

# Timothy David Zimmerman

Hampshire College, School of Cognitive Science  
[www.hampshire.edu/cs/tzimmerman](http://www.hampshire.edu/cs/tzimmerman)

893 West Street, Amherst, MA 01002  
[tzimmerman@hampshire.edu](mailto:tzimmerman@hampshire.edu)

---

*Curriculum Vita*, April, 2019

## Education

Ph.D. University of California, Berkeley, CA  
Science Education, 2005

"Promoting Knowledge Integration of Scientific Principles and Environmental Stewardship: Assessing an Issue-based Approach to Teaching Evolution and Marine Conservation"  
Marcia C. Linn (co-Chair), James D. Slotta (co-Chair), Barbara Y. White, Ian S. Carmichael

M.S. College of Charleston, Charleston, SC  
Marine Biology, 1992

"Latitudinal Reproductive Variation in the Salt Marsh Turtle, the Diamondback Terrapin, *Malaclemys terrapin*"  
Julian R. Harrison (Major Advisor), J. Whitfield Gibbons, Carl Whitney, Zhexi Luo

B.S. University of Massachusetts, North Dartmouth, MA  
Biology and Marine Biology, 1989

## Research Interests

### Preparation of Environmental Educators

Preparation of environmental educators is understudied and lacking at the undergraduate level. Often, preparation of environmental educators only involves ecological content knowledge. What is lost when educators are not taught learning theory, critical theory, or social psychology? How does teaching environmental education about curriculum design shift their teaching practice?

### Environmental Decision-making

Individual decisions about environmental sustainability have collective and long-term effects, yet the connection between knowledge construction and decision-making processes is not well understood. Does coherence or integration of cognitive scientific constructs have lasting decision-making impacts? To what extent does decision-making map onto other scientific process abilities such as argument construction or use of scientific evidence? What is the connection between decision-making and pro-environmental behavior?

### Integrating Formal (Classroom) and Informal (e.g., museum) Learning

Research in science education indicates that out-of-school experiences (e.g., visits to research sites, museums, aquariums, etc.) contribute significantly to learners' interests in and understanding of science. How can we design holistic curricula, incorporating curricular design with exhibit or field trip design, which promote knowledge integration? How can we best leverage technology to mediate science learning across formal and informal learning contexts? How can mobile technologies, such as handheld devices and wireless networks, improve learning "in the moment"?

### Use of Scientific Data in Science Learning

Environmental scientists rely more and more on new technologies, especially real-time data, to make sense of the complexities of their research domain. How can we bring these technologies and the real-time data they collect into classrooms in a meaningful and effective manner? What technological tools can be utilized or designed that promote evidence-based decision-making by students?

## Academic Employment History

### Hampshire College, School of Cognitive Science

Jonathan Lash Chair and Assistant Professor of Environmental Education: 2018-Present

### Hampshire College, School of Cognitive Science

Visiting Assistant Professor of Cognition and Education: 2013-2018

### Rutgers University, Graduate School of Education/Institute of Marine and Coastal Sciences

Assistant Professor of Science Education: 2008-2013

### University of California, Berkeley, Lawrence Hall of Science

Program Manager, CA Center for Ocean Science Education Excellence: 2006-2008

### University of California, Berkeley, Graduate School of Education

Graduate Student Researcher: 2000-2005

## Non-academic Employment History

### United States Environmental Protection Agency, Headquarters Office

National Program Manager: 1997-2000

### United States Army Corps of Engineers, Headquarters Office

National Program Manager: 1996-1997

### United States Army Corps of Engineers, Charleston SC District Office

Project Manager: 1992-1996

### South Carolina Department of Natural Resources, Marine Resources Research Institute

Research Assistant: 1992

### College of Charleston, Biology Department

Graduate Student Teaching Assistant: 1989-1992

### University of Georgia, Savanna River Ecology Laboratory

Graduate Student Research Assistant: 1990-1992

### Massachusetts Audubon Society, Wellfleet Bay Wildlife Sanctuary

Environmental Educator; Marine Naturalist: 1989

## Grants, Fellowships and Awards

### Research and Implementation Grants (current total \$2,006,717; over \$1.9m extramural)

Roddenberry Foundation

2016-2019

(Grant Amount: \$200,000) Roddenberry Foundation implementation grant to support faculty and students understand and solve real-world climate justice problems. The grant will: support faculty development and teaching of new courses at the intersection of climate change, resilience and social justice; support student travel to implement climate justice solutions; establish the Roddenberry Seminar series, a twice-a-year seminar with scholars and practitioners; and sponsor the Roddenberry Solve-a-thon once yearly.

**PI=Timothy D. Zimmerman;** Co-PI=Bethanie Hooker.

Institute of Museum and Library Sciences

2015-2017

(Grant Amount: \$148,587; contract amount: \$7,800) IMLS Grant to design and create exhibits for the Hitchcock Center for the Environment's new building. Through coursework and my own efforts, I will design and implement formative and summative evaluation tools to determine the effectiveness of new exhibits. PI=Julie Johnson, Executive Director, Hitchcock Center for the Environment.

Five Colleges, Inc.

