

## **CURRICULUM VITAE**

**Peter John Taylor**

Professor, College of Education and Human Development  
Director, Graduate Program in Critical & Creative Thinking  
Director, Program on Science, Technology & Values  
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## **AREAS OF RESEARCH AND TEACHING**

Critical Thinking and Reflective Practice, especially about  
Innovation in Teaching, Group Process, and Interdisciplinary Collaboration  
Social Analysis of Ecological Change  
Social Epidemiology and Human Life-course Development  
Science in its Social Context

## **EDUCATION**

Ph.D., Organismic & Evolutionary Biology, Harvard University, 1985  
Dissertation: "Construction and turnover in multispecies communities: A critique of approaches to ecological complexity"

B.Sc.(Hons.), Monash University, Australia, 1975  
Majors in Biomathematics and Zoology

## **POSITIONS HELD**

Graduate Program Director/Coordinator/Faculty Advisor, Program in Critical & Creative Thinking, University of Massachusetts Boston, 1999-2004, 2007-; Coordinator of Science in a Changing World track, 2009-

Professor, 2006-; Associate Professor, 2002-6; Assistant Professor, 1998-2002, University of Massachusetts Boston

Visiting Professor, School of Forestry and Environmental Studies, Yale University, 2003

Adjunct Professor, Department of Environmental, Coastal and Ocean Sciences, 2002-4

Eugene Lang Visiting Professor for Social Change, Swarthmore College, 1997-98

Rockefeller Fellow, Rutgers University, Center for the Critical Analysis of Contemporary Culture, 1996-97

Assistant Professor, Cornell University, Program on Science, Technology & Society 1990-91; Department of Science & Technology Studies, 1991-97

Research Collaborator, Grupo de Estudios sobre Instituciones Agrarias y Recursos Ambientales, Departamento de Economía, Centro de Investigación y Docencia Económicas, Mexico, 1992-97

Visiting Professor, Centro de Investigación y Docencia Económicas and Centro de Ecología, U.N.A.M., Mexico, 1992, 1993

Senior Ecologist, Biosystems Analysis, Tiburon, CA, 1989-90

Wantrup Fellow in Natural Resource Economics, University of California, Berkeley, 1987-89

Guest Lecturer, University of Helsinki & Academy of Finland, 1988

Research Associate, Museum of Comparative Zoology, Harvard University, 1985-87

Faculty, New School for Social Research, Lang College Science, Technology and Power Program, 1986-87

Teaching faculty, Harvard University Summer School, 1986-87

Mellon Fellow, Science, Technology & Society, M.I.T., 1985-86

Teaching fellow and tutor, Harvard University, Biology, History of Science and the Core Curriculum, 1981-85

Summer Research Associate, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, 1984

Course development consultant, Royal Melbourne Institute of Technology, Australia, Socio-environmental assessment program, 1982

Marine Ecosystems Research Group, Harvard School of Public Health, 1980-82

Graduate Research Assistant, Institute of Applied Economic and Social Research, University of Melbourne, Australia, 1978-79

Senior Research Assistant, Agriculture Dept., University of Queensland, 1976-77

Tutor, Monash University, Australia, Statistics, 1975

## TEACHING EXPERIENCE

### *University of Massachusetts, Boston*

Thinking, Learning and Computers

Processes of Research and Engagement (formerly, Practicum)

Critical Thinking

Science-in-society [Seminar in Critical Thinking]

Action Research for Educational, Professional, and Personal Change (formerly, Evaluation of Educational Change)

Synthesis of Theory and Practice

Computers, Technology and Education

Environment, Science, and Society [Critical and Creative Thinking in Science and Technology]

Making Sense of Numbers [Seminar in Critical Thinking]

Biology in Society: Critical Thinking

Politics and the Environment

Scientific and Political Change (formerly, Science, Technology and Public Policy)

Epidemiological Thinking and Population Health (formerly, Pathways of Disease and Development: Epidemiological Thinking for Non-Specialists)

Reflective Practice

Gender, Race, and the Complexities of Science and Technology

Creative Thinking, Collaboration, and Organizational Change

Creative Thinking

Cognitive Psychology

Design for Living Complexities

Changing Life: Reading the Intersections of Gender, Race, Biology, and Literature

Mathematical Thinking

*Cornell University*

Biology and Society: The Social Construction of Life  
Social Analysis of Ecological Change  
Investigative Research on the Social Impact of Science  
Statistical Analysis for the Life Sciences  
Science and Social Theory (Themes: Structure & agency; Changing ideas of nature)  
Ecology and Social Change (Freshman writing seminar)  
Visualizing the Dynamics of Science

Graduate student committees and independent studies in History & Philosophy of Science & Technology, Science & Technology Studies, Development Sociology, Professional Studies, City and Regional Planning, Natural Resources

Faculty Mentor for Graduate student teaching freshman writing seminars, 1992-96.

*Other courses taught at other Institutions:*

Ecologists as social critics  
Interpreting Nature and Society in the Twentieth Century  
Social Constructions of Nature  
Making sense of measurement: A critical introduction to statistics  
Evolution: Synthesis and controversy in biology  
Critical Scholarship and Practice in Conservation and Development

**GRANTS, FELLOWSHIPS & AWARDS**

International Society for History, Philosophy and Social Studies of Biology, Off-Year Workshop designation and Graduate Student funding for New England Workshop on Science and Social Change, 2014

Fulbright Scholar, Portugal, 2012

Office of International Transnational Affairs, University of Massachusetts, Boston, Faculty Study Abroad Grant, 2011

Visiting Fellowship, Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria, 2008 & 2010

Chancellor's Award for Distinguished Teaching, University of Massachusetts, Boston, 2009

NSF Grant, "The Implications of Heterogeneity for the Philosophy, History, Sociology, and Science of Biological Determinism" (PI, \$17,755), 2006-9

NSF Grant, "Ecological Research and the Complexities of Participation in Social and Environmental Change" (PI, \$14,400), 2005-9

NSF Grant, "New England Workshop on Science and Social Change" (PI, \$6,000), 2004-5

NSF Grant, "Genes, Gestation, and Life Experiences: A Critical Comparison of Concepts and Methods Used in Analyses of Biosocial Development" (PI, \$71,670), 2003-5

Visiting Scholar, Pembroke Center for Teaching and Research on Women, Brown University, 2002-03.

