

# Using culturally responsive practices to improve your data collection and better advocate for your study participants

Sonya Harvey-Justiniano, Liz Kunz Kollmann, Regina Ayala Chavez



Sonya Harvey-Justiniano (she/her)  
Research and Evaluation Associate  
Museum of Science, Boston

Regina Ayala Chávez (she/her)  
Research Associate  
Catalyst Consulting Group, Durham

Elizabeth Kunz Kollmann (she/her)  
Director, Research and Evaluation  
Museum of Science, Boston

**Co-Creating With Communities**

**Sparking Interest**

**APPRAISE**

# Culturally Responsive Evaluation

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**Promotion of equity and social justice;** attendance to issues of power



**Engagement of partners and community members,** particularly those with less social power, **during all phases of the evaluation**



Composition of evaluation team and **reflection on assumptions and biases**



Consideration of **cultural and historical contexts** and different worldviews



**Intentional** methods and **thoughtful** data collection



Intentional analysis and **inclusive interpretation**



**Accessible and actionable** evaluation findings



# APPRAISE

A research project about identity,  
exhibits, and feelings of belonging

## **APPRAISE:**

Exhibit appraisal and diverse populations: Pilot research about intersectional and science identities in science exhibits

Elizabeth Kunz Kollmann

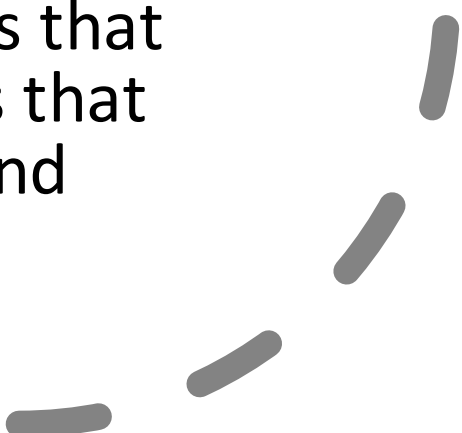
([ekollmann@mos.org](mailto:ekollmann@mos.org))

Museum of Science, Boston

2025 Visitor Studies  
Association Conference



# APPRAISE asks...

- How can we:
    - Complexify our understandings of youth identity?
    - Support youth metacognition about their identities and appraisals of museum exhibits?
    - Provide a scaffolded approach for youth to have conversations with museum professionals?
  - So that we can we design exhibits that address identity [culture] in ways that encourage feelings of inclusion and belonging.
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# Methods

## Phase 1: Identities

1a: What makes you, you?

1b: Science identities

1c: Peer-pair interview

## Phase 2: Exhibits

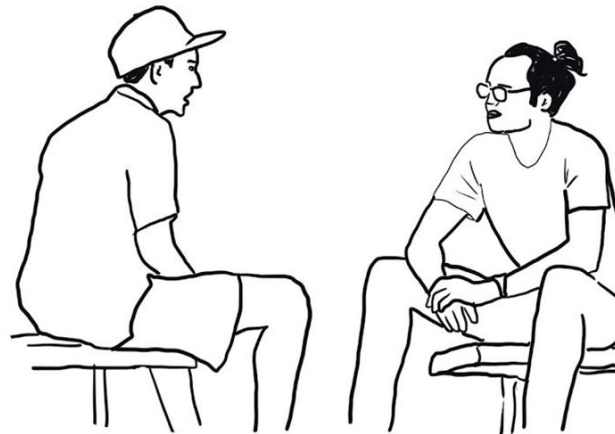
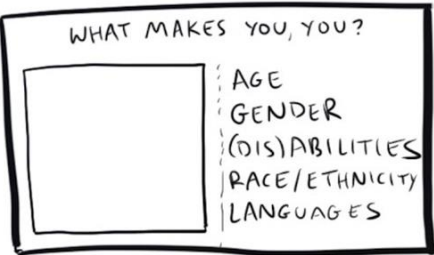
2a: Gallery walk preview

2b: Exhibit use

## Phase 3: Reflection

3a: Peer-pair interview #2

3b: Group debrief



# Early Interview #2

Thank you. So let's think back to the activity we did at the beginning when you described yourself. In different contexts, we become more.or.less aware of different aspects of ourselves. For example, I don't always think about my gender, but then when I'm in a public place and I have to find the "right" bathroom, my gender becomes more relevant. Or, I might not always think about how I'm a creative person, but if I'm at an art exhibit it might make me remember how much I like art. Here are the activities you did earlier about who you are. [show] **What, if anything, would you want to change based on your experience at this exhibit?** [probe for both words and what makes you, you]

**What parts of your identity, if any, do you think were a good match for this exhibit?**  
[probe: What about the exhibit made it a good match?]