2014

(Grant Amount: 1 semester TA hire; \$9,730 value) Mellon Foundation Bridging Grant to employ a graduate student TA from the University of Massachusetts, Amherst to help co-teach my Environmental Education course at Hampshire College. **PI=Timothy D. Zimmerman.**

National Science Foundation

2010-2016

(Grant Amount: \$1,127,609) NSF - ITEST (Innovative Technology Experiences for Students and Teachers) research grant entitled "Promoting 21st Century Science: Technology-Enhanced Learning Across Formal and Informal Environments" to study Science 2.0 scientists and their use of technology and compare that data to middle-school students use of technology while they engage in a marine science curriculum that incorporates technology across formal and informal learning contexts. **PI=Timothy D. Zimmerman;** Co-PI=James D. Slotta, University of Toronto.

2011-2014

(Grant Amount: \$149,988) NSF IRES (International Research Experiences for Students) research grant funded project entitled Climate Change and Threatened Salmonid Fishes in Northern Mongolia to study fisheries in Mongolia and science learning of participants. PI=Olaf P. Jensen, Rutgers University's IMCS; **Co-PI=Timothy D. Zimmerman.**

2011-2014

(Grant Amount: \$307,100) NSF REU (Research Experiences for Undergraduates) research grant plus grant supplement to conduct research on science learning during the Rutgers Internship in Ocean Sciences (RIOS) 10-week summer research experience. PI=Gary Taghon, Rutgers Univ. IMCS; Co-PI=Ken Able, Rutgers Univ. Marine Field Station; **Co-PI=Timothy D. Zimmerman.**

Rutgers University

2008-2011

(Grant Amount: \$29,966) Rutgers University's School of Environmental and Biological Sciences Curriculum Development program competitive research grant entitled "Introduction to Oceanography: A New Approach to Learning Science and Learning How to Learn." A 3-year award to conduct research in science education. **PI=Timothy D. Zimmerman.**

2008

(Grant Amount: \$24,524) Rutgers University's School of Environmental and Biological Sciences Pre-tenure competitive program grant entitled "Learning Across Contexts: Evidence of Science Learning Through Filled Trip Conversations." A 1 year research grant awarded to conduct research in science education. **PI=Timothy D. Zimmerman.**

Palm Educational Partnership Research Hub

2001

(Grant Amount: \$149,500 in technology) Palm Educational Partnership Research Hub Award entitled "The WISE- Palm Research Partnership." PI=James D. Slotta; **Co-PI=Tim Zimmerman.**

Slocum-Lunz Foundation

1991

(Grant Amount: \$500) Slocum-Lunz Foundation Graduate Research Grant. Awarded to purchase equipment for field research on diamondback terrapins in South Carolina. **PI=Timothy D. Zimmerman.**

## Fellowships

2015-2016

Fellow - Five Colleges/Mellon Foundation Bridging Initiative in the Public and Applied Humanities  
Awarded to bring a learning sciences perspective to the use of museum collections for teaching.

2003-2004

UC Berkeley University Fellowship

Awarded to conduct research on the use of technology in marine science education.

2002-2003

UC Berkeley University Fellowship

Awarded to continue development of a research program that integrates formal and informal science learning.

2001-2002

Spencer Research Center Graduate Training Fellowship

Awarded to develop and assess curricula integrating formal and informal science learning environments and that focus on marine conservation concepts.

2000-2001

NSF Science and Design Fellowship

Awarded to develop and assess a technology based curriculum in marine science.

## Awards

2009

CSCS Post-Doctoral and Early Career Workshop – Accepted into this competitive program as an early career faculty member

AERA Division C New Faculty Mentoring Program -Accepted into this competitive program

## **Publications**

\* = graduate student; \*\* = undergraduate student

### Books

Darling-Hammond, L., Barron, B., Pearson, P.D., Schoenfeld, A.H., Stage, E.K., **Zimmerman, T.D.**, Cervetti, G.N., & Tilson, J.L. (2008). *Powerful learning: What we know about teaching for understanding*. San Francisco, CA: Jossey-Bass.

### Book Chapters

**Zimmerman, T.D.** (preparing for Summer 2019). [invited contribution] Educational innovations that foster environmental decision-making. To appear in *Encyclopedia of Educational Innovation*.

flessas, b.m.r.\*\* & **Zimmerman, T.D.** (2019). Beyond nature talk: Transforming environmental education with critical and queer theories. In W.Letts and S. Fifield (Eds.) *STEM of desire: Queer theories in science education* (pp. 89-107). Rotterdam, Netherlands: Brill | Sense.

**Zimmerman, T.D.** (2015). Field-based Data Collection. In R. Gunstone (Ed.) *Encyclopedia of science education* (pp. 432-433). New York: Springer.

**Zimmerman, T.D.** (2014). Mobile devices for promoting museum learning. In *MuseumsEtc 10 must reads: Learning, engaging, enriching*. Edinburgh, UK: MuseumsEtc.

Cohen, E.\* & **Zimmerman, T.D.** (2012). Teaching the greenhouse effect with inquiry-based computer simulations: A WISE case study. In L. Lennex and K. Nettleton (Eds.) *Cases on inquiry through instructional technology in math and science: Systemic approaches* (pp. 551-580). IGI Global.

