January 2018

Curriculum Vitae
Alan C. Love

Department of Philosophy
University of Minnesota
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Minneapolis, MN 55455

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EMPLOYMENT

Professor, Dept. of Philosophy	Univ. of Minnesota	2017-present
Director, Minn. Center for Philosophy of Science	Univ. of Minnesota	2014-present
Associate Professor, Dept. of Philosophy	Univ. of Minnesota	2012-2017
Assistant Professor, Dept. of Philosophy	Univ. of Minnesota	2006-2012
Assistant Professor, Dept. of Philosophy	UC Santa Cruz	2005-2006

EDUCATION

Ph.D.	History and Philosophy of Science	University of Pittsburgh	2005
M.A.	Biology (Ecol., Evol., & Behav.)	Indiana Univ., Bloomington	2004
M.A.	Philosophy	University of Pittsburgh	2002
B.S.	Biology (Minor: Philosophy)	M.I.T.	1995

AREAS OF SPECIALIZATION

Philosophy of Biology, Philosophy of Science, Biology

AREAS OF COMPETENCE

Darwin, History of Biology, Logic, Modern Philosophy/Science, Science and Religion

PUBLICATIONS

Forthcoming/In Press

Love, A.C. under contract. *Evolution and Development*. Cambridge University Press.

Love, A.C. forthcoming. Situating evolutionary developmental biology in evolutionary theory. In S.M. Scheiner and D.P Mindell (eds), *The Theory of Evolution*. University of Chicago Press.

Love, A.C. forthcoming. Individuation, individuality, and experimental practice in developmental biology. In O. Bueno, R.-L. Chen, and M.B. Fagan (eds), *Individuation, Process and Scientific Practices*. Oxford University Press.

Love, A.C. forthcoming. Combining genetic and physical causation in developmental explanations. In C.K. Waters and J. Woodward (eds), *Causal Reasoning in Biology*. Minnesota Studies in the Philosophy of Science. Minneapolis: University of Minnesota Press.

Love, A.C. and M. Dresow. forthcoming. Scientific kinds in practice: no artificial ingredients. (A review of *Natural Kinds and Classification in Scientific Practice*, edited by C. Kendig, [2016]), *HOPOS: The Journal of the International Society for the History of Philosophy of Science*.

Love, A.C. and W.C. Wimsatt. forthcoming. Explaining cultural evolution: an interdisciplinary endeavor. In A.C. Love and W.C. Wimsatt (eds), *Beyond the Meme: Development and Structure in Cultural Evolution*. Minnesota Studies in the Philosophy of Science. Minneapolis: University of Minnesota Press.

Love, A.C. and W.C. Wimsatt (eds). forthcoming. *Beyond the Meme: Development and Structure in Cultural Evolution*. Minnesota Studies in the Philosophy of Science. Minneapolis: University of Minnesota Press.

2018

Love, A.C. 2018. Developmental mechanisms. In S. Glennan and P. Illari (eds), *The Routledge Handbook of the Philosophy of Mechanisms and Mechanical Philosophy*. New York and London: Routledge, 332–347.

Love, A.C. and R.R. Strathmann. 2018. Marine invertebrate larvae: model life histories for development, ecology, and evolution. In T.J. Carrier, A.M. Reitzel, and A. Heyland (eds), *Evolutionary Ecology of Marine Invertebrate Larvae*. New York: Oxford University Press, 306–321.

Sarkar, S., A.C. Love, and W.C. Wimsatt. 2018. Reductionism in biology. *Oxford Bibliographies in Philosophy*. Ed. D. Pritchard. New York: Oxford University Press.

2017

Brigandt, I. and A.C. Love. 2017. Reductionism in biology. *The Stanford Encyclopedia of Philosophy* (previous versions: 2012, 2008).

Love, A.C. 2017. Building integrated explanatory models of complex biological phenomena: From Mill's methods to a causal mosaic. In M. Massimi and J.-W. Romeijn (eds), *EPSA15 Selected Papers: European Studies in Philosophy of Science, Vol. 5*. Dordrecht: Springer, 221–232.

Love, A.C. 2017. Evo-devo and the structure(s) of evolutionary theory: a different kind of challenge. In P. Huneman and D. Walsh (eds), *Challenging the Modern Synthesis: Adaptation, Development, and Inheritance*. New York: Oxford University Press, 159–187.

Love, A.C. 2017. Stasis and change: the evolution of a philosopher. (A review of The Philosophy of Philip Kitcher, edited by M. Couch and J. Pfeifer, [2016]), *Metascience* 26:223–227

Love, A.C. and I. Brigandt. 2017. Philosophical dimensions of individuality. In S. Lidgard and L.K. Nyhart (eds), *Biological Individuality: Integrating Scientific, Philosophical, and Historical Perspectives*. Chicago: University of Chicago Press, 318–348.

Love, A.C., T.A. Stewart, G.P. Wagner, and S.A. Newman. 2017. Perspectives on integrating genetic and physical explanations of evolution and development. *Integrative and Comparative Biology*. 57:1258-1268.

Liu, K.E., A.C. Love, and M. Travisano. 2017. How cancer spreads: reconceptualizing a disease. In G. Boniolo and M.J. Nathan (eds), *Philosophy of Molecular Medicine: Foundational Issues in Research and Practice*. New York and London: Routledge, 100–121.

2016

Hüttemann, A. and A.C. Love. 2016. Reduction. In P. Humphries (ed), *The Oxford Handbook of Philosophy of Science*. New York: Oxford University Press, 460–484.

Love, A.C. 2016. Explaining the origins of multicellularity: between evolutionary dynamics and developmental mechanisms. In: K.J. Niklas and S.A. Newman (eds.), *Multicellularity: Origins and Evolution*. Cambridge, MA: MIT Press, 279–295.

Love, A.C. 2016. Sailing the uncharted waters of techno-possibility. (A review of *Here Be Dragons: Science, Technology and the Future of Humanity* by O. Häggström, [2016]), *Choice* 54(2):628.

