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### ***Education***

Boston University, Biology (Plant Ecology), Ph.D., 1999  
Boston University, Plant Ecology, M.A., 1993  
Harvard University, Linguistics, A.M., 1978 (Ph.D. not completed)  
Harvard College, Linguistics and Celtic, A.B., 1975

***Graduate Advisors (Harvard University):*** Prof. Calvert Watkins; Prof. Karl V. Teeter; Prof. Jochem Schindler.

***Graduate Advisors (Boston University):*** Prof. Solange Breault, UMass Boston, Prof. Frances Chew, Tufts University, Prof Thomas Kunz, Boston University.

***Thesis Advisor (Boston University):*** Prof Richard B Primack, Boston University

### ***Work Experience***

#### ***TERC, Cambridge, MA***

##### **Co-Director, Center for School Reform.**

##### **Principal Investigator/Project Director/Sr. Research Associate, 1986 – Present**

PI or PD, researcher, curriculum developer, and proposal writer for a variety of experimental projects, with an emphasis on curriculum and teacher change, and the use of telecommunications in support of educational reform. Proposal funding from National Science Foundation and US Dept of Education totalling (to date) >\$,000,000.

##### Proposals funded

*Environmental Innovation Challenges: Teaching and Learning Science Practices in the Context of Complex Earth Systems. (NSF DRL-1908117).* Co-PI. Gillian Puttick, PI. 4-year project to revise, expand, and research the use of crowd-sourcing methods for high school project-based learning about climate change mitigation and other environmental challenges.

*STEM Videohall (NSF DRL 1642187).* Co-PI. Joni Falk, PI. 3-year project to develop, implement, facilitate, and research an annual video showcase for federally funded STEM education projects.

*The Climate Lab (NSF DRL 1417202),* PI. Collaborative project with Manomet (Trevor Lloyd-Evans, PI), a conservation research institution, to develop a program to engage middle-school students in local phenological research as the basis for teaching about climate change.

*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, drawing on recent advances in research on coupled human-nonhuman systems. Co-PI: Gillian Puttick

*MSP-Net (NSF/MSP-0335334), MSPNet II (06-34149), MSPnet III (12-4055)* (Joni Falk, PI)  
Co-PI for long-term Infrastructure and Communications project to create and implement MSPnet, an electronic community to build capacity for MSP program and facilitate learning across the program.

*IGERTnet. (DGE0834992)*. (Joni Falk, PI) coPI for project to create and maintain electronic resource center for the IGERT program

*The Atlantic Partnership for the Biological Sciences (DUE/MSP 0928417)*. CoPI for MSP START project to develop a Math-Science Partnership for life sciences, with Salem (MA) State College and Universidad de Puerto Rico en Humacao. (Lisa Delissio, Salem State Univ. PI)

*Under the Microscope (NSF/REESE 0815190)*. PI of study synthesizing research literature on biological lab experiences grades 1-13. G. Puttick co-PI.

*Biocomplexity and the habitable planet (NSF/IMD0628171)* (Dr. Gillian Puttick, PI) Co-PI for 3.5 year project to develop a case-based, capstone course for high school, drawing on recent advances in research on coupled human-nonhuman systems

*Researching science in the wireless high school (NSF/TPC 0455795)*. PI. The study examines teachers' instructional choices and the role of school technology culture in pioneering wireless, 1-to-1 computing environments, to understand possible value added to science teaching and learning. Joni Falk, co-PI.

*Supporting and Understanding Sustainability in Local Systemic Change (NSF 00-88027)*

*The Inquiry-based Classroom in Context (NSF/REC 9804929)*. PI; Joni Falk, Co-PI.

*Eyes to the Future: Middle School Girls Envisioning Math, Science, and Technology in High School and Beyond (NSF/HRD 9906153)* (Joni Falk, PI). Co-PI.

*MSPnet RETA design (NSF/MSP)*. Co-PI (Joni Falk PI)

*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***

**Adjunct faculty**

1988-1993

Faculty for an adult-degree program, including study-planning and supervision. Studies supervised were in cognitive science and linguistics (including language history, social applications, and propaganda), life and physical sciences, religion and church history.

***LISP Machine, Inc.***

**Software instructor**

1984-1986

Developed and taught intensive customer-training courses on programming with the LISP Machine. I also had some supervisory responsibility for the Education Division.