Instructional Technology Center, Senior Fellowship, University of Massachusetts Boston, 2002.

Public Service grant, University of Massachusetts Boston, 2001.

Healy grant for Proposal Development, University of Massachusetts Boston, 2000.

Faculty Seminar Participant, Center for Improvement of Teaching, University of Massachusetts Boston, 1999.

STEMTEC grant for Science in Society workshops, 1999.

Visiting Fellowship, Agrarian Studies Program, Yale University, 1998 (declined)

Rockefeller Fellowship, Center for Critical Analysis of Contemporary Culture, Rutgers University, 1996

American Council of Learned Societies, International Travel Award, 1995

Summer travel grants, Cornell International Institute for Food Agriculture and Development, 1992, 1993

Hewlett Fund, Cornell Center for Environmental Research, Seed Grant for Program on Social Analysis of Environmental Change, 1990

Visiting Lectureship, Academy of Finland, 1988

Wantrup Fellowship, University of California, Berkeley, 1987, 1988

National Research Council nominee to the 8th International Congress for Logic, Methodology & Philosophy of Science

Mellon Fellowship, Science, Technology & Society Program, M.I.T., 1985

Harvard University Committee on Undergraduate Education, Certificate of Distinction in Teaching, 1985

Summer Research Fellowship, Oak Ridge National Laboratory, 1984

## PROFESSIONAL ACTIVITIES

### **University of Massachusetts, Boston:**

Critical & Creative Thinking Program, Graduate Program Director/Coordinator, 1999-2004, 2007-  
Admissions Committee, 1998-2005; 2009-  
Coordinator, "Science in a Changing World" track, 2009-  
Organizer of "Critical and Creative Thinking in the Workplace" Workshops/Course, 2001  
Organizer of "Critical and Creative Thinking in Practice" Forum and Workshops, 1999-2004  
Co-organizer of "Critical and Creative Thinking Network" monthly events and online social network,  
2007-  
Search Committee for staff and faculty positions, 2009, 2014  
Editor, Working Papers in Critical, Creative, and Reflective Practice, and in Science in a Changing  
World  
Curriculum & Instruction Department, (Co-)coordinator/director, Learning, Teaching and Educational  
Transformation (non-licensure) M.Ed. track, 2008-12  
Departmental Curriculum Committee, Co-chair, 2007-8  
Chair 2006-7, Associate Chair 2007  
Executive Committee 2005-6  
Personnel Review Committees, 2005- (incl. Chair 2005, 08-10, 14, 15)  
Search Committee for faculty positions, 2001, 2004, 2005-6, 2010-11  
Departmental Annual Faculty Review Sub-Committee, Chair 1999-2000, 2013-14; Member 1999-  
2000, 2007-8  
Organizer, Brown bag series, 2008  
College of Education and Human Development (formerly: Graduate College of Education)  
Promotion Review Committee, External member, 2013

College Personnel Committee, 2002-4, 08-10, 12-13; Chair 2003; Co/chair 2008-10  
Academic Affairs & Curriculum Committee, Chair 2000-2, 2005-6  
MEET Educational Technology Fellow, 2001-2  
Dean's Task Force on Educational Technology, 2000-2

College of Advancing and Professional Studies  
Steering Committee, 2013-15, 2018-  
College Personnel Committee, chair, 2014-  
Curriculum Committee, 2013-2015

University  
SSRC grant on "Transdisciplinary research," Proposal review committee member, 2017  
Public Policy Ph. D. Program, Associate member, 2004-; Academic Affairs Committee, 2008-11;  
12-16; Admissions Committee, 2017  
Strategic Plan Implementation committee on Quality of Graduate Programs, 2016  
Graduate Writing Center working group, 2013-14; Workshop designer & leader: "Supporting  
students' writing development throughout the graduate curriculum," 2014  
NEASC Self-study group on Faculty, 2013-4  
Selection Committee, Assistant Dean, Graduate Studies and Admissions, 2013  
Selection Committee, Chancellor's Award for Distinguished Teaching, Chair 2010  
Science, Technology, and Values Program, Advisory Board, 1998-; Assistant to Director, 2002-3;  
Director, 2004-  
Inter-college faculty Seminar in Humanities and Sciences (semester-long thematic seminars),  
Organizer, 2003-  
Faculty Council, Budget and Planning Committee, 2009-10  
Environmental Studies program, Advisory Board, 2004-8 (co-chair, 2006-7)  
Environmental Council, 2002-4  
Chancellor's Committee on Sustainability, Chair, Sub-committee on "Infusing Sustainability into the  
Curriculum," 2002-5; Co-organizer, Faculty development workshops, 2003.  
Provost's Task Force on Environmental Affairs, 2000  
Co-chair of site-visit and proposal group that secured Ford Foundation funding for a New England  
Center for Inclusive Teaching (NECIT), 2002  
Committee to establish General Science Degree, 1999  
Committee to establish M.Ed. in Science & Math. Teaching, 1998-99  
Organizer/leader of workshops, "Science-in-Society, Society-in-science," "Helping Each Other to  
Foster Critical Thinking about Biology and Society," "New Directions in Science Education,"  
"Helping Each Other to Foster Critical Thinking about Environment, Science, and Society,"  
1998-2002

**Beyond the Campus:**

**Science as Culture**, editorial board, 1997-2018; associate editor, 2018-; guest co-editor for special edition  
on "Ecological science and Environmental Politics," 1997-98; guest editor for Forum on "From  
radical science to STS."

