



*Innovate to mitigate (NSF 1316225).* Co-PI. Gillian Puttick, PI. Project prototyped and researched the use of crowd-sourcing methods for high school project-based learning about climate change mitigation.

*Understanding Curriculum Design (REESE 1252416)* Co-PI. Debra Bernstein, PI. Multi-partner research study of developers' decisions and strategies in the creation of science curriculum designed to go to scale.

*Biocomplexity: Transforming an Innovative High School Curriculum with UDI Scaffolds and Multimedia Resources (DRK-12 10-20089).* PI for 3-yr project to create an electronic text for a case-based, capstone course for high school,

*Astrobiology (NSF/IMD). (Daniel Barstow, PI). Project Director/co-PI for development of innovative integrated 9<sup>th</sup> grade science curriculum.*

*LSC-Net (NSF/TE 9812831). Co-PI (Joni Falk, PI)*

*Teacher Enhancement in Pedagogy through Ecology (NSF/TPE). (Prassede Calabi, PI). Co-PI*

*Ecology Curriculum (NSF-IMD); (Prassede Calabi, PI). Co-PI*

*Hands-On Elementary Science (ED/FISE). Project director*

Other TERC projects:

*LabNet Project (NSF-TPE) (network manager); Global Laboratory Project (NSF-AAT)(curriculum developer); GLOBE (curriculum developer); Star Schools Project (Department of Education) (curriculum developer); Microcomputer-based Laboratory (NSF-AAT) (curriculum developer); Capsela (Software and curriculum developer)*

***Lesley College , Cambridge , MA***

1988-1993

Faculty for an adult-degree program, including s1 1 Tf [4ud

(updated 5/19)

- Ruopp, R., M. Pfister, B. Drayton, S. Gal (1993) "Supporting Teachers with Telecommunication: The Labnetwork." *Journal of Research in Rural Education* 9.1.
- Drayton, B. (1993) "The role of telecommunications in fostering a community of innovators." In G. Davies and B. Samways (Eds.) *IFPF Proceedings A 29: Teleteaching*. North-Holland: Amsterdam.
- Drayton, B. and R.B. Primack.(1996) Plant species lost in an isolated conservation area in Metropolitan Boston from 1894 to 1993. *Conservation Biology* 11(1):30-39.
- Drayton, B. and J.K. Falk (1997) What do the ecologists get from an innovative mentoring program with high school teachers? *Bulletin of the Ecological Society of America* 78(4):256-60.
- Primack, Richard B. and Brian Drayton (1997) The experimental ecology of reintroduction. *Plant Talk* 11:25-8
- Falk, J., J. Lochhead, G. Jacobs, B. Mooney, and B. Drayton (1999) TEECH Lessons Learned: strategies for facilitating communication in teacher enhancement. *Journal of Technology and Teacher Education* 7(4):271-8)
- Drayton, B. and R.B. Primack (1999). Experimental extinctions of garlic mustard (*Alliaria petiolata*) populations: implications for weed science and

Falk, J. and B. Drayton (2004) State testing and inquiry-based science: are the complementary or competing reforms? *Journal of Educational Change*.  
Drayton, Brian, Joni K. Falk, Rena Stroud, Kathryn Hobbs, and James

- Bernstein, D., B. Drayton, C. Schunn, and S. McKenney (in review)  
"Consequences of curricular adaptation strategies for implementation at scale".
- Drayton, Brian, Trevor Lloyd Evans, Gillian Puttick, Evan Dalton, and Abe Drayton (in review) Mechanisms for the mutual appropriation of goals in a partnership between educators and a field research station: boundaries and boundary objects.
- Falk, Joni, Debra Bernstein, and Brian Drayton (in review) Fostering video sharing and discourse among STEM educational researchers in a multimodal environment.

