WZAM^3 | Why Zoos & Aquariums Matter
Wave 3: STEM Matters

STEM Matters: Investigating the Confluence of Visitor and Institutional Learning Agendas

New Knowledge Organization Ltd
COSI's Lifelong Learning Group
OSU Center for Research on Lifelong STEM Learning
Association of Zoos and Aquariums

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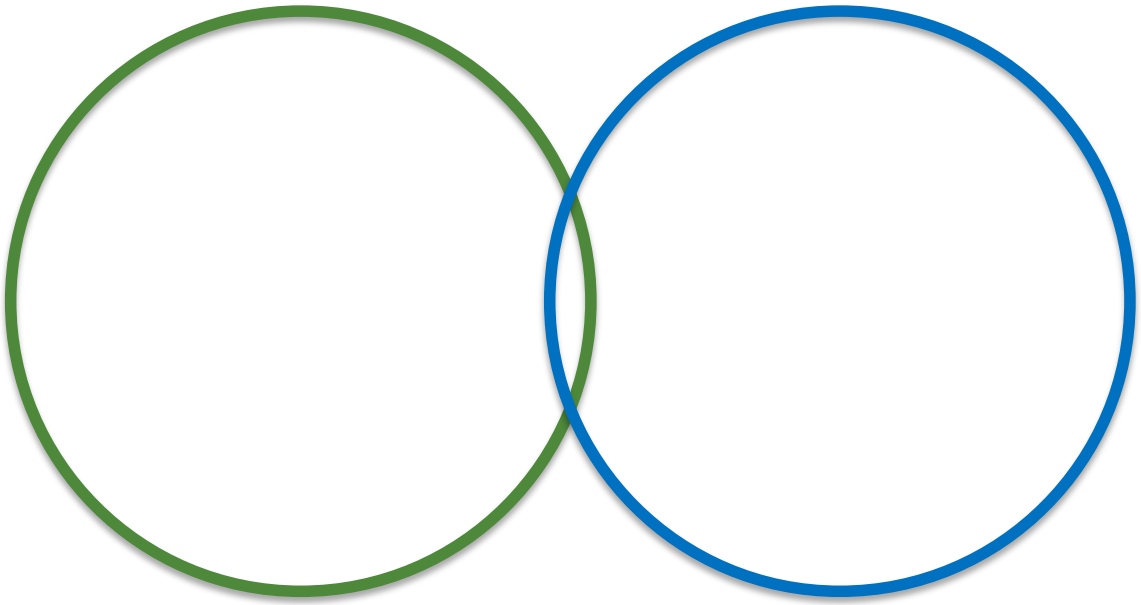

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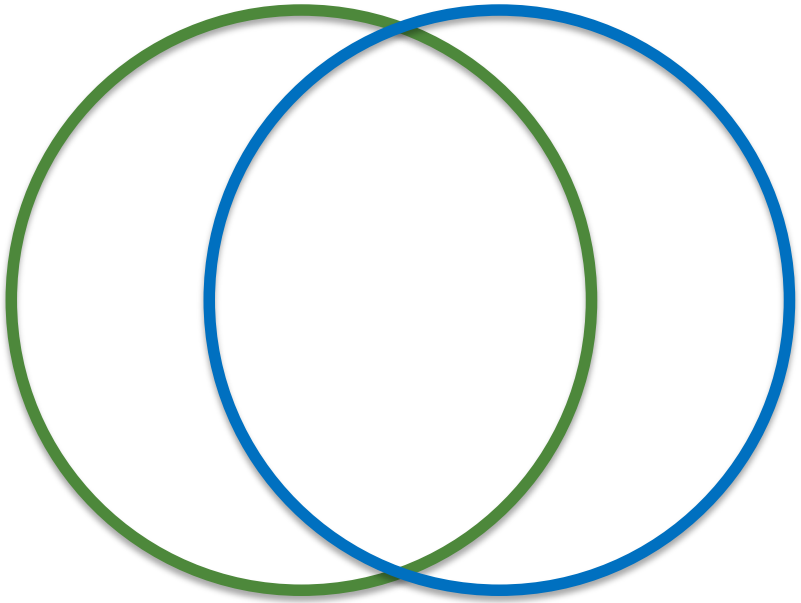

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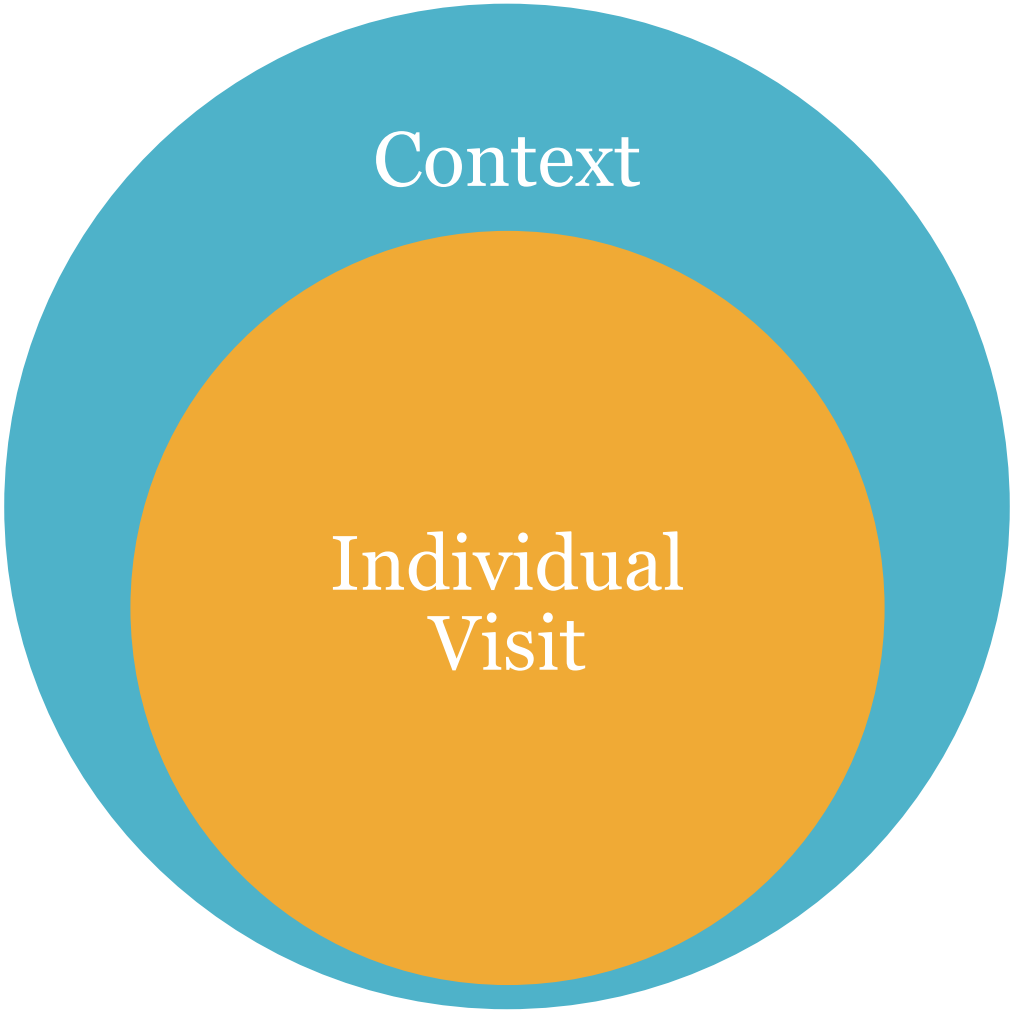

