

STEM Education Evaluation Center (SEEC) Projects

SEEC offers consultation, external evaluation, and research support for existing STEM education grants and programs, and we collaborate with proposal writing teams to design studies. SEEC staff respond to clients at various points in the process, focusing on needs assessments, formative development and feedback, summative outcomes, sustainability, and dissemination.

Our projects range in scale from close observations of individual training events to implementation of multi-year, multi-site evaluations on local, state, and national levels. We are experienced quantitative and qualitative researchers who understand the affordances and constraints of different methods and approaches, and can design instruments and studies, collect and analyze data, and report results whether they are highly nuanced descriptions of a phenomenon, multi-faceted comparisons of outcomes, or evidence of causal impact.

As researchers, evaluators and principal investigators who focus solely on STEM education, SEEC's expertise is grounded in theory and practice. We work on the cutting edge of disciplinary, curricular, instructional, and methodological practices in STEM education.

For more information visit: seec.terc.edu

The following list includes active SEEC projects. You may also access [past SEEC projects](#).

- [Adopting Research-based Instructional Strategies for Enhancing STEM Education \(ARISE\)](#) —

Principal Investigator: [Jim Hammerman](#)
Funders: The National Science Foundation
Website: <http://arise.unl.edu/>

The goal of the ARISE project is to support faculty to use research based instructional strategies (RBISs) to improve how STEM courses are taught and evaluated at the University of Nebraska ... [More »](#)

- [All Included in Mathematics–Expansion and Dissemination \(AIM-ED\)](#) —

Principal Investigators: [Jim Hammerman](#) and [Judy Storeygard](#)
Funders: The National Science Foundation
Website: <http://www.horizon-research.com/project-aim-all-included-in-mathematics/>

SEEC evaluators are collaborating with the Project AIM team to conduct a quasi-experimental analysis of its impact on teacher and student learning ... [More »](#)

- [Creating a Virtual Infrastructure for Engaging Rural Youth in STEM Disciplines](#) —

Principal Investigator: [Jim Hammerman](#)
Funders: The National Science Foundation
Website: <http://www.thoughtstem.com/home/programs>

This project builds on Network Maine's extensive infrastructure, and its partnership with ThoughtSTEM, to develop and provide STEM and computer science learning opportunities ... [More »](#)

- [Creative Robotics](#) —

Principal Investigators: [Debra Bernstein](#) and [Karen Mutch-Jones](#)
Funders: The National Science Foundation

To increase opportunities for more students to engage in technology innovation, the Creative Robotics project supports robotics integration into disciplinary classrooms. [More »](#)

- [EcoXPT \(Learning about Ecosystems Science and Complex Causality through Experimentation in a Virtual World\)](#) —

Principal Investigator: [Jim Hammerman](#)
Funders: The National Science Foundation
Website: <http://ecolearn.gse.harvard.edu/ecoxpt/overview.php>

This project builds on an existing multi-user virtual environment (EcoMUVE) to explore how various forms of experiment-based inquiry can support student reasoning about complex causality in the context of ecosystem science. [More »](#)

- [Evaluating DMI](#) —

Principal Investigator: [Jim Hammerman](#)
Funders: The National Science Foundation
Website: <http://mathleadership.org/about/summer-institutes/developing-mathematical-ideas-institute/>

Developing Mathematical Ideas (DMI) is a widely-used elementary and middle grades (K–8) mathematics teacher professional development curriculum based on well-established principles of effective programs. [More »](#)

- [GeniGUIDE](#) —

Principal Investigator: [Karen Mutch-Jones](#)
Funders: The National Science Foundation
Website: <https://concord.org/projects/geniguide>

The goal of the GeniGUIDE project is to improve student learning of genetics content by developing and researching a layered learner guidance system that aids students ... [More »](#)

- [GrACE](#) —

Principal Investigator: [Jim Hammerman](#)
Funders: The National Science Foundation
Website: <http://www.northeastern.edu/games/grace/>

GrACE, named after the pioneering computer scientist Grace Hopper, is an educational puzzle game for middle school students intended to teach algorithmic thinking in an after school context. [More »](#)

- [High Adventure Science Evaluation](#) —

Principal Investigator: [Karen Mutch-Jones](#)
Funders: [National Science Foundation](#)
Website: <http://has.concord.org>

SEEC is evaluating the newest curricular units and computer-based investigations being developed for The Concord Consortium's High-Adventure Science's Earth Systems and Sustainability (ESS) extension. [More »](#)

- [I-ECS: Inclusive Exploring CS Curriculum Enhancement as Face-to-Face and Online Support](#) —

Principal Investigator: [Karen Mutch-Jones](#) and [Debra Bernstein](#)
Funders: The National Science Foundation
Website: [I-ECS](#)

iECS seeks to broaden participation in computing by increasing access for students with visual impairments. [More »](#)

- [Indiana Science Initiative \(ISI\)](#) —

Principal Investigator: [Karen Mutch-Jones](#)
Funders: Lilly Foundation

The goal of this project is to systemically reform K-8 science education in Indiana through teacher professional development. SEEC's summative evaluation of this program ... [More »](#)

- [LOCUS \(Levels of Conceptual Understanding in Statistics\) Evaluation](#) —

Principal Investigator: [Jim Hammerman](#)
Funders: The National Science Foundation and the University of Florida
Website: <https://locus.statisticseducation.org>

SEEC will serve as evaluators for the LOCUS project. [More »](#)