- Zimmerman, T.D.** (2011). Mobile devices for promoting museum learning. In J.E. Katz, W. LeBar, and E. Lynch (Eds.) *Creativity and Technology: Social Media, Mobiles and Museums* (pp. 264-291). Edinburgh, UK: MuseumsEtc.
- Payne, D.L. & **Zimmerman, T.D.** (2010). Beyond terra firma: Bringing Ocean and Aquatic Sciences to Science Teacher Education. In A. Bodzin, B.S. Klein, & S. Weaver (Eds.) *The inclusion of environmental education in science teacher education* (pp. 81-96). New York, NY: Springer.
- Zimmerman, T.D.** & Stage, E.K. (2008). Teaching science for understanding. In L. Darling-Hammond, et al., *Powerful learning: What we know about teaching for understanding* (pp. 151-191). San Francisco, CA: Jossey- Bass.

### Articles in Refereed Journals

\* = graduate student; \*\* = undergraduate student

- Zimmerman, T.D.** & Devault, J.\*\* (reviewed, now in revision for Spring 2019 re-submission). Aquarium Conservation Education Missions and Prior Knowledge: The Case of Visitors' Knowledge of Shark Reproduction.
- Zimmerman, T.D.** (revising for Summer 2019). Capturing Free-Choice Science Learning Moments During a Task-based School-Aquarium Field Trip.
- Zimmerman, T.D.** & Slotta, J.D. (revising draft; to be submitted Summer 2019). Connecting formal and informal learning environments to help students learn challenging marine biology concepts.
- Zimmerman, T.D.** (in prep, targeted for Winter 2018-19). Science and environmental decision-making: Implications from a high school ocean science curriculum.
- Zimmerman, T.D.** (in planning phase/prep, expected submission Fall 2019). Capturing student learning during research apprenticeship experiences: An ocean sciences example.
- Fisher-Maltese, C.\* & **Zimmerman, T.D.** (2015). A garden-based approach to teaching life science produces shifts in students' attitudes toward the environment. *International Journal of Environmental and Science Education*, 10(1), 51-66.
- Lovich, J.E., A.D. Tucker, D.E. Kling, J.W. Gibbons, & **T.D. Zimmerman**. (1991). Behavior of hatchling diamondback terrapins (*Malaclemys terrapin*) released in a South Carolina salt marsh. *Herpetological Review* 22(3):81-83.

### Articles in Non-refereed Journals

- Zimmerman, T.D.** (2009). Researching the learning and teaching of ocean sciences understanding: Notes from a learning scientist. *Limnology and Oceanography Bulletin*, 18(3): 65-66.

### Professional Evaluation Reports

- Zimmerman, T.D.**, et al.\*\* (2016). *Formative Evaluation of the Exhibits in The Hitchcock Center for the Environment's New Visitors Center*.

### Thesis, Dissertation works

- Zimmerman, T.D.** (2005). *Promoting knowledge integration of scientific principles and environmental stewardship: Assessing an issue-based approach to teaching evolution and marine conservation*. Unpublished doctoral dissertation, University of California, Berkeley.
- Zimmerman, T.D.** (1992). Latitudinal Reproductive Variation in the Salt Marsh Turtle, the Diamondback Terrapin, *Malaclemys terrapin*. Unpublished master of science thesis, University of Charleston, Charleston, SC.

### **Presentations**

\* = graduate student; \*\* = undergraduate student

### Keynote and Plenary Addresses

- Zimmerman, T.D.** (Oct., 2018). *Leveraging the learning sciences in environmental education*. Invited Keynote Panelist at the Research Symposium of the annual meeting for the North American Association for Environmental Educators. Spokane, WA.

**Zimmerman, T.D.** (Dec., 2015). *Contesting "Place": Community as a context for environmental education.*

Invited keynote address at the Massachusetts Audubon Educator's Retreat. Lincoln, MA.

**Zimmerman, T.D.** (April, 2010). *Mobile tools for science learning.* Invited plenary talk at the Museums, Mobile Devices and Social Media: Where We Are Today, What's Next? Conference. New Brunswick, NJ.

### Peer-reviewed Conference Papers, Presentations and Proceedings

\* = graduate student; \*\* = undergraduate student

Markle, A.\*\* & **Zimmerman, T.D.**, & Sayigh, L. (upcoming - July, 2019). *Approaching the Iceberg: Navigating Effect Communication & Accessibility in Informal Ocean & Climate Change Education.* Presentation at the National Marine Educators' Association annual conference. Rye, NH.

**Zimmerman, T.D.** & Kelley, C. (Oct., 2018). *EE Lab School(s): preparing "preservice" environmental educators for the future.* Presentation at the Research Symposium of the annual meeting for the North American Association for Environmental Educators. Spokane, WA.

Sweeney, S.\*\* & **Zimmerman, T.D.** (Oct., 2018). *Revitalizing research on encourage equity and intersectionality in environmental education.* Presentation at the Research Symposium of the annual meeting for the North American Association for Environmental Educators. Spokane, WA.

Slotta, J.D., Acosta, A\*. & **Zimmerman, T.D.** (April, 2017). *Social network scaffolds for a citizen science community.* Poster presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

O'Brien, S.\*\* & **Zimmerman, T.D.** (Oct. 2016). *Rethinking how we study integrating environmental topics into science classrooms.* Presentation at the Research Symposium of the annual meeting for the North American Association for Environmental Educators. Madison, WI.