- Drayton, B. (1993) "Design for a science network." in Ruopp, R., S. Gal, B. Drayton, M. Pfister (Eds.). 1993 *LabNet: Towards a Community of Practice*. Englewood Cliffs, NJ: Lawrence Erlbaum; pages 145-197.
- Drayton, B. (1997) Reflection. In TERC, Inc. *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc. pp. 59-85.
- Drayton, B. and K. Flick (1997) Collaboration. in TERC, Inc. (*Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc. pp 86-100.
- Drayton, B. (1997) Finding and working with an ecologist. in TERC, Inc. *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC,

Falk, Joni, and Brian Drayton (2009). MSPnet: Design considerations for nested learning communities. in Falk, J. and B. Drayton, eds. *Creating and sustaining online professional learning communities*. New York: Teachers College Press. pp. 17-26.

Falk, Joni, Soo-Young Lee, and Brian Drayton (2009) Structuring a virtual conference to facilitate collaboration and reflective dialogue. in Falk, J. and B. Drayton, eds. *Creating and sustaining online professional learning communities*. New York: Teachers College Press. pp. 175-202.

Drayton, B. ( 2015) Introduction: Interrogating and Reconstructing Practice. Section ii: Present: Within institutions, Introduction. In Eryaman, M.Y. & Bruce, B. C., eds., *Handbook of Progressive Education*. New York: Peter Lang.

### C. Other

Drayton, B. (2006c) Introduction to Hugh Barbour, *Limits to the leadings of the Light*. Boston: Beacon Hill Friends House BHFH-93. pp. i-iii.

Drayton, B. 2009c. Introduction to *Revolutionary Quaker Witness: Learning from the Lamb's War of the 1650s.* by D. Gwyn. Boston: Beacon Hill Friends House BHFH-1012. pp.i-v.

Drayton, B. (2011b) Forward to Buckley, Paul., ed. *Dear Friend: Letters and essays of Elias Hicks*. San Francisco: Inner Light Books.

TERC.

<https://terc.edu/display/Library/Discourse+Analysis+of+Comments+on+a+Climate+Change+Op-Ed%2C+Part+2>

Drayton, B. and G. Puttick (2015) Digital design of "smart images": A design story. Research White Paper. Cambridge, MA: TERC.

Drayton, B., G. Puttick, A. Drayton, T Lloyd-Evans (2015) Co-inventing the Climate Lab: First lessons from an innovative partnership. *Hands On!* Spring 2015, pp. 3-5.

Drayton, B. (2017) Teacher knowing: Reflections on a student-teacher dialogue and implications for professional development. Cambridge, MA: TERC Working Paper.

<https://terc.edu/display/Library/Teacher+knowing%3A+Reflections+on+a+student-teacher+dialogue+and+implications+for+professional+development>

#### B. Textbooks:

Calabi, P., B. Drayton, and D. Pearlman (1997) *Ecology: A systems approach*. Dubuque, IA: Kendall/Hunt publishing company.

TERC, Inc. (2009) *Astrobiology*. Mt. Kisko, NY: It's About Time.

TERC, Inc. (2015) *Environmental science and biocomplexity*. Mount Kisco, NY: It's About Time Publishers.

Drayton, B. (1994) *Selections from the pastoral writings of James Nayler, with biographical sketch and notes*. Worcester, MA: Mosher Book and Tract Fund of New England Yearly Meeting of Friends.

Drayton, B. (1997) *Treasure in Earthen Vessels: Letters to Corinthians and New Englanders on Christian Unity*. Worcester, MA: Mosher Book and Tract Fund of New England Yearly Meeting of Friends.

Drayton, B. (2001) *Selected writings of James Nayler*. Second edition, revised and expanded, with new introduction. Worcester, MA: Mosher Book and Tract Fund of New England Yearly Meeting of Friends.

Drayton, B. (2006) *On living with a concern for Gospel ministry*. Philadelphia and Worcester, MA: Quaker Press in cooperation with Mosher Book and Tract Fund of New England Yearly Meeting.

Drayton, Brian (2007) *Unity, disunity, diversity OR Some mysteries of the Holy*



Drayton, Brian (2011) *James Nayler Speaking*. Wallingford, PA: Pendle Hill Publications, PHP 413.

