

Gilly Puttick

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Program/Areas of Interest

Life sciences and climate change; Lab-based learning; Technology integration; Interdisciplinary learning

Biographical Summary

Dr. Puttick is currently a co-leader of the Life Sciences Group at TERC. This group seeks to understand the nature of students' encounters with living systems through laboratory experiences, and the ways in which the affordances of technology can enhance learning.

Her current work focuses on the intersection of environmental science, biological sciences, technology integration, engineering, robotics and computational thinking practices in middle school. Gilly is currently the principal or co-principal investigator of two projects: *Research on the Development of Computational and Systems Thinking in Middle School Students through Explorations of Complex Earth Systems* and *Designing Biomimetic Robots*. Research questions being addressed include:

- How does the integration of data, techniques, tools, theories and perspectives from more than one discipline position students to solve problems whose solutions are beyond the scope of a single discipline?
- How does participatory pedagogy – which draws on the cultural and social resources that students bring to the classroom – support interdisciplinary learning and broaden participation?

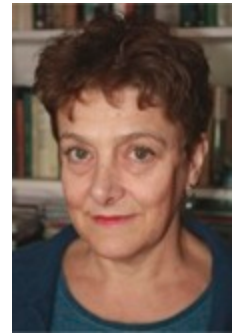
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Articles

- Building systems from Scratch: An exploratory study of students learning about climate change. *Journal of Science Education and Technology* Gillian Puttick and Eli Tucker-Raymond. (2018). <https://doi.org/10.1007/s10956-017-9725-x>
- [Design Based Research Study of a Girl Scout Program Focused on Energy Conservation](#)
— Gillian Puttick, Debra Bernstein, and Teon Edwards. *Educational Designer* 3 (10). (2018)
- Biocomplexity: Aligning an "NGSS-ready" curriculum with NGSS Performance Expectations
— Gillian Puttick, and Brian Drayton. *American Biology Teacher* 79 (5), 344-349. (2017)
- Environmental attitudes in youth-created computer games about climate change.
— Gillian Puttick, Eli Tucker-Raymond, & Barnes, J. Proceedings of Games, Learning and Society 12 conference. (2017)
- [A Study of the Literature of Lab-Based Instruction in Biology](#)
— Gillian Puttick, Brian Drayton and Eliza Cohen. *American Biology Teacher* (2015) 77,1.
- [Achieving Energy and Ecological Literacies for All: Linking Ecology and Energy Education. Perspectives from Sessions at Ecological Society of America \(ESA\) 2014 Annual Meeting](#)
— Leanne M. Jablonski, Kenneth Klemow and Gillian Puttick. *The Journal of Sustainability Education*, January 2015: Energy Education
- [Digital Curriculum in the Classroom: Authority, Control, and Teacher Role](#)
— Gilly Puttick, Brian Drayton, and J. Karp. *International Journal on Emerging Technologies in Learning* (2015)
- [Digital Design of "Smart Images": A Design Story](#)
— Brian Drayton, Gillian Puttick. *Educational Designer* (2016)
- [Environmental Attitudes in Youth-created Computer Games about Climate Change](#)
— Gillian Puttick, Eli Tucker-Raymond, & Jackie Barnes. Proceedings of the Games + Learning + Society Conference (2016)
- [Girls Energy Conservation Corps: Study of a Girl Scout Program Focused on Energy Conservation](#)
— Gilly Puttick and Debra Bernstein. Paper presented at the National Association for Research in Science Teaching annual meeting (2013)
- [It's Not as Bad as Using the Toaster All the Time—Trade Offs in a Scratch Game About Energy Use](#)
— Gillian Puttick, Debra Bernstein, Amanda Strawhacker, and Elisabeth Sylvan
- [Learning and Behavior Change in a Girl Scout Program Focused on Energy Conservation: Saving Energy to 'Save The Planet'](#)
— Gillian Puttick, Kim Kies, Cecilia Garibay and Debra Bernstein. *The Journal of Sustainability Education*, January 2015: Energy Education
- [Lesson Study for Accessible Science: Building Expertise to Improve Practice in Inclusive Science Classrooms](#)
— Karen Mutch-Jones, Gilly Puttick, and Daphne Minner. *Journal of Research in Science Teaching*. (2012) Volume 49, Issue 8, pages 1012–1034, October 2012.
- [Muscles, Lungs, Blood and Guts](#)
— Gilly Puttick and Judith (Judy) Storeygard. *Hands On!* 30(2007). 10-19
- [Seeding Social Norms About Energy Conservation Among Girl Scouts](#)
— Debra Bernstein and Gilly Puttick. *Applied Environmental Education and Communication*. (2014) 13(3), 171-182.
- [Supporting Science Access for All Students: Using Content Enhancements to Create Pathways to the Big Ideas](#)
— Gilly Puttick, and Karen Mutch-Jones. *Science Scope*, July 2015
- [Under the Microscope: Review of the Research on Biological Lab Experiences 1987-2007: A Research White Paper](#)
— Brian Drayton, Gilly Puttick, and Meaghan Donovan. Cambridge, MA: (2013) TERC, Inc.
- [What, where, who? Learning in an Innovate to Mitigate pilot team](#)
— Brian Drayton and Gilly Puttick. A working paper. Cambridge, MA:TERC.

Curriculum

Puttick, G., Drayton, B., Pickett, S. and Berkowitz, A. [Environmental Science and Biocomplexity](#). Mt. Kisco, NY: Its About Time Publishers. (Textbook to appear)



Associations

American Education Research Association, National Science Teachers Association, National Association of Biology Teachers, Ecological Society of America, Learning Disabilities Association