**Zimmerman, T.D.**, Najafi, H.\*, Acosta, A.\*, Slotta, J.D., O'Hara, M., & Krauss, A. (June, 2015). *Pioneer Valley Citizen Science Collaboratory: A CSCL Approach to Designing Citizen Science Projects.* In O. Lindwall, P. Häkkinen, T. Koschmann, P. Tchounikine, and S. Ludvigsen (Eds.) *Exploring the Material Conditions of Learning: Computer Supported Collaborative Learning (CSCL) Conference 2015, Vol 2* (pp. 771-772). International Society of the Learning Sciences: Gothenburg, Sweden.

Fisher-Maltese, C.\* & **Zimmerman, T.D.** (April, 2014). *Teaching science in an informal learning setting: Assessing a garden-based approach to teaching the life cycle of insects.* Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA

Cohen, E.\* & **Zimmerman, T.D.** (April, 2013). *Employing inquiry-based computer simulations and embedded scientist videos to teach challenging climate change and NOS concepts.* Poster presented at the annual meeting of the National Association of Research on Science Teaching, Puerto Rico.

Fenner, L.\* & **Zimmerman, T.D.** (Jan, 2013). *Using personal meaning maps to improve citizen science programs.* Presentation at the 28th Annual Meeting of the Alliance for New Jersey Environmental Educators. Plainsboro, NJ.

**Zimmerman, T.D.** & DeVault, J.\*\* (Oct. 2012). *Implications of messy prior ecological knowledge for environmental conservation efforts.* Poster presentation at the Research Symposium of the annual meeting for the North American Association for Environmental Educators. Oakland, CA.

**Zimmerman, T.D.** & Stapleton, S.\* (Oct. 2012). *Studying college students' environmental disposition highlights environmental education research challenges.* Poster presentation at the Research Symposium of the annual meeting for the North American Association for Environmental Educators. Oakland, CA.

Cohen, E.\* & **Zimmerman, T.D.** (April, 2011). *Analysis of A Greenhouse Effect Simulation Implementation in 8<sup>th</sup> Grade Science Course.* Poster presented at the annual meeting of the National Association of Research on Science Teaching, Orlando, FL.

Fisher-Maltese, C.\*, Ryan, S. & **Zimmerman, T.D.** (April, 2011). *A Case Study of a School Garden: An Informal Setting that is Fertile Ground for Instructional Practice.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

**Zimmerman, T.D.** (March, 2010). *Capturing Learning Across Formal and Informal Contexts.* Paper presentation at the National Association of Research on Science Teaching Annual Conference. Philadelphia, PA.

Holzer, M.\* & **Zimmerman, T.D.** (2010, January). *Analysis of a Citizen Science Project Participant Survey to Uncover Learning through Participation: A Pilot Study.* Poster session presented at the 90<sup>th</sup> Annual Meeting of the American Meteorological Society, Atlanta, Georgia.

- Zimmerman, T.D.** (June, 2009). *Using mobile and classroom technologies to foster and capture learning across formal and informal contexts: A Pilot study*. Poster presented at the 8th International Conference on Computer Supported Collaborative Learning. Rhodes, Greece.
- Zimmerman, T.D.**, Halversen, C., & Strang, C. (March, 2008). *Promoting and researching sustainable scientist-informal education partnerships: The COSEE-CA COSIA Model*. Paper presented at the 2008 Ocean Sciences Meeting. Orlando, FL.
- Zimmerman, T.D.** (Jan., 2008). *Ocean misconceptions, Ocean Literacy Principles and their role in advancing scientific literacy*. Paper presented at the Association for Science Teacher Education 2008 International Conference. St. Louis, MO.
- Peach, C., Yasuda, M. Senise, M., **Zimmerman, T.D.** (Dec., 2007). *Earth and ocean sciences online: A strategic partnership to bring research science into middle and high school classrooms*. Paper presented at the American Geophysical Union Annual Conference. San Francisco, CA.
- Zimmerman, T.D.**, Halversen, C., & Strang, C. (Nov., 2007). *Preparing Future Generations of Scientists for Cross-discipline Communication and Collaboration: The Communicating Ocean Sciences Model*. Paper presented at the Estuarine Research Federation Biennial Conference. Providence, RI.
- Strang, C., & **Zimmerman, T.D.** (July, 2007). *Ocean literacy: Concept flows for grades K-5*. Presentation at the National Association of Marine Educators Annual Meeting. Portland, ME.
- Zimmerman, T.D.** & Slotta, J.D. (April, 2007). *Connecting science to real world issues: A knowledge integration approach*. Paper presentation at the Annual Meeting of the American Educational Research Association. Chicago, IL.
- Glenn, S., McDonnell, J., Halversen, C., & **Zimmerman, T.D.** (Dec., 2006). *Communicating Ocean Sciences to Informal Audiences (COSIA): Universities, oceanographic institutions, science centers, and aquariums working together to improve ocean education and public outreach*. Poster presentation at American Geophysical Union Annual Conference. San Francisco, CA.
- Zimmerman, T.D.** & Brown, J. (Sept., 2006). *Ocean protection through effective communication: Ocean knowledge, misconceptions and public opinion*. Poster presentation at California and The World Ocean Conference. Long Beach, CA.
- Slotta, J.D., Aleahmad, T. & **Zimmerman, T.** (April, 2005). *Scaffolding interactive learning: The case for a rich interoperability framework*. Poster presentation at the Annual Meeting of the American Educational Research Association. Montreal, Quebec, Canada.
- Slotta, J.D. & **Zimmerman, T. D.** (April, 2004). *Integrating handheld activities into Web-based inquiry projects*. Paper presentation at the Annual Meeting of the American Educational Research Association. San Diego, CA.
- Zimmerman, T.D.** & Slotta, J.D. (April, 2003). *Helping students understand complex biology concepts through knowledge integration activities in the classroom and at an aquarium*. Paper presentation at the Annual Meeting of the American Educational Research Association. Chicago, IL.
- Slotta, J.D. & **Zimmerman, T.** (Feb., 2002). *Designing marine science technology-mediated curricula that integrate formal and informal learning environments*. Poster presentation at CILT Ubiquitous Computing: Handhelds in Education conference. Hillsboro, OR.
- Sisk-Hilton, S. & **Zimmerman, T.** (March, 2002). *WISE science: Promoting technology rich inquiry-based science learning*. Symposium presented at the San Mateo Science Teachers Association Conference. San Mateo, CA.
- Zimmerman, T.D.** (1992). *Latitudinal Reproductive Variation in the Salt Marsh Turtle, the Diamondback Terrapin, Malaclemys terrapin*. Presented at the Southeastern Estuarine Research Association Spring Meeting. North Topsail Beach, NC.