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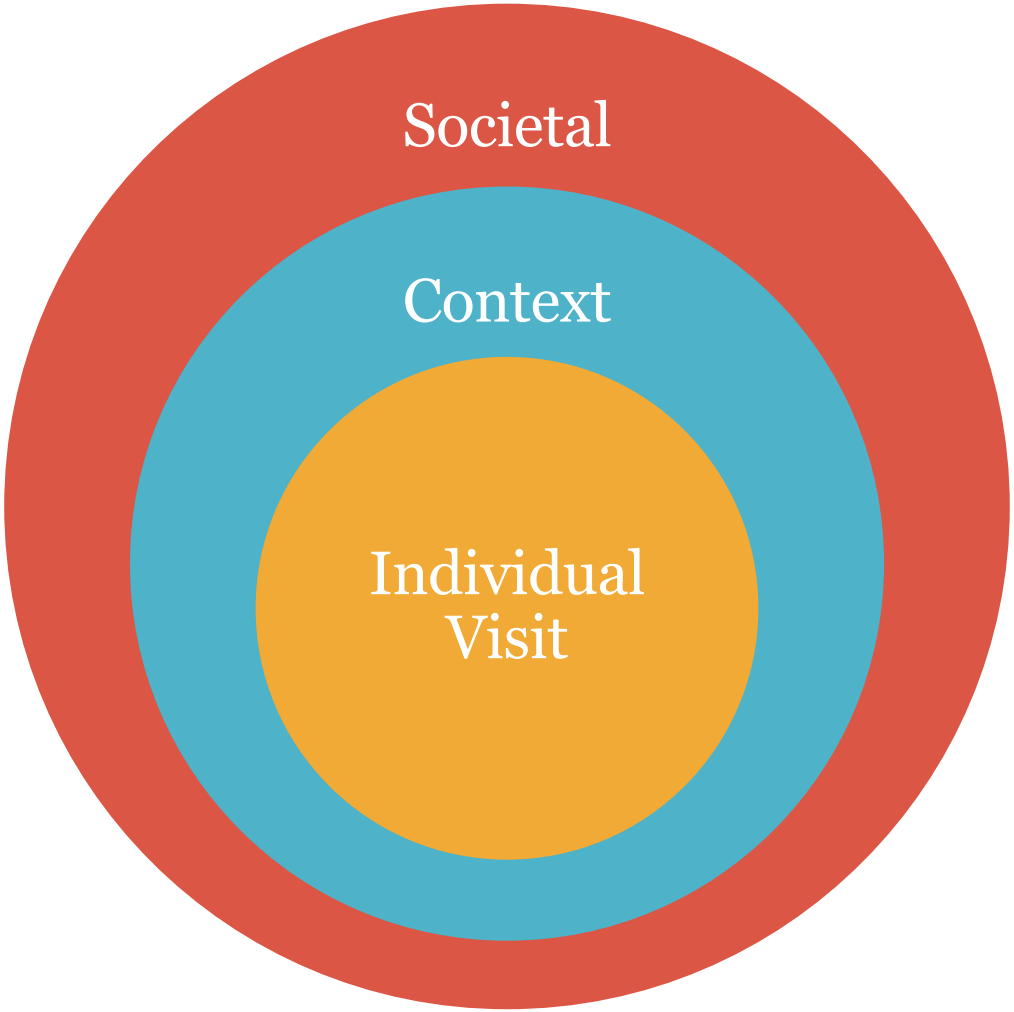

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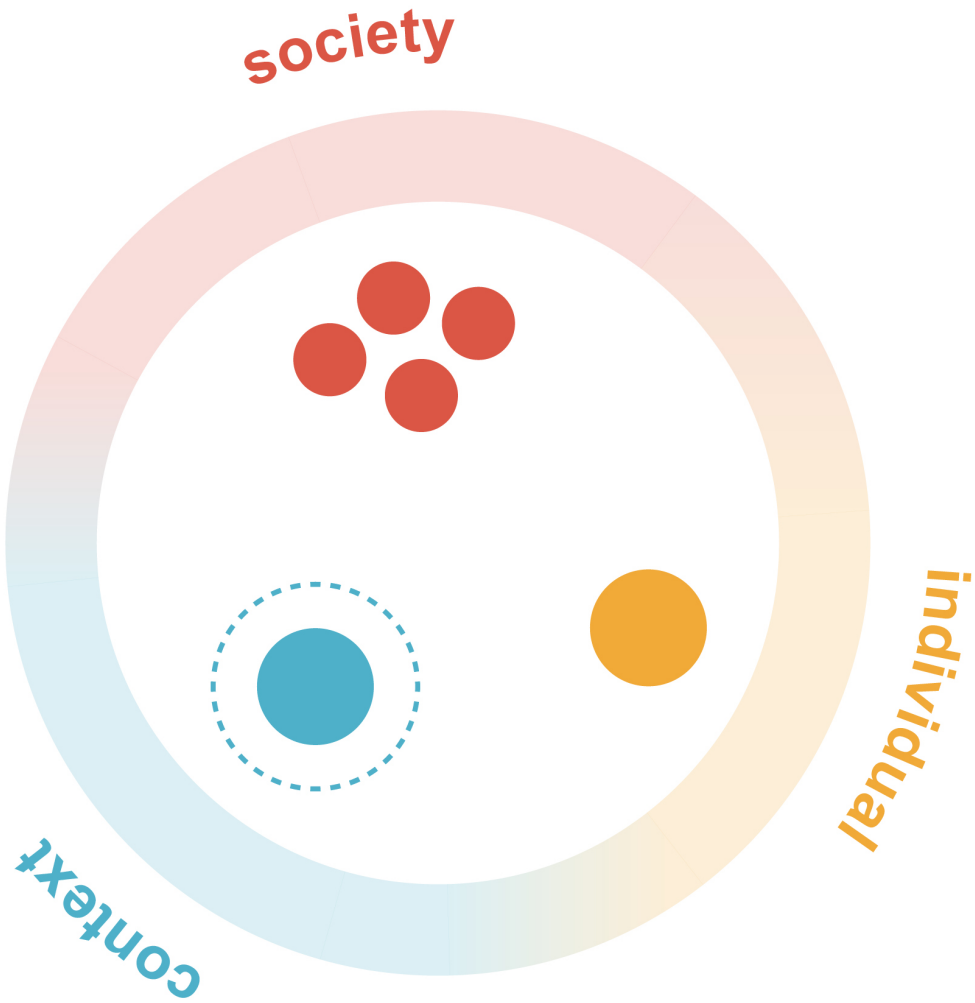

