

# Center for School Reform Projects

CSR encompasses multiple bodies of work all aimed at improving math and science education for all students. The work of the center is diverse in that it encompasses research, professional development, direct service, curriculum development, electronic network creation, and evaluation. Projects within the center span elementary, middle, high-school, college and graduate education. While some of the projects are engaged in large-scale, national, systemic change efforts others are local, researching and providing direct service to classrooms in Massachusetts. Bodies of work in the center include: creating, facilitating and researching cutting-edge, online learning communities and collegial networks; researching technology integration in the science classroom; curriculum development, professional development and research projects focused on biology, biocomplexity and ecology; research and professional development aimed at improving the experience of learning-disabled students in the science classroom; informal science education related to energy conservation; and external evaluation of science, technology, engineering, and mathematics projects.

## The TERC Life Sciences Group of the Center for School Reform

A research and development program, the Life Sciences Group is founded on the conviction that students can and should experience the life sciences as dynamic fields of inquiry whose diversity reflects the immense diversity of living systems. [More »](#)

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

- [Biocomplexity and the Habitable Planet](#) —

**Principal Investigator:** [Gilly Puttick](#) and [Brian Drayton](#)

**Funders:** [National Science Foundation](#)

**Website:** <http://biocomplexity.terc.edu>

TERC and the Institute for Ecosystem Studies are developing an innovative high school curriculum designed around the dynamics of complex and evolving coupled natural and human (CNH) systems. Materials are drawn from research at the Long-Term Ecological Research sites. [More »](#)

- [Biocomplexity-Transforming Innovative High School Curriculum](#) —

**Principal Investigator:** [Brian Drayton](#) and [Gilly Puttick](#)

**Funders:** [National Science Foundation](#)

**Website:** <http://biocomplexityUDL.terc.edu>

This project has developed a multimedia-enhanced version of the TERC-developed Biocomplexity and the Habitable Planet (DRL-0628171) curriculum, a high school capstone science course. The Biocomplexity developers designed [More »](#)

- [Biosphere and Climate: Understanding Climate Change in New England](#) —

**Principal Investigator:** [Brian Drayton](#) and [Gilly Puttick](#)

**Funder:** TERC

**Website:** <https://external-wiki.terc.edu/display/BAC/About>

This project and its website emphasize biological evidence of climate change and links natural phenomena to social and cultural changes in our region. [More »](#)

- [Building Systems from Scratch](#) —

**Principal Investigators:** [Gilly Puttick](#), [Eli Tucker-Raymond](#)

**Funder:** The National Science Foundation

**Website:** [buildingsystems.terc.edu](http://buildingsystems.terc.edu)

The *Building Systems from Scratch* project will develop and study a education program that integrates computing into middle school Earth systems science by interweaving game design and science learning. [More »](#)

- [Design Dimensions](#) —

**Principal Investigator:** [Debra Bernstein](#) and [Brian Drayton](#)

**Funders:** [National Science Foundation](#)

**Website:** <https://sites.google.com/site/eddesigndimensions/>

This is a project to improve understanding of practices critical to the design of curricular materials for implementation in a broad range of educational contexts. Three organizations - TERC, the University of California-Berkeley's Lawrence Hall of Science, and the University of Pittsburgh's Learning Research and Development Center — will collaborate to explore and codify practices [More »](#)

- [Designing Biomimetic Robots](#) —

**Principal Investigators:** [Debra Bernstein](#), PI; [Gillian Puttick](#), Co-PI

**Funder:** The National Science Foundation

The Designing Biomimetic Robots project will develop and study an education program that integrates science, engineering, and computing by engaging students in biomimicry design challenges ... [More »](#)

- [Digital Content Enhancements for the Ecology Curriculum](#) —

**Principal Investigators:** [Jeff Lockwood](#) and [Gilly Puttick](#)

**Funders:** TERC

TERC's 1997 *Ecology: A systems approach* broke new ground in high school curriculum, taking a "molecules to systems" approach ... [More »](#)

- [Innovate to Mitigate](#) —

**Principal Investigators:** [Gilly Puttick](#) and [Brian Drayton](#)

**Funder:** [National Science Foundation](#)

This project is designing and conducting a crowd-sourced open innovation challenge to young people of ages 13-18 to mitigate levels of greenhouse gases. The goal of the project is to explore the extent to which the challenge will successfully attract, engage and motivate teen participants to conduct sustained and meaningful scientific inquiry across science, technology and engineering disciplines. [More »](#)

- [MSPnet III](#) —

**Principal Investigator:** [Joni Falk](#) and [Brian Drayton](#)

**Funders:** [National Science Foundation](#)

**Website:** <http://hub.mspnet.org/>



This 5 year-grant will support the continuing design, development and maintenance of MSP.net—to include MSPnet's technical development; content and online media creation; outreach, dissemination, and community facilitation efforts; and research and evaluation efforts. [More »](#)

- [The Climate Lab](#) —

**Principal Investigators:** [Brian Drayton](#) and [Gilly Puttick](#)

**Funder:** [National Science Foundation](#)

TERC and the Manomet Center for Conservation Sciences are developing and testing an education partnership model for climate change education that features inquiry-oriented and place-based learning. [More »](#)

- [The Research and Practice Collaboratory](#) —

**Principal Investigator:** [Joni Falk](#)

**Funders:** [National Science Foundation](#)

**Website:** <http://researchandpractice.org>

The Exploratorium, in collaboration with University of Colorado in Boulder; University of Washington in Seattle; Education Development Center in Waltham, Massachusetts; Inverness Research of California, and TERC have formed a Research+Practice Collaboratory to strengthen connections between research and [More »](#)