Sometimes an exhibit feels like it isn't made for us. So, for instance, if an exhibit is designed for someone much taller than me and I can't reach it, or something like that. **Were there any parts of you that felt like they didn't fit at this exhibit?** [probe: What about the exhibit made it not a good fit?]

Alright, now we're going to look at some of your responses to the survey and talk about what aspects of the exhibit made you feel the way you did. Here's a picture of the exhibit for reference, and we can also go back over to it if that's helpful. The more we can be specific about what parts of the exhibit contributed to your responses, the more helpful it is for designers.

So the survey you did asked some questions about how much energy you had at this exhibit. You said [repeat responses]. **What about the exhibit made you feel that way?** (prompt to identify specific design features and annotate the board if possible.) (if applicable, the second researcher can probe about differences between pre/post and between survey items)

So the survey you did asked some questions about how pleasant or unpleasant you felt at this exhibit. You said [repeat responses]. **What about the exhibit made you feel that way?** (prompt to identify specific design features and annotate the board if possible.) (if applicable, the second researcher can probe about differences between pre/post and between survey items)

So the survey you did asked some questions about how much the exhibit caught your attention. You said [repeat responses]. **What about the exhibit made you feel that way?** (prompt to identify specific design features and annotate the board if possible.) (if applicable, the second researcher can probe about differences between pre/post and between survey items)

# Revised Interview #2

## Pause and Reflect!

In small groups, you will audio record yourselves as you each answer some questions out loud.

Once you have started recording, read the first question aloud and have all of your group members respond before moving to the next question.

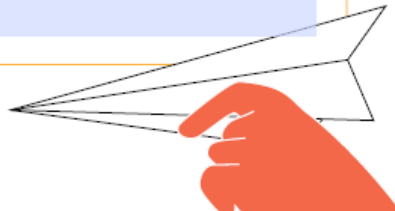


On your exhibit surveys, question #10 asked about whether an exhibit was designed for "someone like you."

**1. When you answered that question, what were you thinking "someone like you" meant?**

A large light blue rectangular box for writing the answer to question 1.

**2. Which exhibit did you choose to use first, and why?**

A large light blue rectangular box for writing the answer to question 2.

**3. Which exhibit(s), if any, were well designed for someone like you, and why?**

A large light blue rectangular box for writing the answer to question 3.

**4. Which exhibit(s), if any, were NOT well designed for someone like you, and why?**

A large light blue rectangular box for writing the answer to question 4.

Let the Researcher know when you are done!



# Revised Interview #2

## Pause and Reflect!

In small groups, you will audio record yourselves as you each answer some questions out loud.

Once you have started recording, read the first question aloud and have all of your group members respond before moving to the next question.



On your exhibit surveys, question #10 asked about whether an exhibit was designed for "someone like you."

### 1. When you answered that question, what were you thinking "someone like you" meant?

**Speaker 2:** [0:11]: what did you choose first and why?

**Speaker 1:** [0:14]: I chose number 21, antibiotics or something like that.

**Speaker 3:** Oh, it's recording.

**Speaker 2:** Why did you choose it?

**Speaker 1:** Does it say why?

**Speaker 2:** Mm-hmm <affirmative>

### 2. Which exhibit did you choose to use first, and why?

**Speaker 1:** Because... because I just walked up to a random one.

**Speaker 2:** Okay. What about you?

**Speaker 3:** I like the boogers exhibit.

**Speaker 2:** Why did you pick it?

**Speaker 3:** Cause it was cool. And... the boogers... I want to learn about boogers!

**Speaker 2:** Why—What exhibit did you choose first? And why?

**Speaker 4:** Because—the booger? 'cause I'm like that.

**Speaker 2:** Okay. Second one on your way to... like, on your—

### 3. Which exhibit(s), if any, were well designed for someone like you, and why?

Empty text box for recording answers to question 3.

