional Impacts Evaluation Partners Interview #1

Consent

The research team will obtain consent both in writing and verbally in order to honor multiple communication styles. Verbally, the facilitators will explain the purpose of the evaluation, how the data will be used and provide information of whom to contact in case they have any questions or concerns about the evaluation (as described below). They will be assured that their participation in evaluation is voluntary and that everything they say will be kept anonymous and confidential. The facilitator(s) will then ask for permission to audio record the interview. If anyone feels uncomfortable being audiotaped, then an alternative solution (e.g. taking detailed notes) will be implemented.

Interview guidelines

Introduction

The facilitator will contact each partner by email and/or phone and will invite them to participate in an interview as part of the summative evaluation for professional impacts. The facilitator will remind the partner that participation is completely optional and voluntary, and that their input will be handled with confidentiality and respect. The interview should take approximately 30-45 minutes, and everyone should feel free to skip any questions they do not feel comfortable answering.

Guiding interview questions:

- 1) Could you please briefly describe the role you have played in the ROW/GOK project?
(Prompts → How did you initially get involved? What do you see as your primary role or contribution to the project?)
- 2) The term “reciprocal collaboration” has been used and defined in many different ways throughout the project. Could you describe from your own personal or cultural viewpoint what reciprocal collaboration means?
(Prompts → What would this collaboration look like? What are the key principles or values behind collaboration from your personal or cultural perspective?)
 - 2a. Thinking about your perspectives on collaboration, to what extent has your experience on the GOK/ROW project fit into this model? *(Prompts → Can you provide examples? How could the collaboration have been deepened?)*

- 3) How were the relationships with your collaboration partners (e.g. OMSI, IEI, NMAI, the four tribal community partners) begin? How have they evolved or developed over time?
- 4) One of the main ideas of ROW/GOK is to increase all the partners' **skills** in facilitating "reciprocal collaboration" between science museums and tribal communities or organizations. What were the most important skills you feel that you or others in your organization or community have gained as a result of being involved in ROW?
(Prompts → What do you think led to this impact? Can you provide any examples? Or, if this did not occur, can you provide a sense of why not?)
- 5) Another intention of ROW is to increase all the partners' **confidence** in facilitating "reciprocal collaboration" between science museums and tribal communities or organizations. To what extent do you feel you or others in your organization or community have gained confidence in this area?
(Prompts → What do you think led to this impact? Can you provide any examples? Or, if this did not occur, can you provide a sense of why not?)
- 6) What were some additional impacts or benefits (for you, your organization or community) of the ROW project?
- 7) Please rate the following statements on a scale of 1-10, with 1 being "not at all" and 10 being "completely". As a result of participating in the GOK/ROW project...
- a) I feel more confident in my ability to facilitate reciprocal collaboration between science museums and tribal communities
 - b) I gained valuable skills in facilitating reciprocal collaboration between science museums and tribal communities or organizations
 - c) I would be interesting in participating in this type of collaboration in the future
 - d) I feel my voice was honored, respected, and included in the collaboration
 - e) I feel the cultural knowledge shared as part of the collaboration was honored, respected and included
- [Prompts → Can you please provide ideas on why you gave these areas these specific ratings?]*
- 8) What challenges or limitations, if any, did you feel that you, your community/organization, and/or the overall collaboration has faced? *(Prompts → How were those addressed, if at all? If not addressed, do you have recommendations for future collaborations?)*
- 9) Do you have any other thoughts you'd like to share about the ROW collaboration at this point?

Finally, we have a couple of questions related to the summative evaluation:

- 1) Is there anyone else from your organization or community whom you feel we should connect with as part of this evaluation?
- 2) As we start planning for the summative evaluation of the public audience impacts (e.g. your visitors, community members), what would you like to learn from them?
- 3) What process would you recommend for us to develop a summative evaluation plan that will be relevant and appropriate for your audiences and community members?

Thank you so much for your time and input today. Your voice is extremely valuable in this process. We will now be taking everyone's perspectives and synthesizing them into a memo report, which we will share back with you all for review and comments. We will also be connecting with you soon to get input on the Summative Evaluation for the public audience impacts. Thanks again, and we look forward to our continued work together.

Partners PhotoVoice and Group Reflection

June 2014

Overview

As described in detail in the Summative Evaluation Plan for Professional Impacts, Native Pathways (NaPs) and the Lifelong Learning Group (LLG) have been engaged to conduct summative evaluation of the professional impacts of the Roots of Wisdom (ROW) collaborative project. The central evaluation questions are as follows:

1. How successful was the project in achieving the intended *professional audience impacts* (e.g. increase in skills and confidence) around reciprocal collaboration? What contributed to successes and what were lessons learned for future cross-cultural collaborations?
2. What did the various collaboration(s) look like within ROW and how were they developed and nurtured/sustained over time?
3. How do various partners (OMSI, IEI, NMAI, Community Partners) define collaboration from their own cultural perspectives and to what extent and in what ways did the ROW collaboration fulfill their expectations?