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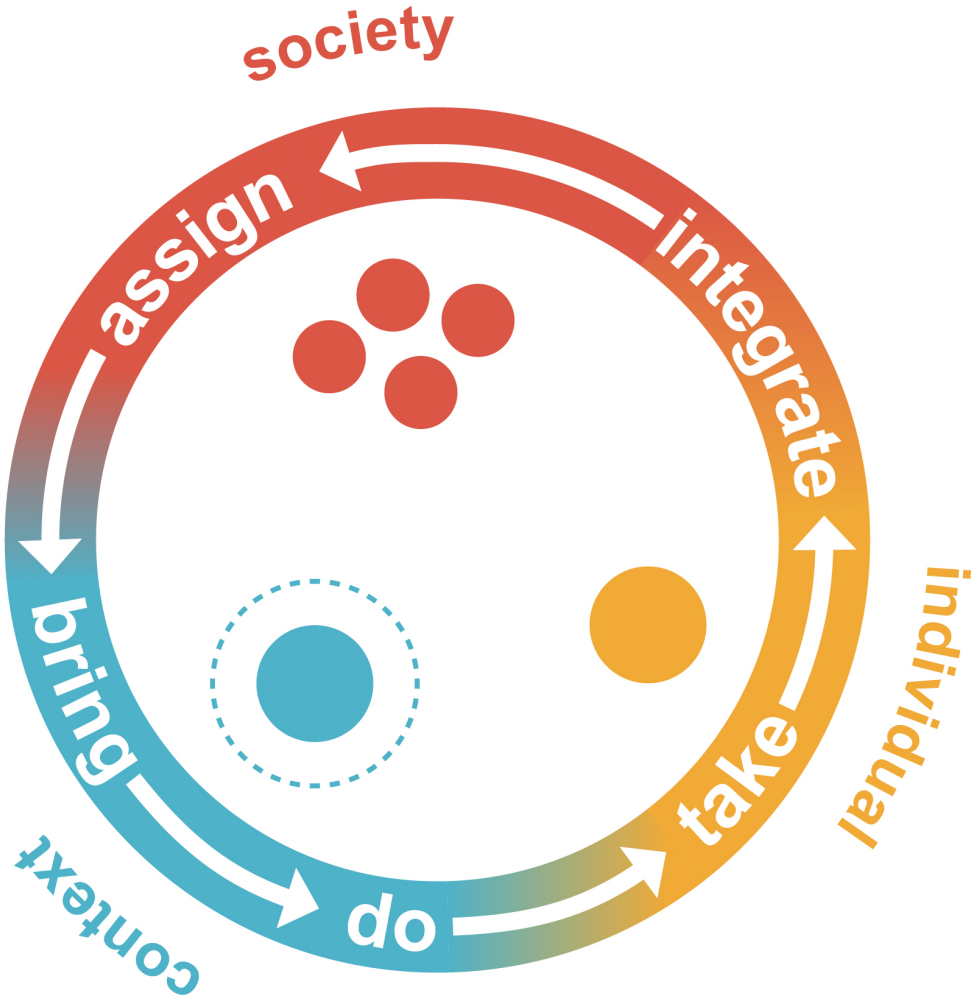

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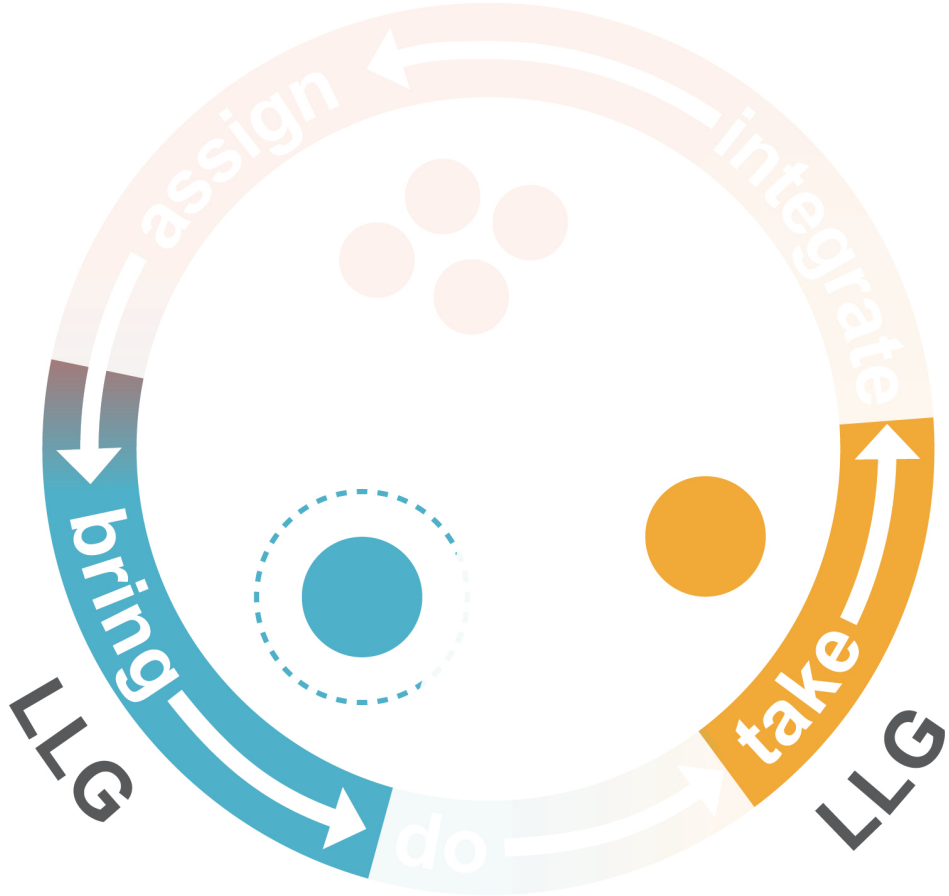

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Center for Research on Lifelong STEM Learning

ENTRY NARRATIVES AND VISIT BEHAVIORS

KELLY RIEDINGER
MARTIN STORKSDIECK

Oregon State University

What are the entry characteristics of visitors and how do these characteristics play out in terms of behaviors during the Z/A visit?