Love, A.C. 2016. High stakes classification and reordering natural phenomena. (A review of *Animal, Vegetable, Mineral? How Eighteenth-Century Science Disrupted the Natural Order* by S. Gibson, [2015]), *HOPOS: The Journal of the International Society for the History of Philosophy of Science* 6:337–340.

Love, A.C. and D. Urban. 2016. Developmental evolution of novel structures – animals. In R. Kliman (ed.), *Encyclopedia of Evolutionary Biology*. Volume 3. Oxford: Academic Press, 136–145.

2015

Love, A.C. 2015. Developmental biology. *The Stanford Encyclopedia of Philosophy*.

Love, A.C. 2015. Conceptual change and evolutionary developmental biology. In A.C. Love (ed), *Conceptual Change in Biology: Scientific and Philosophical Perspectives on Evolution and Development*. Boston Studies in Philosophy of Science. Berlin: Springer, 1–54.

Love, A.C. 2015. Evolutionary developmental biology: philosophical issues. In T. Heams, P. Huneman, L. Lecointre, and M. Silberstein (eds), *Handbook of Evolutionary Thinking in the Sciences*. Berlin: Springer, 265-283.

Love, A.C. ed. 2015. *Conceptual Change in Biology: Scientific and Philosophical Perspectives on Evolution and Development*. Boston Studies in the Philosophy and History of Science (Volume 307). Berlin: Springer.

Love, A.C. 2015. Collaborative explanation, explanatory roles, and scientific explaining in practice. *Studies in History and Philosophy of Science* 52:88–94.

Love, A.C. 2015. ChINs, swarms, and variational modalities: concepts in the service of an evolutionary research program. *Biology & Philosophy* 30:873–888. (Essay review of *Homology, Genes, and Evolutionary Innovation* by G.P. Wagner [2014].)

Love, A.C. 2015. What-if history of science. *Metascience* 24:5–24. (Review symposium of *Darwin Deleted: Imagining a World without Darwin* by P. Bowler [2013].)

Love, A.C. 2015. Methodological pluralism about causation in the sciences. (A review of *Causality: Philosophical Theory Meets Scientific Practice* by P. Illari and F. Russo, [2014]), *Choice* 53(11):1247.

Love, A.C. 2015. Scientism under scrutiny. (A review of *Scientism: The New Orthodoxy* edited by R.N. Williams and D.N. Robinson, [2015]), *Choice* 53(10):747.

Love, A.C. 2015. Developing a rhetorical account of explanation. (A review of *The Nature of Scientific Thinking: on Interpretation, Explanation and Understanding* by J. Faye, [2014]), *Choice* 52(8):4168.

Love, A.C. and M.J. Nathan. 2015. The idealization of causation in mechanistic explanation. *Philosophy of Science* 82:761–774.

Moczek, A.P., K.E. Sears, A. Stollewerk, P.J. Wittkopp, P. Diggle, I. Dworkin, C. Ledon-Rettig, D.Q. Mattus, S. Roth, E. Abouheif, F.D. Brown, C-H. Chiu, C.S. Cohen, A.W. De Tomaso, S.F. Gilbert, B.K. Hall, A.C. Love, D.C. Lyons, T. Sanger, J. Smith, C. Specht, M. Vallejo-Marin, and C.G. Extavour. 2015. The significance and scope of evolutionary developmental biology: a vision for the 21st century. *Evolution & Development* 17:198–219.

2014

Love, A.C. 2014. The erotetic organization of developmental biology. In A. Minelli and T. Pradeu (eds), *Towards a Theory of Development*. Oxford: Oxford University Press, 33–55.

Love, A.C. 2014. A kaleidoscopic view of scientific naturalism. (A review of *Victorian Scientific Naturalism: Community, Identity, Continuity* edited by G. Dawson and B. Lightman, [2014]), *Choice* 52(3):1395.

Love, A.C. 2014. Philosophy of biology exemplified. (A review of *Philosophy of Biology* by Peter Godfrey-Smith, [2013]), *Choice* 51(12):6737.

Love, A.C. 2014. Caution on the plurality of causation. (A review of *The Why of Things: Causality in Science, Medicine, and Life* by P.V. Rabins, [2013]), *Choice* 51(9):4988.

O'Malley, M.A., I. Brigandt, A.C. Love, J.W. Crawford, J.A. Gilbert, R. Knight, S.D. Mitchell, and F. Rohwer. 2014. Multilevel research strategies and biological systems. *Philosophy of Science* 81:811-828.

2013

Love, A.C. 2013. Theory is as theory does: scientific practice and theory structure in biology. *Biological Theory* 7:325–337.

Love, A.C. 2013. Interdisciplinary lessons for the teaching of biology from the practice of Evo-devo. *Science & Education* 22:255–278.

Love, A.C. 2013. Teaching evolutionary developmental biology: concepts, problems, and controversy. In K. Kampourakis (ed), *Philosophy of Biology: A Companion for Educators*. Berlin: Springer, 323–341.

Love, A.C. 2013. Experiments, intuitions and images of philosophy and science. *Analysis Reviews* 73:785–797. (Essay review of *Experimental Philosophy: An Introduction* by J. Alexander [2012] and *Philosophy Without Intuitions* by H. Cappelen [2012].)

Love, A.C. 2013. Cooperation analyzed interdisciplinarily. (A review of *Evolution, Games, and God: The Principle of Cooperation* edited by M. Nowak and S. Coakley, [2013]), *Choice* 51(3):1470.

Love, A.C. 2013. From *Arabidopsis* and *Antirrhinum* to Arabia and Antioch. (A review of *Cells to Civilizations: The Principles of Change That Shape Life* by E. Coen, [2012]), *Evolution & Development* 15:158–159.