***New England Friends Home***

**Director**

1981-1984

Director for small, Level IV rest home on Boston's South Shore. I was responsible for all aspects of the Home's operation: financial management and fund raising, community relations, personnel, medical oversight, regulatory compliance, licensing, maintenance, and so forth.

***Editor***

**Freelance editor**

1978-1981

Edited newsletters, dissertations, books, and articles in a range of subjects for individuals and institutions in the Boston area.

**Publications and presentations**  
(updated 5/19)

**Publications**

**1. Peer-Reviewed articles: Science and education**

- 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 conservation biology. *Biological Invasions*1( 2-3):159-167.
- Drayton, B. and J.K. Falk (2001) Tell-tale signs of the Inquiry-oriented classroom. *Bulletin of the National Assoc. of Secondary School Principals*. 85 (623): 24-34.
- Drayton, B. (2001b). A new record for *Alliaria petiolata* (Brassicaceae) in Hillsborough County, New Hampshire. *Rhodora* 103 (915):323-325.
- Drayton, B, and J. Falk (2002) Inquiry-oriented science as a feature of your school system: What does it take? *Science Educator* 11(1):8-17.
- Drayton, B. and J. Falk (2003) Discourse analysis of web texts: initial results from a telementoring project for middle-school girls. *Education, communication, and information* 2(3):71-104.
- Drayton, B. and R.B. Primack (2000a) Rates of success in the reintroduction by four methods of several perennial plant species in eastern Massachusetts. *Rhodora* 102, No. 911:299-331.
- Drayton, B., and R.B. Primack (2000b) Reply to Rejmánek, 'On the use and misuse of transition matrices in plant population biology.' *Biological Invasions* 2:319.
- Drayton, B. and J. Falk (2006c) Dimensions that shape teacher-scientist collaborations for teacher enhancement. *Science Education* 90: 743-761.

- 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 Hammerman (2009) After Installation: Ubiquitous Computing and High School Science in Three Experienced, High-Technology Schools. *Journal of Technology, Learning, and Assessment*. 9.3.  
<http://escholarship.bc.edu/jtla/vol9/3/>
- Primack, R. B. and B. Drayton (2011). Editorial: An Important Review of Plant Reintroductions. *Biological Conservation* 144:666.
- Drayton, Brian and Richard B. Primack (2012) Success rates for reintroductions of eight perennial species after fifteen years. *Restoration Ecology* Vol. 20, No. 3, pp. 299–303.
- Primack, R.B., A.J. Miller-Rushing, and B. Drayton. 2014. Reply to Angelo: Declines in species in Thoreau's Concord and the Middlesex Fells, Massachusetts, USA. *Phytoneuron* 2014-61: 1–5.
- Stroud, R., B. Drayton, J Falk (2014) Interactive Whiteboard Use in High-Tech Science Classrooms: Technology Adoption and Integration. *International Journal of Emerging Technologies in Education*. 9(9). <http://online-journals.org/index.php/i-jet/index>
- Puttick, G., B. Drayton, and E. Cohen (2015) A study of the literature on lab-based instruction in Biology. *American Biology Teacher* 77 (1): 12-1
- Puttick, G and B. Drayton (2015). Digital curriculum in the classroom: Authority, control, and teacher role. *International Journal on Emerging Technologies in Learning*. December issue.
- Drayton, B. and G. Puttick (2016) Digital design of "smart images": A design story. *Educational Designer*. 3:9.  
<http://educationaldesigner.org/ed/volume3/issue9/article32/index.htm>
- Bernstein, D., B. Drayton, S. McKenney, and C. Schunn (2016) Designing Science Curriculum for Implementation at Scale: Considerations for Diverse and Resource-Limited Settings. *Proceedings of the ICLS 2016*, Singapore: pp 886-889. <https://doi.dx.org/10.22318/icls2016.128>
- Puttick, G. and B. Drayton (2017) Biocomplexity: Aligning an "NGSS-ready" curriculum with NGSS performance expectations. *American Biology Teacher* Vol. 79, No 5, pages. 344–349.
- Puttick, G., B. Drayton, and A.G. Drayton (2017) Innovate to Mitigate: Science Learning in an Open-innovation Challenge for High School Students. *Sustainability in Environment* Vol. 2, No. 4, 2017. URL:  
<http://dx.doi.org/10.22158/se.v2n4p389>
- Drayton, B., and G. Puttick (2018) Innovate to Mitigate: Learning as activity in a team of high school students addressing a climate mitigation challenge. *Sustainability in Environment* 3(1). URL:  
<http://dx.doi.org/10.22158/se.v3n1p1>.
- Bopardikar, A., D. Bernstein, S. McKenney, and B. Drayton (2018) Work-based curriculum to broaden learners' participation in science: Insights for designers. *Research in Science Education*. <https://doi.org/10.1007/s11165-018-9731-x>

- 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.

