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Youth Lead the Way:

A Youth Advisory Research Board Model for Climate Impact Education

Professional Development Evaluation Report

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July 27, 2023

Executive Summary

This summative evaluation study is part of Youth Lead the Way: A Youth Advisory Research Board Model for Climate Impact Education, a three-year (2020– 2023) collaborative effort between youth, a science center, and other partners. Hosted by Oregon Museum of Science and Industry (OMSI), Youth Lead the Way (YLTW) offered youth from communities underrepresented in STEM to conduct content research on local climate change impacts, advise OMSI staff members on projects related to climate impact education, and develop interactive educational products designed to engage public audiences on these impacts. Over the course of sixteen months, the program supported the formation of a Youth Advisory Research Board or YARB. As part of the YLTW project, OMSI staff members developed materials to share with adult and youth education and non-education staff at the Sciencenter in Ithaca, New York, a YLTW partner organization. Working with Sciencenter staff, YLTW staff developed a two-day Professional Development (PD) workshop integrating the priorities of Sciencenter and YLTW practices and lessons learned found to be of value at OMSI.

The aim of this evaluation study was to assess the extent to which the three PD workshop sessions (one for non-education staff, one for education staff and one for program youth) supported knowledge and confidence of Sciencenter staff and youth participants around the topics of integrating feedback from, and co-creating content with youth. The evaluation team used qualitative approaches to collect data through pre- and post-PD workshop questionnaires as well as a post-interview with the program coordinator two weeks after the PD workshops.

Findings from this summative evaluation study suggest that the PD content and delivery supported the workshop outcomes. The majority of the participants reported that the PD content was valuable as it supported ideation regarding potential opportunities to incorporate youth input at the Ithaca Sciencenter. The PD workshop sessions supported (non-education and education) staff confidence working with, and awareness of receiving feedback from youth through insights, tools, and new perspectives on integrating youth input. However, they reported that barriers to implementing the PD workshop content were resources and time available to invest, plan, and incorporate components of the PD workshop into their existing roles and projects. The program youth reported that the PD workshop session did not change their confidence around advising and co-developing programs and projects.

It is recommended that future PD workshops utilize reflective activities that involve participants imagining scenarios that apply to the work they do, and how youth input could be incorporated. Using examples drawn specifically from their organization's programs and projects could foster an opportunity for both staff and youth to imagine roles and ways to collaborate while also considering constraints of resources, models, and structures in their organization. Activities that pair youth and adult staff could also contribute to developing concrete and practical opportunities for implementation.

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Introduction

Youth Lead the Way: A Youth Advisory Research Board Model for Climate Impact Education was an NSF-funded project that aimed to leverage youth leadership to empower informal science education (ISE) institutions, community partners, and the public to engage more effectively in science-based collective action in response to climate change through the development and implementation of a Youth Advisory Research Board (YARB).

Over the course of 16 months, the YARB members conducted social science and content research studies on various local climate impact topics while concurrently serving in an advisory role at OMSI. The YARB members also developed and presented climate stories—a communication approach based on storytelling—to raise public understanding and awareness about local climate changes and impacts. More information on the Youth Lead the Way (YLTW) program can be found at Youth Lead the Way— Oregon Museum of Science and Industry (omsi.edu).

As part of the YLTW project, OMSI staff members developed materials to share with adult and youth education and non-education staff at the Sciencenter in Ithaca, New York, a YLTW partner organization. Working with Sciencenter staff, YLTW staff developed a Professional Development (PD) workshop integrating the priorities of Sciencenter and YLTW practices and lessons learned found to be of value at OMSI. This report describes the summative evaluation methods and results of that PD.

Evaluation Overview and Questions

The summative evaluation of the YLTW PD workshop assessed the extent to which the PD workshop elicited knowledge and confidence about receiving input from youth as advisors and co-creators of informal STEM materials. The content, delivery, and potential impact of the PD workshop materials were evaluated with a focus on inclusion of teen voices in non-education and education museum departments, and adoption of youth-led research into any/all youth programming outputs.