### Invited Colloquia and Talks

- Zimmerman, T.D.** (July, 2018). Diversity and inclusion in environmental outreach. *Minnesota Invasive Species Advisory Council Summer, 2018 meeting*.
- Zimmerman, T.D.** (March, 2014). Childhood Youth and Learning 10 Year Anniversary Plenary: A Decade in Integrating Theory and Practice. Hampshire College, Amherst, MA.
- Zimmerman, T.D.** (March, 2013). *Inquiries into informal science and environmental learning: Informing practice through learning science research*. Hampshire College's School of Cognitive Science Lunchtime Lecture Series, Amherst, MA.

- Zimmerman, T.D.** (April, 2012). *Field research experience and science learning across contexts*. Presentation at the Rutgers University Graduate School of Education, Dept. of Learning and Teaching Lunchtime Lecture Series. New Brunswick, NJ.
- Zimmerman, T.D.** & Petrillo, J.\* (Feb., 2012). *Researching science learning during extended field-based experiences: A view from afar*. Presentation at the Mongolian Ecological Research Symposium. Tuckerton, NJ.
- Zimmerman, T.D.** (April, 2011). *Researching the hidden world of "interstitial learning" in STEM education*. Invited talk presented at the annual meeting of the American Educational Researchers Association, New Orleans, LA.
- Zimmerman, T.D.** (October, 2010). *Applying an educational research lens to "Research Apprenticeships" within the NSF REU program*. Invited talk at the National Science Foundation, Washington, D.C.
- Zimmerman, T.D.** (April, 2010). *Learning evolutionary biology through inquiry activities across contexts*. Invited talk at the Dept. of Ecology, Evolution and Natural Resources, Rutgers University, New Brunswick, NJ.
- Zimmerman, T.D.** (April, 2009). *Aquatic sciences, SENCER and informal learning*. Invited talk at the SENCER Mid-Atlantic Conference. Rutgers University, New Brunswick, NJ.
- Zimmerman, T.D.** (Feb., 2009). *Designing to promote science learning across formal and informal contexts*. Invited talk STEM Group, Graduate School of Education, University of Pennsylvania, Philadelphia, PA.
- Zimmerman, T.D.** (March, 2008). *Connecting science learning to environmental decision-making: Adaptation and marine conservation*. Invited talk at the College of Education, Univ. of Texas, Austin, Austin, TX.
- Zimmerman, T.D.** (Feb., 2008). *Ocean sciences: A context ripe for educational research*. Invited talk at the Graduate School of Education, Rutgers University, New Brunswick, NJ.
- Zimmerman, T.D.** (March, 2007). *Connecting science learning to environmental decision-making: Adaptation and marine conservation*. Invited talk at the School of Education, Stanford University, Palo Alto, CA.
- Zimmerman, T.D.** (Nov. 2007). *Ocean Education and Environmental Literacy Theme*. Invited panelist for the Sea Grant West Coast Regional Research and Information Needs Planning Workshop. Oakland, CA.
- Zimmerman, T.D.** (Aug., 2007). *Communicating for Understanding*. Invited presentation on the implications of current learning theory for communicating difficult ocean science concepts. California Ocean Communicators Alliance Workshop. Santa Barbara, CA.
- Zimmerman, T.D.** (March, 2006). *Technology, focused content, educational theory, principled pedagogy*. Invited talk to the Moss Landing Marine Laboratory Wireless Interactive Interpretive Program development team. Moss Landing, CA.
- Zimmerman, T.D.** (June, 2002). *The data dilemma, the WISE solution: Using real data in real classrooms*. Invited talk at the Tagging of Pacific Pelagics (TOPP) Education and Outreach Development Workshop. Monterey, CA.
- Zimmerman, T.D.** (March, 2002). *WISE: A science education technology platform*. Invited talk at the Monterey Bay Aquarium Research Institute's EARTH - Education And Research: Testing Hypotheses workshop entitled "Education and real-time data workshop: Where should the two meet?" Monterey, CA.
- Slotta, J., & **Zimmerman, T.** (Oct., 2001). *The Web-based Inquiry Science Environment (WISE): Integrating inquiry and technology into the science curriculum*. Invited talk at the EarthTeam Teacher Professional Development Meeting, Berkeley, CA.
- Zimmerman, T.D.** (June, 2000). *Technical aspects of wetland delineation for purposes of CWA Section 404 enforcement cases*. Invited presentation at the U.S. Department of Justice Environmental Defense Section Annual Meeting. Washington, DC.