Drayton, Brian (2011) Selections from the writings of James Nayler 3rd revised and expanded edition (electronic). Philadelphia:Quaker Press.

Drayton, B. (2012) *Climate change a spiritual challenge and Becoming again a*

- Drayton, Brian. (2005c) Book Review: *Tropical Rain Forests: An Ecological and Biogeographical Comparison*. *Rhodora* 107: 426-428.
- Drayton, B. (2004b) What's in a model? *Hands On!* 26(2): 8-11.
- Drayton, Brian (2007b) What's the problem? One key to more meaningful inquiry. In *Hands On!* 30(1):14-17.
- Drayton, B. (2004g) Darwin's journals, and yours. *Hands On!*27(1):18-20
- Pokress, S.C., J. Falk, and B. Drayton (2003) Eyes to the future. *Hands On!* 26(1) pg. 12-16.
- Drayton, B. (2004d) Review: Gilliam, F.S. and M.R. Roberts (2003) *The herbaceous layer in Forests of Eastern North America*. *Rhodora*.
- Drayton, Brian (2006d). Book Review -- *Demons in Eden: The Paradox of Plant Diversity*. *Rhodora* 108:294-295.
- Drayton, Brian (2006e) Book Review -- *Plant Conservation: A Natural History Approach*. *Rhodora* 108:296-298.
- Drayton, Brian and Bertram Bruce (2013) Editorial for *Progressive Education: Educating for Democracy and the Process of Authority*. In *International Journal of Progressive Education*, Special Issue 2013: *Progressive Education: Past, Present and Future* vol 9, #2 pp. 7-10.
- Drayton, B., G. Puttick, A. Drayton, T Lloyd-Evans (2015) Co-inventing the Climate Lab: First lessons from an innovative partnership. *Hands On!* Spring 2015, pp. 3-5.
- Drayton, B. (2016) Review: Dale Stokes, *The fish in the forest: Salmon and the web of life*. *Biological Conservation* , p. 36. DOI information: 10.1016/j.biocon.2015.11.011
- Drayton, B. (2016) Review: Askins, Robert A. *Saving the world's deciduous forests.: Ecological perspectives from East Asia, North America, and Europe*. *Biological Conservation*.

Drayton, B. (1979) "On Meeting for Business as Wocm BT 50 0 0 50 0m B(0.2 (yt) 0.2 (on, B. (19

- Drayton, Brian (1998) Being a recorded minister. Pendle Hill, Current Issues in Quakerism series, published on the World-Wide Web at <http://www.pendlehill.org/newpage11.htm>.
- Drayton, Brian (2000a) Review of *The Clouded Quaker Star: James Nayler 1618-1660*. *Friends Journal* 46(8): 24-27.
- Drayton, Brian (2000b) An historical note on recording gifts in the ministry. *New England Friend* 55(2): 2-5.
- Drayton, Brian (2000c) Advice to ministers. *New England Friend* 55(2):3
- Drayton, Brian (2008c) Nurturing the Seed of Christ. *Friends Bulletin*, April 2008, pp 15-16.
- Drayton, B. (2001d) Review of *David Ferris* (Grundy, M. ed). *Friends Journal* 47(11):27-29.
- Drayton, B. (2002a) Review: *British Quakerism 1860-1920: The transformation of a religious community*. *Quaker Life*.
- Drayton, B. (2002b). *Seekers Found*. (book review). *Friends Journal*. 48(1):28-31.
- Drayton, B. (2002c). Reading *Constantine's Sword*. (Book review). *Friends Journal* 48(2):28-29.
- Drayton, B. (2003a) Review: *Historical Dictionary of the Friends (Quakers)*. *Friends Journal* 49(11):26-31.
- Drayton, B. (2003b) Review: *Barclay's Apology for the true Christian Divinity*. FJ:
- Drayton, B. (2003c) Quaker writings: James Nayler.