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Theoretical Context

- Contextual model of learning (Falk & Dierking, 2000; Falk & Storksdieck, 2005)
- Integrated Experience Model (Storksdieck, 2006)
- Visitor based learning framework (Barriault & Pearson, 2010)

Study Design

Part 1 (Years 1 & 2):

- Characterizing Groups
- Video Tracking Study

Part 2: (Year 3)

- Interpretive In-Situ Experimental Study

Tracking Study

- Pre-Post Interviews:
  - Entry characteristics (pre-)
  - Plans for visit (pre-)
  - Visit details & behaviors (post-)
  - Decision-making processes (post-)
- Full visit experience with GoPro cameras

This Study

Pre-Visit Interview (n=62)	Z/A Observations (n=70)	Post-Interviews (n=61)
• Group Characteristics • Who do they typically visit with • Motivation for the visit • Plans for the visit • Perceived mission of zoos/aquariums	• Time at exhibits • Time in transit • Time engaged in meaning making talk • Decision-making conversations and behaviors	• Remembered visit behaviors • Extent to which group adhered to visit plan • How decisions were made • Learning about group members and about self • Perceived mission of zoos/aquariums

Video-Based Tracking Data

- Allows us to understand how people make choices about what to experience
- Tells us how and where meaning-making happens
- Allows us to link visitors declared agenda to their actual behavior

What we hope to learn from our data:

- Entry Characteristics:
  - Demographics, visit motivation, plans for the visit, perceptions of Z/A mission
- Visit Behaviors:
  - Decision-making, conservation education talk, meaning-making talk
- Exit Narrative
  - Perceptions of Z/A mission, self-reported visit activities and decision-making behaviors

Contact Information

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Condition of the Visit

Joe Heimlich
Mary Ann Wojton
E. Elaine Horr

Center for Research and Evaluation
Lifelong Learning Group

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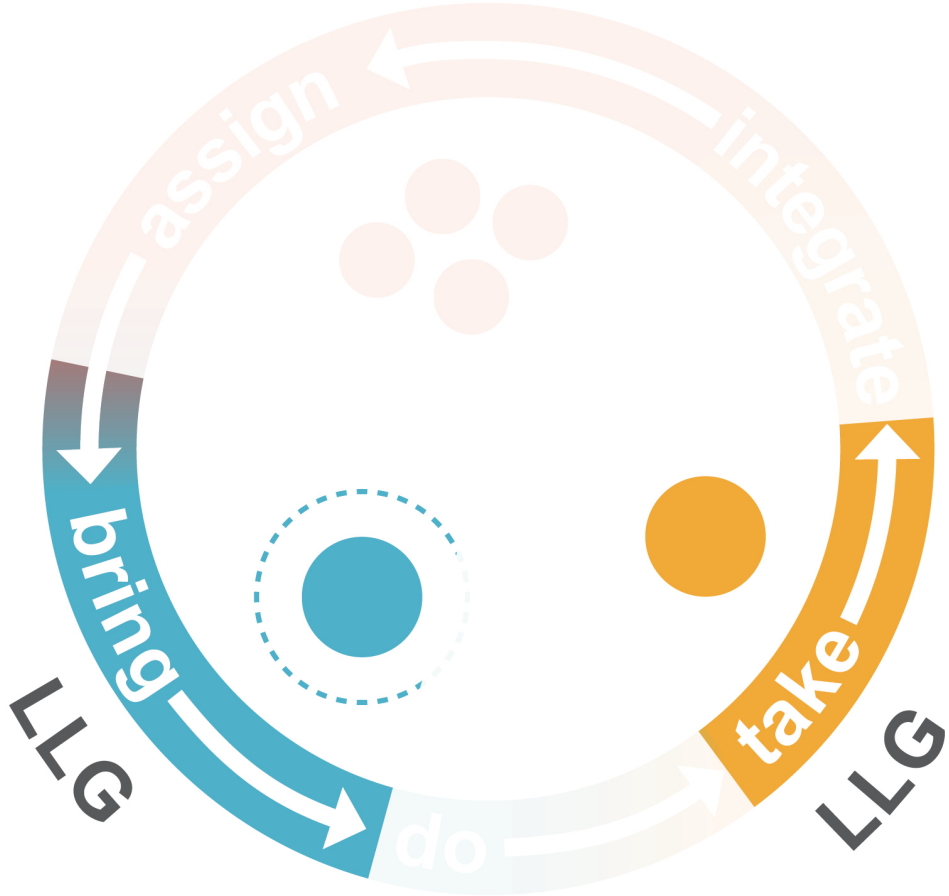


Question |

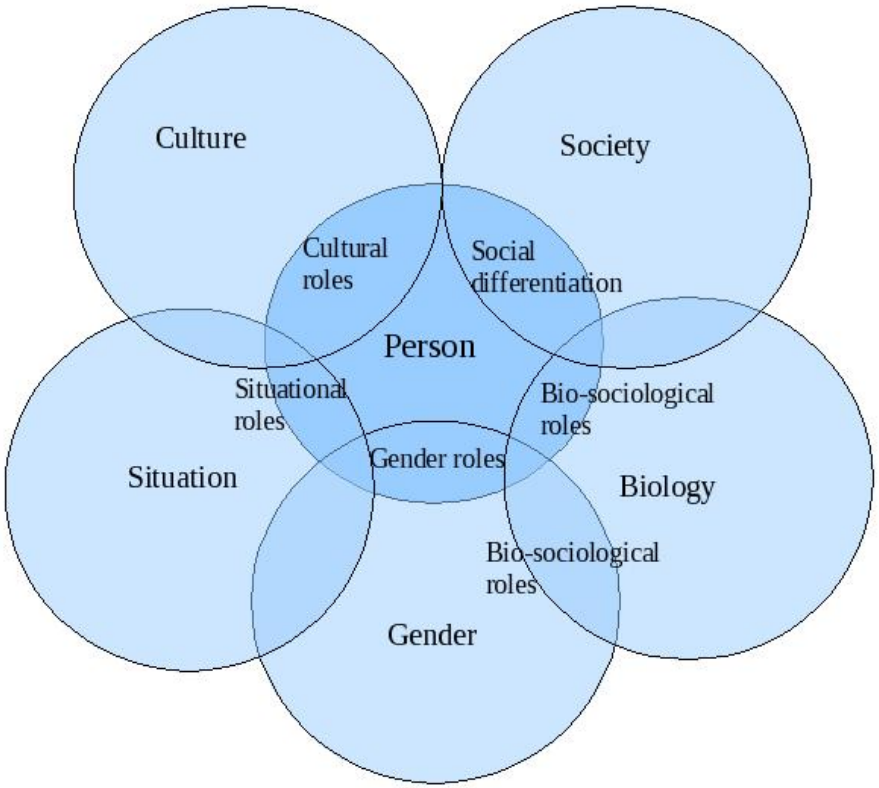
What is the individual condition of the visit; how is the visit contextualized in the life stage and learning ecology of the individual and what are common entry themes and exit outcomes tied to those themes, and how dominant is each across the visiting population?