Overarching Evaluation Questions	Evaluation Methods
To what extent and in what ways do ISE staff (adults) who participate in the Youth Lead the Way professional development workshop report increases in knowledge and confidence related to youth researcher/advisor and to co-creating socially relevant programming with youth?	Professional audiences: Survey (paper the day of the PD)
To what extent and in what ways do ISE program participants (youth) who participate in the Youth Lead the Way professional development workshop report increases in knowledge and confidence related to their role as researcher/advisor and co-creation of socially relevant programming (for example local climate impact education) with adults?	ISE program participants: Survey (printed paper the day of the PD)

Workshop descriptions

An OMSI project education staff facilitated the YLTW PD workshop. The facilitator had experience not only through the YLTW project, but also managing the teen program in OMSI for almost eight years. The PD workshop sessions were delivered at the Ithaca Sciencenter on May 5 and 6 of 2023. The PD was designed to discuss the two primary roles held by OMSI youth in the YLTW project—Advisors and Co-creators. The PD was divided into three sessions after consulting with the Ithaca program and according to participants' roles at the science center:

The first session was conducted on Friday, May 5, for non-education staff with the goal of eliciting cross-departmental conversations and shared understanding about how youth can impact projects beyond Sciencenter's existing *Future Science Leaders* program. The OMSI facilitator led a group of eight people with a combination of Google slides and activities for about 6 hours.

On Saturday, May 6 there were two mini sessions, one for Education staff (adults) which aimed to support a better understanding of how to form and facilitate a youth advisory research board. Especially, how program staff could make the experience meaningful and impactful, so youth co-development in programs can be implemented. The OMSI staff educator led a group of four staff members who alternated between their schedule and the session for about 4–6 hours. The facilitation of the session included a combination of Google slides and activities. The second was a two-hour mini session attended by the middle school youth who are part of the *Future Science Leaders* program (Interactive Programs for Families & Groups | Sciencenter, Ithaca NY), and who will act as mentors for the upcoming fall cohort. This mini-session aimed at supporting a shared understanding of what youth are looking for from the mentors' program and opportunities advising and co-creating with staff (adults) in terms of becoming mentor roles and opportunities . This session included a combination of slides and activities with eight youth.

Methods

Study Design

The evaluation of the YLTW Professional Development (PD) was a summative outcome evaluation design that used qualitative data gathered through pre- and post-PD workshop questionnaires, and an individual interview. Information provided was self-reported in three instances: a pre-questionnaire prior to beginning each session, a post-questionnaire at the end of the PD workshops (see Appendix C, D, E), and a post-interview two weeks after the PD workshops (see Appendix F).

Pre-program methods: Participants were asked at the beginning of the PD sessions what they hoped to get out of the session; a prompt was provided by the OMSI staff in a slide deck and participants were invited to verbally share their responses while the OMSI staff recorded them in a slide within the aforementioned Google Slide deck.

Post-program methods: Post-program methods used in the PD summative evaluation are summarized in Table 1.

Table 1. PD evaluation post-program methods

Participant	Methods
Non-education staff (adult)	- Individual surveys (paper survey)
Education staff (adult)	- Writing notes on a large paper or sticky note - Individual surveys (paper survey)
Program participant (youth)	- Writing notes on a large paper or sticky note - Individual surveys (priority paper survey)
Program Lead (adult)	- Interview

Instrument development

The development of the survey and interview questions was guided by the overarching evaluation questions (on page 5 of this report) and the PD content and delivery objectives planned by the project program lead (see Table 2).

Table 2. PD content and delivery objectives and outcomes

Participant	Objectives	Outcomes
Non-education staff (adult)	How to include teen voices in non-education museum departments	Museum staff outside of the Education department will feel more confident and prepared to work with youth advisors, and integrate their feedback into museum functions.
Education staff (adult)	How to shift focus of current youth programming to be youth-led, and how to incorporate youth-led research into all youth programming outputs	Museum education staff will feel more confident and prepared to co-create programming with youth, and to implement guiding principles of YARBs and youth empowerment into their existing programming.
Program participant (youth)	How to shift focus of current youth programming to be youth-led, and how to incorporate youth-led research into all youth programming outputs	Youth will feel more confident in co-creating programming with adult staff and advising museum departments and projects.
Program lead (adult)	How aligned was the PD content and delivery with the current program structure and set up at the Ithaca Sciencenter	Museum lead staff who coordinate education staff will report the likelihood of implementing the PD content into their programs.

Data collection

OMSI program staff started each PD workshop session by posting a question in the workshop slide deck to gather data on participants' expectations for the session. After each session, the Ithaca Sciencenter Program Coordinator distributed evaluation questionnaires which were filled in individually by each session participant (see Appendices C, D, E). Participants returned completed questionnaires to an envelope so responses could remain anonymous.

Two weeks after the PD workshop concluded, evaluators met with the Ithaca Sciencenter Program Coordinator for a remote interview via Zoom. The goal of this interview was to gather an overall reflection of the PD workshop content, delivery, and the likelihood of or barriers to its applicability at that center. The interview lasted approximately 20 minutes and was recorded.

