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| **Learning #1**  NRC’s *Learning Science in Informal Environments* proposes in learning strand #1 that “learners in informal environments experience excitement, interest, and motivation to learn about phenomena in the natural and physical world.” What do you think about the notion that excitement is a primary driver of engagement? What about other affective states, e.g. ones of arousal, like attentiveness? Does participation and learning from it drive interest, or does interest drive learning? Are affective states important in your own work? |  | **Learning #2**  NRC’s *Learning Science in Informal Environments* proposes in learning strand #4 that “learners in informal environments reflect on science as a way of knowing….as a social enterprise that advances scientific understanding over time.” What have you noticed from your own work about the kinds of informal environments or strategies that are conducive to communicating science process and/or values? |
| **Learning #3**  NRC’s *Learning Science in Informal Environments* surveys and synthesizes some of what we know about learning up to this point in the ISE field’s history, mostly from the researcher’s perspective. How do practitioners conceptualize and talk about learning? What do ISE practitioners and researchers gain from collaborating? Do you know of current ‘sweet spots’ where research and practice come together? What barriers have you found to praxis in your own work, and how do you address them? |  | **Learning #4**  NRC’s *Learning Science in Informal Environments* and *Surrounded by Science* propose an “ecological” framework for learning, intended to highlight the cognitive, social, and cultural learning processes and outcomes that are shaped by distinctive features of particular settings, learner motivations and backgrounds, and associated learning expectations. How does this perspective fit with how you think about your own work? Do different kinds of designed spaces or activities invite different outcomes? |
| **Learning #5**  In “making the case” for informal science education, there is an assumption that there are identifiable, distinct aspects of learning that occur across designed settings, everyday environments, and in programs. How would you describe the particular qualities of STEM learning in your own work? Does ISE learning vary from designed settings to everyday environments and programs, for example, or in situations where informal isn’t also free-choice? What is different about the tools used and/or the roles of learners and educators across informal settings?" |  | **Learning #6**  NRC’s *Learning Science in Informal Environments* proposes 6 “strands of science learning” that are supported by informal environments. These refer roughly to inspiration, motivation, understanding, experimentation, meta-cognition, social interaction, and identity. Which of these strands do you find useful in communicating the value of your work, and for which stakeholders are they important? What would convince you that any one of these strands of learning had been achieved? What kinds of outcome measures or assessments of them would you like to see? |
| **Learning #7**  NRC’s *Learning Science in Informal Environments* proposes in learning strand #3 that “learners in informal environments manipulate, test, explore, predict, question, observe, and make sense of the natural and physical world.” Why is interactivity important? Do we really have evidence that it is, or is it just a core assumption that we make? Is it under-conceptualized? How do we unpack this? |  | **Learning #8**  NRC’s *Learning Science in Informal Environments* proposes in learning strand # 6 that “learners in informal environments think about themselves as science learners and develop an identity as someone who knows about, uses, and sometimes contributes to science.” Is science learning valid if learners don’t know it’s “science learning”? Do we need a richer version or understanding of ‘identity,” or even what we mean by STEM? |
| **Learning #9**  NRC’s *Learning Science in Informal Environments* and *Surrounded by Science* describe some of the ways that culture influences learning, as well as some strategies for engaging a diversity of audiences equitably in science learning. What more needs to be unpacked about science as a cultural enterprise and how welcoming it is to people of all backgrounds? How do diverse cultural perspectives inform STEM? For example, what do Native ways of knowing have to offer ISE? Which dimensions of these issues still need to be explored and how? |  |  |