Condition of the visit

Life Stage

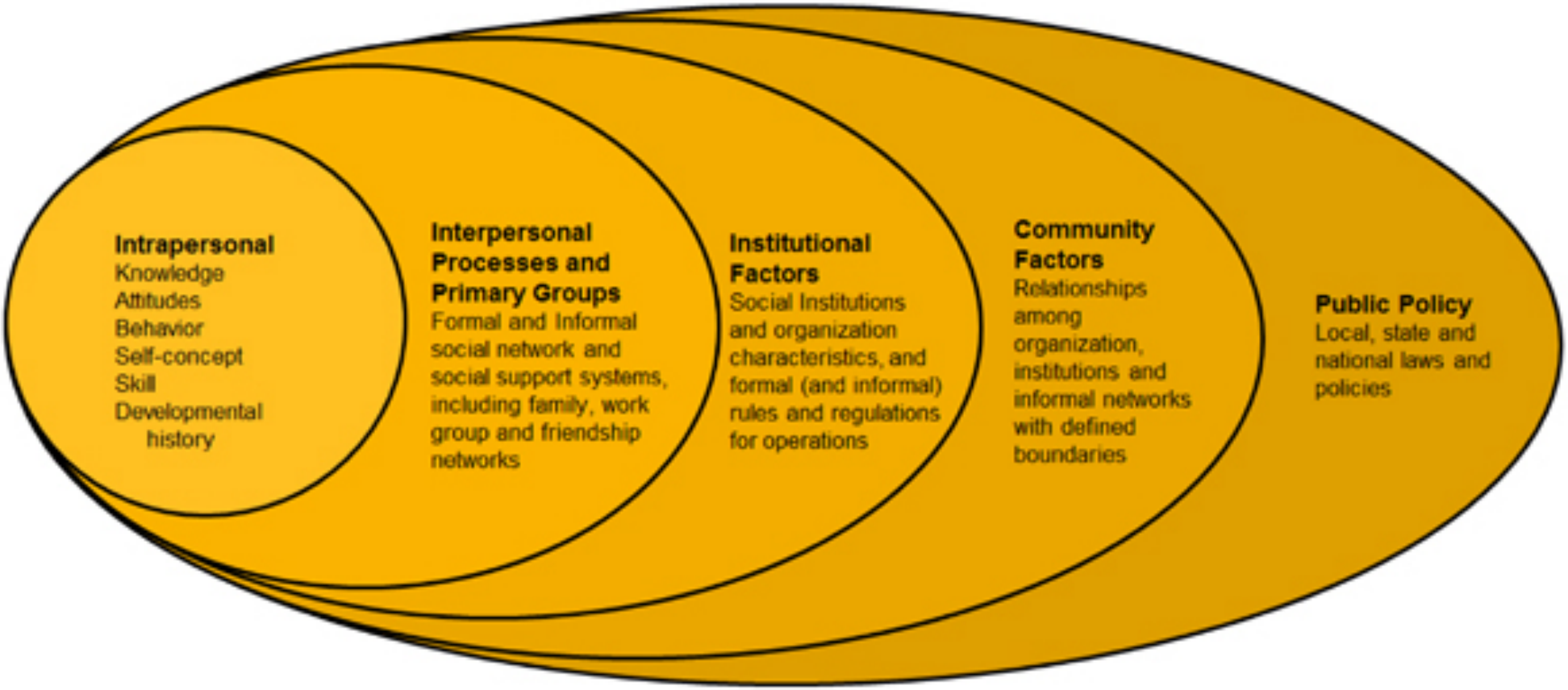
Condition of the visit

-



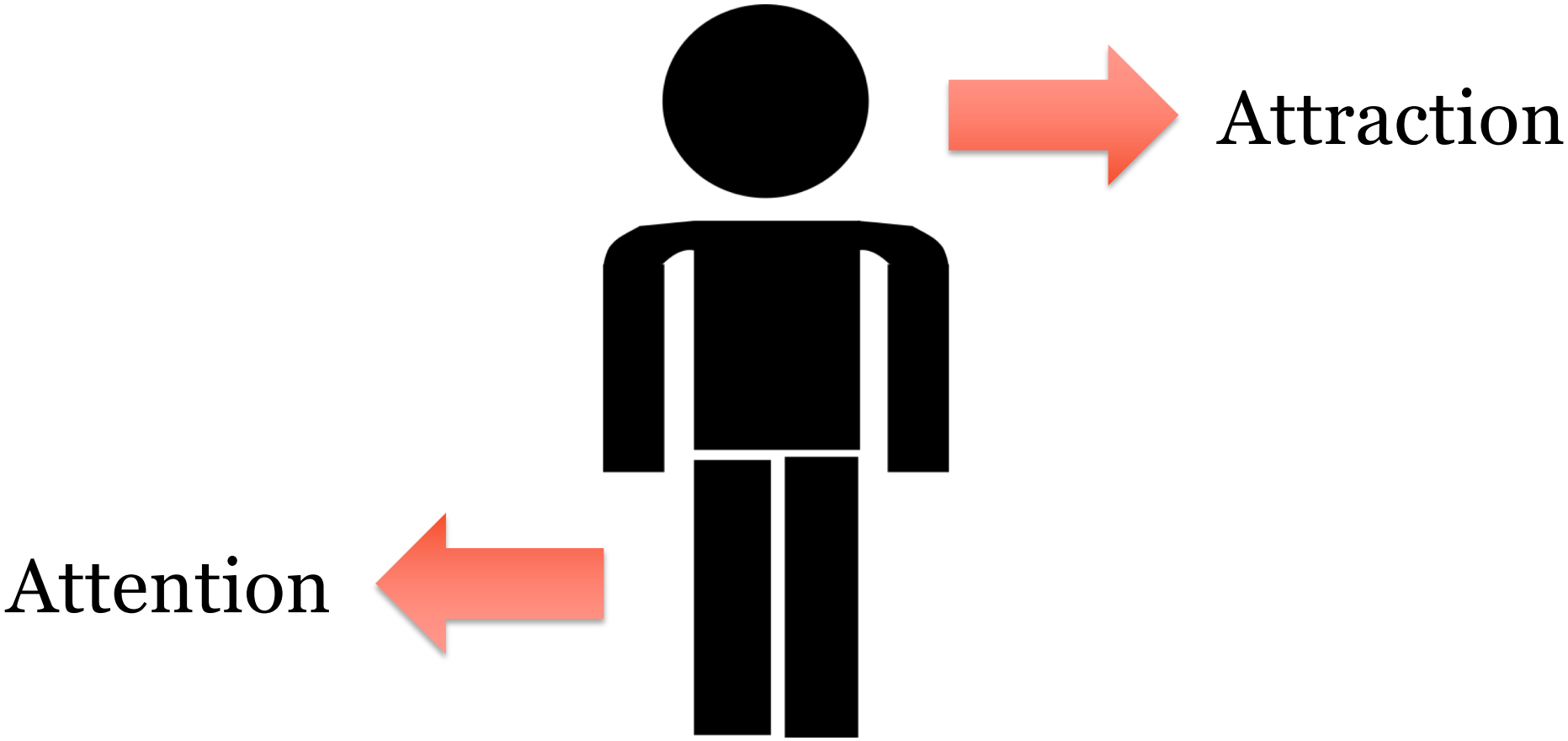
Social role

Condition of the visit



Individual's learningscape

Condition of the visit



Conditions- Specific

Study Design

Year 1:

- Pre & Post Interviews with Members

Year 2:

- Analyzed interview data, constructed questionnaire

Year 3

- Administer Pre- and Post-Questionnaire at 25 zoos and aquariums

Year 1

158 Pre- and Post-Interviews completed at 7 sites

- Columbus Zoo & Aquarium
- North Carolina Aquarium at Fort Fisher
- Cleveland Metroparks Zoo
- Mystic Aquarium
- Naples Zoo and Botanical Garden
- Phoenix Zoo
- Seattle Aquarium

Tell me about yourself?

And they did . . . .

They told us about who they visit with

I come to the zoo primarily because the girlfriend and I enjoy animals.

Adults who came alone

I would actually come here sometimes during lunch and just do the outer loop around Africa Trail

They told us about their intent for the visit

it's always interesting, the landscaping, how they incorporate the zoo into the – kind of what you were just saying – the natural environment

It's calming for me

So we started a routine on Tuesdays they would do toddler Tuesdays here.

About Technology

- *get him away from video games and computers and TV and all that fun things that kids grow up with today*
- *we'll be Pokémon hunting*

Factor Construction & Reduction

- Used literature and interviews
- Created lists of items
- Tested 142 items with panel, reduced to 60 items on questionnaires

Demographics

- Questions were developed based on interview data and literature
- Questions tested with visitors to COSI, a science museum
- 22 demographic variables, such as career stage, hobbies, political viewpoint

Current Work

We collaborated with 25 zoos and aquariums

- Zoo/Aquarium staff is collecting pre- and post-questionnaires data
- 50 guests
- Three times (busy season—either summer or winter, fall, spring)

CENTER FOR RESEARCH AND EVALUATION

Lifelong Learning Group

If you are interested contact

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614.629.3148

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Society

Public Perceptions of Z/As

Rupu Gupta, John Fraser, John Voiklis, & Shuli Rank

newknowledge.org

WILDLIFE CONSERVATION SOCIETY • WE STAND FOR WILDLIFE • WCS

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NKO

Research Question

What aspects of Z/As foster public trust in these institutions?

National Survey 1

National Study |

Framing |

Ways in which we asked about perceptions vs. trust

Perceptions	**Trust**
How much do you *agree / disagree*: Z/As are . . .	How important is _____*for you to trust* a Z/A?

Trust | Expectations

Ethical integrity	Ethics
	Inform about specific animals
Conservation Leadership	Wildlife Agent, Informant, Activator
	Collaborator in conservation
Guidance on Sustainability	Advise on sustainability practices
Quality visit	Quality attraction
	Quality experience

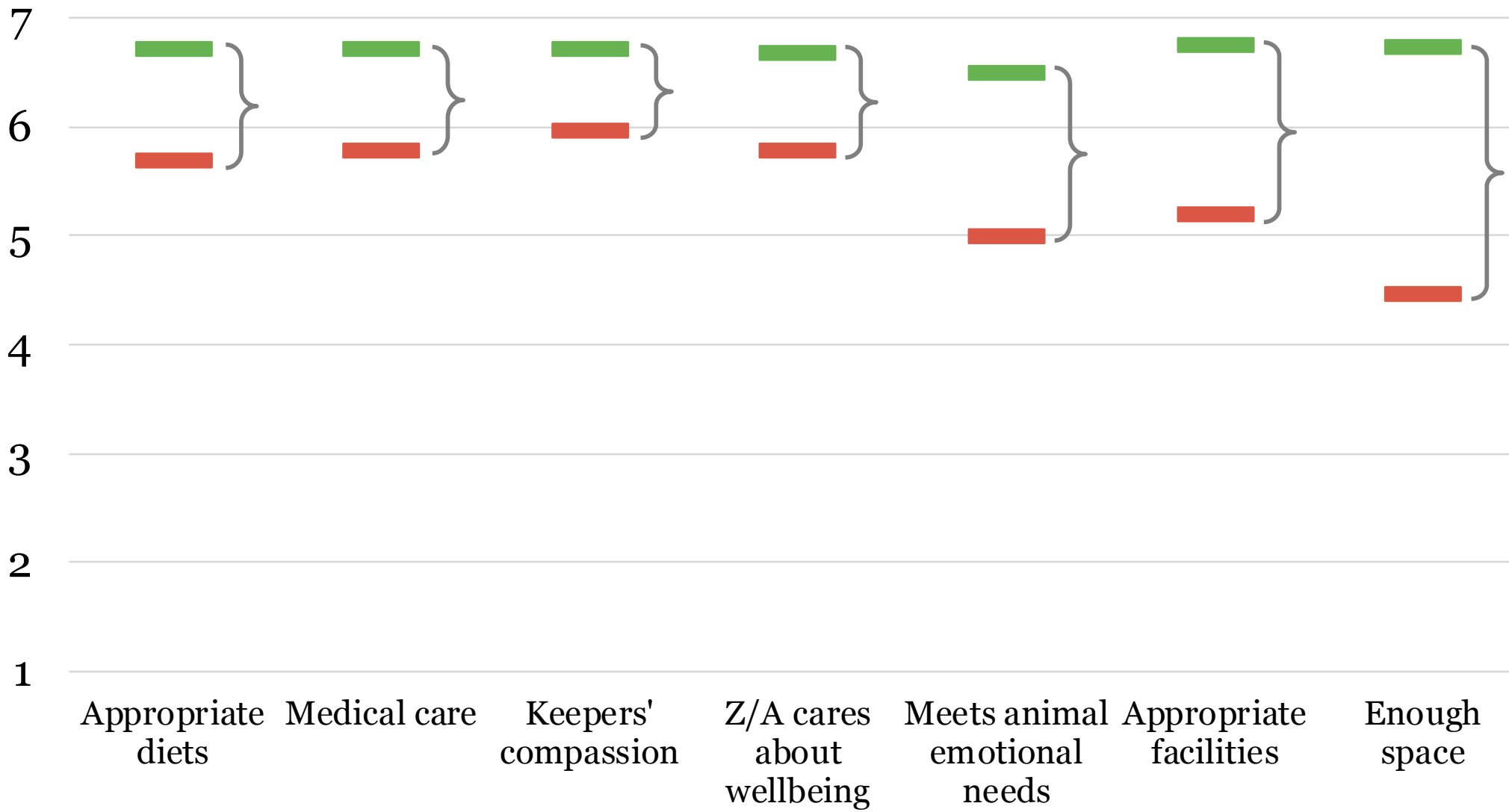
Overall | Average for all questions

Expectation > Perception

5.60 : 5.25

Largest Discrepancy

Largest discrepancies between expectations and perceptions



Research Question

How does the public perceive Z/A within the STEM learning ecology?

