

STEM Matters: Investigating the Confluence of Visitor and Institutional Agendas

Overview:

OSU's Center for Research on Lifelong STEM Learning is partnering with two other research organizations, New Knowledge Organization Ltd. (NKO) and Lifelong Learning Group (LLG), on the NSF grant, *STEM Matters: Investigating the Confluence of Visitor and Institutional Agendas*. The three partner organizations will seek to advance the research priorities identified by AZA's Conservation Education Committee (CEC) and Research and Technology Committee (RTC) by examining the following research questions:

- 1) What are the public perceptions of zoos and aquariums (Z/As) within the national informal STEM learning ecology? and How does the public institutional voice of Z/As outside of their walls advance STEM learning objectives?;
- 2) What are the conditions of the visit within the life stage and learning ecology of the individual? How are entry themes reconciled with institutional mission?; and
- 3) What are the entry characteristics of visitors and how do those characteristics play out in behaviors during a visit?

The project is directly supported by an expert informal learning advisory panel, drawn from the AZA leadership community as well as peers from the STEM learning research field.

Scope of Work:

The project is envisioned as a research collaborative where each team explores parallel research questions as part of a nested study design. Each organization will take the lead on one of the broad research questions and the respective findings of each study will be integrated and collectively will contribute to advancing the informal STEM learning knowledge base. The three teams will work collaboratively as peer-critics seeking to triangulate their efforts for advancing practice. OSU will take the lead on the third research question which aims to learn more about how visitors' agendas and entry narrative influence their behaviors and outcomes during zoo/aquarium visits.

OSU's study will be divided in to the following three sub-components: characterizing groups, tracking study, and interpretive strategy in-situ study. To characterize groups visiting zoos and aquariums, OSU will place cameras at the entrance of a sample of zoos and aquariums across the country to record visible group characteristics. OSU will also conduct entry and exit interviews for verification of group characteristics and to provide an estimate of error for our coding process. As part of the tracking study, we will intercept a sample of visitors to zoos and aquariums and collect video and audio data of the groups' visit using mobile cameras. Finally, the in-situ study of interpretive strategies will use video and data from cameras and microphones placed at sample exhibitions to capture differences in group behavior and meaning making for three experimental conditions.

Broader Impacts:

This study builds upon earlier NSF-funded studies known collectively as "*Why Zoos and Aquariums Matter*" that explored learning across multiple zoo and aquarium settings (Falk et al., 2007; Fraser & Sickler, 2009). The current study will translate research findings to

advance practice through project dissemination efforts including briefings, overviews and instruments for informal science education professionals through existing AZA professional training networks.