Informed consent and assent

Prior to starting the YLTW PD workshop, youth participants and their caregivers received a package that contained: 1) a letter that explained the purpose of the evaluation study, and 2) informed consent and assent forms that asked caregivers and youth if they agreed for youth to participate in surveys, questionnaires, and other data collection activities throughout the duration of the PD workshop (see Appendix B). The letter stated that only data aggregates or main themes would be reported (no data with individual names). Due to the small number of youth participating in the PD workshop, evaluators could not guarantee that individuals' responses would not be recognizable.

Ithaca Sciencenter staff who participated in the PD workshop received a printed consent form that included information about how the responses would be used and asked for their agreement to participate (see Appendix A).

Sample

The sample size of each session varied, based on participant availability and the session topic (Table 3). PD workshop participants completed a paper questionnaire after each session. The PD workshop included: non-education staff (for example: guest services, front desk, marketing, exhibit fabrication), education staff, and program participants (middle school-aged youth who participate in the *Future Science Leaders* program and will likely become high school mentors in the fall for middle schoolers who enter in the program). The Ithaca Sciencenter Education Program coordinator was interviewed two weeks after the PD workshop occurred.

Table 3. Sample size by PD session and participants

Session	Participant	Total sample
1	Non-Education staff	8
2	Education Staff	4
2	Program participant (youth)	8
Post	Program Lead	1

Data analysis

Data from the paper questionnaires were entered into a Google spreadsheet; data from the interview were audio-recorded, interviewers took handwritten notes, and the notes were entered into a Google spreadsheet. When needed, the audio-recording was used to generate a transcript to clarify notes.

All data were analyzed using thematic analysis for each participant group which allowed evaluators to identify themes and patterns. The themes from questionnaires and the interview were then associated/paired with the overarching questions from the evaluation and the PD objectives and outcomes.

Limitations

Participants' responses and numbers in some instances were very limited and did not support in-depth exploration of certain themes or allow for emergent themes. For example, themes such as co-development with youth input could not be deeply explored since only four education staff participants were present, two of whom had to leave the PD workshop intermittently due to the nature of their roles in the museum.

Results

The results in the following section are presented by participant group with respect to the evaluation overarching questions and the PD objectives and expected outcomes.

Non-Education staff

Goals and hopes before the PD workshop

Before the workshop started, non-education staff were asked by the OMSI facilitator about their goals and hopes with respect to the PD workshop session about youth as advisors.Responses were documented by the OMSI facilitator in a Google slide. Three themes emerged from participants' responses regarding what they hoped to get from the workshop:

- Audience communications and marketing
- Exhibit design, build, and prototype
- Outdoor area planning and incorporating input

While these responses were taken into consideration by the facilitator to help guide and customize the workshop for this particular audience, they were not specifically addressed or revisited during reflection of the session.

Insights on integrating youth voice

Overall, the PD workshop elicited positive responses from non-education staff. The PD was perceived as engaging and interactive. Participants' responses mentioned that the value of the PD content resided in providing frameworks and strategies for skills that are important when collaborating with youth.

"Guidance on how people think/communicate, especially w/regards to direct feedback & how to apply these to a longer teen youth program."

"The 'Big picture' framework and hints on developing a project were great, and things I hadn't considered yet."

In some instances, participants considered the value of the PD workshop as applicable to their roles and work and the science center.

"Bringing youth perspectives to social media. Helping with content creation to elevate their voice. The brainstorming session was helpful in leading [to] this idea."

"….For example creating a welcoming environment from a younger perspective, or how to freshen up the store."

Managerial and soft skills were mentioned by participants as opportunities for integrating youth input in their projects. Managerial skills mentioned included recruitment, compensation, time management, and scalability of projects that included youth input.

"We're thinking about redesigning our science fair. We know we want community input. Think specifically about this audience and get specific about how brainstorming makes teen input ACTIONABLE!"

"Talking to teens more like adults is great advice, and using previous examples of collaborative work."

Implementation difficulties

Time was identified by participants as a hurdle to implementing ideas from the PD workshop content such as youth advice and input. Participants referred to time as the primary constraint with respect to engaging, guiding, and organizing youth.

"Implementing these programs seems like a great idea, but it is very time consuming. I already have a full workload, and adding a youth advisor component will decrease my productivity even if there is a better eventual outcome."

"Perhaps making sure teens stay organized and on topic with the goals set forth. That's on me to make sure my guidance is maintained without micromanaging."

One participant mentioned youth compensation and availability as difficult to implement with respect to their work.