To answer these questions, the evaluation team will use multiple methods across three data collection points: 1) Initial interviews; 2) PhotoVoice / Group Reflection; and 3) Final interviews. The current document outlines the process, protocols, and specific questions for the **Photo Voice / Group Reflection**.

PhotoVoice / Group Reflection

PhotoVoice is a grassroots, participatory methodology in which participants document and reflect on key questions using visual images and engage in facilitated discussions. The PhotoVoice activity will take place during the Advisor/Partner meeting scheduled for July 8 and 9, 2014. Using the PhotoVoice method, the team will ask participants to capture visual images (photos, drawings, etc.) to answer a central question around how the collaborative process is reflected in the Roots of Wisdom exhibit. A description of the process and set-up needs is detailed below:

1. *Introduction – 10 minutes*

Participants are invited to document their response to a framing question using a digital camera or smartphone; or by drawing with a sketchpad and pencils/pens, whichever method they prefer. The framing question is as follows: ***How is the***

collaborative process (or reciprocal collaboration) best reflected in the Roots of Wisdom exhibition?

2. *Gallery time / photo-taking – 20 minutes*

Participants spend time in the exhibition and take or draw photos in response to the framing question, as many as they would like. Then they will be invited to each select 2 images that best represent their response to this question, and write a brief reflection (1-2 sentences) of why and how each selected picture best represents the answer to the framing question. Participants are reminded that there are no right or wrong answers, and they can respond to the question in whatever way they choose. This can include positive examples and/or lessons learned about collaboration.

3. *Sharing images – 20 minutes*

The images will be downloaded and shared via an LCD projector or laptop computer. Each participant can share their story of their images, addressing the central question, and why and how their images represent that question.

4. *Group discussion – 60 minutes*

The discussion will build on the photo activity and will focus on questions of how the collaborative process unfolded, what supported collaboration, as well as limitations and lessons learned. Following are the guiding questions for the discussion group:

- *Looking across all the images/narratives that were shared here today, what common themes do you see across the collaboration? How could the ROW collaboration be described to others?*
- *What aspects of the collaboration(s) do you think were most successful? (e.g. principles and processes that best supported the inclusion of multiple perspectives)*
- *What benefits do you see for yourself, your organization, and/or your community as a result of participation in this project?*
- *What were the most important lessons learned?*

6. *Wrap up, thank-you gifts – 10 minutes*

Set up

To conduct the discussion group, the team will need a quiet, comfortable space with a large central table and enough chairs for participants plus the facilitator. Chairs should all be in a circle, facing each other, to encourage conversation.

Materials needed

Provided by OMSI:

LLG projector

1-2 Digital cameras (if possible)

3-4 clipboards

Provided by LLG:

Sign-in sheet

Digital audio recorder

Consent

Following the umbrella IRB protocol, written and verbal permission to utilize feedback for evaluation purposes will be acquired in advance of data collection. Signed consent forms will be collected, and researchers will remind participants of the purpose and use of the data being gathered. Verbal permission will be sought for audio recording the focus group conversation. If any individual is uncomfortable with recording, an alternative method will be used (e.g. taking detailed notes). Researchers will remind participants that participation in evaluation activities is entirely optional and voluntary; if they do choose to participate, their names or other identifying information will not be used in reporting.

Interview #2 and Relationship Map

Prepared by Jill Stein, LLG
Shelly Valdez, Native Pathways

April 2015

Overview

As described in detail in the Summative Evaluation Plan for Professional Impacts, Native Pathways (NaPs) and the Lifelong Learning Group (LLG) have been engaged to conduct summative evaluation of the professional impacts of the Roots of Wisdom (ROW) collaborative project. The central evaluation questions are as follows:

4. How successful was the project in achieving the intended *professional audience impacts* (e.g. increase in skills and confidence) around reciprocal collaboration? What contributed to successes and what were lessons learned for future cross-cultural collaborations?
5. What did the various collaboration(s) look like within ROW and how were they developed and nurtured/sustained over time?
6. How do various partners (OMSI, IEI, NMAI, Community Partners) define collaboration from their own cultural perspectives and to what extent and in what ways did the ROW collaboration fulfill their expectations?

To answer these questions, the evaluation team will use multiple methods across three data collection points: 1) Initial interviews; 2) PhotoVoice / Group Reflection; and 3) Final interviews and relationship map. The current document outlines the protocols and specific methods for the **Final Interviews and Relationship Map**.

