**ERIN BARDAR**
**TERC - 2067 MASSACHUSETTS AVE., CAMBRIDGE, MA 02410**

## PROFESSIONAL PREPARATION

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| Boston University | Astronomy | Ph.D. 2006 |
| Brown University | Physics | Sc.B., 2000 |

## APPOINTMENTS

2010-present Education Materials Director, EdGE at TERC
2006-present Research and Development Specialist, TERC

## SELECTED PROFESSIONAL EXPERIENCE

**Curriculum Developer,** *Personalized Computational Thinking for Grades 3-8* (*CodePlay)* (2017–present). Infusing computational thinking into new and existing STEM curriculum materials. This project is a Researcher Practitioner Partnership (RPP) between Braintree Public Schools (BPS) and EdGE at TERC. The purpose of this RPP is to build a strong foundation for the teaching and learning of Computational Thinking (CT) in upper elementary and middle schools throughout BPS, and in doing so, to inform a scalable and generalizable model of personalized CT education for a broad audience of diverse learners in grades 3-8 with cognitive differences.

**Curriculum Developer,** *Zoombinis: The Full Development Implementation Research Study of a Computational Thinking Game for Upper Elementary and Middle School Learners (*2015–present). Developing curriculum materials to bridge gameplay and formal instruction; labeling gameplay data. The Zoombinis implementation research study examines the development of computational thinking for upper elementary and middle grades students. This project leverages an existing game by (1) embedding tools for studying patterns of students' decision-making and problem solving in the environment and (2) providing classroom teachers with resources to bridge gameplay and formal learning for a wide variety of students.

**Lead Curriculum Developer,** *EarthLabs* (2008-2016). Developing online curriculum. EarthLabs provides a model for rigorous and engaging Earth and environmental science labs by offering the laboratory experiences needed to elevate Earth science to a capstone high-school science course that coheres prior science studies and benchmarks students for college placement. EarthLabs units offer sequences for learning science concepts through hands-on experiments and data analysis. Using satellite imagery, numerical data, computer visualizations, and video, students explore Earth system processes and build quantitative skills that enable them to objectively evaluate scientific findings for themselves.

**PAPERS AND PRESENTATIONS**

Rowe, Rowe, E., Asbell-Clarke, J., Baker, R., Scruggs, R., Gasca, S., & **Bardar, E.** (under review). Assessing computational thinking with gameplay process data. Manuscript submitted for publication in Educational Assessment.

Almeda, M., Rowe, E., Asbell-Clarke, J., Baker, R., Scruggs, R., **Bardar, E.**, & Gasca, S. (submitted). Modeling Implicit Computational Thinking in *Zoombinis* Mudball Wall Gameplay. Paper submitted to the Technology, Mind, and Society conference, October, Washington D.C.

Rowe, E., Asbell-Clarke, J., Baker, R., Gasca, S., **Bardar, E**., & Scruggs, R. (2018, April). Labeling Implicit Computational Thinking in Pizza Pass Gameplay. Late-breaking work presented at the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 18), Montreal.

Rowe, E., **Bardar, E.**, & Asbell-Clarke, J. (2015). Building Bridges: Teachers Leveraging Game-Based Implicit Science Learning in Physics Classrooms. In D. Russell, & Laffey, J. (Ed.), *Handbook of Research on Gaming Trends in P-12 Education*. Hershey, PA: IGI Global.

Larsen, J. L., **Bardar, E.**, & Asbell-Clarke, J. (2014). *Ravenous*. Paper presented at the 10th Annual Games+Learning+Society Conference, Madison, WI, June 11-13.

Larsen, J., Minner, D., Rowe, E., Edwards, T., Asbell-Clarke, J., **Bardar, E.**, & MacEachern, B. (2014, June). STEMLandia–The Nature's Apprentice Geocaching Adventure Opening the Door for STEM Learning Through Outside Games. In *EdMedia+ Innovate Learning* (pp. 2198-2202). Association for the Advancement of Computing in Education (AACE).

McNeal, K. S., Libarkin, J. C., Ledley, T. S., **Bardar, E.**, Haddad, N., Ellins, K., & Dutta, S. (2014). The role of research in online curriculum development: The case of EarthLabs Climate Change and Earth System Modules. *Journal of Geoscience Education*, *62*(4), 560-577.

Rowe, E., Asbell-Clarke, J., **Bardar, E.**, Kasman, E., & MacEachern, B. (2014). Crossing the bridge: Connecting game-based implicit science learning to the classroom. Paper presented at the 10th annual Games+Learning+Society conference in Madison, WI, June 11-13.

**Bardar, E.**, Asbell-Clarke, J., Edwards, T., & Larsen, J. L. (2013). *Impulse*. Paper presented at the Games+Learning+Society 9.0 (GLS 9.0) Conference, Madison, WI.

Edwards, T., **Bardar, E.**, Asbell-Clarke, J., & Larsen, J. L. (2013). *Quantum Spectre*. Paper presented at the Games+Learning+Society 9.0 (GLS 9.0) Conference, Madison, WI.

Haddad, N., McNeal, K., Ledley, T. S., Dunlap, C., **Bardar, E.**, Youngman, B., Ellins, K. K., Sullivan, S. B., Lynds, S., & Libarkin, J. (2012, November). EarthLabs Workshops: Increasing Teachers' Understanding and Ability to Teach Climate Science. In *2012 GSA Annual Meeting in Charlotte*.

**Bardar, E.M.** (2008). "First Results from the Light and Spectroscopy Concept Inventory," *Astronomy Education Review*, 6(2).

**Bardar, E.M.** & Brecher, K. (2008). “Project LITE Educational Materials and Their Effectiveness as Measured by the Light and Spectroscopy Concept Inventory,” *Astronomy Education Review*, 6(2).

**Bardar, E.M.,** Prather, E. E., Brecher, K., & Slater, T. F. (2007). "Development and Validation of the Light and Spectroscopy Concept Inventory," *Astronomy Education Review*, 5(2).

**Bardar, E. M. (Weeks)**, Prather, E. E., Brecher, K., & Slater, T. F. (2005). “The Need for a Light and Spectroscopy Concept Inventory for Assessing Innovations in Introductory Astronomy Survey Courses,” *Astronomy Education Review*, 4(2).