Society for Social Studies of Science: Organizer of sessions "Lives in STS 'as a series of failed political  
experiments'" 2018; "Heterogeneity and heritability: Responses from sociology, philosophy, and  
history of science" 2006; "Representing and engaging with unruly processes" 2005; "Interpreting  
research on the complexity of changing disease patterns," 2004; "Social interactions in the  
production of epidemiology," 2002; "Ecological politics as cultural discourse," 1998.

Organizer, New England Workshop on Science and Social Change, 2003-; Workshops on "Complexities of  
environment and development in the Age of DNA," 2004; "How complexities of the social  
environment shape the ways that society makes use of knowledge about 'genetic' conditions,"  
2005, "Ecological restoration as social reconstruction," 2006; "Collaborative generation of  
environmental knowledge and inquiry," 2007; "Science-in-society: Teaching and engaging across  
boundaries," 2008; "Heterogeneity and Development: Methods and Perspectives from Sciences  
and Science Studies," 2009; "Where social theory meets critical engagement with the production  
of scientific knowledge," and "Problem- and case-based learning about biology-in-society," 2010;

"Open Spaces for Changing Science and Society," 2011; "Open Spaces for Scientific and Social Change II: Support for Translation," 2012; "Scaffolding Scientific and Social Change," 2013; "Changing Life in Times of Crisis," 2014; "Fostering Critical Thinking and Reflective Practice in Times of Crisis," 2015; "Impossible to Simply Continue Along Previous Lines: Changing Life in Times of Crisis," 2016 & 2017 & 2018; "Intersecting Processes" and "Making Spaces for Connecting, Probing, Reflecting, Creating," 2017

External Review panels: Member, State of Connecticut Reaccreditation for The Graduate Institute, April 2017; Chair, Proposal for M.A. degree in Critical and Creative Thinking, University of Nebraska, November 2014.

Workshop designer and facilitator, "Design for Living Complexities," RMIT and Macquarie Universities, Australia, October 2016, "Making Sense of our 4S Experiences: An hour for Connecting and Reflecting Together," Society for Social Studies of Science, September 2016, "Collaborative Reflection & Prospect Formation in the area of critical & creative thinking," UMass Boston, July 2014; "What is a studio or what could it be," RMIT University, Australia, August 2013; "Design for Living Complexities: Bringing critical thinking into design practice," University of Wollongong, Australia, August 2013; "6-minute MOOC," UMassBoston Center for Innovative Teaching Conference, May 2013 (with J. Szteiter & F. Sullivan); "Creativity and Innovation in Epidemiologic Research," American College of Epidemiology, Chicago, September 2012; Cancer Care Ontario, January 2013; "Biology in Society: Critical thinking and refractive practice" at IBMC in Porto, Portugal; "Troubled by Heterogeneity?" University of Coimbra, Portugal, November 2012; "Collaborative production of knowledge: Health, environment, and publics," University of Coimbra, Portugal, May 2011.

"Ethics of participatory processes," Discussion group facilitator, Cary Conference on "Linking Ecology and Ethics for a Changing World: Values, Philosophy, and Action," Millbrook, NY, May 2011.

"When the Social, not the Medium, is the Message: A Workshop on Community-building and Research Collaboration in Virtual Spaces," Workshop co-organizer, University of Massachusetts Boston, April 2011

"Changing Research, Teaching and Society," Workshop facilitator, University of Wollongong, Australia, February 2011.

Workshop Participant to develop a Research Collaborative Network in Undergraduate Biology Education, Emory University, May 2010

Visiting Theorist, Center for Drug Use and HIV Research, National Development and Research Institutes, New York, January 2009

"Democracy and its Critics," short course, American Political Science Association, Boston, August 2008, guest facilitator

Advisory Board, UMass Lowell Center for Sustainable Production, 2006; Invited participant in Faculty seminar on "Responsible Development of Emerging Technologies," 2008.

External Evaluating Committee for "Management of Ecosystems and Human Development" Megaproject of UNAM (National Autonomous University of Mexico), 2005-7

Handbook of Ecological Concepts, Invited international workshop participant, 2002, 2006; Editorial Board

External doctoral examiner, University of Newcastle, Australia, 2004

Workshop leader & consultant, Global Perspectives Curriculum Development Project, Mt. Mary College, 2004.

Invited Facilitator/Participant, Middle East Environmental Futures Project, Brown University, July 2003

Pembroke Center Seminar on Theories of Embodiment, Brown University: Workshop leader, December 2002

External reviewer, Centre for Social Studies at the University of Coimbra, Portugal, 2002

Massachusetts Board of Higher Education and the Dwight D. Eisenhower Professional Development Program in the South River/South Coastal Watershed, Co-PI 2000-1 and Workshop leader, November 2000, May 2001.

International Society for History, Philosophy and Social Studies of Biology:

Past-President, 1997-99

Education Committee, Chair, 1997-2001; Member 2001-5

Marjorie Grene Prize Committee, Chair, 2005-7; Member; 2007-9

Operations Committee, 2009-13

Organizer or co-organizer of sessions: "Genes, Gestation, and Life Experiences: Perspectives on the Social Environment in the Age of DNA" in 1999; "Teaching History, Philosophy, and Social Studies of Biology" pre-conference workshop in 2001; "Knowing, Interpreting and Engaging with New and Old Biocomplexities" in 2005.

Association for Supervision and Curriculum Development, Panel Member, "Teaching Thinking: Looking Backwards, Looking Forwards," March 2001; Teaching for Thinking Network Board member 2001-4.

NSF Workshop on a Research Agenda for Linking Ecological and Economic Systems, Tempe, Invited Participant, June 2000.

University of Tampere, Finland, International Collaborator, "How does nature speak?" project, 1996-; Workshop facilitator, 2000.

Local Knowledge and Global Consequences Workshop, Harvard School of Government, Invited Commentator, April 2000.

