Appendix: I/CaLL Community Science Learning

Project: Indianapolis: City as Living Laboratory

NSF Award #DRL-13-23117

August 28, 2018

For: Travis Ryan, PhD
Butler University

By: Nezam Ardalan

Correspondence: Joanna Brucker, jbrucker@newknowledge.org

NewKnowledge Publication: #NSF.097.115.08-A

Overview:

This document contains the following Appendices that provide information for the I/CaLL Community Science Learning study.

Appendix A: StreamLines Events

Appendix B: StreamLines Events Survey Instrument

Appendix C: Art + Science Brainstorm Coding Themes

Appendix D: Art + Science Brainstorm Flyer

Appendix A: StreamLines Events and Programming

Below is list of known community-based events and programming that took place over the life of StreamLines. Many of these programs took place multiple times over the course of the project. These programs were either one off events such as the Butler Arts Festival, quarterly such as the Art + Science brainstorm discussions, monthly such as the walks and bike rides, or at the sporadically and discretion of those involved such as Children's Museum programming and the Poetry Workshops.

Event / Program	Frequency
Community Art + Science brainstorm at Public Libraries	Quarterly
Poetry Workshops and Lunch Hour readings at varied locations	At the Discretion of those involved
Children's Museum Programing and Outreach, such as Make A Splash!, Wacky Water program, Science Works Water exhibit, STEAM Camp and kids' dance performance, and First Thursdays Target Family nights.	One-off events, at times for prolonged periods of time
StreamLines Programing at Butler Arts Festival	One-off Event
StreamLines Music available at IMA indoor park	One-off Event
MidWinter Festival featuring StreamLines stage performance of dance	One-off Event
Walks and Bike rides in collaboration with IUPUI Arts and Humanities Institute and other partners.	Monthly
Big Tent installations	Bi-Annual
StreamLines Outreach through tabling events such as Celebrate Science Indiana; White River Festival; West Indy Back to School Day; Feast of Lanterns; Art Squared; kids activities at Rocky Ripple Festival.	One-off Events

Appendix B: Events Survey Instrument

This survey was modified slightly to maintain relevance depending on the site / event that was being evaluated. Each version of survey addressed the same core questions.

1. Based on your experience of tonight's dance performance, how would you complete this sentence? *"One thing I never knew o never realized before I saw this was…"*

_____
_____

_____
_____

2. This event was funded by the National Science Foundation. In your opinion, what was the science topic covered during the event?

_____
_____

3. Please rate your agreement with the following statements about this event.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I think this event was effective at communicating about the science topic.	❍	❍	❍	❍	❍
This event made me think about the science topic in new ways.	❍	❍	❍	❍	❍
The science topic is relevant to my daily life.	❍	❍	❍	❍	❍
This science topic made me think of the waterways in Indianapolis in new ways.	❍	❍	❍	❍	❍

4. Reflect on your thoughts **before** you attended this event and **now**. Please rate your agreement with the following statements.

	Before Event					Now				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I understand the science topic described here.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I can explain the science topic described here to another person.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I feel like art can be an effective way to communicate about science.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