"Potentially figuring out ways to fairly compensate them and work around the school schedules and state laws.[Making sure the] hours they [the youth] can actually come and work with us…."

Confidence receiving feedback from youth

Participants' responses about their confidence in receiving feedback from youth as a result of the PD workshop were positive. Five out of eight respondents mentioned that the workshop increased their confidence, and as result, this influenced some of their perspectives and awareness with respect to youth ideas.

"I think it [confidence receiving feedback] has increased with the understanding that the youth who might be involved have a lot of valuable ideas and new perspectives."

Two participants did not report any change in confidence. They did, however, mention that the PD workshop provided them with insights and tools in relation to incorporating youth feedback.

"It gave me some insight into how to get to a place where youth feedback can be used. Sometimes It's hard to get over the initial step and provide the proper background knowledge and environment so that youth can contribute meaningfully. This was very practical in terms of overcoming those obstacles."

Education staff

Goals and hopes before the PD workshop

Education staff were asked about their goals and hopes with respect to the PD workshop session about youth as co-creators. Three themes emerged from participants' responses:

- Setting up structures for internships and trainings
- Incorporating best practices and empowering youth to create content
- Expanding and finding opportunities beyond programming

Insights on integrating youth voice

Learning about ways of incorporating feedback and co-creation in their existing programs was perceived as valuable for the participants. Specific activities and frameworks from the workshop were mentioned as valuable for working with youth in educational programs. PD activities and content mentioned by participants included:

- Feedback activity (this was part of the Johari Window activity, see Appendix G)
- Empowerment ladder of participation (adapted from Hart, R., 1992)
- Case or examples from a similar program (used in the YLTW program, see Appendix H)

Participants reported that the PD workshop elicited some new ideas for integrating youth input into their existing projects. Ideas of applications included:

- The model of the program such as internship and payment
- Specific projects such as live collections and social issues, camps programs, and appealing to younger audiences in the offerings

Influence on participants' co-creating programming practices with youth

The PD workshop content and activities influenced co-creation practices for three out of four participants. In particular, ideas shared by staff for how to better incorporate youth in co-creation included having youth be part of the process from the start, having youth generate ideas from their work rather than having few options, and having youth lead more off-site programs.

Implementation difficulties

Time and resources were identified by participants as areas that could hinder implementation of the workshop content. Participants mentioned not having the time and appropriate resources to invest in youth programs. Furthemore, one participant mentioned that changes in the youth program require a lot of upfront thinking and planning, as well as, shifting current structures in their organization.

Confidence receiving feedback from youth

Two out of four participants stated that the PD workshop content and activities supported their confidence in receiving and incorporating feedback from youth. Tools such as the Johari Window (Oliver, S. and Duncan, S., 2019) and the empowerment ladder framework were identified as valuable approaches for receiving and incorporating feedback. Participants gave examples such as incorporating formal evaluations as a means to collect youth feedback.

Program Participants: Youth

PD learnings

Five out of eight youth participants mentioned learning something from their PD session. Most comments dealt with the high school *Future Science Leaders* program, such as new ideas for what it might look like or include. One youth mentioned the possibility of meeting with other groups; it was unclear what types of groups they were thinking about – potentially, similar groups of youth at other organizations .

These are some representative quotes:

> *"I learned about potential things we could do with the middle schoolers."*

> *"From our discussions I learned about the ways HS future science leaders could play out and what people want from it."*

Implementation difficulties

Location and distance were mentioned as potential difficulties for implementing what participants learned in the workshop, presumably because of transportation costs and logistics. Youth also mentioned that finding time to apply what they learned about in the workshop would be difficult during the school year, especially on weekdays.

Some quotes from participants:

> *"It seems difficult to [visit] different locations through the program but we would all like to try."*

> *"Working with other high school groups from other museums [would be difficult]."*

Confidence advising museum projects

The PD workshop mini session did not elicit more confidence in advising museum projects in youth. Six out of ten youth reported no change and one youth reported less confidence. Emergent themes from participants' responses suggest that they are already comfortable advising and appreciative of the PD content as it was informative. Some representative quotes:

> *"I feel pretty much the same about it (so still excited). I just got more information and feel more informed."*

"No change, but I still feel like it would be cool to help out more. It was nice to hear this as a possibility though I had thought about it."

Confidence co-creating program content

Most of the youth reported that after being in the PD workshop their confidence about co-creating program content did not change (seven out of eight reported no change and one reported more confidence). In their responses, some youth reported that they were already comfortable working with adults and some youth stated that the PD workshop fostered feelings of enthusiasm in relation to shaping the program and working with people. One youth stated they were good at following directions.

"I am a little more excited to work more on exhibits for the museum."

"I thought that it was nice to have a say in how I wanted this program to continue."

Program Lead

Two weeks after the PD workshop occurred, the Education Program Coordinator from the Ithaca Sciencenter was interviewed by OMSI evaluators. The Program Coordinator attended all three PD sessions and was able to provide big picture insights in relation to the PD content and delivery with respect to his organization.

Alignment of the PD workshop content

When asked about their impressions of the PD workshop content, The Ithaca Sciencenter Program Coordinator mentioned that the PD was a positive experience for the staff members and youth. In particular, the specificity and relatability were characteristics that made this a strong workshop. The PD workshop, as stated by the Education Program Coordinator, elicited a rich opportunity for the staff who participated to directly share with each other about their specific work and concrete aspects of their roles.

Implementation of the PD workshop content

The PD workshop content and activities provided an opportunity for the Program Coordinator to hear and generate ideas about areas of improvement for the middle school program. In particular, since the youth who participated in the workshop were the ones graduating from middle school and went through the program at the science center, this provided an opportunity to incorporate youth voices when re-envisioning the high school program. Furthermore, according to the Program Coordinator, the PD workshop offered a platform to have youth express the ways in which they want to use their voice and would like to be involved. He also felt the PD provided opportunities to consider some

components for a Youth Advisory Research Board (YARB) to leverage youth who have been already part of the museum program, and incorporate their voice in the work at the museum in Ithaca.

Influence of the PD workshop on co-development practices

The PD workshop content allowed the Program Coordinator to envision what co-creating could be with youth at their organization. Currently, the program at the Ithaca Sciencenter runs with specific options in which youth ideas are not implemented. The program coordinator expressed that co-creating could provide opportunities for authentic approaches to and implementation of youth ideas. These ideas, he mentioned, could further be expanded to other departments in his organization.

Implementation difficulties

The Education Program Coordinator mentioned it would be difficult to implement the PD workshop content due to staff capacity and institutional buy-in. As a small organization in which staff have to play many different roles, having time and resources is a hurdle in implementing new practices. In addition, it is challenging to convince leadership of the practices' added value.

The Program Coordinator stated that logistical concerns are a broader barrier to implementing a YARB as described in the workshops. Specifically, he mentioned adapting the YARB model and managing youth expectations. He mentioned that the current program at his institution is project based-learning and it could be challenging to incorporate the YLTW YARB model or parts of it without major changes to how the projects run in his organization. Managing youth expectations was also mentioned as a barrier in relation to potential deliverables such building exhibits or working with the animal collection. If a YARB were implemented, there may not be time for the youth involved to see the results of their work, which may be a disappointment to them.

Results summary

The goal of this summative evaluation was to assess the extent to which the YLTW PD workshops supported participants who serve a variety of roles to increase the involvement of youth as advisors and co-creators of content at the Ithaca Sciencenter.

Table 4. Results summary of PD successful areas and areas for improvement

Participants	Successful areas	Suggestions for improvement
Non-education staff (adult)	- Frameworks and strategies for how to work with youth. - Ideas of applications for staff with different roles (education and non-education staff) in their	- Additional resources for addressing hurdles to implementation such as time, compensation for youth and buy-in from leadership.

	organization. - Increased confidence in receiving and incorporating feedback from youth.	
Education staff (adult)	- Framework for feedback, creativity and getting inspired to apply to their work/roles. - Ideas of how a program model could work. - Tools for co-creation and opportunities for generating new ideas for their practices as education staff.	- Additional resources for addressing hurdles to implementation such as time and working within existing structures.
Program participant (youth)	- Generation of new ideas for the highschool program. - Increased enthusiasm and awareness of opportunities to shape the program, work in different places, and with different people.	- Additional resources for addressing hurdles to implementation such as scheduling around school and locations from a distance. - Additional, or improved activities to support youth confidence in advising and co-creating program content.
Program lead (adult)	- Opportunity to incorporate youth voices when re-envisioning the high school program. - Ideas to leverage YARB components with the HS program. - Rich opportunity for staff to directly share with each other about their specific work and concrete aspects of their roles. - Learned about co-development in an authentic way and with possibilities beyond education.	- Institutional buy-in and staff capacity were mentioned as challenges to implementation. - Provide advice and resources for adapting components of a YARB into the existing programs and managing youth expectations.