Love, A.C. and G.L. Lugar. 2013. Dimensions of integration in interdisciplinary explanations of the origin of evolutionary novelty. *Studies in the History and Philosophy of Biological and Biomedical Sciences*. 44:537–550.

Love, A.C. and M. Travisano. 2013. Microbes modeling ontogeny. *Biology & Philosophy* 28:161–188.

2012

Brigandt, I. and A.C. Love. 2012. Conceptualizing evolutionary novelty: moving beyond definitional debates. *Journal of Experimental Zoology (Mol Dev Evol)* 318B:417–427.

Doyle, T.J. and Love, A.C. 2012. Leibniz through the lens of life science. (A review of *Divine Machines: Leibniz and the Sciences of Life* by J.E.H. Smith, [2011]), *Journal of the History of Biology* 45:367–371.

Love, A.C. 2012. Hierarchy, causation and explanation: ubiquity, locality, and pluralism. *Interface Focus* 2: 115–125.

Love, A.C. 2012. Material versus formal theories in philosophy of science: a methodological interpretation. In H. de Regt, S. Okasha, and S. Hartmann (eds), *EPSA Philosophy of Science: Amsterdam 2009. The European Philosophy of Science Association Proceedings, Vol. 1*. Berlin: Springer, 175–185.

Love, A.C. 2012. Ignorance and science: from strange juxtaposition to essential connection. (A review of *Ignorance: How it Drives Science* by Stuart Firestein, [2012]), *Science in Focus*.

Love, A.C. 2012. The allure of perennial questions in biology: temporary excitement or substantive advance? (A review of *Form and Function in Developmental Evolution* edited by M.D. Laubichler and J. Maienschein, [2009]), *Metascience* 21:167–170.

2011

Hüttemann, A. and A.C. Love. 2011. Aspects of reductive explanation in biological science: intrinsicality, fundamentality, and temporality. *British Journal for Philosophy of Science* 62:519–549.

Love, A.C. 2011. Darwin's functional reasoning and homology. In M. Wheeler (ed), *150 Years of Evolution: Darwin's Impact on Contemporary Thought & Culture*. San Diego: SDSU Press, 49–67.

Love, A.C. 2011. Philosophical lessons from scientific biography. *Philosophy of Science* 78: 696-701. (Essay review of *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* by R.J. Richards [2009].)

Love, A.C. 2011. Philosophy and paleontology: getting to know each other. (A review of *Paleontology: A Philosophical Introduction* by D. Turner, [2011]), *Notre Dame Philosophical Reviews*.

Love, A.C. 2011. Walking in Darwin's Galápagos shoes. (A review of *Darwin in Galápagos: Footsteps to a New World* by K.T. Grant and G.B. Estes, [2009]), *Metascience* 20:117–119.

Love, A.C. and A. Hüttemann 2011. Comparing part-whole explanations in biology and physics. In D. Dieks, W.J. Gonzalez, S. Hartmann, T. Uebel, and M. Weber (eds), *Explanation, Prediction, and Confirmation*. Berlin: Springer, 183–202.

2010

Brigandt, I. and A.C. Love. 2010. Evolutionary novelty and the Evo-devo synthesis: field notes. *Evolutionary Biology* 37:93–99.

Love, A.C. 2010. Darwin's 'imaginary illustrations': creatively teaching evolutionary concepts and the nature of science. *The American Biology Teacher* 72:82–89.

Love, A.C. 2010. Idealization in evolutionary developmental investigation: a tension between phenotypic plasticity and normal stages. *Philosophical Transactions of the Royal Society B* 365:679–690.

Love, A.C. 2010. Rethinking the structure of evolutionary theory for an extended synthesis. In M. Pigliucci and G. Müller (eds) *Evolution—The Extended Synthesis*. Cambridge, MA: MIT Press, 403–441.

2009

Love, A.C. 2009. Marine invertebrates, model organisms, and the modern synthesis: epistemic values, evo-devo, and exclusion. *Theory in Biosciences* 128:19–42.

Love, A.C. 2009. Typology reconfigured: from the metaphysics of essentialism to the epistemology of representation. *Acta Biotheoretica* 57:51–75.

2008

Love, A.C. 2008. Explaining evolutionary innovation and novelty: criteria of adequacy and multidisciplinary prerequisites. *Philosophy of Science* 75:874–886.

Love, A.C. 2008. From philosophy to science (to natural philosophy): evolutionary developmental perspectives. *The Quarterly Review of Biology* 83:65–76.

Love, A.C. 2008. Explaining the ontogeny of form: philosophical issues. In S. Sarkar and A. Plutynski (eds) *A Companion to the Philosophy of Biology*. Malden, MA: Blackwell Publishers, 223–247.

Love, A.C. 2008. Scientific realism: just out of reach? (A review of *Exceeding our Grasp: Science, History, and the Problem of Unconceived Alternatives* by P.K. Stanford, [2006]), *Review of Metaphysics* 62:155–157.

Love, A.C. 2008. Revisiting evolutionary foundations. (A review of *Making Sense of Evolution: The Conceptual Foundations of Evolutionary Biology* by M. Pigliucci and J. Kaplan, [2006]), *Mind* 117:201–205.

Love, A.C., I. Brigandt, K. Stotz, D. Schweitzer, and A. Rosenberg. 2008. More worry, less love? *Metascience* 17:1–26. (Review symposium of *Darwinian Reductionism: Or, How to Stop Worrying and Love Molecular Biology* by A. Rosenberg [2006].)

Love, A.C., A.E. Lee, M.E. Andrews, and R.A. Raff. 2008. Co-option and dissociation in larval origins and evolution: the sea urchin larval gut. *Evolution & Development* 10:74–88.

2007

Love, A.C. 2007. Functional homology and homology of function: biological concepts and philosophical consequences. *Biology & Philosophy* 22:691–708.

Love, A.C. 2007. Morphological and paleontological perspectives for a history of evo-devo. In M. Laubichler and J. Maienschein (eds) *From Embryology to Evo-Devo: A History of Developmental Evolution*. Cambridge, MA: MIT Press, 267–307.

Love, A.C. 2007. Revolutionary evo-devo? (A review of *Endless Forms Most Beautiful: The New Science of Evo-devo* by S. Carroll, [2005]), *Journal of the History of Biology* 40:594–597.

Love, A.C. 2007. The hedgehog, the fox, and reductionism in biology. (A review of *Darwinian Reductionism: Or, How to Stop Worrying and Love Molecular Biology* by A. Rosenberg, [2006]), *Evolution* 61:2736–2738.

Love, A.C. 2007. Putting the pieces together. (A review of *Fins into Limbs: Evolution, Development, and Transformation* edited by B.K. Hall, [2007]), *Science* 317:1502–1503.

Love, A.C., M.E. Andrews, and R.A. Raff. 2007. Gene expression patterns in a novel animal appendage: The sea urchin pluteus arm. *Evolution & Development* 9:51–68.

2006

Love, A.C. 2006. Reflections on the middle stages of evo-devo's ontogeny. *Biological Theory* 1:94–97.

Love, A.C. 2006 Evolutionary morphology and evo-devo: hierarchy and novelty. *Theory in Biosciences* 124:317–333.

Love, A.C. 2006. Taking development seriously: who, what, where, why, when, how? *Biology & Philosophy* 21:575–589. (Essay review of *Embryology, Epigenesis, and Evolution: Taking Development Seriously*, by J.S. Robert, [2004].)

Love, A.C. 2006. Looking beyond gene concepts. (A review of *What Genes Can't Do* by L. Moss, [2004]), *Philosophy of Science* 73:247–250.

Love, A.C. 2006. Plausibility, conceivability, and possibility. (A review of *The Plausibility of Life* by M. Kirschner and J. Gerhart, [2005]), *BioScience* 56:772–774.

Love, A.C. 2006. History, scientific methodology, and the 'squishy' sciences. (A review of *Science Rules: A Historical Introduction to Scientific Methods* edited by P. Achinstein, [2004]), *Perspectives in Biology and Medicine* 49:452–456.

Love, A.C. and R.A. Raff. 2006. Larval ectoderm, organizational homology, and the origins of evolutionary novelty. *Journal of Experimental Zoology (Mol Dev Evol)* 306B:18–34.

2005

Love, A.C. 2005. The return of the embryo. *Biology & Philosophy* 20:567–584. (Essay review of *Keywords and Concepts in Evolutionary Developmental Biology*, edited by B.K. Hall and W. Olson, [2003].)

Love, A.C. 2005. Thinking historically about embryos and evolution. (A review of *The Changing Role of the Embryo in Evolutionary Thought: Roots of Evo-Devo* by R. Amundson, [2005]), *Notre Dame Philosophical Reviews*.

2004

Ingram, E.L., E. Lehman, A.C. Love, and K.M. Polacek. 2004. Fostering inquiry in nonlaboratory settings. *Journal of College Science Teaching* 34:39–43.

Raff, R.A. and A.C. Love. 2004. Kowalevsky, comparative evolutionary embryology, and the intellectual lineage of evo-devo. *Journal of Experimental Zoology (Mol Dev Evol)* 302B:19–34.

2003

Love, A.C. 2003. Evolvability, dispositions, and intrinsicality. *Philosophy of Science* 70:1015–1027.

Love, A.C. 2003. Evolutionary morphology, innovation, and the synthesis of evolutionary and developmental biology. *Biology & Philosophy* 18:309–345.

Translated and reprinted
Love, A.C. 2013 [2003]. Morfologia evoluzionistica, innovazione e sintesi della biologia evoluzionistica e dello sviluppo. In A. Pinotti and S. Tedesco (eds), *Estetica e science della vita: Morfologia, biologia teoretica, evo-devo*. Milan: Raffaello Cortina Editore, 289–323.

Love, A.C. and R.A. Raff. 2003. Knowing your ancestors: themes in the history of evo-devo. *Evolution & Development* 5:327–330.

2002
Love, A.C. 2002. Darwin and *Cirripedia* prior to 1846: exploring the origins of the barnacle research. *Journal of the History of Biology* 35:251–289.

Love, A.C. 2002. Christianity for Darwinians? (A review of *Can a Darwinian be a Christian?* by M. Ruse, [2001]), *Metascience* 11:115–118.

AWARDS/FELLOWSHIPS/GRANTS

- John Templeton Foundation Grant – "Free will, determinism, and the development of character: An adoption study" (Co-Investigator), 2017-2019
- John Templeton Foundation Grant – "Science and religion: an Abrahamic inquiry" (Senior Scholar), 2016-2019
- John Templeton Foundation Grant – "From biological practice to scientific metaphysics" (Co-PI with C. Kenneth Waters, Marcel Weber, and William Wimsatt), 2015-2018
- John Templeton Foundation Grant – "Integrating genetic and generic explanations of biological phenomena" (Co-PI with William Wimsatt), 2014-2017
- CLA Scholar of the College, 2013-2016
- Imagine Fund Annual Award, 2013-2014
- John Templeton Foundation Grant – "Complexity, emergence and reductionism: toward a multilevel integrative analysis of the brain and cognition" (Project Team Member), 2011-2013
- Global Programs & Strategy Alliance, International Travel Award, 2011
- Institute for Advanced Study Faculty Seminar Award, spring semester 2010
- McKnight Land Grant Professorship, 2009-2011
- SSHRC (Canada) Grant – "Integrating different biological approaches: a philosophical contribution" (Collaborator/Core Team Member with I. Brigandt, University of Alberta), 2009-2011
- Graduate School – Office of Interdisciplinary Initiatives Grant: "Conceptual Foundations of Evolutionary Biology Graduate Group" (Team Member with M. Borrello, M. Travisano, and C.K. Waters), 2008-2010
- CLA Single Semester Leave, 2008-2009
- McKnight Arts and Humanities Endowment Summer Fellowship, 2007
- University of Minnesota Faculty Summer Research Fellowship, 2007
- American Philosophical Association/Philosophy of Science Association Travel Grant, 2006
- UCSC COR Faculty Research Grant, 2005-2006
- Andrew Mellon Predoctoral Fellowship, 2004-2005
- George Hudock Fellowship, 2003 & 2004
- Harvey Fellowship from the Mustard Seed Foundation, 1999-2002

MAJOR PRESENTATIONS († = invited)

2018

"Scientific Metaphysics, Fundamentality, and Varieties of Pluralism", HPS/Philosophy Colloquium Series, Indiana University, Bloomington, IN, January 2018.†

2017

"What is a Conserved (Genetic) Mechanism?", Society for the Metaphysics of Science, Fordham University, New York, October 2017.

"Methodological Reflections on Achieving an Interdisciplinary Understanding of the Brain and Cognition", Neuro-PRSMH, Department of Psychiatry, University of Minnesota, September 2017. †

"Temporal Scale and Extrinsic Contributions to Evolvability", International Society for the History, Philosophy, and Social Studies of Biology, University of São Paolo, Brazil, July 2017.

"*On Growth and Form*: A Centennial Perspective", Celebrating the 100th Anniversary of D'Arcy Thompson's "On Growth and Form" (Plenary Session), Society for Developmental Biology, Minneapolis, MN, July 2017. †

"Chance, Evolution, and the Burgess Shale", Whyte Museum of the Canadian Rockies, Banff, Alberta, Canada, June 2017.

"Active Matter and Development: Conceptual Issues", Georgetown Active Materials Summer School, Georgetown University, Washington, DC, June 2017. †

"The Concept of Chance in Biological Practice", Workshop on Randomness and Providence, Fetzer Institute, Kalamazoo, MI, May 2017. †

"Explaining the Origin of Evolutionary Novelty", Centre for Ecological and Evolutionary Synthesis, University of Oslo, Norway. March 2017. †

"Developmental Mechanisms", Science Studies Program, University of Oslo, Norway, March 2017. †

2016

"Physics, Genetics, and Investigative Reasoning in Developmental Biology", Philosophy Department Colloquium, Marquette University, Milwaukee, WI, November 2016. †

"How Cancer Spreads: Reconceptualizing a Disease", Philosophy of Science Association Meeting, Atlanta, GA, November 2016.

"Characterizing Possibilities: Thought Experiments and Exploratory Experimentation in Biology (and Philosophy): Philosophy Department Colloquium, University of St. Thomas, St. Paul, MN, September 2016. †

"Physics, Genetics, and Investigative Reasoning in Developmental Biology", National Human Genome Research Institute, NIH, Bethesda, MD, September 2016. †

"Physics, Genetics, and Investigative Reasoning in Developmental Biology", Sixth International Conference on Integrated History and Philosophy of Science, University of Edinburgh, Edinburgh, Scotland, July 2016.

"From Individuation in Biology to Biological Individuality", Société de Philosophie des Sciences, University of Lausanne, Lausanne, Switzerland, June 2016.

"Protocols and Potentiality: From Biological Practice to Scientific Metaphysics", Keynote Address, Society for Philosophy of Science in Practice, Rowan University, Glassboro, NJ, June 2016. †

"Marine Invertebrate Larvae: Phylogeny, Ecology, biogeography, Development, and Evolution in the mid-20th century", Marine Biological Laboratories - Arizona State University History of Biology Seminar, Woods Hole, MA, May 2015. †

"Holding in Place a "Social Front" in Science: The Case of Model Organism Research", From Success Stories to Design Precedents: Generating Knowledge about Public Program- and Organization-like Ventures, Relevant to Professional Practice, through Case-Oriented Research, Gallaudet University, Washington, DC, May 2016. †

"How Cancer Spreads: Reconceptualizing a Disease", Philosophy Department Colloquium, University of Pennsylvania, Philadelphia, PA, March 2016. †

"Experimental Manipulation, Developmental Potentiality, and the Reality of Dispositions", American Philosophical Association - Central Division Meeting, Chicago, IL, March 2016.

"Explaining the Origin of Evolutionary Novelty", Midwest Philosophy Colloquium, University of Minnesota-Morris, February 2016. †

"Conceptual Prerequisites for Testing Hypotheses about the Origins of Metazoan Ontogeny", A. Watson Armour III Research Seminar Series, Field Museum of Natural History, Chicago, IL, January 2016. †

2015

"Explaining the Origin of Evolutionary Novelty", 5th Biological Evolution Workshop, Federal University of Rio Grande do Sul, Porto Alegre, Brazil, November 2015. †

"Manipulating Possibilities: Thought Experiments and Exploratory Experimentation in Biology", University of South Dakota, Vermilion, SD, October 2015. †

"Building integrated explanatory models of complex biological phenomena: From Mill's methods to a causal mosaic", European Philosophy of Science Association Meeting, Düsseldorf, Germany, September 2015.

"The Experimental Manipulation of Physical Difference Makers in Development", International Society for the History, Philosophy, and Social Studies of Biology, University of Quebec-Montreal, Canada, July 2015.

"The Centrality of Experiment in the Historical Science Research Program on Evolutionary Novelties", International Society for the History, Philosophy, and Social Studies of Biology, University of Quebec-Montreal, Canada, July 2015.

"Individuation, Individuality, and Experimental Practice in Developmental Biology", Society for Philosophy of Science in Practice, University of Aarhus, Denmark, June 2015.