National Center for Ecological Analysis and Synthesis, Workshop on "Rethinking the Human-Nature Boundary," Invited participant, March 2000.

BioQuest workshop on Teaching College Biology, Invited Presenter and Participant, June 1999, 2002.

Massachusetts Board of Higher Education, Honors Faculty Development Workshop, Invited Workshop Leader, June 1999.

International Communication Association, Invited Commentator, Workshop on "Sense-Making: Methodology between the cracks," May 1999.

"Changing Life" (working group on fostering critical thinking about life and environmental sciences); Convenor, 1999

Centro Regional de Investigaciones Multidisciplinarias, U.N.A.M., México: Consultant and Commentator on development of doctoral program in "Society, Environment, and Sustainability," November 1998.

Swarthmore College: convenor of study group, "New biology: Old and new questions," 1997-98; organizer, international workshop, "How can we help each other with 'agency'?", April 1998.

Columbia University, member of University Seminar on "Ecology and Culture," 1997-98.

**Environment and History**, guest co-editor for special edition on "The politics of the conservation of nature, 1995-97.

**Social Text**, guest collaborating editor, special section of no. 42, on "Science studies," 1994-95.

**Biology and Philosophy**, guest editor of special issue on "Pictorial Representation in Biology," 1989-91

History of Science Society: Organizer of "Human ecologies: New perspectives" session at the 1993 meetings.

American Sociological Association, Section on Scientific Knowledge and Technology: Council Member 1993-96; Returning Officer 1994; Prize Committee 1994-95; Co-organizer of "Science, Technology, Work organization & Global restructuring" session, 1995.

Reviewer:

Acta Biotheoretica; American Journal of Psychiatry; American Naturalist; American Psychologist; Biology & Philosophy; Bioscience; Ecological Complexity; Ecological Economics; Ecological Modelling; Ecology; Environmental Humanities; Environment and History; Genetics & Epigenetics; Geoforum; Global Ecology & Biogeography; Journal of Integrative Environmental Sciences; Pedagogies: An International Journal; Philosophy, Theory, and Practice in Biology (formerly Philosophy and Theory in Biology); PLOS One; Policy & Internet; Psychosis; Public Understanding Of Science; Science; Science as Culture; Science Education; Science in Context; Science Studies; Science, Technology & Human Values; Social Epistemology; Social Studies of Science; Societies Without Borders; Society and Natural Resources; Subjectivity; Synthese; Theoretical Population Biology, Transactions of the Institute of British Geographers

Hackett Publishing; Harvard University Press; Routledge; Sage; SUNY Press; Brooks/Cole; MIT Press; University of Colorado Press; Columbia University Press

National Science Foundation; National Endowment for the Humanities

International Conference on System Sciences; Konrad Lorenz Institute; Medicine 2.0; The Netherlands Organisation of Health, Research and Development

Membership in Professional Societies:

International Society for History, Philosophy and Social Studies of Biology

Society for Social Studies of Science

## PUBLICATIONS

(\* indicates primary author/editor other than PJT; # indicates equal joint authorship/ editorship)

### Books

The Truth is the Whole: Essays in Honor of Richard Levins. Arlington MA: The Pumping Station, 2018 (ed. with T. Awerbuch, M. Clark#)

Ann(ie) Blum in Our Lives. (editor) Arlington, MA: The Pumping Station, 2016.

Nature-Nurture? No. Moving the Sciences of Variation and Heredity Beyond the Gaps. Arlington, MA: The Pumping Station, 2014.

Taking Yourself Seriously: Processes of Research and Engagement. Arlington, MA: The Pumping Station, 2012 (with Jeremy Szteiter)

Unruly Complexity: Ecology, Interpretation, Engagement. Chicago: University of Chicago Press, 2005.

Changing Life: Genomes, Ecologies, Bodies, Commodities. Minneapolis: University of Minnesota Press (ed. with S. Halfon & P. Edwards), 1997.

### Articles



- “Critical Epidemiological Literacy: Understanding Ideas Better When Placed in Relation to Alternatives,” **Synthese**, in press, DOI: 10.1007/s11229-018-01960-6.
- “The role of distributed health literacy in asthma integrated care: A public medical context from Portugal,” **International Journal of Integrated Care**, 18:18, <https://doi.org/10.5334/ijic.3301> (with L. Abreu, J.Nunes, S. Silva \*)
- “From Complexity to Construction to Intersecting Processes: Puzzles for theoretical and social inquiry,” **Ecological Complexity**, 35:76-80, 2018.
- "Distributed health literacy among people living with type 2 diabetes: defining levels of awareness and support," **Journal of Health & Social Care in the Community** (with L. Abreu, J.Nunes, S. Silva \*), 26(10): 90-101, 2018.
- “The genotype/phenotype distinction,” Stanford Encyclopedia of Philosophy (with R. Lewontin), <https://plato.stanford.edu/entries/genotype-phenotype/>, 2017.
- “Distinctions that make a difference? (An essay review of Beyond versus: The struggle to understand the interaction of nature and nurture by J. Tabery),” **Studies in History and Philosophy of Biological and Biomedical Sciences, Part C**, 51: 70-76, 2015.
- “Ecological Philosophy,” **Oxford Bibliographies in Ecology** (<http://www.oxfordbibliographies.com/>), 2015.
- “A gene-free formulation of classical quantitative genetics used to examine results and interpretations under three standard assumptions,” **Acta Biotheoretica**, 60(4): 357-378, 2012.
- "Cultivating Collaborators: Concepts and Questions Emerging Interactively From An Evolving, Interdisciplinary Workshop" (with S. Fifield and C. Young), **Science as Culture**, 20(1): 89-105, 2011.
- "Biology as Politics: The Direct and Indirect Effects of Lewontin and Levins (An essay review of Biology Under the Influence: Dialectical Essays on Ecology, Agriculture, and Health)," **Science as Culture**, 19(2): 241-253, 2010.
- “Three puzzles and eight gaps: What heritability studies and critical commentaries have not paid enough attention to,” **Biology & Philosophy**, 25:1-31, 2010.
- "Why was Galton so concerned about 'regression to the mean'?—A contribution to interpreting and changing science and society" **DataCritica**, 2(2): 3-22, 2008 ([http://bit.ly/DataCritica2\\_1\\_1](http://bit.ly/DataCritica2_1_1))
- “Nothing Reliable about Genes or Environment: New Perspectives on Analysis of Similarity Among Relatives in Light of the Possibility of Underlying Heterogeneity,” **Studies in History and Philosophy of Biological and Biomedical Sciences**, 40(3): 210-220, 2009.
- "Infrastructure and Scaffolding: Interpretation and Change of Research Involving Human Genetic Information," **Science as Culture**, 18(4): 435-459, 2009.
- “The under-recognized implications of heterogeneity: Opportunities for fresh views on scientific, philosophical, and social debates about heritability,” **History and Philosophy of the Life Sciences**, 30: 431-456, 2008.
- “The Unreliability of High Human Heritability Estimates and Small Shared Effects of Growing Up in the Same Family,” **Biological Theory**, 2(4): 387-397, 2007.
- "Guidelines for ensuring that educational technologies are used only when there is significant pedagogical benefit," **International Journal of Arts and Sciences**, 2(1): 26-29, 2007.