- Drayton, B. 2009. Review: *The Beautiful Soul of John Woolman* by Thomas Savage. *Friends Journal*.
- Drayton, B. 2009b. Review: *Quakerism: a theology for our time* by Patricia A. Williams. *Friends Journal*.
- Drayton, Brian (2010a ) Review: *Works of James Nayler*, vol. 4. *Friends Journal*
- Drayton, Brian (2010b) Review: *James Nayler, from revolutionary to prophet* by David Neelon. *Friends Journal*.
- Drayton, Brian (2010c) Revie

- Drayton, B. (2018d) Book Review: *The Leveller Revolution: Radical political organisation in England, 1640-1650*. *Friends Journal* 64 (15)  
<https://www.friendsjournal.org/the-leveller-revolution-john-rees/>
- Drayton, B. (2018e) Book Review: *The Cambridge Companion to Quakerism*. *Friends Journal* 64 (16) pp. 22-3.

### ***Examples of Synergistic Activities***

1. Contribution to science of learning: with collaborator, led research seminar of leaders in the field of electronic communities of practice for professional learning, 2007, resulting in an edited volume: Falk, J., and B. Drayton, eds. (2009) *Creating and sustaining online professional learning communities*. New York: Teachers College Press.
2. *Biodiversity Counts* (1998) Served as advisory board member and consultant on curriculum development for an outreach program of the American Museum of Natural History.
3. Service to science outside TERC: Reviewer for manuscripts for science and science education journals 2005-present, including *Science Education*, *Biological Conservation*, *Teachers College Record*, *Rhodora*.
4. External member of Ph.D. Committee for Maria Lawrence, Lesley University Candidate in Science Education (2003), Dr. George Hein, Committee chair.
5. Invited Co-Editor, *International Journal of Progressive Education*, Special Issue 2013: *Progressive Education: Past, Present and Future vol 9, #2*.
6. Eryaman, M.Y. & Bruce, B. C., eds., *Handbook of Progressive Education*. New York: Peter Lang. Section Editor, Section 2. *ism*

- 1992 Spitzer, W. , Drayton, B, et al. "The Global Lab and Environmental Network Projects" Presentation at National Science Teachers Assoc. 3/92.
- 1992 Drayton, B. "The TERC LabNetwork: The community of practice as an agent of curriculum change in science teaching." Presentation at Assoc. of Supervisors and Curriculum Developers, New Orleans, LA 4/92.
- 1992 Drayton, B, R. Ruopp, S. Gal. "The community of practice as a locus for teacher change." Symposium at AERA annual meetings, San Francisco.
1993. "Friends and War Taxes: Faith and Practice." Presentation to Friends Meeting at Cambridge (MA), 5/7/93.
1993. "Changes in the Flora of the Middlesex Fells, 1894-1992." Poster presentation submitted to meeting of Society for Conservation Biology, Tempe AZ, 6/93.
1994. "Long term loss of species in an isolated forest reserve in Massachusetts." Presented to the Society for Conservation Biology and Organization for Tropical Biology joint meetings, Guadalajara, Mexico, 6/9/94.
1996. Drayton, Brian and Richard B. Primack. "Garlic mustard as a model system for the study of issues in plant reintroductions." Paper presented at annual meeting of Ecological Society of America, August 12, 1996, at Providence, RI.
1996. Drayton, Brian. The TEPE project: Lessons and Questions. Delivered at the Toronto meeting of NISE and the regional meeting of NSTA.
- Drayton, Brian (1996) Floristic change and conservation in the Middlesex Fells. Presentation to the Friends of the Fells annual meeting.
- Falk, J. K. & B. Drayton (1997). Dynamics of the relationships between teachers and scientists in an innovative mentorship collaboration. Paper presented to American Educational Research Assoc March, 1997.
- Falk, J.K., B. Drayton, G. Jacobs, and J. Lochhead (1997) TEECH: Forging an electronic community for leaders of teacher enhancement projects. Presented at Ed-Media/Ed-Telecomm Annual Meeting, Calgary Alberta, June 1997.
- Falk, J.K. and B. Drayton (1998) Before the innovation hits the classroom: teachers' self-image as an element of teacher enhancement. Paper presented to American Educational Research Assoc. annual meeting.
- Drayton, B, and J.K. Falk (1999) "Eyes to the future: middle-school girls envisioning science and math in high school and beyond." Presented to 1999 meeting of ICTE, Edinburgh March 1999.
- Drayton, B. and J.K. Falk (1999) Eyes to the Future: Initial results from an innovative mentoring program for middle school girls in math and science. Presented at AERA annual meeting, Montreal, April 1999.
- Drayton, B. and R.B. Primack. 1999. Experimental eradications of garlic mustard (*Alliaria petiolata*) populations: implications for weed science and conservation biology. Paper delivered at Yale Symposium on Biological Invasions, New Haven CT Feb. 1999.
- Drayton, B. and R.B. Primack (1999) Experimental creation of garlic mustard populations. Paper delivered at Yale Symposium on Biological Invasions, New Haven CT Feb. 1999.