### Invited University Guest Lectures

Amherst College, Spring '18

Mount Holyoke College, Fall '14

George Washington University Law School, Washington, DC, Fall '97

Clemson University, Forestry Department, Fall '95

### Other Presentations, Lectures or Demonstrations

**Zimmerman, T.D.** (Nov. 2008). *The WISE Platform for teaching middle school science*. Invited in-service workshop for Piscataway Public Schools' middle school science teachers.

**Zimmerman, T.D.** (Dec., 2007). *What does current learning theory tell us about the design of tools for museum learning?* Workshop for the education staff of the California Academy of Sciences, San Francisco, CA.



**Zimmerman, T.D.** (June, 2001). *Teaching marine science using WISE technology*. Invited workshop presentation at the Monterey Bay Aquarium Teacher's Workshop. Monterey, CA.

## Teaching and Curriculum Design

### College/University Courses

Hampshire College, School of Cognitive Science

"Systems Theory and Systems Thinking: Tools to Tackle Wicked Environmental and Ecojustice Problems" Spring '19

"Curriculum Design in Environmental and Sustainability Education" Fall '18

"Oceans of Change: Ocean and human protection in the face of climate change" Fall '16, '18

"Games that Teach" – Spring '17

"Mixed-Methods Research Design: Combing Qualitative and Quantitative Approaches to Study Cognitive Science Questions" – Spring '16; Fall '17

"Critical Pedagogy of Place: A Tool for Environmental Action and Social Change" - Fall '15, Spring '18

"Museums as Learning Contexts" – Fall '13; Spring '15; Fall '16, Spring '19

"Designing for Learning in Formal and Informal Contexts" – Spring '15; Spring '17

"How People Learn" – Spring '14; Fall '14, Fall '15, Spring '18

"Educational Research: Theory to Practice" – Spring '14

"Environmental Education: Foundation and Inquiries" – Fall '13; Fall '14; Spring '16; Fall '17

Rutgers University, Graduate School of Education:

"Learning in Informal Contexts" – Spring '10; Spring '12; Spring '13

"Biology and Society" – Fall '09

"Inquiry and the Design of Learning Environments" – Spring '09

Rutgers University, School of Environmental and Biological Sciences:

"Informal Science Education" – Fall '10

Rutgers University, Institute of Marine and Coastal Sciences: "

"Oceanography and Schools" – Spring '09; Spring '10; Spring '11

University of California, Berkeley, Graduate School of Education:

"Environmental Education Reading Group" – Fall '07

University of California, Berkeley, Integrative Biology:

"Communicating Ocean Sciences to Informal Audiences" - Spring '07, Spring '08

"Communicating Ocean Sciences" - Spring '06

University of California, Berkeley, Environmental Science Policy and Management:

"Knowing when 2+2 is more than 4: The art and science of systems dynamics." – Fall '01

College of Charleston, Biology Department:

"General Biology" labs – Fall '89, Fall '90, Spring '91

"Human Anatomy and Physiology" lab –Fall '91

### Outdoor Environmental Teaching Experience

California State Parks, Ano Nuevo State Wildlife Reserve – led interpretive walks for the public amongst breeding population of elephant seals.

Charleston County Parks and Recreation Commission – taught outdoor, hands-on environmental education classes.

MA Audubon Society - taught week long, hands-on environmental education and marine science classes to diverse K-10 students.

Earthwatch Terrapin Project - Initiated a Barrier Island Ecology course taught to high school teachers and undergraduates; 5, one-day-long classes each summer for 4 years

Charleston District, COE - Co-taught a 2-day seminar to the Savannah District, COE on procedures for enforcing laws and regulations under COE jurisdiction.

### Curriculum Design

"Systems Theory and Systems Thinking: Tools to Tackle Wicked Environmental and Ecojustice Problems" –

Developed this new course focused on system theory and teaching systems thinking as they relate to environmental justice and environmental challenges. Hampshire College. 2019

- "Curriculum Design in Environmental and Sustainability Education" – Developed this new course focused on applying learning sciences design approaches to environmental education. Hampshire College. 2018
- "Oceans of Change: Ocean and human protection in the face of climate change" – Developed this new course focused on environmental behavior change theories ranging from cognitive science to ecopsychology to education to cultural studies. Hampshire College. 2017
- "Games that Teach" – Co-designed (and co-taught) this new course focused on the intersection of game design theory and practices and teaching/curriculum design theory and practices. Hampshire College. 2017
- "Mixed-Methods Research Design: Combing Qualitative and Quantitative Approaches to Study Cognitive Science Questions" – Developed this new undergraduate course as an opportunity for students to explore this research methodology as a possible tool for their work. Hampshire College. 2016
- "Critical Pedagogy of Place: A Tool for Environmental Action and Social Change" – Developed this new undergraduate course as an advanced environmental education course. Hampshire College. 2015
- "Environmental Education: Foundations and Inquires" – Developed this new undergraduate course focused on the history, foundations, and lines of inquiry associated with environmental education. Hampshire College. 2013
- "Museums as Learning Contexts" – Modified my Learning in Informal Contexts course to be appropriate for undergraduate, liberal arts students. Hampshire College. 2013
- "Informal Science Education" – Developed this new undergraduate course focused on learning science outside of school contexts. Rutgers University. 2010
- "Learning in Informal Contexts" – Developed this new doctoral-level course focused on learning outside of school contexts. Rutgers University. 2010
- "Communicating Ocean Sciences to Informal Audiences" – Co-developed this course being taught to marine science graduate/undergraduate students at 6+ universities nationwide. 2006 – 2008
- "WISE Birds of a Feather Evolve Together" – Co-developed this technology-mediated high school biology curriculum. 2005
- "WISE Adaptation to Habitat: Where have all the fish gone?" – Developed and assessed a web-enabled marine science curriculum, in collaboration with the Monterey Bay Aquarium. The curriculum challenges students to explore current marine conservation issues and promotes a rich and integrated understanding of environmental science concepts. 2002 – 2004
- "Knowing when 2+2 is more than 4: The art and science of systems dynamics." – Developed this freshman seminar course designed to engage freshman college students in systems thinking activities in an environmental science context. 2001
- "WISE Ocean Stewards" – Designed and evaluated this marine science curriculum, in conjunction with the National Geographic Society and the US National Oceanic and Atmospheric Administration, focused on the National Marine Sanctuaries and marine conservation. 2000 – 2001
- "Green Horizons" – Contributed content to this bound, but unpublished college level environmental curriculum designed to engage non-science majors in critical thinking exercises about everyday environmental issues such as recycling, water pollution and household toxic waste
- Designed environmental science curricula for the Charleston County Parks and Recreation Commission

## Student Advising and Committee Work

### Doctoral Degree Students Mentored

Chair

Carley Fisher-Maltese. Ph.D. granted May 2013. Rutgers University.  
Edward Cohen. Ed.D. granted May 2013. Rutgers University.

Committee Member

Margaret Holzer. 2008 – 2013, Doctoral Candidate. Rutgers University.  
John Rupert. 2011 – 2013, Doctoral Candidate. Rutgers University.

### Master's Degree Students Mentored

## Chair

John Petrillo, M.Ed. granted May 2013. Rutgers University.  
Jenny Tomko, M.Ed. granted May 2013. Rutgers University.  
Lindsey Fenner. M.Ed. granted Dec. 2013. Rutgers University.  
Amy Boyajian. M.Ed. granted May 2012. Rutgers University.

## Member

Alyssandra Black, Univ. of Massachusetts, Amherst, M.L.A. granted. May, 2016

## Mentor

Eric Teruel. U.C. Berkeley, M.Ed. 2006. Mentored/advised on curriculum design and master's research.  
Amy Holloway – U.C. Berkeley, M.Ed. 2005. Mentored/advised on curriculum design and master's research.

## Undergraduate Senior Research Theses Supervised

### Chair

Josephine Eilersten, Hampshire College, B.A. 2018  
Sweeney Sweeney, Hampshire College, B.A. 2018  
Ryan Allmendinger, Hampshire College, B.A. 2018  
Tyler Kidd, Hampshire College, B.A. 2018  
Aodhan Hemeon-McMahon, Hampshire College. B.A. 2017.  
Shannon Larkin, Hampshire College, B.A. 2017  
Dineen O'Rourke, Hampshire College. B.A. 2017.  
William Martin, Hampshire College. B.A. 2017.  
Samantha O'Brien, Hampshire College. B.A. 2016.  
Chiarra Forrester, Hampshire College. B.A. 2016. Co-Chair.  
Emily Gonzalez, Hampshire College. B.A. 2016.  
Madra Choromanska, Hampshire College. B.A. 2016.  
Kaitee Levinson, Hampshire College. B.A. 2016.  
Joseph Goldin, Hampshire College. B.A. 2016.  
Alana Godner-Abravanel, Hampshire College. B.A. 2016. Co-chair.  
Jonathan Gardner, Hampshire College. B.A. 2016.  
Rachel Garner, Hampshire College. B.A. 2015.  
Allison (Ali) Gibbs. Hampshire College. B.A. 2015.  
blake (Mya) flessas. Hampshire College. B.A. 2015.  
Anna Yoors. Hampshire College. B.A. 2014.  
Ava Castro. Hampshire College. B.A. 2014.  
Jessica DeVault. Rutgers University. B.S. 2012. Supervisor.