- "Heritability and heterogeneity: The irrelevance of heritability in explaining differences between means for different human groups or generations," **Biological Theory**, 1(4): 392-401, 2006.
- "The analysis of variance is an analysis of causes (of a very circumscribed kind)," **International Journal of Epidemiology**, 35: 527-531, 2006.
- "Heritability and heterogeneity: The limited relevance of heritability in investigation of genetic and environmental factors," **Biological Theory**, 1(2): 150-164, 2006.
- "What can we do? -- Moving debates over genetic determinism and interactionism in new directions," **Science as Culture**, 13 (3): 331-355, 2004.
- "Situatedness and Problematic Boundaries: Conceptualizing Life's Complex Ecological Context," **Biology & Philosophy**, 16(4):521-532, 2001. (with Y. Haila)
- "The Philosophical dullness of classical ecology, and a Levinsian alternative," **Biology & Philosophy**, 16 (1), 93-102, 2001. (with Y. Haila\*)
- "Socio-ecological webs and sites of sociality: Levins' strategy of model building revisited," **Biology & Philosophy**, 15 (2), 197-210, 2000.
- "How does the commons become tragic? Simple models as complex socio-political constructions" **Science as Culture**, 7 (4), 449-464, 1998.
- "Natural Selection: A heavy hand in biological and social thought," **Science as Culture**, 7 (1), 5-32, 1998. Reprinted as "La selección natural: Un lastre sobre el pensamiento biológico y social," **Ludus Vitalis**, 7 (12), 27-55, 2000.
- "Building on construction: An exploration of heterogeneous constructionism, using an analogy from psychology and a sketch from socio-economic modelling" **Perspectives on Science**, 3(1), 66-98, 1995.
- "The social analysis of ecological change: From systems to intersecting processes" **Social Science Information**, 34: 5-30, 1995. (With R. García-Barrios) Also published, slightly modified, as "El análisis social del cambio ecológico, El medio ambiente: Una perspectiva económica social" pp. 67-93 in J. Jardon (ed.). Recursos, Energía y Cambio Social. Mexico: Plaza y Valdez Editores, 1995.
- "How do we know we have global environmental problems?: Science and the globalization of environmental discourse" **Geoforum**, 23: 405-416, 1992. (With F. Buttel)
- "Environmental sociology and global environmental change: A critical assessment" **Society and Natural Resources**, 5:211-230, 1992 (With F. Buttel\*) Revised version, pp. 228-255 in M. Redclift & T. Benton (eds.) Social Theory and the Global Environment, Routledge, 1994.
- "Ecosystems as circuits: Diagrams and the limits of physical analogies" **Biology & Philosophy**, 6:275-294, 1991. (With A. Blum)
- "Revising models and generating theory" **Oikos** 54:121-126, 1989.
- "Technocratic optimism, H.T. Odum and the partial transformation of ecological metaphor after World War 2" **J. Hist. Biol.** 21:213-244, 1988.
- "The construction and turnover of complex community models having Generalized Lotka-Volterra dynamics" **J. Theor. Biol.** 135:569-588, 1988.

"Consistent Scaling and Parameter Choice for Linear and Generalized Lotka-Volterra Models Used in Community Ecology" **J. Theor. Biol.** 135:543-568, 1988.

"Historical versus Selectionist Explanations in Evolutionary Theory" **Cladistics** 3: 1-13, 1987.

"Dialectical Biology as Political Practice. An essay review of R. Levins & R. Lewontin The Dialectical Biologist," **Radical Science** 20: 81-111, 1986 (=L. Levidow (ed.) Science as Politics, Free Association Books)

### Book chapters

"The hidden complexity of simple models, or Why theorists of all kinds should be troubled by unmodeled variables having dynamical lives of their own," pp. 180-200 in T. Awerbuch, M. Clark, P. Taylor (eds.) The Truth is the Whole: Essays in Honor of Richard Levins, Arlington MA: The Pumping Station, 2018.

"Changing Science in Heterogeneous Environments," pp. 87-101 in T. Awerbuch, M. Clark, P. Taylor (eds.), The Truth is the Whole: Essays in Honor of Richard Levins, Arlington MA: The Pumping Station, 2018.

"Nature and Nurture," in N. Castree, M. Hulme and J. Proctor (Eds.) The Companion to Environmental Studies. London: Routledge, 2018.

"Bringing All to the Table: From the Pumping Station to Project-Based Learning," pp. 427-439 in C. Winslow (Ed.) River of Fire: Commons, Crisis, and the Imagination. Arlington MA: The Pumping Station, 2016.