Responses from the participants suggest that overall, the PD workshop content and activities supported the project outcomes (see Table 4 for the summary of areas in which the PD workshop was successful). The majority of the participants reported that the PD content was valuable as it supported participants' ideation regarding potential opportunities to incorporate youth input at the Ithaca Sciencenter. Staff participants, both non-education and education staff, reported that the PD content was valuable in providing them with frameworks and strategies for working with youth as advisors or co-creators. Youth from the *Future Science Leaders* program at the Ithaca Sciencenter, reported that the PD allowed them to start imagining ways in which they can shape the program and provide input.

Overall, the PD workshop content and delivery was well-received by the participants. The program coordinator who participated in all sessions, reported that the PD content strength was in its relatability and specificity. The PD workshop provided an opportunity for the staff to consider areas to apply youth input in their different roles and projects at their organization. This was supported by the Program Coordinator's response when referring to applying YARB components and possibilities that expand beyond education staff. Furthermore, the PD workshops supported staff confidence in

and awareness of receiving feedback from youth, as workshop content provided insights, tools, and a fresh perspective on working with youth.

The PD workshop content and delivery, however, was not as successful in two areas. First, the workshop did not increase youth confidence. The majority of the youth stated they already were confident in giving feedback or working with adults. One youth response in relation to following directions might hint that the co-development portion of the content could be improved. Second, The workshop did not support staff confidence or intention to implement ways to incorporate youth input. Staff reported that barriers to implementing the PD workshop content were resources and time available to invest, plan, and incorporate components of the PD workshop into their existing roles and projects.

Future PD workshops might spend more time supporting participants' confidence incorporating youth input by using examples tailored to the organization's programs and projects such as reflective prompts or case scenario activities. This could foster an opportunity for both staff and youth to imagine and plan the roles and ways to collaborate while also considering constraints of resources, models and structures in their organization.

References

Free Child Institute. (2011). *Ladder of Youth Voice*. www.freechild.org/ladder.htm

Oliver, S. and Duncan, S. (2019) 'Editorial: Looking through the Johari window'. *Research for All*, 3 (1): https://doi.org/10.18546/RFA.03.1.01

Appendix A: Ithaca Sciencenter Staff Consent Form

Purpose

Youth Lead the Way: A Youth Advisory Research Board Model for Climate Impact Education (YLTW) is an OMSI (Oregon Museum of Science and Industry) project funded by the National Science Foundation. The project aims at working with youth to empower informal science education (ISE) institutions, community partners, and the public to engage more effectively in science-based collective action in response to climate change.

As part of the project, we have developed a professional development in a workshop. We will be conducting an evaluation of this workshop to better understand what, if any, impact the workshop has on ISE professional attitudes related to youth researcher/advisor and collaboration.

Procedures

If you decide to take part in the study, we will ask you to participate in an interview with an OMSI evaluator, fill in a questionnaire, and/or participate in a focus group.

Interviews and/or questionnaires will take around 10 minutes. If a group interview is conducted, the session would not be longer than two hours.

Notes will be taken for interviews and group interviews studies. The interviews and/or the focus group may also be video or audio recorded.

Risks/ Discomforts

You may feel compelled to participate in the evaluation study against your own wishes due to the fact that the project is related to your place of employment. Additionally, there is a slight risk to privacy and/or loss of confidentiality. There may be audio or video recording that may also contribute to loss of privacy or confidentiality.

Please know that your participation in this evaluation study is completely voluntary and will in no way affect your employment or participation on the project. You are free to terminate participation in this study at any time without penalty and without impact on your participation in the project.

Confidentiality

We will keep your data confidential to the fullest extent possible. To do this, we will keep your data in locked file cabinets and on secure servers that only qualified project staff can access. Although we may use your names to identify you and your responses, we will not share your names in evaluation reports or other publications.

Benefits

There are no direct benefits in participating in the evaluation study. You may feel a sense of pride in knowing that your participation is helping us to create materials to better train informal educators to collaborate with youth in free choice environments, like museums.

Questions

If you have any questions or concerns about this study, you may contact Scott Randol, the project's lead evaluator, at (503)-797-4547 or srandol@omsi.edu.

AGREEMENT TO PARTICIPATE

Your signature does not waive any legal right. A copy will be given to you for your records.

I agree to participate in this evaluation study.

Participant Signature: _____ Date: _____

Appendix B: Youth and Parent/Guardian Evaluation Consent and Assent Letter

Dear Parent,

As you may know, your child has signed up to collaborate with the Ithaca Sciencenter through a program that engages youth in science topics and programming. The Ithaca Sciencenter is a project partner with the Oregon Museum of Science and Industry (OMSI) in a National Science Foundation-funded project called Youth Lead the Way: A Youth Advisory Research Board (YARB) Model for Climate Impact Education. Together, Ithaca Sciencenter and OMSI will offer a professional workshop aimed at empowering informal science education (ISE) staff members who are part of their programs. The goal of the professional development workshop is to share best practices related to youth input in the museum, including the incorporation of youth-led programming and research to address topics related to climate impact and other social action.