### Committee Member

Delilah Silverstein, Hampshire College, B.A. 2018  
Isabella Witty, Hampshire College, B.A. 2018  
Shannon Larkin, Hampshire College. B.A. 2017.  
Tinsley Gaylean, Hampshire College. B.A. 2017.  
Evalena Black, Hampshire College. B.A. 2017.  
Lyda Coburn, Hampshire College. B.A. 2016.  
Lillian Feingold, Hampshire College. B.A. 2016.  
Elena Zerin. Hampshire College. B.A. 2016. Member second semester, Chair first semester.  
Roslyn McMurray. Hampshire College. B.A. 2015.  
Erika Linenfelser. Hampshire College. B.A. 2014.  
Julie Petke. Hampshire College. B.A. 2014.  
Joshua Reynolds, Hampshire College. B.A. 2014.

## College Community Service

### Hampshire College

Hampshire College Advancement Committee, Faculty Representative – Fall 2018-present  
Hampshire-Hitchcock Trails Committee – Spring 2016-present  
Five Colleges Sustainability Certificate Program Steering Committee – 2016-present  
Five Colleges Coastal and Marine Science Program Steering Committee – 2015-present  
Critical Studies in Childhood, Youth, and Learning Steering Committee – 2013-present  
R.W. Kern Center Building Communication Committee – Chair, 2014-2016; Member, Spring 2013  
Kern Center Dedication Leader for the Building as Educator Workshop – Fall 2016

### Rutgers University

Design of Learning Environments New Ed.D. Program Committee – 2010-2013  
GSE Commencement Committee – 2009-2011  
IMCS Outstanding Marine Science Senior Award Committee – 2008-2009  
GSE Courses of Study Committee – 2008-2009

## Service to my professional community

### Journal Guest Editor

Southeastern Naturalist, Special Issue on Education, '16-'17

### Journal Peer Reviewer

Science Education, '16, '17, '18  
Environmental Education Research, '12, '17, '18  
Public Understanding of Science, '08, '09  
Journal of Research in Science Teaching, '08, '09  
International Journal of Science Education, '10

### Grant Proposal Reviewer

National Science Foundation, '08, '09, '11, '16  
Association of New Jersey Environmental Educators, '12

### Conference Proposal Reviewer

AERA, '06, '07, '08, '09; '10, '11, '12, '13  
NAAEE Research Symposium, '16, '18  
CSCL, '09  
ICLS, '10  
NARST, '09, '10

### Professional Advisory Committees

Advisory Board member for EcoXPT, an NSF-funded educational research project at Harvard University's Graduate School of Education. PI= Tina Grotzer, CoPI=Amy Kamarainen. 2015-present  
Advisory Board member, New Hampshire Charitable Foundation grant, Seacoast Science Center. 2015-2016  
Advisory Board member for Cyberlaboratory: Exploring Customization and Continuity, NSF-funded informal learning research project. PI=Shawn Rowe, Oregon State University. 2011-2015  
Advisory Board member for EcoMOBILE, an NSF-funded educational research project at Harvard University's Graduate School of Education. PI=Christopher Dede, Co-PI=Tina Grotzer. 2011-2015

### Leadership

AERA Informal Learning Special Interest Group Board Member – 2012-2014  
Education Committee Co-Chair, International Marine Conservation Congress – 2008-2009

Education Committee Chair, CA Ocean Communicators Alliance – Spring '06-Summer '08  
Project Leader, TELS Center Evolutionary Biology Curriculum Partnership – Fall '04-Spring '05  
Graduate Student Representative, SESAME Executive Committee – Fall '02-Spring '05  
Graduate Assembly Representative, Academic Senate Committee on Teaching – Fall '03-Spring '04  
Member, Academic Affairs Committee, UC Berkeley Graduate Assembly – Fall '03-Spring '04  
Co-founder and Director, Berkeley Association for the Study of Informal Learning - 2002  
Project Leader, WISE/Monterey Bay Aquarium Project Development Partnership – 2001-2004  
National Coordinator, EPA/DOJ National Enforcement Conference – 1998,1999, 2000  
National Coordinator, Nationwide Permits Task Force – 1996  
Participant Supervisor, Earthwatch Program Terrapin Research Project – 1990, 1991, 1992

## Wider Community Service

Steering Committee, The Hartsbrook School's Land Stewardship Program. 2015-present  
Steering Committee member, CA Ocean Communicator's Alliance. February, 2006-July, 2008  
Educational Advisor, Moss Landing Marine Laboratory Wireless Interactive Interpretive Program. January, 2006-2007  
Board Member, Marine Science Institute, Redwood City, CA – May, 2005 - April, 2006  
Many talks, presentations and workshops to/for educators. See above for details.

## Professional Affiliations

Citizen Science Association (CSA) 2015-present  
North American Association of Environmental Educators (NAAEE) 2011-present  
American Educational Research Association (AERA) 2001-present  
International Society of the Learning Sciences (ISLS) 2001-present  
National Association for Research in Science Teaching (NARST) 2010-2015  
Association for Science Teacher Education (ASTE) 2008-2010  
American Association for the Advancement of Science (AAAS) 2003-2010  
Estuarine Research Federation (ERF) 1989-1995