"Ontogeny and Phylogeny: Gould, Heterochrony, and Macroevolution", Marine Biological Laboratories - Arizona State University History of Biology Seminar, Woods Hole, MA, May 2015. †

"Individuation, Individuality, and Experimental Practice in Developmental Biology", Annual HPS Alumni Lecture, Department of History and Philosophy of Science, University of Pittsburgh, PA, March 2015. †

"Commentary on Jannai Shields's 'The Failure of the Ineliminability Argument for Causal Role Functions'", American Philosophical Association - Central Division Meeting, St. Louis, MO, February 2015. †

2014

"Individuation and Experimentation in Developmental Biology", Taiwan Conference on Scientific Individuation, National Chung Cheng University, Chiayi, Taiwan, December 2014. †

"Philosophy of Science and Science Education", 2nd International History, Philosophy and Science Teaching Asian Regional Conference, Taipei, Taiwan, December 2014. †

"The Necessity of HPS in Science Teaching and Open Questions: Heterogeneity, History, Realism, and Worldviews", Book Panel Commentary on *Science Teaching: The Contribution of History and Philosophy of Science* (2014) by M. Matthews, 2nd International History, Philosophy and Science Teaching Asian Regional Conference, Taipei, Taiwan, December 2014.

"Development, not Developmental Biology, Was Left Out of the Modern Synthesis", Revisiting the History of the Modern Synthesis, University of Chicago, Chicago, IL, November 2014. †

"The Idealization of Causation in Mechanistic Explanation", Philosophy of Science Association Meeting, Chicago, IL, November 2014.

"The Fate of Physical Explanations of Development: Origination, Marginalization, and (Apparent) Restoration", Explanatory Integration in Developmental Biology, University of Cologne, Cologne, Germany, October 2014. †

"Explaining the Origins of Multicellularity: Criteria of Adequacy and Epistemological Prerequisites", The Origins and Consequences of Multicellularity, Konrad Lorenz Institute, Altenberg, Austria, September 2014. †

"The Concept of Potentiality in Developmental Reasoning", Explaining Development, Istituto Veneto di Scienze Lettere, Venice, Italy, September 2014. †

"The Idealization of Causation in Mechanistic Explanation", Philosophy of Biology at Madison (POBAM), University of Wisconsin–Madison, May 2014. †

"The Fate of Physical Explanations of Development: Origination, Marginalization, and (Apparent) Restoration", Ottawa-Carleton Institute of Biology Symposium, University of Ottawa, Ottawa, Canada, May 2014. †

"Methodological Reflections on Achieving an Interdisciplinary Understanding of Brain Function", Center for Cognitive Science, University of Minnesota, Minneapolis, MN, April 2014. †

"Integrating Generic and Genetic Explanations of Development", Franke Program in Science and the Humanities, Yale University, New Haven, CT, February 2014. †

2013

"Symposium Commentator for 'Explanation and Understanding in Scientific Practice' Session", American Philosophical Association - Eastern Division Meeting, Baltimore, MD, December 2013. †

"Prolegomenon to a Naturalized Metaphysics of Biological Practice", Organisms, Machines, and Mechanisms (Lake Geneva Biology Interest Group Workshop), University of Geneva, Geneva, Switzerland, December 2013. †

"Physical Explanations of Developmental Phenomena in Flux, 1950-1990: The Life and Work of J.P. Trinkaus, History of Science Society Meeting, Boston, MA, November 2013.

"Comments on William Bechtel's 'Recomposing Biological Mechanisms Through Diagrams and Computational Models'", International Society for the History, Philosophy, and Social Studies of Biology, University of Montpellier, France, July 2013. †

"Generic and Genetic Explanations: Comparing Experimental and Historical Biology", International Society for the History, Philosophy, and Social Studies of Biology, University of Montpellier, France, July 2013.

"The Invisibility of Scientific Practice in Interdisciplinary Explanations", Society for Philosophy of Science in Practice, University of Toronto, Canada, June 2013.

"Microbes Modeling Ontogeny", Committee on Conceptual Foundations of Science, History and Philosophy of Science Workshop Series, University of Chicago, IL, March 2013. †

"Microbes Modeling Ontogeny", Department of History and Philosophy of Science, Indiana University-Bloomington, IN, January 2013. †

2012

"Reconceiving Science: Beyond Methodological Naturalism", Department of Theology, University of St. Thomas, MN, December 2012. †

"Session Commentator for 'Animal Models beyond Genetics'", History of Science Society Meeting, San Diego, CA, November 2012.

"From Microbial Methods to Metazoan Ontogeny: Multilevel Modeling of Biological Phenomena", Philosophy of Science Association Meeting, San Diego, CA, November 2012.

"Combining Genetic and Physical Causation in Explanations of Ontogeny", Philosophical Perspectives on Causal Reasoning in Biology, Minnesota Center for Philosophy of Science, University of Minnesota, MN, May 2012. †

"Interdisciplinarity, Social Neuroscience, and Multilevel Explanation: Combining Actual Difference Makers in Consensus Periodizations", Complexity Network, Phoenix, Arizona, April 2012.

"Methodological Naturalism Reconceived (or Elided?)", Department of Philosophy, Calvin College, Grand Rapids, MI, April 2012. †

"Methodological Naturalism Reconceived (or Elided?)", Department of Physics, Wheaton College, IL, April 2012. †

"Combining Genetic and Physical Causation in Explanations of Ontogeny", Department of Philosophy, St. Olaf College, Northfield, MN, March 2012. †

"Apportioning Causal Responsibility in Reductive Explanations of Ontogeny", Distinguished Speaker Series, The Committee on the History and Philosophy of Science, UC-Boulder, Boulder, CO, February 2012. †

2011

"Dimensions of Integration in Historical Explanation: Physics, Genetics, and the Origins of Evolutionary Novelty", Integration in Contemporary Biology: Philosophical Perspectives on the Dynamics of Interdisciplinarity, Minnesota Center for Philosophy of Science, Minneapolis, MN, September 2011.

"Physics Meets Biology in Evo-devo", International Society for the History, Philosophy, and Social Studies of Biology, University of Utah, Salt Lake City, UT, July 2011.