### 4. Which exhibit(s), if any, were NOT well designed for someone like you, and why?

Empty text box for recording answers to question 4.

Let the Researcher know when you are

**Speaker 4:** something to do with my race? It says "someone like you". I was thinking racism. He was like "these people."

**Speaker 1:** [1:25 Or exhibit survey question, asked you whether or...

**Speaker 2:** An exhibit was designed for someone like you. What were you thinking "someone like you" meant?

**Speaker 4:** Somebody my race.

**Speaker 2:** Ohhhh, okay—that's where you're coming from? Okay. Yeah.

**Speaker 1:** Someone that likes doing things you like.

**Speaker 2:** Which exhibits, if any were well designed for someone like you?

**Speaker 1:** I like the DNA one.

**Speaker 2:** the DNA one?

**Speaker 4:** The—in the—where it checks what's in my body, the bacteria—the bacteria scanner.

**Speaker 1:** I also like the height one. I liked it, but it was crazy.

**Speaker 2:**

And what about you?

**Speaker 3:** [2:23]... The height one was designed for me, so I can laugh on people.

**Speaker 2:** Which exhibits, if any, were not well designed for someone like you?

**Speaker 3:** Maybe the infant one with the, the mute thing... the baby and the ... [the fetus.] yeah—I didn't like that one.

**Speaker 2:**


No—which ones were *not* well designed.

**Speaker 3:** Oh, the booger one.


**Speaker 2:** You—you didn't you like that one? you just said you liked that one!

**Speaker 3:** And I said, picked it—I picked it first 'cause it was the one that caught my eye first, but I didn't like it.