Consent

Following the umbrella protocol for the GOK project, the research team will obtain consent both in writing and verbally in order to honor multiple communication styles. Verbally, the facilitators will explain the purpose of the evaluation, how the data will be used, and provide information of whom to contact in case they have any questions or concerns about the evaluation (as described below). They will be assured that their participation in evaluation is voluntary and that everything they say will be kept anonymous and confidential. The facilitator(s) will then ask for permission to audio record the interview. If anyone feels uncomfortable being audiotaped, then an alternative solution (e.g. taking detailed notes) will be implemented.

Methods

Final data collection with the ROW professional audience will include two components: 1) a “relationship/collaboration map” and 2) A semi-structured phone interview. The facilitator will contact each partner by email and/or phone and will invite them to participate in an interview as part of the summative evaluation for professional impacts; this email will include the invitation to complete the relationship map activity. The facilitator will remind the partner that participation is completely optional and voluntary, and that their input will be handled with confidentiality and respect. The interview should take approximately 30-45 minutes, and everyone should feel free to skip any questions they do not feel comfortable answering. If the relationship map is not completed before the interview, the facilitator will gently remind participants about this activity and let them know they can submit it after the interview.

Relationship Map

The purpose of this activity is to understand the ways in which each partner developed relationship through the ROW collaboration and how they perceive the overall partnership. It allows for a visual representation of project impacts around reciprocal collaboration, using their own cultural lens and personal perspectives. For most Native community members, the use of visuals and the mapping process are a natural part of internal community communication forms, so it is non-threatening and will be easy to implement because of the prior knowledge base it lends itself to. This area can also serve as a springboard for the interview. (See Appendix A for activity.)

Semi-Structured Interview

Introduction:

“Thanks again for taking the time to do this interview. Just as a reminder, this should take about 25-30 minutes, and let me know at any point if you need to leave or if there are questions you don’t wish to answer. We will use your input as part of our summative evaluation report for ROW; and will keep your comments anonymous and confidential. We would like to audio record the conversation for accuracy; this would only be available to the evaluation team. Would that be okay with you? (If yes → great, let’s begin! If no → not a problem. Do you mind if I take notes instead?)

Okay, let’s begin... It’s been a little over a year since we did the last round of interviews for this project. We wanted to make sure we captured any changes or growth that occurred in the last year of project. We sent you the notes from your initial interview (if applicable) so you could be reminded of what you were thinking at that time. Now we’d like to ask a few follow-up questions related to your participation in the ROW collaboration.

- 1) In what ways have you been involved in the ROW project over this past year?

(Prompts → what has been your primary role or connection to the project in this final year?)

- 2) How have your relationships with the collaboration partners (e.g. OMSI, IEI, NMAI, the four tribal community partners) evolved or developed over this past year, if at all?
- 3) Last time, we asked you to rate some statements related to your participation in the ROW project. Looking at your responses, are there any changes you would make based on the last year of the project? If so, please explain. If not, why not?
- 4) What other new skills or learning have you developed through your participation in the ROW collaboration?
- 5) While we are primarily focusing on individual impacts, it is also important to understand how ROW may have influenced your organization or community more broadly. What were some additional impacts, if any, for your organization and/or community?
- 6) We know there is great interest in finding positive ways to bring traditional Native knowledge and western science together in museum settings. What is something you've learned from the ROW project in this area that you feel is important to share with others? *(Prompt → What limitations did you or your organization face, and how were those addressed?)*
- 7) As the ROW grant comes to a close at the end of this year, are there ways in which you see the partnerships continuing or growing into the future? If so, what would those look like?
- 8) Do you have any other thoughts you'd like to share about the ROW collaboration that we haven't addressed?

Relationship Map Activity

Thinking about the relationships you've developed through your participation in the *Generations of Knowledge/Roots of Wisdom* collaboration, please draw a visual representation, map, or other graphic that represents these relationships from your own personal or cultural perspective. Here are some **key questions** to consider addressing in your visual:

- Where do you fit in? How are you connected to the other partners?
- What do these relationships and partnerships look or feel like?
- Where does your organization and/or community fit in?
- How are the partnering organizations connected?
- How have the relationships changed or developed over time?

To get you started, you can use any piece of paper as your "canvas." Below are some **suggested steps** for doing the activity. However, we invite you to be creative and make whatever visual has meaning for you and/or best represents your experience and perspectives of the *Roots of Wisdom* collaboration.

Suggested steps

Step 1. Find a location on your "canvas" where you feel the ROW project fits best. Draw a visual that represents the ROW collaboration from your perspective.

Step 2. Represent in a visual way all the partners that you have connected with through the ROW project

Step 3. Include yourself within this visual

Step 4. Include your organization or community

When your visual is completed, please scan and email it to Jill Stein at jstein@cosi.org and Shelly Valdez at shilaguna@aol.com. You may also mail a hard copy to:

Jill Stein
Lifelong Learning Group, COSI
333 W. Broad St.
Columbus, OH 43215