DEVISE: Building evaluation capacity in PPSR and Informal Science Education

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Big Idea
DEVISE (Developing, Validating, and Implementing, Situated Evaluation Instruments) is an NSF-funded project spearheaded by the Cornell Lab of Ornithology. A major goal of DEVISE is to develop generalizable, yet customizable, tools and strategies to effectively measure learning outcomes across PPSR (Public Participation in Scientific Research) projects and ultimately, informal science education programs.

Audience
Through additional funding from the Noyce Foundation, we intend to test and validate existing, new, or modified instruments with members of the public engaged in scientific research. A major goal of DEVISE is to develop generalizable, yet customizable, tools and strategies to effectively measure learning outcomes across PPSR (Public Participation in Scientific Research) projects and ultimately, informal science education programs.

Challenges
- Creating effective "generalized" STEM evaluative tools
- Constructing psychometric items and instruments
- Recruiting participants for in-person field testing
- Establishing validity & reliability
- Developing sensitive enough measures for citizen scientists

Potential Impacts
- Improved goal and objective setting by projects
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- Increased evaluation capacity and improved evaluation quality for PPSR and ISE programs

Deliverables

1. A Framework for Evaluating Outcomes of PPSR Projects
- Identification as a science learner both by self and others, recognition of agency and fluency in learning and doing science, affiliation with the science community
- Behavior change resulting from participation such as place-based and global stewardship, new participation, and community or civic action
- Procedural skills such as asking questions; designing studies; collecting, analyzing and interpreting data; experimenting; argumentation; synthesis; technology use; and communication

2. A Searchable Online Database of Tested Scales and Tools (through ATIS)

3. Online Toolkit for Practitioners and Evaluators
- User’s Guide for Project Evaluation of PPSR projects
- Inventory of sample goals, outcomes, and indicators for PPSR projects
- Professional development opportunities: tutorials, webinars, and workshops
- Case study highlights from projects reaching diverse audiences
- Research on learning in informal environments
- Technical assistance for ongoing evaluations

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Literature cited: