

**Lisa A. Gilbert**

Professor of Geosciences and Marine Science at Williams-Mystic, Williams College

*EDUCATION*

- 2004 Ph.D., University of Washington, Oceanography (Marine Geology & Geophysics)
- 1999 M.S., University of Washington, Oceanography (Marine Geology & Geophysics)
- 1997 A.B., Dartmouth College, Earth Sciences with High Honors, Music minor
- 1996 Spring semester, The Maritime Studies Program of Williams College & Mystic Seaport

*FACULTY APPOINTMENTS*

- 2020 - Professor, Geosciences and Marine Science at Williams-Mystic, Williams College
- 2013-20 Associate Professor, Geosciences and Marine Science at Williams-Mystic, Williams College
- 2006-13 Assistant Professor, Geosciences and Marine Science at Williams-Mystic, Williams College
- 2004-06 Marine Scientist at Williams-Mystic, Mystic Seaport
- 2002-03 Visiting Lecturer in Marine Sciences at Williams-Mystic, Mystic Seaport
- 2001-02 Geology Instructor, Highline Community College

*COURTESY RESEARCH APPOINTMENTS*

- 2018 - Research Associate (courtesy), University of California, Santa Cruz, Earth & Planetary Sciences
- 2018 Visiting Associate Professor (sabbatical), University of Otago, Geology, Dunedin, NZ
- 2017 Visiting Associate Researcher (sabbatical), UCSC Earth & Planetary Sciences
- 2009 Visiting Assistant Professor (Assistant Professor Leave), UCSC Earth & Planetary Sciences

*PUBLICATIONS (\*student co-author)*

Hung, C.\*, L.A. Gilbert, D.A.H. Teagle, D. Craw, and R.A. Wobus, (*in press*). Features of seafloor hydrothermal alteration in metabasalts of mid-ocean ridge origin from the Chrystalls Beach Complex, *New Zealand Journal of Geology and Geophysics*.

Gilbert, L.A. (*in press*). Teaching Geoscience Tools For Addressing Societal Grand Challenges: A Unique Study-Away Experience During COVID19, *Science Education and Civic Engagement: An International Journal*, 12(2).

Gilbert, L.A., R. Teasdale, and C.A. Manduca (2020), A New Vision of Sustainability in Earth Science Education, *Eos*, 101, <https://doi.org/10.1029/2020EO146424>.

Egger, A.E., M.Z. Bruckner, S.J. Birnbaum, and L.A. Gilbert, (2019). Developing effective interdisciplinary curricular materials, *in* Interdisciplinary Teaching about Earth and the Environment for a Sustainable Future Association of Environmental Sciences and Studies Book Series, Springer ISBN: 978-3-030-03272-2, 45-68. DOI: 10.1007/978-3-030-03273-9

Gilbert, L.A., D. Gross, and K. Kreutz (2019). Developing undergraduate students' systems thinking skills with an InTeGrate module, *Journal of Geoscience Education*, 67:1, 34-49, DOI: 10.1080/10899995.2018.1529469 **COVER ARTICLE**

Iverson, E., D. Steer, L.A. Gilbert, K. Kastens, K. O'Connell, and C.A. Manduca, (2019). Measuring literacy, attitudes, and capacities to solve societal problems *in* Interdisciplinary Teaching about Earth and

the Environment for a Sustainable Future Association of Environmental Sciences and Studies Book Series, Springer, ISBN: 978-3-030-03272-2, 91-119. DOI: 10.1007/978-3-030-03273-9

Gilbert, L.A., L. Crispini, P. Tartarotti, and M.L. Bona\* (2018). Permeability Structure of the Lava-Dike Transition of 15 My Old Oceanic Crust Formed at the East Pacific Rise, *Geochemistry, Geophysics, Geosystems*, 19(9), 3555-3569. DOI:10.1029/2018GC007696

Gilbert, L.A. and M.L. Bona\* (2016). Permeability of Oceanic Crustal Rock Samples from IODP Hole 1256D, *Geochemistry, Geophysics, Geosystems*, 17(9), 3825-3832. DOI:10.1002/2016GC006467

Gilbert, L.A., D. Gross, and K. Kruetz (2016). Systems Thinking, *InTeGrate*.  
[http://serc.carleton.edu/integrate/teaching\\_materials/syst\\_thinking/](http://serc.carleton.edu/integrate/teaching_materials/syst_thinking/)

Gilbert, L.A., J. Ramage, and J. Galster (2014). Natural Hazards and Risks: Hurricanes, *InTeGrate*.  
[http://serc.carleton.edu/integrate/teaching\\_materials/hazards/](http://serc.carleton.edu/integrate/teaching_materials/hazards/)

Schnur, S.R.\* and L.A. Gilbert, (2012). Detailed Volcanostratigraphy of an Accreted Seamount: Implications for Intra-plate Seamount Formation, *Geochemistry, Geophysics, Geosystems*, 13, Q0AM05, DOI:10.1029/2012GC004301.

Gilbert, L.A., J. Stempien, D. McConnell, D. Budd, K. van der Hoeven Kraft, A. Bykerk-Kauffman, M. Jones, C. Knight, R. Matheney, D. Perkins, and K. Wirth (2012). Not Just "Rocks for Jocks": Who Are Introductory Geology Students and Why Are They Here?, *Journal of Geoscience Education*, 60(4), 360-371.

Gilbert, L.A. and M. H. Salisbury (2011). Oceanic Crustal Velocities from Laboratory and Logging Measurements of Integrated Ocean Drilling Program Hole 1256D, *Geochem. Geophys. Geosyst.*, 12, Q09001, DOI:10.1029/2011GC003750.

Swift, S., M. Reichow, A. Tikku, M. Tominaga, and L. Gilbert (2008). Velocity Structure of Upper Ocean Crust at Ocean Drilling Program Site 1256, *Geochemistry, Geophysics, Geosystems*, 9, Q10O13, DOI:10.1029/2008GC002188.

Gilbert, L.A., and A. Burke\* (2008). Depth-Shifting Cores Incompletely Recovered from the Upper Oceanic Crust, IODP Hole 1256D, *Geochem. Geophys. Geosyst.*, 9, Q08O11, DOI:10.1029/2008GC002010.

Gilbert, L.A., R.E. McDuff, and H.P. Johnson (2007). Porosity of the Upper Edifice of Axial Seamount, *Geology*, 35(1), 49-52 and 35(4), 384, DOI: 10.1130/G22892A.1.

Wilson, D.S., D.A.H. Teagle, J.C. Alt, N.R. Banerjee, S. Umino, S. Miyashita, G.D. Acton, R. Anma, S.R. Barr, A. Belghoul, J. Carlut, D.M. Christie, R.M. Coggon, K.M. Cooper, C. Cordier, L. Crispini, S.R. Durand, F. Einaudi, L. Galli, Y. Gao, J. Geldmacher, L.A. Gilbert, N.W. Hayman, E. Herrero-Bervera, N. Hirano, S. Holter, S. Ingle, S. Jiang, U. Kalberkamp, M. Kerneklian, J. Koepke, C. Laverne, H.L. Lledo Vasquez, J. Maclennan, S. Morgan, N. Neo, H.J. Nichols, S.-H. Park, M.K. Reichow, T. Sakuyama, T. Sano, R. Sandwell, B. Scheibner, C.E. Smith-Duque, S.A. Swift, P. Tartarotti, A.A. Tikku, M. Tominaga, E.A. Veloso, T. Yamasaki, S. Yamazaki, and C. Ziegler (2006). Drilling to Gabbro in Intact Ocean Crust, *Science*, 312 (5776), 1016-1020, DOI 10.1126/science.1126090.

Gilbert, L.A. and H.P. Johnson (1999). Direct Measurements of Oceanic Crustal Density at the Northern Juan de Fuca Ridge, *Geophys. Res. Lett.*, 26(24), 3633-3636.

*RECENT PUBLISHED ABSTRACTS, since 2016 (\*student co-author)*

Hung, C.\*, L.A. Gilbert, D. Craw, D.A.H. Teagle, and R.A. Wobus (2019). Evidence for Seafloor Hydrothermal Alteration in Delaminated MOR-Type Metabasalts of the Chrystalls Beach Complex, South Island, New Zealand, *American Geophysical Union Fall Meeting*, V43H-0194.

Gilbert, L.A., E. Iverson, K. Kastens, and C.A. Manduca (2019). Supporting and Assessing Systems Thinking Skills Development in Undergraduates, *American Geophysical Union Fall Meeting*, ED21C-1051. **INVITED**

Gragg, R.D.S., E.R. Iverson, H. Brethauer-Gay, J. Warford, L.A. Gilbert, K. Sheriff, C.A. Manduca, (2019). Impact of InTeGrate Teaching Materials on Student Geoscience Interests, Literacy and Learning Outcomes at Historically Black Colleges and Universities, *Earth Educators' Rendezvous*.

Nagy-Shadman, E. and L.A. Gilbert, (2019). Geoscience Literacy and Career Interest Improve Among Two-Year College Students with InTeGrate Materials, *Earth Educators' Rendezvous*.

Hung, C.\*, L.A. Gilbert, and R.A. Wobus, (2019). Metamorphic processes recorded in delaminated metabasalts preserved on South Island, New Zealand, *Geological Society of America Northeast Section Abstracts with Program*.

Gilbert, L.A., (2019). Beyond cause-and-effect: teaching students to think in systems, *Geological Society of America Northeast Section Abstracts with Programs*.

Manduca, C.A., L.A. Gilbert, R.S. Gragg, E.A.R. Iverson, R.H. Macdonald, D.A. McConnell, and D. Steer, (2018). Community-Based Research Teams: Examples from On the Cutting Edge and InTeGrate Projects, *American Geophysical Union Fall Meeting*.

Manduca, C., D. Blockstein, T. Bralower, F. Davis, D. Doser, A. Egger, S. Fox, L. Gilbert, D. Gosselin, R. Gragg, E. Iverson, K. Kastens, D. McConnell, E. Nagy-Shadman, C.J. Orr, D. Steer, and J. Taber, (2018). InTeGrate: Interdisciplinary Teaching about the Earth for a Sustainable Future, EOS16/HS1.14, *European Geophysical Union, EGU2018-11029*.

McCauley, E.Q.\*, M.R. Suslovic\*, J.L. Swartz\*, C. Hung\*, and L.A. Gilbert (2017). An inundation model of Barn Island Salt Marsh, Connecticut, *AGU Virtual Poster Showcase Fall 2017*.

Hung, C.\*, L.A. Gilbert, E.Q. McCauley\*, M.R. Suslovic\*, J.L. Swartz\*, and M.E. Weiner\* (2017). An Integrated Approach to Erosional Processes at a New England Salt Marsh, *Geological Society of America Abstracts with Programs*.

Gilbert, L.A., E. Iverson, K.A. Kastens, A. Awad, E.Q. McCauley\*, J.L. Caulkins, D.N Steer, C.D Czajka, D.A. McConnell, and C.A. Manduca (2017). Explicit Focus on Systems Thinking in InTeGrate Materials Yield Improved Student Performance, *Geological Society of America Abstracts with Programs*.

LeMay, L.E., R.W. Dunbar, S.C. Ebanks, L.A. Gilbert, R.H. Macdonald, C.J. Ormand, C. Riihimaki, and G.S. Weissmann (2017). *Preparing for an Academic Career in the Geosciences Workshop: A Success of the On-the-Cutting-Edge Program*, *Geological Society of America Abstracts with Programs*.

Egger, A.E., S.P. Fox, J.R. McDaris, and L.A. Gilbert (2017). Facilitating Three-Dimensional Learning With Adaptable, Searchable, NGSS-Aligned Curricular Materials from InTeGrate, *Geological Society of America Abstracts with Programs*.

Iverson, E., L.A. Gilbert, D. Steer, S. Birnbaum, C.A. Manduca (2016). Assessing Student Learning about the Earth through the InTeGrate Project, *American Geophysical Union Fall Meeting*.

Gilbert, L.A., E. Marin-Spiotta, L. LeMay, D.E Reed, A.R. Desai, and R. H. Macdonald (2016). A new Model for the Preparing for an Academic Career in the Geosciences Workshop, *American Geophysical Union Fall Meeting*.

Gilbert, L.A., K. Kruetz, and D. Gross (2016). What is a System? *Earth Educators Rendezvous*.

#### UNDERGRADUATE THESES SUPERVISED

- 2020-21 Hayden Gillooly S19 (Williams '21). Project: The Changing Climate of Maritime, Experiential, Place-Based Education in the Time of COVID-19
- 2017-19 Caroline Hung (Williams '19). Project: Origin and alteration of the Chrystalls Beach Complex Metabasalts, New Zealand: Implications for obduction-related metamorphism and hydrothermal fluid flow. *Bud Wobus was second advisor*. Now PhD student at UCR.
- 2014-16 Molly Weiner S14 (U. Rochester '16). Project: Biotic stabilization of Barn Island Marsh. Now Community Affairs Coordinator at Morgan Stanley.
- 2012-13 Miranda Bona (Williams '13). Project: Evolution and distribution of permeability in upper oceanic crust, IODP Hole 1256D. *Bud Wobus was second advisor*. Now Geologist at TerraPhase Engineering, Inc.
- 2008-09 Henry (Ted) Kernan F06 (Williams '09). Project: Focused Hydrothermal Flow in the Abitibi Greenstone Belt. *Co-advisor with Bud Wobus*. Continued on to Colorado School of Mines M.S., founder of WellLogData.
- 2007-08 Nicole Kuenzel (Coastal Carolina University '08). Project: Influences on seismic velocities of the ocean crust. Continued on to University of New Hampshire M.S., now Geoscientist at C&C Technologies.
- 2006-07 Susan Schnur F06 (Carleton College '07). Project: Nicasio Reservoir Terrane, California. *Cam Davidson was second advisor*. Continued on to ETH Zurich M.S. and Oregon State University Ph.D., now Washington Editor-in-Chief & Geology Publications Manager

#### SUMMER UNDERGRADUATE RESEARCHERS (# non-geoscience STEM; \*\* non-STEM major)

- 2020 Hayden Gillooly S19, Williams '21; Sustainability and experiential education
- 2020 Maggie Zhang# S20, Carnegie Mellon '22; Image processing of seafloor basalt
- 2020 Jennifer Crandall#, Middlebury '20.5; Subseafloor biosphere modeling
- 2020 Lily Schaufele\*\* S20, Smith '21; Systems thinking and remote learning
- 2020 Cameron Weiner, Middlebury '20.5; Middle school systems thinking module
- 2019 Julia Ward, Williams '21; Chrystalls Beach metabasalt physical properties
- 2019 Erin Meadors#, Williams '20; Barn Island Marsh foraminiferal records
- 2019 Caroline Hung, Williams '19; Chrystalls Beach Formation metabasalts
- 2019 Lindsay Fox#, Sewanee '20; Barn Island Marsh nutrient fluxes
- 2019 Sophia Stouse, Smith '20; Barn Island Marsh marsh peat chemistry
- 2018 Caroline Hung, Williams '19; Chrystalls Beach Formation metabasalts

2017 Meghan Suslovic# F16, Smith '18; Sea level rise and Barn Island Marsh  
 2017 Jason Swartz# S17, McDaniel '18; Barn Island Marsh biotic stability  
 2017 Caroline Hung, Williams '19; Barn Island Marsh erosion  
 2017 Emma McCauley# S17, SUNY Stony Brook '18; Barn Island Marsh GIS mapping  
 2016 Caroline Hung, Williams '19; Barn Island Marsh monitoring; IODP 1256D  
 2016 Charley Weyser\*\* F15, Williams '17; Ocean affect  
 2016 Alexandra McInturf# S14, Williams '15; *Morgan* 38<sup>th</sup> Voyage science logs  
 2015 Molly Weiner S14, University of Rochester '16; Marsh stability models  
 2015 Alana McGillis F13, Smith College '15; geology comic book development  
 2014 Molly Weiner S14, University of Rochester '16; Mapping marsh stability  
 2014 Katherine Enright, Wesleyan '15; Talcott basalt permeability; outreach through farms  
 2014 Alana McGillis F13, Smith '15; Talcott petrography; comic book outreach  
 2013 Caroline Gregory S13, Hamilton '14; UBI images, IODP Hole 1256D  
 2012 Miranda Bona, Williams '13; IODP Hole 1256D visual permeability  
 2012 Bryce Mitsunaga, Williams '13; Walvis Ridge physical properties  
 2011 Elizabeth Moncure# S10, Smith '11; Barn Island Marsh data analysis  
 2011 Harley Stevens\*\* S11, UConn '12; Barn Island Marsh survey  
 2011 Herrick Sullivan\*\* S11, Williams '13; Barn Island Marsh survey  
 2010 Erin Dlabola, Juniata '11; Barn Island Marsh sediment analysis  
 2010 Abigail Martin# F08, Williams '11; Barn Island marsh plant succession  
 2010 Susan Schnur F06, ETH M.S. student; LIDAR image analysis  
 2009 Kimberly Elson F07, Carleton '10; Mapping the Nicasio Reservoir Terrane  
 2009 Nicole Kuenzel, UNH M.S. student; Ocean provinces  
 2009 Susan Schnur F06, ETH M.S. student; Seamount formation models  
 2008 Lauren Anderson, Lehigh '09; Keck Abitibi Nitrogen isotopes  
 2008 Stefanie Gugolz, Beloit '09; Keck Abitibi pillow rim alteration  
 2008 Henry (Ted) Kernan F06, Williams '09; Keck Abitibi hydrothermal maps  
 2008 Adrienne Love, Trinity '09; Keck Abitibi outcrop porosity  
 2008 Lisa Smith, Amherst '09; Keck Abitibi vesicles  
 2008 Karen Tekverk, Haverford '09; Keck Abitibi folding and metasomatism  
 2008 Kimberly Elson F07, Carleton '10; Mapping the Blake River Group  
 2008 Amanda Nicholas\*\* S08, Florida '08; Oceanic crust velocity data  
 2008 Ellie Wawrsazcek\*\* S08, Williams '10; Velocity meter test measurements  
 2007 Nicole Kuenzel, Coastal Carolina '08; IODP basalt physical properties  
 2007 Danielle Kerper, Harvard '08; Abitibi greenstone inter-pillow porosity  
 2006 Susan Schnur F06, Carleton '07; Nicasio Reservoir Terrane sampling  
 2006 Andrea Burke S04, Williams '06; Using MATLAB for core-log integration

*PART-TIME UNDERGRAUATE LAB ASSISTANTS (# non-geoscience STEM major; \*\* non-STEM major)*

2020 Stefan Kuklinsky# S20, UC Berkeley '22; Image processing of pillow lavas  
 2020 Maggie Zhang# S20, Carnegie Mellon '22; Thin section image acquisition  
 2020 Katarina Szada-Daubert# S20, FSU '19; Marsh microplastics  
 2019 Tristan Biggs\*\* F19, UVM '20; Physical properties of Raoul pumice samples  
 2019 Dayana Manrique S19, Williams '21; Origins of a 2018 Pacific pumice plume  
 2019 Kylie Weigle# S19, Stockton '18; Origins of a 2018 Pacific pumice plume  
 2019 Dionna Jenkins\*\* F18, Smith '20; Under-represented minority geoscience faculty  
 2018 Lily Wilson\*\* F18, Colby '20; Magnetic susceptibility of seafloor volcanics  
 2018 Erika Olson, Williams '19; Dunedin Volcanic Group (in New Zealand)  
 2017 Muriel Leung# S17, UPenn '18; Permeability analysis, IODP Hole 1256D  
 2017 Nicholas Mitch\*\* S17, Bowdoin '18; Permeability analysis, IODP Hole 1256D

2016 Peter Baughmann\*\* F16; Image analysis of fractures, IODP Hole 1256D  
 2016 Marlo Stein S16, Smith '17; Image analysis of fractures, IODP Hole 1256D  
 2015 Miaoru Guan F15, Williams '17; Walvis Ridge physical properties  
 2015 Kathleen Swoap# F15, Williams '17; Walvis Ridge physical properties  
 2015 Cody Remillard F15, Williams '15; Walvis Ridge sample imaging  
 2015 Lindsey Precht#, Williams '15; *Morgan 38<sup>th</sup>* Voyage data processing  
 2015 Luis Urrea S15, Williams '16; Clays and permeability, IODP Hole 1256D  
 2015 Kaitlyn Klema S15, Smith '16; Clays and permeability, IODP Hole 1256D  
 2014 Caroline Atwood F14, Williams '16; Permeability of IODP Hole 1256D  
 2014 Caroline White-Nockleby F14, Williams '16; Geoscience systems thinking  
 2014 Amanda Ketting-Olivier S14, Mt San Antonio '14; Walvis porosities  
 2014 Alana McGillis F13, Smith '15; Walvis ridge sample velocities  
 2013 Caroline Gregory S13, Hamilton '14; Sample/image permeability  
 2013 Gabriela Serrato Marks F13, Bowdoin '15; Walvis permeability  
 2012 Michael Semensi# F12, Williams '13; Walvis Ridge mini-core volumes  
 2012 Connor Dempsey# S12, Williams '13; Permeability of IODP Hole 1256D  
 2012 Grace LaPier# S12, Williams '13; Permeability of IODP Hole 1256D  
 2011 Nuria Clodius# F11, Mt Holyoke '13; Barn Island Marsh rhizomes  
 2011 Zara Currimjee# F11, Williams '13; Barn Island Marsh rhizomes  
 2011 Charu Sharma# F11, Mt Holyoke '13; Permeability of IODP Hole 1256D  
 2011 Daniel Gross# S11, Williams '12; A method for determining permeability  
 2011 Justina Khuu# S11 Bryn Mawr '12; Image analysis, dike microstructures  
 2011 Anna Szymanski# S11, Williams '12; Barn Island Marsh sand horizons  
 2010 Margaret DeOliveria# F10, Moravian '13; Barn Island marsh rhizomes  
 2010 Jessica Johnson# S10, Tufts '11; Physical properties of Black Gap basalts  
 2010 Elizabeth Moncure# S10, Smith '11; Image analysis of vesicular basalts  
 2009 Katelyn Gerecht# S09, Smith '10; Automatic visual porosity estimation  
 2008 Rebecca Gilbert S08, Williams '10; Ultrasonic velocity meter apparatus  
 2008 Allie Goldberg F08, Williams '10; A comparison of pillow vesicularity  
 2008 Daniel McCune# F08, Amherst '09; Abitibi sample preparation and velocity  
 2008 Rachel Neurath S08, Smith '09; Porosity of Hole 1256D mini-cores  
 2007 Kimberly Elson F07, Carleton '10; Porosity of Hole 1256D mini-cubes  
 2007 Emily Flynn\*\* F07, Williams '09; Porosity of Hole 1256D mini-cubes  
 2007 Sunmi Yang# S07, Williams '08; Pycnometry of deep drilled samples  
 2006 Carrie Keogh# F06, Emory '08; Synthesis of DSDP and ODP lavas drilled  
 2006 Susan Schnur F06, Carleton '07; Pycnometer calibration  
 2006 Brooke Adams S06\*\*, Vassar '08; Sample prep, IODP 1256D  
 2006 Max Fowler Cohen S06\*\*, Colby '09; Sample prep, IODP 1256D

#### *POSTDOCTORAL RESEARCH SUPERVISED*

2013-14 Dr. Emanuele Fontana, InterRIDGE visiting postdoctoral scholar, University of Milan.  
 Project: Crack asperity preserved in an ophiolite, Cyprus. *Co-supervised with Paola Tartarotti*

#### *RECENT WORKSHOPS LED*

Preparing for an Academic Career in Geoscience, co-led with Sue Ebanks (Savannah State U.), Lynsey LeMay (Thomas Nelson CC), Catherine Riihimaki (Princeton), and Gary Weissman (U. New Mexico), *Earth Educators Rendezvous*, online, July 13-15, 2020.

Microplastics in the Mystic River Estuary, a workshop for museum teachers, Mystic Seaport Museum, Mystic, CT, January 13, 2020.

Earth Education for Sustainable Societies workshop, lead convener and PI, co-led with Rachel Teasdale (CSU Chico), Cathy Manduca (Carleton), Mintesinot Jiru (Coppin State University), Rory McFadden (Gustavus Adolphus), Hannah Scherer (Virginia Tech), and, Margie Turrin (Columbia), Carleton College, Northfield, MN, October 14-16, 2019.

Preparing for an Academic Career in Geoscience, co-led with Sue Ebanks (Savannah State U.), Lynsey LeMay (Thomas Nelson CC), Catherine Riihimaki (Princeton), and Jessica Oster (Vanderbilt), Earth Educators Rendezvous, Nashville, TN, July 15-17, 2019.

Pathways to performance expectations using InTeGrate materials, co-led with Anne Egger (Central Washington U.) and Kathryn Baldwin (Eastern Washington U.), *InTeGrate* Webinar, November 16, 2018.

Engaging Students in Understanding the Earth System as it Intertwines with Key Societal Issues: A workshop for high school teachers, *Goldschmidt 2018*, Boston, MA, August 16, 2018.

Engaging Students in Understanding the Earth System as it Intertwines with Key Societal Issues: A workshop for K-8 teachers, co-led with Peter Berquist (Thomas Nelson CC), *Goldschmidt 2018*, Boston, MA, August 14, 2018.

Preparing for an Academic Career, co-led with Sue Ebanks (Savannah State U.), Lynsey LeMay (Thomas Nelson CC), Catherine Riihimaki (Princeton), and Gary Weissmann (U. New Mexico), *Earth Educators' Rendezvous*, Lawrence, KS, July 16-18, 2018.

Using Conceptual Frameworks of Earth Systems to Frame Future Directions in Systems Thinking Research, co-led with Hannah Scherer (Virginia Tech), *Earth Educators' Rendezvous*, Lawrence, KS, July 19-20, 2018.

InTeGrate 101: How to incorporate InTeGrate classroom materials into your courses, co-led with Elizabeth Nagy-Shadman (Pasadena CC) and; Lisa Doner (Plymouth State), *InTeGrate* Webinar, December 8, 2017.

Fostering Systems Thinking in Your Students, InTeGrate Webinar, March 22, 2017.

Preparing for an Academic Career, co-led with Ankur Desai (U. Wisconsin), Lynsey LeMay (Thomas Nelson CC), Erika Marin-Spiotta (U. Wisconsin), and David Reed (U. Wisconsin), *Earth Educators' Rendezvous*, Madison, WI, July 18-20, 2016.

Does it Take Two to Tango? Interdisciplinary Teaching Solo and in Teams, co-led with Catherine Riihimaki (Princeton), *Earth Educators' Rendezvous*, Madison, WI, July 20, 2016.

Teaching about Natural Hazards and Risks, co-led with Laurel Goodell (Princeton) and Tim Bralower (Penn State), *InTeGrate* Webinar, August 31, 2016.

Teaching Geoscience in Society: Building Relevance and Interest in the Geosciences by Adding InTeGrate Resources to Your Class, co-led with Rachel Teasdale (CSU Chico), *American Geophysical Union Fall Meeting*, San Francisco, CA, December 15, 2015.

Science on the *Morgan*: An interdisciplinary professional development workshop for middle school teachers, *Mystic Seaport for Educators*, October 5, 2015.

Teaching with InTeGrate materials in a 2YC environment: Natural Hazards and Risks, workshop presenter, Earth Educators Rendezvous, Boulder, CO, July 15, 2015.

Introduction to InTeGrate Modules: Hands-on, data-rich, and socially relevant geoscience activities, co-led with Elizabeth Nagy-Shadman (Pasadena CC), Cynthia Fadem (Earlham), David McConnell (NC State), Pamela McMullin-Messier (Central Washington), *InTeGrate* Webinar, April 10, 2015.