## 2. Book chapters

### A. Science and education

- 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, Inc. pp 100-107.
- Drayton, B. (1997) Contracts. in TERC, Inc. *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc. pp 108-115.
- Drayton, B. (1997) Workshops. in TERC, Inc. *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc. pp 116-122.
- Drayton, B. and J. Falk (1997) Learning from your workshops: Feedback and evaluation. in TERC, Inc. *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc. pp 132-146.
- Calabi, P., B. Drayton, and K. Flick (1997) Variations on the model: 3 Daughter Institute Cases. in TERC, Inc. *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc. pp 154-179.
- Primack, Richard B. and Brian Drayton (1999a) Community and population perspectives in ecosystem management. In. Maltby, E., M. Holdgate, M. Acreman, and A. Weir, eds. *Ecosystem Management: Questions for science and society*. Virginia Water, U.K.: Royal Holloway Inst. For Environmental research. pp. 77-82.
- Primack, R.B. and B. Drayton (1999b). Reintroduction as a conservation tool. In: J. Gibbs, M. Hunter, and E. Sterling. *Problem-solving in conservation biology and wildlife management*. Blackwell Science: Boston.
- Drayton, Brian and Joni Falk (2009) Introduction. in Falk, J. and B. Drayton, eds. *Creating and sustaining online professional learning communities*. New York: Teachers College Press. pp1-14
- Drayton, Brian, Jon Obuchowski, and Joni Falk (2009). Epilogue. in Falk, J. and B. Drayton, eds. *Creating and sustaining online professional learning communities*. New York: Teachers College Press. pp. 203-218

- 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.

## **3. Books and white papers**

### **A. Science and education**

- Ruopp, R., S. Gal, B. Drayton, M. Pfister (Eds.). (1993) *LabNet: Towards a Community of Practice*. Englewood Cliffs, NJ: Lawrence Erlbaum.
- TERC, Inc. (1997) *Teacher Enhancement in Pedagogy and Ecology*. Cambridge, MA : TERC, Inc.
- Drayton, B. 1999. *The experimental ecology of plant species reintroductions*. Ph.D. dissertation, Boston University.
- Falk, J. and B. Drayton, eds. (2009) *Creating and sustaining online professional learning communities*. New York: Teachers College Press.
- Drayton, Brian, Joni K. Falk, Rena Stroud, Kathryn Hobbs, and James Hammerman. (Jan. 2010). *The Test of Time: Ubiquitous computing visions and realities in 7 pioneering schools*. White paper. Cambridge, MA: TERC, Inc.
- Drayton, B., G. Puttick, and M. Donovan (2012) *Under the Microscope: Review of the research on biological lab experiences 1987-2007, A Research White Paper*. Cambridge, MA: TERC, Inc. <http://www.terc.edu>.
- Drayton, B. and G. Puttick (2015) Digital design of "smart images": A design story. Research White Paper. Cambridge, MA: TERC.
- Drayton, B. (2015a) Discourse analysis of comments on a climate change op-ed. Part 2. Working Papers from the Life Sciences Initiative. Cambridge, MA: TERC.  
<https://terc.edu/display/Library/Discourse+Analysis+of+Comments+on+a+Climate+Change+Op-Ed%2C+Part+1>
- Drayton, B. (2015b) Discourse analysis of comments on a climate change op-ed. Part 2. Working Papers from the Life Sciences Initiative. Cambridge, MA:

- 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.

**B. Quaker**

- 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 Spirit's LIFE at work in its body's members. A letter to New England Friends*. Boston: Beacon Hill Friends House.
- Drayton, Brian (2007) *Getting Rooted: Living in the Cross a path to joy and liberation* Pendle Hill Pamphlet #393. Wallingford, PA: Pendle Hill Publications.
- Drayton, Brian, Benigno Sanchez-Eppler, and Susan Furry (2008) *Fragmentos de los escritos de James Nayler*. Basado en una edicion de Brian Drayton. Traducida por B. S-E and S. F. Spanish translation, with new introduction and additional texts. of Drayton (2001). Boston: Beacon Hill Friends House and Worcester: New England Yearly Meeting of Friends.