"The ethics of participatory processes: Dynamic flux, Open questions," pp. 325-337 in Rozzi, R., Pickett, S. T. A., Callicott, J. B., Chapin, F. S., Power, M. E., & Armesto, J. J. (Eds.). Earth Stewardship: Linking Ecology and Ethics in Theory and Practice. Springer, 2015.

"Philosophy of Ecology," eLS (Encyclopedia of Life Sciences). Chichester: Wiley, <http://www.els.net/> [DOI: 10.1002/9780470015902.a0003607.pub3. (Revised version of 2008 entry), 2015.

"Case study: Collaborative explorations," The Peeragogy Handbook, <http://peeragogy.org>, 2013.

"Conceptualizing the heterogeneity, embeddedness, and ongoing restructuring that make ecological complexity 'unruly'," pp. 87-95 in K. Jax and A. Schwarz (eds.), Revisiting ecology. Reflecting on concepts, advancing science. Berlin: Springer, 2011.

"Shifting boundaries: From management to engagement in complexities of ecosystems and social contexts," pp. 248-263 in A. Belgrano, C. Fowler (eds.), Ecosystem Based Management for Marine Fisheries: An Evolving Perspective. Cambridge: Cambridge University Press, 2011.

"Agency, structuredness, and the production of knowledge within intersecting processes," pp. 81-98 in M. Goldman, P. Nadasdy, and M. Turner (eds.), Knowing Nature: Conversations between Political Ecology and Science Studies, Chicago: University of Chicago Press, 2011.

"Developing Critical Thinking is Like a Journey," pp. 155-169 in G. F. Ollington (ed.) Teachers and Teaching Strategies, Problems and Innovations. Hauppauge, NY: Nova Science Publishers, 2008.

"Philosophy of Ecology," Encyclopedia of Life Sciences. Chichester: Wiley, 2008. (Revised version of 2001 entry with Y. Haila, published by Macmillan)

"Exploring themes about social agency through interpretation of diagrams of nature and society," pp. 235-260 in Y. Haila and C. Dyke (eds.) How Nature Speaks: The Dynamics of the Human Ecological Condition. Durham, NC: Duke University Press, 2006.

- "'Whose trees/interpretations are these?' Bridging the divide between subjects and outsider-researchers," pp. 305-312 in R. Eglash, J. Croissant, G. DiChiro, R. Fouché (eds.), Appropriating Technology: Vernacular Science and Social Power. Minneapolis: University of Minnesota Press, 2004.
- "A reconstrução da complexidade ecológica sem regras: ciência, interpretação e prática reflexiva crítica" [Reconstructing unruly ecological complexity: Science, interpretation, and critical, reflective practice], pp. 529-551 in Conhecimento Prudente para Uma Vida Decente: Um Discurso sobre as Ciências Revisitado, ed. B. de Sousa Santos, Porto: Afrontamento 2003. Revised version pp. 295-314 in Cognitive Justice in a Global World: Prudent Knowledges for a Decent Life, ed. B. de Sousa Santos, Lanham, MD: Lexington Books, 2007.
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- "What can we do?—Commentary on Fred Bookstein, 'My Unexpected Journey in Applied Biomathematics'," **Biological Theory**, 1 (2): 180-181, 2006.
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- "Review of A History of the Ecosystem Concept in Ecology by Frank Golley" **Isis**, 86 (3): 523-524, 1995.

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- "Mapping workshops for teaching ecology" **Bulletin of the Ecological Society of America** **70**:123-125, 1989. (With Y. Haila)
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- "Shifting frames: From divided to distributed psychologies of scientific agents," **Proceedings of the Philosophy of Science Association 1994**, Vol.2, 304-310
- "Mapping ecologists' ecologies of knowledge" **Proceedings of the Philosophy of Science Association 1990**, Vol.2, 95-109
- "The Strategy of Model Building in Ecology, Revisited" **8th. Int. Congr. Logic, Meth. & Phil. of Sci.**, Volume 2:308-311, 1987.
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- "A description with some applications of MSNUCY, a computer model combining interspecific interactions with nutrient cycling" **Envir. Sci. Division Publication 2419**, O.R.N.L., 1985. (With W.M.Post.)
- "Economic aspects of the use of water resources in the Kerang Region" Technical Paper no. 11 of the Institute of Applied Economic and Social Research (I.A.E.S.R.). (Second report to the Ministry of Water Resources, Victoria), 1979. (With J.Ferguson and A.Smith).
- "The Kerang Farm Model" Technical Paper no. 12 of I.A.E.S.R, 1979.

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"What difference does it make? An essay review of James Tabery 'Beyond versus: The struggle to understand the interaction of nature and nurture'." Working Papers on Science in a Changing World, [http://scholarworks.umb.edu/cct\\_sicw/1](http://scholarworks.umb.edu/cct_sicw/1), 2015.

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"Heterogeneity, not randomness, sets challenges for quantitative genetics and epidemiology: A response to Davey Smith's 'gloomy prospect'" Working Papers on Science in a Changing World, [http://scholarworks.umb.edu/cct\\_sicw/2](http://scholarworks.umb.edu/cct_sicw/2), 2014.

"Five Fundamental Gaps in Nature-Nurture Science," Working Papers on Science in a Changing World, [https://scholarworks.umb.edu/cct\\_sicw/3/](https://scholarworks.umb.edu/cct_sicw/3/), 2014.

"Slow EdTech: Pedagogical principles, collaborative explorations, and persistent challenges," Working Papers in Critical, Creative, and Reflective Practice, [http://scholarworks.umb.edu/cct\\_ccrp/2](http://scholarworks.umb.edu/cct_ccrp/2), 2014. (With F. Sullivan and J. Szteiter)

"Now It Is Impossible 'Simply to Continue Along Previous Lines': A Partial Design Sketch of Enactable Social Theorizing," Working Papers on Science in a Changing World, [https://scholarworks.umb.edu/cct\\_sicw/11/](https://scholarworks.umb.edu/cct_sicw/11/), 2012.