Drayton, Brian and Joni Falk (1999) Dimensions that shape teacher-scientist collaborations for inquiry-based teacher enhancement. Paper presented at MOFET 1999.

educators and a field research station: boundaries and boundary objects.  
Presented at the North American Congress for Conservation Biology,  
Madison, WI, July 2016.

Bernstein Debra, Brian Drayton, Susan McKenney, and Christian Schunn (2017)  
Two strategies to support curricular adaptation for implementation at scale.  
Poster presented at ISDDE, Berkeley, November 2017.

Dalton, E., A. Kacal, T. Lloyd-Evans, and B. Drayton (2018) Climate Lab:  
Engaging Students through Relevant Climate Change Research. North  
American Assoc. of Environmental Educators. Seattle, WA. Oct. 2018.

B. Quaker and other  
(presentations and workshops)

1987 "The Historical Background of the Richmond Declaration of Faith."  
Presentation to a gathering of New England Friends at Worcester, MA, 6/87.

1993. "Images of Holiness: a Bible study." Workshop offered at New England  
Yearly Meeting of Friends, 8/93.

1993. "A historical note on Elders in the Society of Friends." For a meeting of the  
Committee on Ministry and Counsel of New England Yearly Meeting.  
(12/10/93).

1994. "Recorded Ministers: History, function, and present relevance." For a  
meeting of Salem Quarterly Meeting of Friends, 1/23/94.

1994. "Trends in Quaker history, from the beginning to 1994." Talk to Quaker  
Studies class, Dover Friends Meeting, 10/10/94.

1995. "Letters to Corinthians and New Englanders on Christian Unity: The 1995  
New England Yearly Meeting Bible Half-hours."

1996. "The Recorded Ministry." Lecture presented 10/21 at Pendle Hill,



- 2014 North Shore Friends Meeting retreat on climate change science and spirituality.
- 2014 Friends Center in Barnesville, OH. Gathering for ministers.
- 2014 Led weekend retreat at Pendle Hill (Wallingford, PA) with Fran Taber, on the "Language for the Inward Landscape."
- 2015a Friends Center, Barnesville OH for ministering Friends, drawing in part on my recent work with Dewsbury's writings. March
- 2015b a weekend retreat for West Hills Friends Church (Portland OR), and gathering at Multnomah Meeting on climate change action and spirituality.
- 2016 Annual Retreat at Friendship Monthly Meeting (North Carolina Yearly Meeting C) and led forum on recording of ministers.
- 2017a Putney (VT) meeting forum on recognizing ministers
- 2017b Presentation to Salem Quarterly Meeting on "Making a testimony happen"
- 2017c Presented the 2017 Willson Lectures on Quaker spirituality at Earlham School of Religion (March)
- 2017d Led spring retreat for Ohio Valley Yearly Meeting
- 2018a Oct. Ben Lomond Quaker Center.
- 2018b Oct. Lancaster (PA) Friends Meeting. Meeting retreat, forum on traditional Quaker language, and forum on climate change and spirituality.
- 2019 Friends Center, Barnesville OH for ministering Friends, drawing on the writings of Samuel Bownas. March

(In addition, numerous other workshops,