5. Have you heard of StreamLines?

❍ Yes

❍ No

6. Have you closely examined any of these installations around Indianapolis?

❍ Yes

❍ No

7. If yes, what do you think it is about?

_____

_____

_____

8. How long have you lived in Indianapolis?

❍ Less than a year

❍ 1 to 5 years

❍ 5 to 10 years

❍ 10 to 20 years

❍ More than 20 years

❍ Prefer not to answer

9. How close do you live to Brookside Park?

❍ Within 1 mile

❍ Within 5 miles

❍ Within 10 miles

❍ Farther than 10 miles away

10. This project is about the Indianapolis waterways. Do you know what body of water is nearest Brookside Park?

❍ Yes (please name) _____

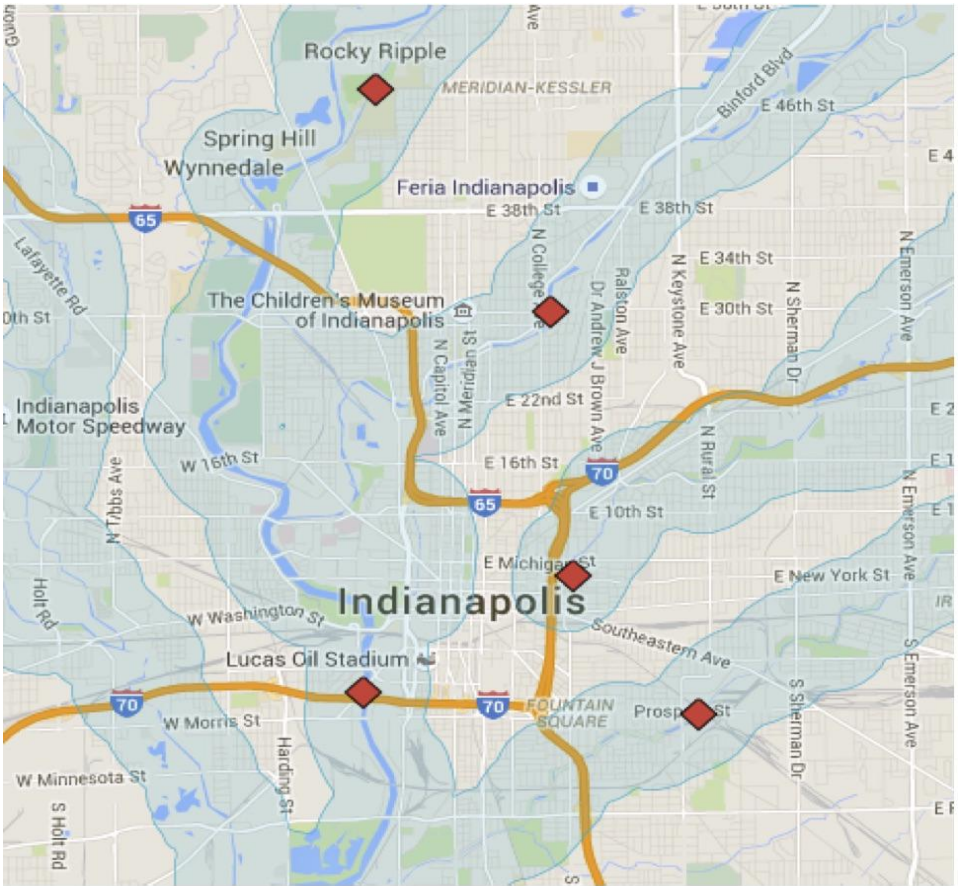
❍ No

11. Where did you hear about today's event? (Select all that apply.)

- Social media (e.g., Facebook, Twitter, Instagram)
- Flyer
- Word of mouth
- I was passing by and decided to stop

Other (please specify) _____

12. This project is about the Indianapolis waterways and we are interested in knowing how close people live to the rivers.



Appendix C: Art + Science Brainstorm Coding Themes

1. Tone
    a. Use of Humor
    b. Emphasizing Emotionally
    c. Serious Discourse
2. Content
    a. Social Support/Building Trust
        i. Connecting through Place
        ii. Connecting through Occupation
        iii. Connecting through Knowledge
        iv. General Chatter/Banter
    b. Framing the Project
        i. Details of StreamLines
        ii. Reasons for the Project
        iii. Negative Framing of Project
        iv. Positive Framing of Project
        v. Neutral Framing of Project
    c. Expertise
        i. Knowledge Surrounding Disciplines
        ii. Explanations of Key Discipline Concepts
    d. Moral Issues/Ethics
        i. Conservation Biology/Conservation Psychology
        ii. Stewardship
    e. Solutions
        i. Opportunities to Help
        ii. Art/Science Contributions to a Sustainable Society
    f. Collaboration
        i. Agreements
        ii. Disagreements
    g. Audience Personal Connections
        i. Relating the Conversation to Self
        ii. Parallels between Life Experience and StreamLines Content
    h. Science
        i. Discussion of Science Topics
        ii. Discussion of Science Processes
        iii. Discussion of at least 1 Science Theme or Concept
    i. Art
        i. Discussion of Art Topics
        ii. Discussion of Artistic Processes
        iii. Social Purpose of Art
        iv. Inspiration for Art
        v. Analysis of an Art Piece

3. Art/Science Intersection
    a. Comparison of Art and Science Disciplines
    b. Using One's Discipline to Understand the Other
4. Organizer Role
    a. Shift Conversation to Stay on Task
    b. Reframe Conversation to Come Back to Project
    c. Connecting Pieces to Make Relevant to the Project

Table 1. Themes, sub-themes and frequencies of Art + Science Brainstorm Coded Analysis

Theme	Sub-Theme	Code	Frequency
Art/Science Intersection	Art/Science Intersection	Comparison of art and science as disciplines/ using ones discipline to understand another…	212
Content	Art	Discussion of art/artistic process. Analysis of an art piece (i.e., meaning and purpose, social purpose, inspiration	115
Tone	Tone	Use of humor (i.e., sarcasm, irony)	75
Content	Expertise	Explanations or understanding of key concepts of disciplines (i.e., science (scientific process), culture, art, geography): didactic	67
Content	Expertise	Knowledge around disciplines (i.e., social history, science, art, culture, geography): conversational	48
Content	Solutions	How can we help?	23
Content	Audience Personal Connections	Tying the conversation back to self	22
Organizer Role	Organizer Role	Shift conversation focus to stay on task	21
Content	Science	Discussion of 6 site/themes	17
Content	Framing the Project	Details of streamlines	16
		Other	16
Organizer Role	Organizer Role	Connecting pieces to make relevant to the project	14
Content	Social Support & Building Trust	Getting to know one another through occupation	13
Content	Social Support & Building Trust	Getting to know one another through place	12
Content	Social Support & Building Trust	Through expertise	12
Content	Solutions	How does art and/or science contribute to a sustainable society?	11
Content	Science	Discussion of 22 science topics	10
Content	Framing the Project	Reasons why project is happening (i.e., explaining key concepts, historical setting)	7
Organizer Role	Organizer Role	Reframe conversation to come back to project	4
Content	Framing the Project	Positive framing of project	3
Content	Audience Personal Connections	Drawing parallels between life experience and content of streamlines	3
Content	Framing the Project	Neutral framing of project	2
Content	Moral Issues/Ethics	Stewardship	2
Content	Framing the Project	Negative framing of project	1
Content	Moral Issues/Ethics	Utilitarian value	1
Content	Moral Issues/Ethics	Intrinsic value	0

Appendix D: Art + Science Brainstorm Flyer

New Knowledge Organization Ltd.

Facing Society's Grand Challenges Head On

tel: (347) 766-3399
40 Exchange Pl. Suite 1403
New York, NY 10005

tel: (442) 222-8814
3630 Ocean Ranch Blvd.
Oceanside, CA 92056

tel: (240) 639-1177
P.O. Box 30273
Bethesda, MD 20824