- 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 witnessing body: Two letters to New England Friends*. Boston: Beacon Hill Friends House. Quaker Issues BHFH-1013.
- Drayton, B. and W. P. Taber, Jr. (2016) *A language for the inward landscape*. Philadelphia: Tract Association of Friends.
- Drayton, B. (2019) *On living with a concern for Gospel ministry*. 2nd edition revised and expanded. Philadelphia: Quaker Press.

#### 4. Other (Articles and reviews)

##### A. Science and education

- Drayton, B. (1987) Review of *Using Graphics to Learn Basic Programming* (by T. Barclay) in *Hands On!*.
- Drayton, B. (1993) Review of Shugart et al. *Vegetation Dynamics and Global Change*. *Plant Science Bulletin* 39(3) pp. 27-9.
- Drayton, B. (1993) "Reflections of a curriculum writer." *Hands On!* 16.2, Fall, 1993.
- Drayton, B. (1994b) Review of Mark Plotkin *Tales of a Shaman's Apprentice*. *Conservation Biology*. 8(3):
- Drayton, B. (1995) Review of D. Ehrenfeld (ed) 1995. *Genes, Species, and Populations: Readings from Conservation Biology*. Cambridge, MA: Blackwell Science, Inc. *Plant Science Bulletin*. 41(4):96-7.
- Calabi, Prassede and Brian Drayton. (1996) Symbiotic Relationships: Teachers and ecologists. *Hands On!* 19(1): 15-16.
- Drayton, B. (1996) Review of D. R. Given (1995) *Principles and practice of plant conservation*. Portland OR: Timber Press and Frankel, Otto et al. 1995. *The conservation of plant biodiversity*. Cambridge: at the University Press. *Conservation Biology* 10(2): 690.
- Drayton, B. (1997b ) Review of Falk, Donald A., Constance J. Millar, and Margaret Olwell (Eds). *Restoring Diversity: Strategies for reintroduction of endangered plants* Island Press. *Plant Science Bulletin*. 43(2):33.
- Falk, J.K and B. Drayton (1998a) Many Futures: Mentoring Middle School Girls. *Hands On!* 21(3):24-28.
- Falk, Joni, Brian Drayton, Clare Crawford, and Jon Obuchowski (1999) Eyes to the Future: A Multi-Age Mentoring Program for Girls. *Leadership and New Technologies Perspectives*, issue 8, April 1999.
- Drayton, B. (1992) "Long-term Plant Responses to environmental change." in *Hands On!* 15.1 Spring 1992
- Falk, J.K. and B. Drayton (2000) Cultivating a culture of inquiry. *Hands On!* 23(2): pp. 1 and 16-19.
- Drayton, B. (2001c) Review of *Wildflowers of Maine, New Hampshire, and Vermont, in color*. by Alan E. Besette, Arleen Rainis Besette, William Chapman, and Valerie Conley Chapman. *Plant Science Bulletin* 47(4):175.

- 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*.

## B. Quaker and other

- Drayton, B. (1979) "On Meeting for Business as Worship." *Quaker Life* 4/79.
- Drayton, B. (1983) Review of *South Africa: Challenge and Hope* (American Friends Service Cttee). *Peacework* 1/83.
- Drayton, B. (1984) Review of *Enjoy Old Age* (by B.F. Skinner) in *Friends Journal*.
- Drayton, B. (1986) Review of *The Eye of Faith: A history of Ohio Yearly Meeting* (by W.P. Taber) *Friends Journal* 32.7 (11/15/86).
- Drayton, B. (1988) Living epistles. *New England Friend* 43(2)1, 5)
- Drayton, B. (1990) "On Solid Sitting." *Friends Journal* 36.3 (3/90)
- Drayton, B. (1990)"On Opportunities." *Friends Journal* 36.9 (9/90)
- Drayton, B. (1993) "On feeling a sustained call to the ministry." *New England Friend*, 3/93.
- Drayton, B. (1993) Review of Noam Chomsky: *Year 501*, for *Friends Journal*, August 1993.