As part of this project, evaluators from the Oregon Museum of Science and Industry will be collecting information from youth in order to understand the impact of the workshop. The purpose of this letter is to inform you about the project and to ask you for your permission to include your child in the evaluation activities. If you decide to allow your child to participate, your child will be asked to talk to evaluators about their experiences in the workshop and their collaborations with museum staff. We plan to conduct interviews, distribute questionnaires, and/or conduct a group interview with participating youth.

Risks/Discomforts

Some information collected may identify your child (such as names, audio, or video images). Being recorded, your child could lose some privacy. Other than this risk, there are no known additional risks for participating. Please review the attached photo/video release form to provide or decline consent for us to take video or photos of your child. Your child's name will not be associated with any research and evaluation reports or publications.

Benefits

Your child may feel empowered by helping OMSI understand better the impact of the professional development workshop related to a YARB model and best practices of engaging with youth in museums. Your child may see how their input contributes to improved programs.

Confidentiality

We will keep your child's data confidential according to law. To do this, we will keep the data in locked file cabinets and on secure servers that only qualified project staff can access. The ethics board that reviewed this study may also have access to records for auditing purposes.

Rights

You and your child are not required to participate in the evaluation study. If you give permission and your child doesn't want to participate, your child will not be required to take part. If your child does not participate in the study, he/she will still be able to participate in OMSI's professional development workshop. Even though you give

permission for your child to participate now, you may decide at any later point to withdraw your permission. In that case, any data gathered from your child will be discarded and not analyzed or reported. Participation is voluntary. You and your child can refuse or discontinue participation at any time without penalty or loss of benefits.

Questions

If you have any questions regarding this study, please contact Rebecca Reilly, the Principal Investigator, at (503) 797-4675 or rreilly@omsi.edu, or Scott Randol, the project's Lead Evaluator, at 503-797-4547 or srandol@omsi.edu. If you have complaints or questions about your rights, you may also contact Heartland Institutional Review Board - 866.618.HIRB - director@heartlandirb.org

Please indicate whether or not you give permission for your child to participate in the Youth Lead the Way project evaluation by you and your child signing and returning this letter. You have been given two copies of this Informed Consent. Please sign both copies and retain one copy for your files. If you have any questions or concerns please feel free to contact me.

Sincerely,

Rebecca Reilly (Principal Investigator)

Teen and Adult Engagement Assistant Manager
Oregon Museum of Science and Industry
rreilly@omsi.edu
503-797-4675

Scott Randol (Lead Evaluator)

Participatory Research and Evaluation manager
Oregon Museum of Science and Industry
srandol@omsi.edu
503-797-4547

Please return this form by:

Youth's Name: _____

_____ Yes, I give permission for my youth to participate in research and evaluation activities as part of the *Youth Lead the Way* project. I understand I may withdraw my permission for participation in this project at any time with no penalty to my youth or myself.

_____ No, I do not give permission for my youth to participate in research and evaluation activities as part of the *Youth Lead the Way* project.

Your signature does not waive any legal right. If you agree, please sign this form.

I am 18 years of age or older and agree to allow my youth to participate in these evaluation procedures.

Parent/Guardian Signature: _____ Date: _____

Youth Assent: I understand that my parent(s) have given permission for me to participate in this project's research and evaluation activities. I can still decide whether or not to participate in these activities throughout the project. I can ask any questions I may have and the OMSI staff will help me understand what I'm supposed to do. By signing below, I agree to be a part of this study.

Youth Signature: _____ Date: _____

Appendix C: Workshop Non-education Staff Questionnaire

Date:

Thank you for providing feedback on how you feel about the *Youth Lead the Way* professional development workshop.

Your participation in this feedback form is voluntary and will in no way affect your employment. You are free to stop providing feedback at any time without penalty and without impact on your employment.

Your response is anonymous and the questionnaire takes about 15 minutes of your time.

1. From the workshop content and activities today, what seems particularly useful with respect to your role and work?

2. From the workshop content and activities, what seems unrealistic or difficult to implement with respect to your work?

3. In what ways, if any, did the workshop content and activities give you insights on how to integrate teen (youth) input in your department and/or projects? Please provide an example?.