**Speaker 2:** Oh, okay. Got it

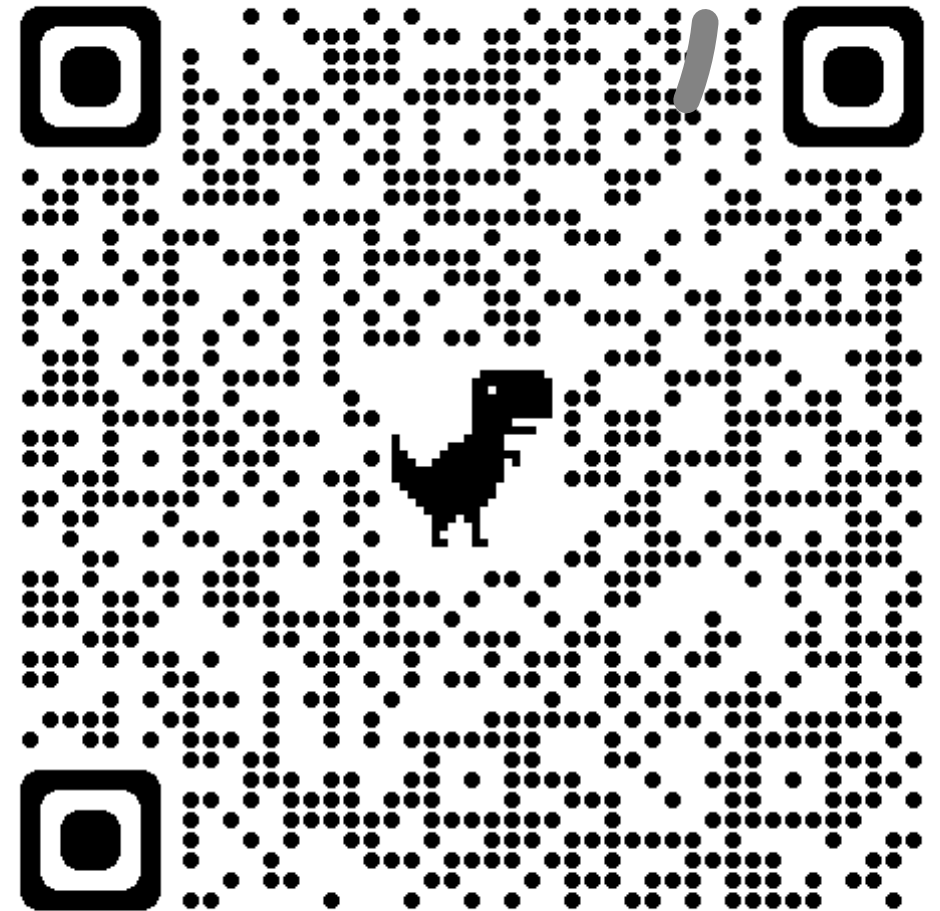


## Other protocol changes

- Youth created parts of the protocol
    - Youth took pictures that were used as part of the meaning map activity
    - Youth recorded their feelings about science for the science identity video
  - Youth were given increased agency as study subjects
    - Youth led all of the interviews except the final debrief
    - Youth chose the exhibits that they appraised and visited
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# APPRAISE tools

- Annotated Instrument and Research Brief
- Instrument Workbooks
- <https://tinyurl.com/2aa6wuxk>





**NISE**  
NATIONAL INFORMAL  
STEM EDUCATION  
**NETWORK**

# Co-Creating with Communities



# Evaluation Goals

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- Evaluate the professional impact of being involved in co-creation work
- Understand in real-time how teams are working together
- Document the work of undertaking co-creation or community informed work, as it happens