- 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. *Friends Journal*. 49(12)28-9.
- Drayton, B., (2004a) Review: *Works of James Nayler, vol. 1*. *Friends Journal* 50(2): 28-31.
- Drayton (2004c) Quaker writings: Douglas Steere. *Friends Journal* 50 (3):
- Drayton, B (2004e) Reflections on being clerk of a small meeting. *FGC Connections*, Spring 2004, pg. 5.
- Drayton, B. (2004f) Quaker Writings: Margaret Fell. *Friends Journal* 50 (5):
- Drayton, B. (2004 h) Quaker writings: Katherine Lonsdale. *Friends Journal* 50().
- Drayton, B. (2004i) Quaker writings: Mary Penington. *Friends Journal* 50(12)
- Drayton, B. (2005a) Quaker writings: Rufus Jones. *Friends Journal* 51(11): 26-7. November 2005.
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- Drayton, B. (2005c) Review: *Works of James Nayler, vol. 2*. *Friends Journal*, Sept. pg. 28.
- Drayton, B. (2006b) Quaker writings: Thomas Kelly. *Friends Journal* 52(2). x:y February.
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- Drayton, Brian (2008a) Review of Alister McGrath. 2007. *Christianity's dangerous idea: The Protestant revolution — a history from the sixteenth century to the twenty-first*. *Quaker Life*.
- Drayton, Brian (2008b) Review: *Works of James Nayler, vol. 3*. *Friends Journal*

- 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) Review: *The Journal of Elias Hicks*. Edited by Paul Buckley. *Friends Journal*.
- Drayton, Brian (2011a) The sign of Jonah and the witness of Friends today. *Friends Journal* 57(1): 19-21.
- Drayton, B. (2011c) Review: *The concurrence and unanimity of the Quakers*. in *Friends Journal* Nov. 2011 issue.
- Drayton, B. (2011d) Why climate change is a spiritual challenge. *BeFriending Creation* 24(6) pp 1ff.
- Drayton, Brian (2012a) Review of *Tender and Broken*. Margery Post Abbot. in *Friends Journal*.
- Drayton, Brian (2013a) *Solid Sitting*. Philadelphia: Tract Association of Friends.
- Drayton, Brian (2013b) *Selections from the writings of James Nayler*. Philadelphia: Quaker Press. [electronic book]
- Drayton, Brian (2013b) Fossil fuel investment and Quaker witness. in *BeFriending Creation* 25(5) Nov-Dec. 2013.  
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- Drayton, Brian (2014a) Review: *The Oxford Handbook of Quaker Studies*. *Friends Journal*.
- Drayton, Brian (2014 b) Review: The power of just doing stuff. *Friends Journal*
- Drayton, Brian (2014c) Review: *Thank you, Anarchy*. *Friends Journal*.
- Drayton, B. (2016a) Review: Early Quakers and their theological thought, Stephen Angell and Ben Dandelion, eds, *Friends Journal* (Feb. 2016)  
<http://www.friendsjournal.org/early-quakers-and-their-theological-thought-1647-1723/>
- Drayton, B. (2016b) Friends gather for the second Climate Spring. *New England Friend* (Feb 2016) <http://www.neym.org/newsletter/friends-gather-second-climate-spring>.
- Drayton, B. (2017) *Inner Peace and the Right Use of Media*. Philadelphia: Tract Association of Friends.
- Drayton, B. (2018a) Book Review: *Being Quaker... Where you are: A journey among isolated Friends in the Northwest*. by S.K. Edson. 2017. Western Friend. *Friends Journal* 64(2):31-2.
- Drayton, B. (2018b) Book Review: *A seeker's theology: Christianity reinterpreted as mysticism*. *Friends Journal* 64.  
<https://www.friendsjournal.org/seekers-theology-christianity-reinterpreted-mysticism/>
- Drayton, B. (2018c) Book Review: *The meaning of belief: Religion from an atheist's point of view*. *Friends Journal* 64.  
<https://www.friendsjournal.org/the-meaning-of-belief-religion-from-an-atheists-point-of-view/>

- 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.
7. Blogs. *Bloghaunter.wordpress.com*, a blog on science education, education reform, and related topics. *Amorvincat.wordpress.com*, a blog on Quaker history, spirituality, and theology, and related topics.

***Collaborators (outside TERC):*** Richard B. Primack, Boston University; Trevor Lloyd-Evans, Manomet Center for Conservation Sciences; George Hein, Lesley University; Lisa DeLissio, Salem State College; Louis Gomez, Northwestern University, John Janovy, University of Nebraska; Alan Berkowitz, Institute for Ecosystem Studies; Steward Pickett, Institute for Ecosystem Studies; Bertram C. Bruce, University of Illinois; Robert Tinker, Concord Consortium; Tina Grotzer, Graduate School of Education, Harvard University.

### **Conference Presentations**

(List not complete.)