4. How has your confidence in receiving feedback from youth changed as a result of the workshop?

5. What else would you like to share?

Thank you!

Appendix D: Workshop Education Staff Questionnaire

Date:

Thank you for agreeing to provide feedback on how you feel about the *Youth Lead the Way* professional development workshop.

Your participation in this feedback form is voluntary and will in no way affect your employment or participation on the project. You are free to stop providing feedback at any time without penalty and without impact on your participation in the project.

Your response is anonymous and the questionnaire takes about 15 minutes of your time.

1. From the workshop content and activities today, what seems particularly useful with respect to your role and work as a teen educator?

2. From the workshop content and activities, what seems unrealistic or difficult to implement with respect to your work?

3. In what ways, if any, did the workshop content and activities give you insights on how to integrate teen (youth) input in your department and/or projects? Please provide an example.

4. In what ways, if any, might the workshop content and activities influence your practices around co-creating programming with youth? Please provide an example.

5. How has your confidence in receiving and incorporating feedback from youth changed as a result of the workshop content and activities?

6. What else would you like to share?

Thank you!

Appendix E: Workshop Program Participants (Teens) Questionnaire

Date:

Thank you for agreeing to provide feedback on how you feel about the *Youth Lead the Way* professional development workshop.

Your participation in this feedback form is voluntary and will in no way affect your participation in the *Future Science Leaders* program. You are free to stop providing feedback at any time without penalty and without impact on your participation in the program.

Your feedback is anonymous and will require about 5–10 minutes of your time.

1. What is one thing that you learned from the workshop today? Write an example.

2. From the workshop today, what seems difficult to apply to the *Future Science Leaders* program? Write an example.

3. After being in the workshop, how has your confidence changed about advising museum projects? Circle one option below.

Less confident	No change	More confident

Please, explain your choice.

4. After being in the workshop, how has your confidence changed about co-creating program content with staff (adults).

Less confident	No change	More confident

Please, explain your choice.

5. Is there anything else you would like to share?

Thank you!

Appendix F: Sciencenter Education Program Coordinator Interview

Welcome and thank you for agreeing to participate in this interview. We want to reflect about the Youth Lead the Way professional development workshop content and delivery.

Your participation in this interview is voluntary and will in no way affect your participation in the project. You are free to terminate participation at any time without penalty and without impact on your participation in the project.

This interview will take about 20–30 minutes of your time.

1. Please tell me your general impressions of the workshop. How did it go and what did you think about it?

2. From the workshop content, what did you find particularly applicable to your department?

3. From the response (above) How do you imagine you or your team implementing that?

4. What are your thoughts about implementing Youth Research and Advisory Boards into your existing program?

5. How do you anticipate the workshop content might influence staff practices around co-developing approaches with youth?

6. From the workshop content, what seems difficult or unrealistic to implement in your programs (and or department)?

7. What else would you like to share?

Johari Window

Each person has four areas of knowledge, depending on if that aspect of you is known to yourself and/or others.

We're going to explore these parts of ourselves today!

	Known to Self	Unknown to Self
Known to Others	**Arena: Public-** What you and others know	**Blind Spots-** What others know about you, but you don't see
Unknown to Others	**Mask: Private-** what you share or hide	**Unconscious:** neither you nor others know

Johari Window Debrief

- How easy or difficult was it to select the adjectives to describe yourself? Why?

- How easy or difficult was it to select the adjectives to describe your team members? Why?

- After comparing feedback, what were you surprised by?

- What can you do to reduce your Blind Spot, and move those traits into your Arena instead?

- How can you apply what you learned about you and your teammates to improve collaboration?

Best Practices from Youth Lead the Way

- Assign youth an initial small intro project, to establish a working relationship and norms.
  - Then assign a larger project for them to spend the term completing.
- Get to know the youth, assess their strengths and interests.
- Projects should not be busy-work, or completely independent!
  - Find a happy medium of guidance and direction, while still giving space for youth creativity and passion.
- Implement youth feedback as much as possible.
- Set out clear guidelines for deliverables the youth will produce, give them examples and/or templates when possible.
- Let youth know exactly how their work will be used.

Best Practices from OMSI Exhibits Team

- Have opportunities for youth to have real decision making power
- Clear outcomes/deliverables that are in line with the skills/experience youth have and/or are specifically developing
  - FSA: exhibit design and facilitation are skills they've already developed
- Situate feedback within context of outcome/goals. "*To get to our shared goal of x, you need to accomplish y*"
- Prep the staff team: these youth are an integral part of of this team, they are both co-creators and part of the target audience, their expertise is their age and worldview