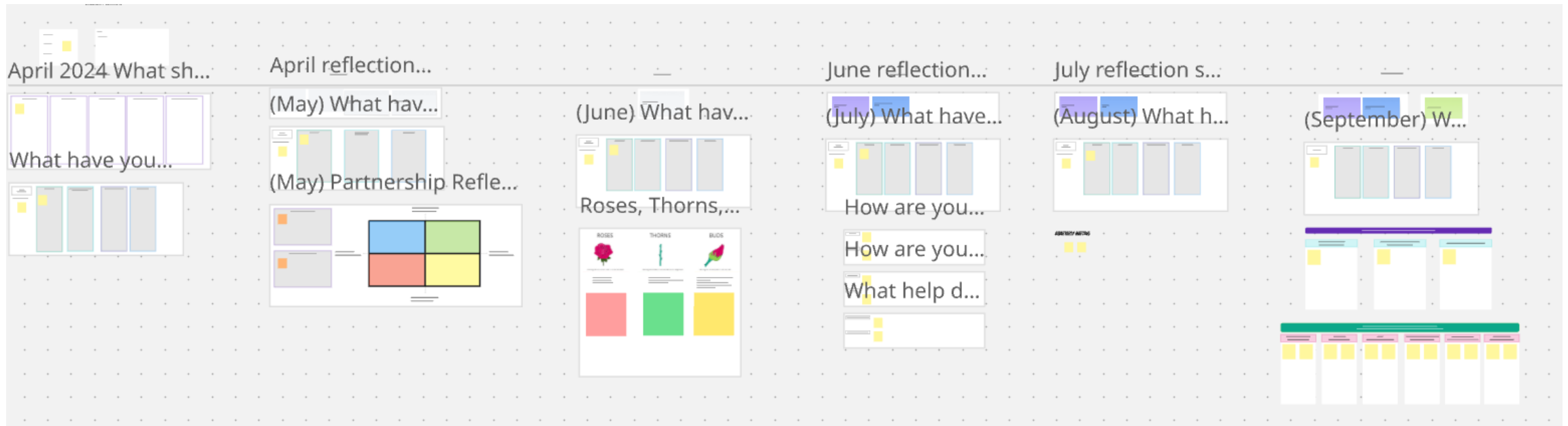


# Monthly Reflections Approach

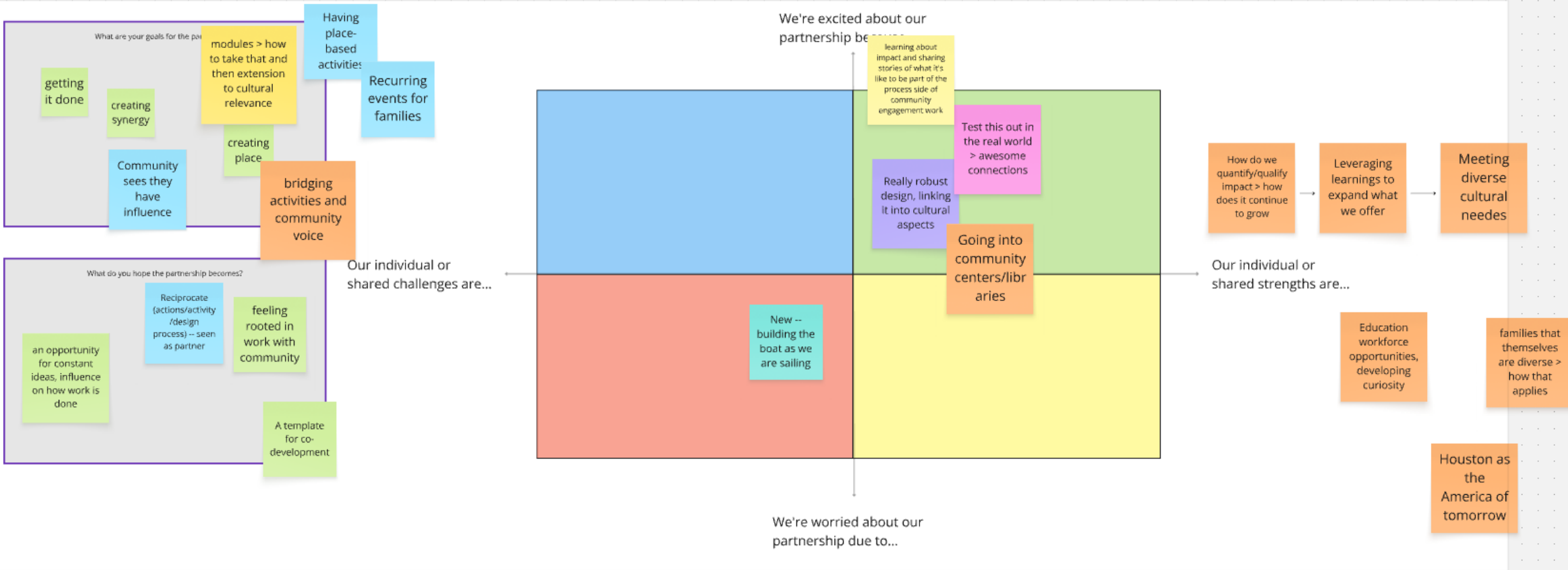
- Document Process
  - Groups tell their own stories collaboratively
- Evolution over time
  - Consistent themes for groups to focus on across the year
- Actionable
  - Reflections support sites in their planning and co-creation process
- **“Scrapbook” Approach**



# Miro Boards as a tool for reflections



(May) Partnership Reflection



# ROSES



The things we've done well. Need to appreciate those!

- What are you proud of?
- What was unexpected?
- What makes you excited?

Proud the team has taken the project and run with it - made it so powerful Grateful to Anthony and Jaime	Team is engaged and involving the community	Watching the kids, all age levels getting excited (even teens!)
	Excited to see how we develop this project - want to be more immersive and messy	Planting a seed with people, seeing excitement when they use the Planets AR
Unexpected - so many events in Brownsville! So much going on!	Unexpected - majority speaking English, especially at the Flea Market (how bilingual the community is)	Unexpected - interested in medical topics (connections to industry there)

# THORNS

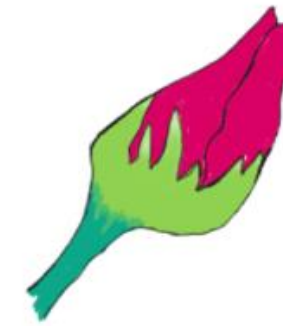


The things which need to improve. We should change those.

- Where are you struggling?
- What issues do you need to work through?
- What help do you need?