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"We Know More Than We Are, At First, Prepared to Acknowledge: Journeying to Develop Critical Thinking," Working Papers in Critical, Creative, and Reflective Practice, [http://scholarworks.umb.edu/cct\\_ccrp/1](http://scholarworks.umb.edu/cct_ccrp/1), 2002

"Generating environmental knowledge and inquiry through workshop processes," Working Papers on Science in a Changing World, [https://scholarworks.umb.edu/cct\\_sicw/6/](https://scholarworks.umb.edu/cct_sicw/6/), 2001.

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### Works In Progress

"What to do if we think that researchers have overlooked a significant conceptual issue? The case of quantitative genetics and underlying heterogeneity"

"Making visible a collage of radical scientists and critics" (under review)

Taking Yourself Seriously: A Fieldbook of Processes of Research and Engagement, 2<sup>nd</sup> edition (with J. Szteiter)

"From radical science to STS," Forum in **Science as Culture**, guest editor

"Nature-nurture vs. nature-nurture vs. nature-nurture...: On the difficulties of bringing conceptually distinct sciences to bear on questions of the changeability of development"

"Who can act? Critical assumptions at the foundations of statistical analysis"

### SELECTED PRESENTATIONS (2006-)

"Collaborative explorations," Society for Social Studies of Science, August 2018.

"Making visible a collage of radical scientists and critics," Society for Social Studies of Science, August 2018.

"Synchronous online teaching: Enhancing learning while boosting enrollment," Center for Innovative Teaching, University of Massachusetts, Boston, October 2017 (with J. Szteiter)

"Design for living complexities: An experiment in teaching critical thinking about design," Society for Social Studies of Science, September 2017.

"Connecting-Probing-Reflecting Spaces: The New England Workshop on Science and Social Change," Society for Social Studies of Science, August 2017.

"What to do if we think that researchers have overlooked a significant issue for 100 years? The case of quantitative genetics and underlying heterogeneity," History and Philosophy of Science, Indiana University, September 2011, Biology and Philosophy departments, Stanford University, March 2016, University of California, Santa Cruz, November 2016.

"A project-based learning experiment in feminist pedagogy," Society for Social Studies of Science, September 2106.

"Political ecology and the changing nature of social theory," American Association of Geographers, March 2016.

"What am I carrying back to my own situation?' A whole-conference dialogue," Keynote facilitated dialogue, "Knowledge From the Margins conference, Michigan State University, August 2015.

"His nature, her nurture-or what good are conceptual critiques for tackling practical concerns about the development of gendered individuals?" International Society for History, Philosophy, and Social Studies of Biology, July 2015.

"Changing Science in Heterogeneous Environments," for The Truth is the Whole Symposium in honor of Richard Levins, Harvard School of Public Health, May 2015.

"Teaching and assessing critical thinking," Keynote, Regional meeting of AMCOA, May 2015.

"Race, Genes, IQ Test Scores," Museum of Science, Boston, April 2011, December 2014.

- “Supporting students’ writing development throughout the graduate curriculum,” Teaching, Learning & Technology Conference, University of Massachusetts, Boston, May 2014 (with M. McCarthy and others)
- “Collaborative explorations: Moderate-size open online collaborative learning,” Teaching, Learning & Technology Conference, University of Massachusetts, Boston, May 2014 (with J. Szteiter & F. Sullivan)
- “Making visible a collage of radical scientists and critics,” Conference on Science for the People: The 1970s and today,” University of Massachusetts Amherst, April 2014.
- “Troubled by Heterogeneity? Control, Infrastructure and Participation in Social Epidemiology and Life Course Development,” Poster at NIH conference on **Complex** Systems, Health Disparities & Population Health, February 2014.
- “No longer possible to simply continue along previous lines’: Cultivating flexible, transversal engagement in intersecting processes of social and scientific change,” Inaugural lecture for 2012-3 Doctoral Programs, Centro de Estudos Sociais, University of Coimbra, October 2012 and EcoSur, Chiapas, México, October 2103.
- “Creative habits and refractive practice,” workshop for Doctoral Programs, Centro de Estudos Sociais, University of Coimbra, November 2012; Curriculum & Instruction Department, University of Massachusetts, Boston, January 2013.
- “Troubled by heterogeneity? Questions for public health, heritability studies, and personal genomics,” IBMC, University of Porto, November 2012
- “Open Space Workshops for Changing Science and Society: Reflection on Participation and Collaboration in STS,” Society for Social Studies of Science, October 2012
- “What if everything is always unruly complexity? From mathematical ecology to Raymond Williams and into open spaces beyond”, BABEL working group meeting, September 2012
- “Tools for reflection and community-building, face2face and online,” Workshop for Educational Technology/ Center for Innovative Teaching Conference, University of Massachusetts, Boston, May 2012 (with J. Szteiter & F. Sullivan)
- "Now it is impossible 'simply to continue along previous lines'-- Enactable Social Theorizing and Open Spaces," New England Workshop on Science and Social Change, May 2012
- “Health: What's Race got to do with it?,” Cambridge Science Festival, April 2012
- “Troubled by Heterogeneity? Control, Infrastructure and Participation in the Study of Heredity and STS,” Society for Social Studies of Science, November 2011
- “Cultivating Collaborators,” Paper and workshop for Public Service Center, Cornell University, October 2011
- “Heterogeneity, Infrastructure, and Genetics,” Sociology of Science/STS graduate students, University of Wisconsin, Madison, October 2011
- “Heterogeneity and Data Analysis,” Paper and workshop for Visual Analysis of Data Research Group, Iowa State University, September 2011

