

CAISE: Connecting Informal STEM Learning & Science Communication

In 2016, the Center for Advancement of Informal Science Education (CAISE) received a five-year cooperative agreement from the National Science Foundation. In addition to continuing its work as a resource center for the Advancing Informal STEM Learning (AISL) program and for the wider field of informal STEM learning, this award featured a new charge: to explore the commonalities and intersections between the informal STEM learning and science communication communities. This will be accomplished through a series of three cross-field Task Forces that will explore areas of common challenge within science communication and informal STEM learning.

Task Forces

- Broadening Participation
- Evaluation & Measurement
- Connecting Research & Practice



Project Team

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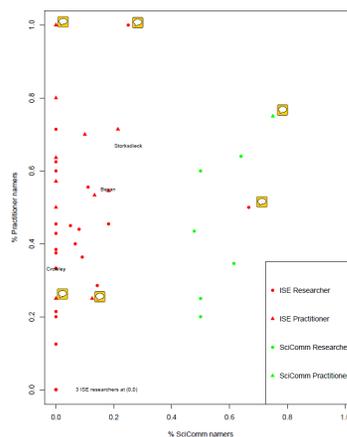
Understanding the Fields

Social Network Study on the Intersection of Informal STEM Education and Science Communication

In the spring of 2017, CAISE administered a two-step survey to 657 leaders in ISE and SciComm fields, both researchers and practitioners, to document the current state of connectivity between the fields, especially in key areas of interest to CAISE: broadening participation, evaluation and measurement, and research and practice. We asked them for people and resources they lean on for their work in these areas and beyond.

Preliminary results suggest that:

- Of the 45 individuals named most often by both ISE and SciComm responders, 38 were from ISE; most (27) of these were ISE researchers.
- With one exception, ISE professional leaders (practitioners or researchers) are largely unknown by leaders in Science Communication.
- Researchers in SciComm reported being significantly less engaged (48%) with research on Broadening Participation than practitioners in either field (~85%), or than ISE researchers (88%).
- The research literature SciComm drew on was more likely to focus on marketing and communication than on work related to learning, equity, or participation.
- Custom-made assessments are far more common than published ones in both fields. Much research and evaluation relies on ad-hoc measurement.
- Practitioners in ISE and SciComm rely mostly on research syntheses and similar forms of digested information.



The separation between green and red along the x axis show clearly the lack of cross over between the two sectors. While triangles (researchers) are distributed across the Y axis (among both researchers and practitioners), note how few circles/practitioners can be found in the lower half of the Y-axis (among researchers). The few SciComm Researchers who were named (green triangles) are in towards center of the X-axis, meaning they were equally nominated by ISE and SciComm

individuals.

Bibliometric Baseline Study: The Co-Evolution of Informal Science Education and Science Communication

People encounter many opportunities to learn about science in out-of-school settings. There are two fields devoted in large part to understanding and supporting this kind of learning: Informal Science Education and Science Communication. To understand the extent to which the fields are connected and overlapping, we analyzed and compared the text from three Science Communication journals and five journals that publish Informal Science Education. Our data set includes articles from 2012 through 2016. We included all articles from the core SciComm journals - Science Communication, Journal of Science Communication, and Public Understanding of Science. For the ISE data, we sampled only the informal articles from Science Education, Journal of Research on Science Teaching, International Journal of Science Education, and the Journal of the Learning Sciences.

Emerging analysis of the authors, abstracts, and citations suggests **four findings**:

- The fields are largely distinct, with work rooted in different literatures and research, and involving mostly different people
- Although sharing similarities in topics and goals at the highest level, the two fields approach those goals with distinct strategies and styles of work
- The patterns of separateness did not change much in the five year period sampled
- The existence of key boundary spanners (people, funders, ideas, projects, etc.) from each field suggests the potential for future synergies and bridging between the two fields.

InformalScience.org



InformalScience.org is a curated searchable collection of project descriptions, research, grey literature, and evaluation reports designed to support professionals in the informal STEM learning and science communication communities.

To learn more, visit CAISE in the ASTC Resource Center!