	Help needed - trying to find something for the moon/mars (not just the rovers)	Even doing well with survey/AR, want to come up with other activities (add not replace) - hitting a wall with implementing new things
Struggling - Staff members only speak English, limited capacity for Spanish. Also seeing this across Brownsville		Technical difficulties - but can be fixed on the spot
Not enough hours in the day!	Staffing, enough people to work events	Wind! Challenges working outside

# BUDS



The things which have potential. Let's discover!

- What new perspectives or directions do you want to explore?
- What do you want to develop/expand?
- What are opportunities for learning in this project that excite you?

Reybotics is a powerhouse for developing, partner excited to do something challenging	Opportunities with community partners, haven't gotten to (yet) - Library, Housing Authority, Parks & Rec all do amazing programming	
Want to make it even more immersive and exciting		
Help to promote all the events are happening		

# Outcomes

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- Deeper Conversations
- Building Trust
- Audience specific communication format
- **Addressing cultural connections**





## Sparking Interest in STEM Among Hispanic Learners Nationwide Through Meaningful Connections to NASA Explorations and Discoveries



- The project's objective is to **create and disseminate culturally relevant** Earth and space professional learning resources designed to improve STEM engagement practices and skills for educators **who engage Hispanic families in authentic, meaningful learning in community settings.**
- The MLS partnered with **local community-based organizations** to attract diverse groups to STEM through learning opportunities that spark interest and provide connections to NASA's mission and work.
- It started **in 2021**, but the relationship between the organizations and the museum is older.



# Pláticas

- Everyday conversations we have.
- A more **culturally relevant** method for gathering information from Hispanic participants (Carmona et al., 2018; Fierros & Delgado Bernal, 2016; Flores & Morales, 2021).
- Researcher and the participants exchange knowledge, making them **co-collaborators** and **co-creators** of the knowledge (García & Mireles-Rios, 2019).



# Lessons Learned

1

Choose the right  
protocol

## Protocol 1

- *Earth System Science careers:*

Earth System Science careers cover an extensive range of areas. Plática with your family about what they are and why they are essential. Chat with them about:

- \_\_\_ Your specific career and what they knew of it before you started school or working in that area.
- \_\_\_ Talk about what Earth system Science careers are.
- \_\_\_ Plática about what they expect of your future in relationship with the career you choose
- \_\_\_ Talk about the importance, and relevance of your career.

## Protocol 2

- *Earth System Science careers:*

I decided to study [**Specific career**], so let's begin talking about [**Specific career**], and Earth Science careers in general.

What did you know about [**Specific career**] as a job before I started studying it?

I've learned about careers as part of my studies too. I never **knew** [**share something about a career you learned about**]. I'm wondering if you can describe what an Earth system Science career is for you and give me some examples.

[**Share something that you think is important about what you study/work, why it matters to you**]

# Lessons Learned

1

Choose the right protocol

2

The success of pláticas varies based on cultural norms

3

Location may influence the outcome

4

The timing of the plática is vital

5

Data recording will vary based in the format of the plática

# Pláticas in action

Kermes, 2023



NASA Open House, 2023



# Discussion Prompts

- What are ways that you have made changes to your methods to make them more culturally responsive?
- What barriers did you encounter in trying to make your methods more culturally responsive?
- How did changing your methods to be more culturally responsive change the data you collected?
- Do you feel that these methods helped you better advocate for your community or audience?
  
- What methods that we shared today would you be interested in using with your own audiences?
- What barriers do you think you might encounter in implementing the methods that we shared?



Q&A

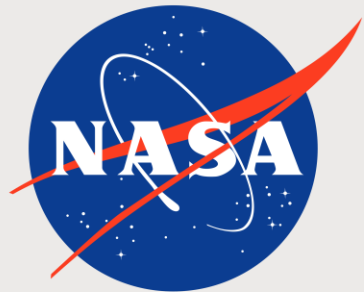


# Acknowledgements



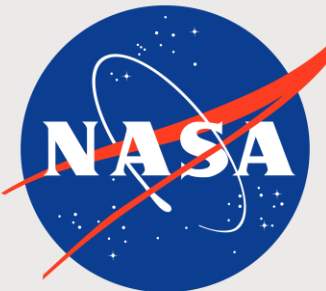
## APPRAISE

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## Sparking Interest

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