- "Changes in the social dimensions of environmental analysis since the early days of political ecology," Social Dimensions of Environmental Policy, University of Illinois, Champaign-Urbana, September 2011
- "How do we know we have population-environment problems? A journey from simple models to multiple points of engagement to contribute to change," School for Designing a Society, Urbana, September 2011
- "What to do if we think that researchers have overlooked a significant issue for 100 years? The case of quantitative genetics and underlying heterogeneity," History and Philosophy of Science, Indiana University, September 2011.
- "Creative Thinking in Epidemiology," Paper and Workshop for ENVIRON and UMass. Amherst Department of Epidemiology, and for CancerCare Ontario, Toronto, September 2011, for American College of Epidemiology, September 2012.
- "This course provides a structure for me to look into what really interests me," International Society for History, Philosophy, and Social Studies of Biology, July 2011
- "Exploration of 'Open Spaces' for Changing Research, Teaching, Science, and Society," University of Coimbra, Portugal, May 2011
- "Our confusions about our online presence and activities (explored through the format of Group meetings that are reflective and generative)," University of Massachusetts, Boston, May 2011
- "Troubled by Heterogeneity? Opportunities for Fresh Views on Long-standing and Recent Issues in Biology and Biomedicine," University of Vienna, October 2010
- "Wiki-ing from here to there," Educational Technology Conference, University of Massachusetts, Boston, May 2010
- "Community-based participatory research on health disparities: An initial exploration of possibilities and problems," University of Coimbra, Portugal, March 2010
- "Start your own writing support group," Teaching for Transformation Conference, January 2010
- "From systems to intersecting processes in the analysis of ecological complexity, from WWII to the 90s," Conference on "Biodiversity power/knowledge since Darwin," Muséum National d'Histoire Naturelle, Paris, December 2009
- "Engaging colleagues in a caring university," Chancellor's Award for Distinguished Teaching Lecture, University of Massachusetts, Boston, November 2009
- "Cities beyond the Year 2000: Engaging with/in the militant particularism-translocal tension of Raymond Williams," Intercollege faculty Seminar in Humanities and Sciences, University of Massachusetts, Boston & New England American Studies Association, October 2009
- "Social-environmental engagements: From Kerang salinization and agro-forestry participation to the place of trans-local perspectives," University of Melbourne, July 2009
- "Farms, families, and fantasies of control: Puzzles in the history and philosophy of heredity that warrant more attention," Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria, October 2008; University of Melbourne, July 2009
- "Steps towards an ecoevodevo synthesis—and beyond?," International Society for History, Philosophy, and Social Studies of Biology, July 2009

- "Revisiting scientific and social debates about heritability in light of the under-recognized implications of heterogeneity," Society for Social Studies of Science, November 2006; International Society for History, Philosophy, and Social Studies of Biology, July 2009
- "Mapping intersecting biological & social processes, using the case of the routinization of testing for PKU," Workshop on Sociology, History and Philosophy of Science in Science Teaching, June 2009
- "Making evolutionary theory more ecological: An update on Chapter 3 of Darwin's Origin," Brown University, April 2009
- "Three new puzzles about nature-nurture debates and why we should care about them," Intercollege faculty Seminar in Humanities and Sciences, University of Massachusetts, Boston, January 2009.
- "Infrastructure and Scaffolding: Thought-pieces on analysis of and engagement in intersecting biosocial processes," "Intersecting processes and research into the bio-social complexities of drugs and health," Center for Drug Use and HIV Research, National Development and Research Institutes, New York, January 2009
- "Writers' workshop and qualitative research," Forestry and Environmental Studies, Yale University, November 2008
- "Unruly complexity and education," Complexity Studies in Education group, Boston College, July 2008
- "Infrastructure and Scaffolding: Themes and Questions to Support Diverse Engagements with the Sciences of Changing Life," Workshop on "The Life Sciences and Society: Challenges of the Post-genome Era," Gulbenkian Foundation, Lisbon and University of Coimbra, May 2008
- "Teaching as Reflective Practice (or Why the most important thing should not be what the tenure review committee thinks)," Graduate College of Education, University of Massachusetts, Boston, February 2008
- "Processes of Research and Engagement," Teaching for Transformation Conference, January 2008
- "Author meets critics: session on P. Taylor's Unruly Complexity," Society for Social Studies of Science, Montreal October 2007
- "A Hands-On Mapping Workshop for Exploring Different Representational Strategies for Describing Complex Technoscientific Domains," Society for Social Studies of Science, Montreal October 2007
- "When is genetic analysis useful and sustainable: Perspectives on some new and old debates about genes and environment," International Society for History, Philosophy, and Social Studies of Biology, July 2007, University of Bristol, July 2007; University of Melbourne and University of New South Wales, March 2007; University of California San Francisco, February 2007; University of Massachusetts, Lowell, October 2006
- "Making sustainable science that addresses the unruly complexities of environment, resource use and development," Centre for the Environment, University of Tasmania, March 2007.
- "Making sustainable science at the complex intersections of environment, health & development," Energy & Resources Group, University of California Berkeley, February 2007
- "Teaching Evolution in These Times," Teaching for Transformation Conference, January 2007; Workshop for the Center for Improvement of Teaching, University of Massachusetts, Boston, October 2006

"On the tension between unruliness of ecological complexity and attempts to bound and discipline it,"  
Workshop on "Building on Borders: Constructions of Ecological Knowledge" for Handbook of Ecological Concepts, Technical University, Darmstadt, April 2006

"Political ecological accounts of intersecting processes as a model for addressing the social situatedness of political ecological researchers," Workshops on "Political Ecologies of Knowledge, Science and Technology" at the University of Wisconsin, Madison and American Association of Geographers, March 2006

"Unruly complexity, or why an ecologist would move into the fields of science-in-society and educational change," Environmental, Earth, and Ocean Sciences Department, University of Massachusetts, Boston, February 2006

"Start your own interdisciplinary faculty seminar," Teaching for Transformation Conference, University of Massachusetts, Boston, January 2006

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