National Study 2

STEM Learning Ecology

Settings

Zoos

Aquariums

Restaurants

Science Centers

Parks

STEM Learning Ecology

STEM Topics

Water Quality

Construction

Climate Change

Animal Behavior

Nutrition

STEM Learning Ecology

Modes of Learning

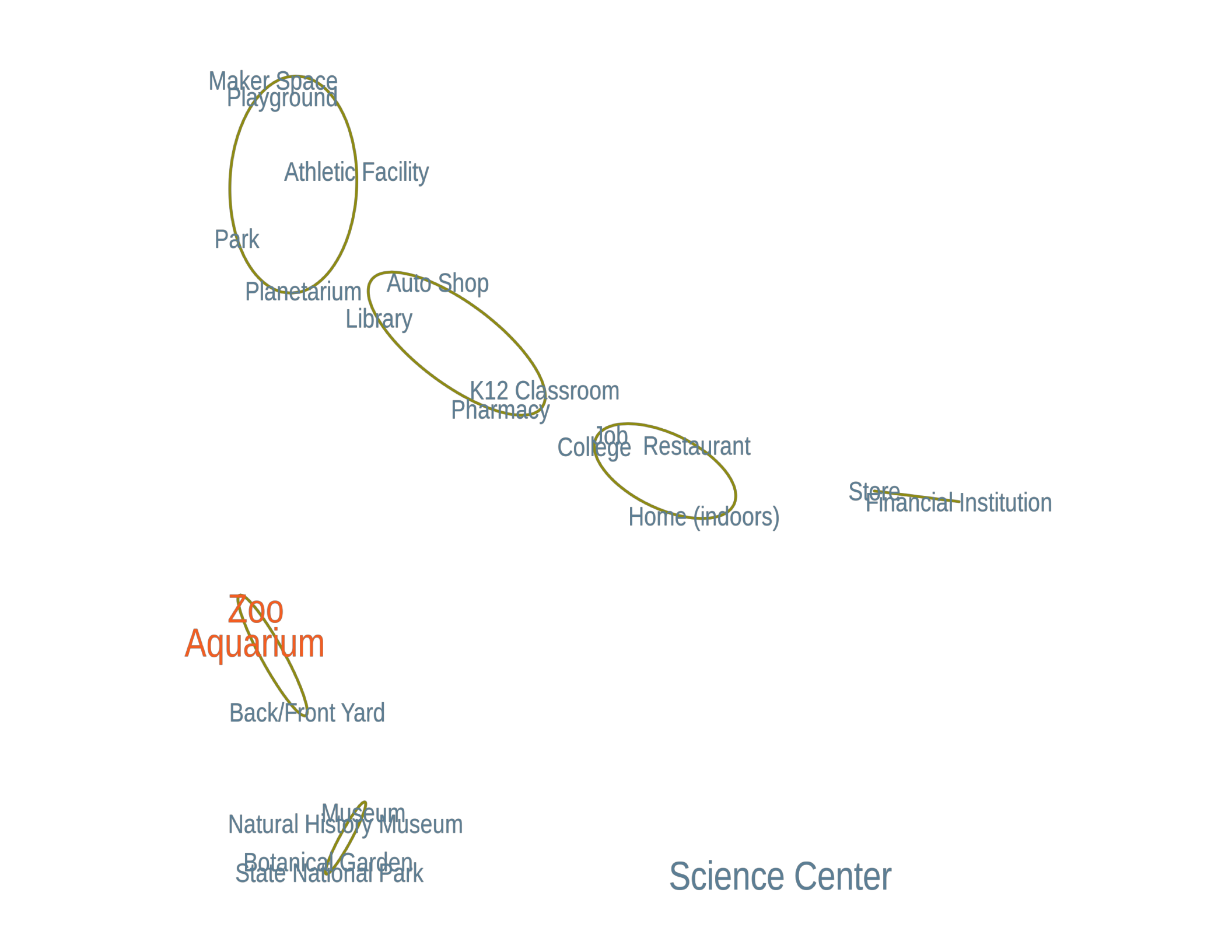
Using Senses

Reading Signs

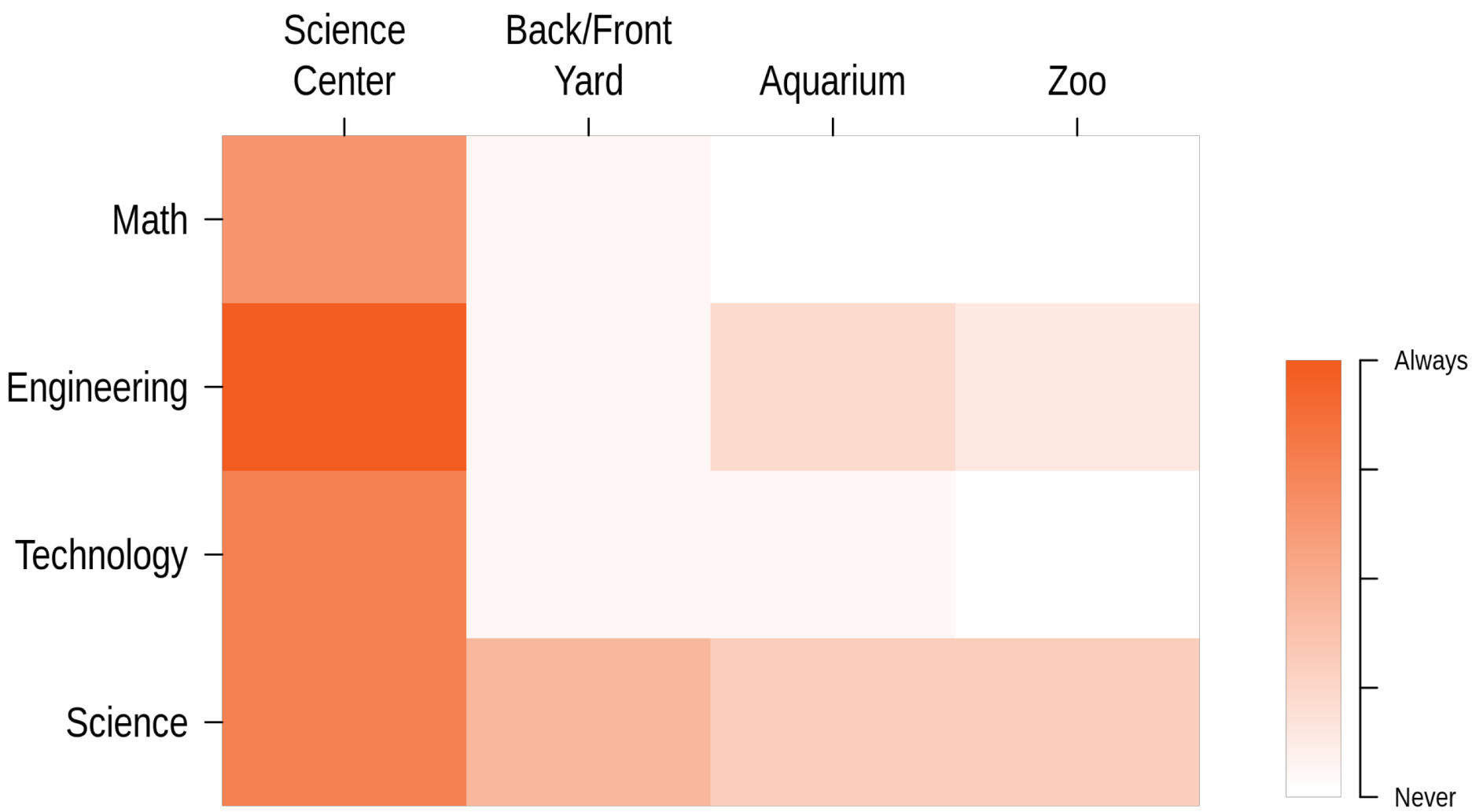
Conversations

Digital Media

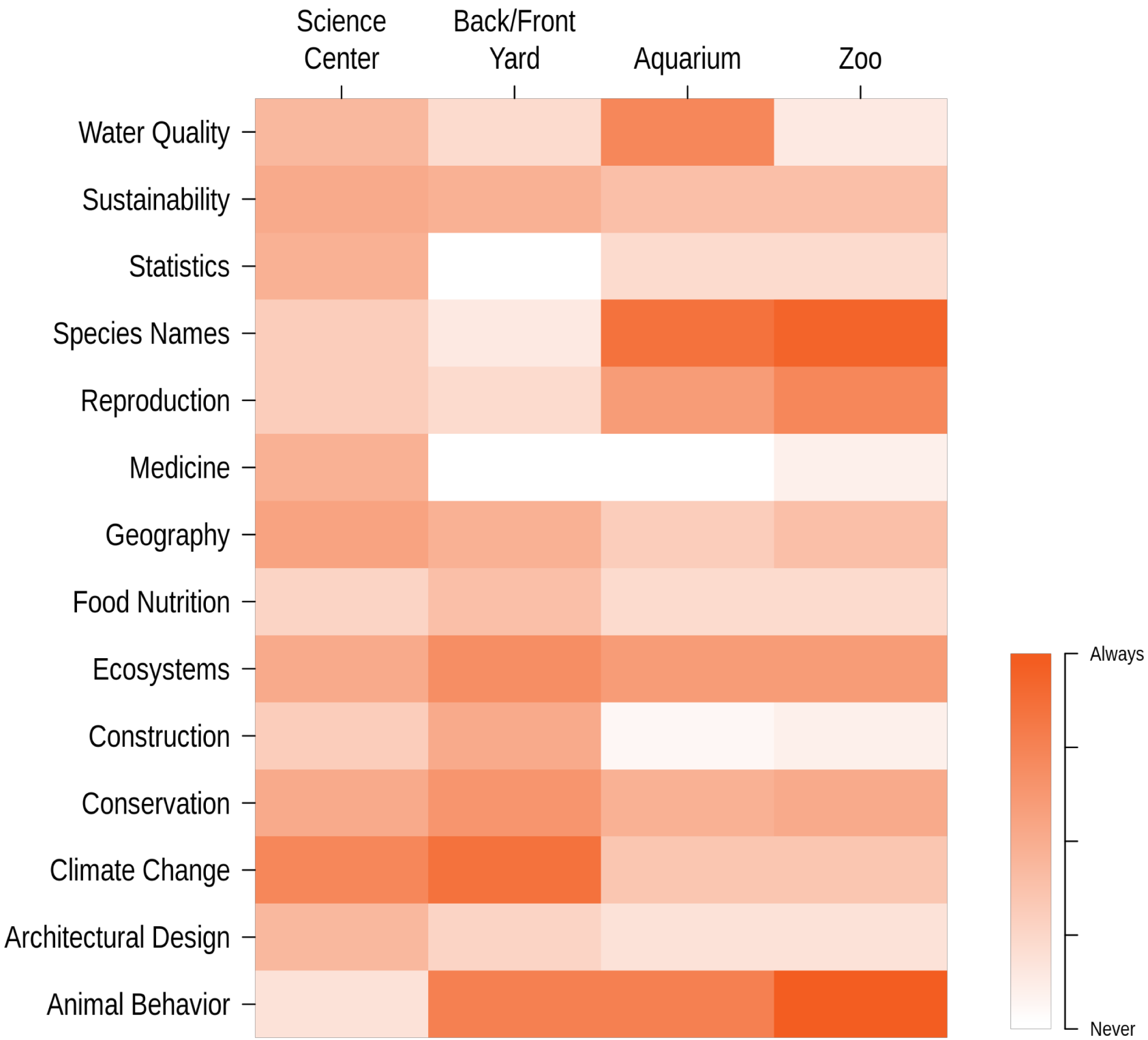
STEM Learning Ecology


Maker Space
Playground
Athletic Facility
Park
Planetarium
Auto Shop
Library
K12 Classroom
Pharmacy
Job
College
Restaurant
Home (indoors)
Store
Financial Institution
Zoo
Aquarium
Back/Front Yard
Museum
Natural History Museum
Botanical Garden
State National Park
Science Center

How **frequency of encountering STEM** sets apart Z/As


Science Center
Back/Front Yard
Aquarium
Zoo
Math
Engineering
Technology
Science
Always
Never

How **STEM topics** set apart Z/As


Science Center
Back/Front Yard
Aquarium
Zoo
Water Quality
Sustainability
Statistics
Species Names
Reproduction
Medicine
Geography
Food Nutrition
Ecosystems
Construction
Conservation
Climate Change
Architectural Design
Animal Behavior
Always
Never

How STEM **learning modes** set apart Z/A

Science Center
Back/Front Yard
Aquarium
Zoo
Using Senses
Reading Signs
Public Program
Presentations
Observing Animals
Learning Facts
HandsOn Activities
Exploring Plant
Digital Media
Conversations
Always
Never

Thank You |

Thank You |

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Thank You |

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