#### **A. Science and education**

- 1991 "Global Laboratory -- an experiment in collaborative science." Presentation at Assoc. for Supervisors and Curriculum Developers Annual Meeting, April 1991, San Francisco.

- 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.
- Falk, Joni, and Brian Drayton. 1999. Local Systemic Change Network: From Policy to Enactment. Paper presented at MOFET 1999.
- Falk, Joni and Brian Drayton (2000) The Inquiry-based Classroom in Context: Bridging the Gap Between Teacher's Practice and Policy Mandates. Presented at American Educational Research Assoc. annual meeting, New Orleans, April 2000.
- Drayton, B. and Falk, J. (2001) Effects of MCAS on middle-school science teaching. Presentation to Forum on the Impact of high stakes tests on science and math teaching. Biophysical Society Annual Meeting, Boston, MA., February 17, 2001.
- Drayton, B. and J. Falk (2001b) Reforms in collision: overlapping mandates and systemic strategies in six Massachusetts districts. Paper to be presented to AERA annual meeting, April 2001.
- Pierce, N.T., B. Drayton, and P. Calabi. (1996) Ecological research and pedagogical change: A program evaluation study. Paper presented at the Annual Meeting of the American Educational Research Assoc. at New York, April 1996.
- Falk, Joni and Brian Drayton (1998b) Before the Innovation hits the classroom: altering teachers' self-image as an element of teacher enhancement. Paper presented to AERA annual meeting 1998.
- Drayton, Brian and Joni Falk (1999b) Eyes to the Future: Initial results from an innovative mentoring program for middle-school girls in math and science. Paper presented to the American Educational Research Assoc., Montreal, April 1999.
- Drayton, Brian and Joni Falk (1999b) Dimensions that shape teacher-scientist collaborations for inquiry-based teacher enhancement. Paper presented at MOFET 1999.
- Falk, Joni, and Brian Drayton. (1999) Local Systemic Change Network: From Policy to Enactment. Paper presented at MOFET 1999.
- Falk, Joni and Brian Drayton (2000) The Inquiry-based Classroom in Context: Bridging the Gap Between Teacher's Practice and Policy Mandates. Paper to be presented at American Educational Research Assoc. annual meeting, New Orleans, April 2000.
- Drayton, Brian, Joni Falk, Rena Stroud (2010) Chemistry Teachers in 11 Ubiquitous Computing Classrooms: Technology Use and Pedagogical Choices. Paper presented at American Educational Research Assoc. annual meeting, April 2011.
- Drayton, Brian, Gilly Puttick, and Meaghan Donovan (2012) Under the Microscope: Review of the research on biological lab experiences 1987-2007. Paper presented to AERA annual meeting, Vancouver, BC, April 2013
- Stroud, Rena, Brian Drayton, and Joni Falk (2012) Interactive Whiteboard Use in High Tech Science Classrooms: Technology Adoption and Integration. Paper presented to AERA annual meeting, Vancouver, BC, April 2013.
- Drayton, B, T. Lloyd-Evans, G. Puttick, E. Dalton, and A. Drayton (2016) Mechanisms for the mutual appropriation of goals in a partnership between

- 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 ISSDDE, 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,  
Wallingford, PA.
- 1997 Dover QM: "Reflections on Quarterly Meetings"
2004. "Job Scott," presentation for New England Quaker history session of  
Friends General Conference.
2005. Three sessions for Quaker Studies, Salem QM: [1] "Beyond 'that of God':  
the theology of Quaker social action"; [2] "Varieties of Friends in New  
England"; and [3] "Quakerism in 25 years."
2005. North Carolina YM (C) "The Bible for early Friends and modern."
- 2005 Ohio YM "Finding a whole Gospel for the 21<sup>st</sup> century"
2006. Reflecting on Richmond's *Signs of Salvation*. Presentation to the Quaker  
Theological Discussion Group.
- 2012 Vassalboro MM, "On the state of Society."
- 2012 Friends Center in Barnesville, OH, on the topic "Speaking of Christ in  
liberal meetings.
- 2012 Friends Center in Barnesville, OH. Workshop: A language for the inward  
landscape
- 2013 Friends Center in Barnesville, OH. retreat: Gathering for ministering  
Friends.
- 2013 Illinois Yearly Meeting (McNabb, IL): "Joy in troubled times."
- 2013 Falmouth QM (NEYM): "Recognizing gifts."

- 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. "A weekend with Isaac Penington."
- 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, addresses at local and regional gatherings, and at retreat centers, regional gatherings of ministering Friends, and on-line courses).