"Doing Biology More Philosophically?", International Society for the History, Philosophy, and Social Studies of Biology, University of Utah, Salt Lake City, UT, July 2011. †

"Theory is as theory does...", Altenberg Workshop in Theoretical Biology – 'The Meaning of "Theory" in Biology', Konrad Lorenz Institute for Evolution & Cognition Research, Altenberg, Austria, July 2011. †

"Modeling Experimental Evidence from the Practices of Developmental Biology", Society for the Philosophy of Science in Practice, University of Exeter, Exeter, UK, June 2011.

"Revisiting Evolutionary Emergence in Contemporary Biology", Matter, Life, Mind - Common Foundational Problems, Parmenides Foundation, Munich – Pullach, Germany, June 2011. †

"Formal versus Material Theories in Philosophy of Science: A Methodological Interpretation", American Philosophical Association - Pacific Division Meeting, San Diego, CA, April 2011.

"Pluralism, Hierarchical Explanations, and the Metaphysics of Science", American Philosophical Association - Central Division Meeting, Minneapolis, MN, March 2011. †

"Reduction and Emergence: Between Science and Philosophy", Chicago Social Brain Network Symposium, Ft. Myers, FL, February 2011. †

"Asa Gray and Conceptual Change: Teleology and Variation", History of Science Brown Bag Lunch Series, University of Wisconsin – Madison, WI, February 2011. †

"Darwin's Functional Reasoning, Homology, and the Structure(s) of Evolutionary Theory", Evolution Seminar Series, University of Wisconsin – Madison, WI, February 2011. †

2010

"The Developmental Basis of Novelty – Reflections on Explanatory Integration", SSHRC workshop on 'Perspectives on Evolutionary Novelty and Evo-devo: Integrating Explanatory Approaches in Biology', McGill University – Redpath Museum, Montreal, Canada, November 2010.

"Modeling Experimental Evidence in Developmental Biology: *In Situ* Hybridization and Serial Idealization", Philosophy of Scientific Experimentation Workshop, Center for Philosophy of Science, University of Pittsburgh, PA, October 2010.

"Reductionism and Evolutionary Explanations of Morality: Necessary Prerequisites ", Evolution and Ethics Conference, Peking University, Beijing, China, October 2010. †

"Models of Time for Reductive Explanations in Experimental Biology", Types of Explanation in the Special Sciences –The Case of Biology and History, University of Cologne, Germany, September/October 2010. †

"Sciences without Theories: Structured Problems in Developmental Biology", Institute for History and Philosophy of Science and Technology – Philosophy of Biology Seminar, University of Paris, France, September 2010. †

"A Pluralist Stance on Top-Down Causation", Top-Down Causation: An Integrating Theme Within and Across the Sciences, The Royal Society, London, UK, September 2010. †

"Pluralism, Reduction, and the Metaphysics of Science", Science Engages Metaphysics: Emergence, Reduction and Explanation, Wheaton College Science Station, Black Hills, SD, July 2010. †

"Evolutionary Innovation and Novelty: Conceptual Developments Since Dahlem", Conceptual Change in Biological Science: Evolutionary Developmental Biology, 1981-2011, Max Planck Institute for the History of Science, Dahlem, Berlin, July 2010.

"Reductionism and the Philosophy of Biology", lectures delivered for the St. Thomas Summer Seminar in Philosophy of Religion and Philosophical Theology, University of St. Thomas, St. Paul, MN, June 2010. †

"The Origin and Evolution of Marine Invertebrate Larval Forms: Historical and Philosophical Perspectives", Evolutionary Transitions in Marine Invertebrate Larval Forms, Picker Interdisciplinary Science Institute, Colgate University, Hamilton, NY, June 2010. †

"Commentary on Andrew Margenot and Derek Turner's 'Contingency and Relative Significance Debates in Biology'", American Philosophical Association - Pacific Division Meeting, San Francisco, CA, April 2010. †

"Modeling Experimental Evidence: Idealization and *In Situ* Hybridization", The Experimental Side of Modeling – II, San Francisco State University, CA, March 2010. †

"Evo-devo and Individuating Evolutionary Theory: A Different Kind of Challenge", Challenges to Evolutionary Theory: An Interdisciplinary Workshop, University of Toronto, Canada, March 2010. †

"Sciences without Theories?", American Philosophical Association - Central Division Meeting, Chicago, IL, February 2010.

"Three Aspects of Reductive Explanations in Biological Science", Minnesota Center for Philosophy of Science Colloquium, University of Minnesota, Minneapolis, January 2010.

2009

"Aspects of Reductive Explanations in Biological Science: Intrinsicality, Fundamentality, and Temporality", Emergence and Reduction in the Sciences – Second Pittsburgh-Paris Workshop, Center for Philosophy of Science, University of Pittsburgh, PA, December 2009.

"Darwin and Philosophy of Biology: Structure, Novelty, and Interdisciplinarity", 150 Years of Evolution: Darwin's Impact on the Humanities and the Social Sciences, San Diego State University, CA, November 2009. †

"Mechanisms for Generating Novel Variants: Conceptual Issues and Questions", SSHRC workshop on 'Integrating different biological approaches', University of Alberta, Edmonton, November 2009.

"Formal versus Material Theories in Philosophy of Science", European Philosophy of Science Association Meeting, Amsterdam, The Netherlands, October 2009.

"The Structure of Biological Problems and Explaining Evolutionary Novelties: Scientific and Philosophical Implications", Symposium on Philosophy of Evolution, University of Groningen, The Netherlands, October 2009. †

"Evolutionary Innovations and Multidisciplinary Explanation in Biology: Prospects and Problems", Symposium on 'Evolutionary Innovations: Where Ecology, Development and Macroevolution Intersect', AAAS-Pacific Division, San Francisco State University, San Francisco, CA, August 2009.

"Investigating the Meaning of Biological Information with Noise", International Society for the History, Philosophy, and Social Studies of Biology, University of Queensland, Brisbane, Australia, July 2009.

"The Heterogeneity of Experimental Practices in Developmental Biology: Epistemological Implications", Society for the Philosophy of Science in Practice, University of Minnesota, Minneapolis, MN, June 2009.

"Temporal Dimensions of Reductionism in Biology", American Philosophical Association - Pacific Division Meeting, Vancouver, British Columbia, Canada, April 2009.

"Temporal Dimensions of Reductionism in Biology", Department of Philosophy, MSU – Mankato, MN, March 2009. †

2008

"Rethinking Conceptual Change in the Context of Evolutionary Developmental Biology", Western Canadian Philosophical Association Meeting, University of Alberta, Edmonton, October 2008.

"The Structure of Evolutionary Theory and Biological Knowledge", Altenberg Workshop in Theoretical Biology – 'Toward an Extended Evolutionary Synthesis', Konrad Lorenz Institute for Evolution & Cognition Research, Altenberg, Austria, July 2008. †

"Asa Gray's Evolving Perspective on Teleology, Variation, and Natural Theology", International Society for the History of Philosophy of Science, Vancouver, British Columbia, June 2008.

"Development and Evolution in Context: Embryos in Erotetic Dialogue", Marine Biological Laboratories - Arizona State University History of Biology Seminar, Woods Hole, MA, May 2008. †

"Temporal Dimensions of Reductionism in Biology", Science Studies Symposium: McKnight Summer Fellows Presentation ("Thinking Through Science: Philosophical Perspectives on Biology, Geography, and History"), University of Minnesota, Minneapolis, May 2008.

"The Structure of Evolutionary Theory and Biological Knowledge: Epistemic Materials for a 21st Century Synthesis" Department of Ecology and Evolutionary Biology, SUNY – Stony Brook, New York, March 2008. †

2007

"Respondent to Kevin Theissen's 'Global Warming: What We Know and What We Do Not Know'", North Central Program for Science and Theology, University of St. Thomas, St. Paul, MN, November 2007. †

"Consequences of an Intelligent Discussion about Design with Darwin: Asa Gray's Evolving Perspective on Teleology and Natural Theology", &HPS – Conference in Integrated History and Philosophy of Science, University of Pittsburgh, Pittsburgh, PA, October 2007.

"Explanatory Adequacy in Philosophical Analyses of Reductionism", International Society for the History, Philosophy, and Social Studies of Biology, University of Exeter, Exeter, UK, July 2007.

"Functional Homology and Homology of Function", International Society for the History, Philosophy, and Social Studies of Biology, University of Exeter, Exeter, UK, July 2007.

"Reduction, Representation, and Temporality in Explanations of Ontogeny", Center for Philosophy and Ethics of Science, University of Hannover, Hannover, Germany, June 2007. †

"Reduction, Representation, and Temporality in Explanations of Ontogeny", Department of Philosophy, University of Münster, Münster, Germany, June 2007. †

"From Philosophy to Science: Evolutionary Developmental Perspectives", Science and Philosophy (Sci-Phi) Symposium, SUNY-Stony Brook (Manhattan), New York, March 2007.

2006

"Physical Reductionism and Molecular Biology: Causation, Dispositions, and Protein Folding", Department of Philosophy, St. Cloud State University, MN, November 2006. †

"Functional Homology and Homology of Function", Philosophy and Developmental Biology Workshop, Vancouver, British Columbia, November 2006.

"Explaining Evolutionary Innovation and Novelty: Criteria of Explanatory Adequacy and Multidisciplinary Prerequisites", Philosophy of Science Association Meeting, Vancouver, British Columbia, Canada, November 2006.

"Commentary on Robert Wilson's *Boundaries of the Mind* and *Genes and the Agents of Life* ('Author Meets Critics' Session)", American Philosophical Association Meeting (Pacific Division), Portland, OR, March 2006. †

"Natural Theology: Recent Developments, Future Potential", Cornell University, sponsored by Chesterton House and Graduate Christian Fellowship, Ithaca, NY, March 2006. †

"Reductionism, Development, and Time", Philosophy of Biology Workshop, sponsored by the University of California-Irvine, Laguna Beach, CA, February 2006. †

"Criteria of Explanatory Adequacy in Disciplinary Syntheses: Revisiting 'Incommensurability' in the Context of Evolutionary Developmental Biology", Dept. of Philosophy, University of Minnesota-Twin Cities, Minneapolis, MN, January 2006. †

"Evolutionary Morphology and Evo-devo: Hierarchy and Novelty ", Bay Area Biosystematists Meeting, University of California-Berkeley, Berkeley, CA, January 2006. †

2005

"Comparative embryology and Evo-devo history: Lessons from N.J. Berrill's embryological investigations of marine invertebrate evolution", Office for History of Science and Technology, University of California-Berkeley, November 2005. †

"The Structure and Import of Developmental Genetic Explanations of Evolutionary Novelty", International Society for the History, Philosophy, and Social Studies of Biology, University of Guelph, Guelph, Ontario, July 2005.

"Commentary on 'Revisiting the Darwinian Revolution' (Special Issue of the *Journal of the History of Biology*, 2005)", International Society for the History, Philosophy, and Social Studies of Biology, University of Guelph, Guelph, Ontario, July 2005. †

"Evolutionary Developmental Biology and the Problem of Innovation and Novelty", Dept. of Philosophy, California State University-Chico, Chico, CA, February 2005. †

"Evolutionary Developmental Biology and the Problem of Innovation and Novelty", Dept. of Philosophy, University of California-Santa Cruz, Santa Cruz, CA, February 2005. †

"Explaining Innovation and Novelty: A Study on the Nature of Interdisciplinary Epistemology", Hampshire College, Amherst, MA, February 2005. †

"N.J. Berrill and the evolutionary developmental biology of ascidians", Division of Humanities, California Institute of Technology, Pasadena, CA, February 2005. †

"Evolutionary Developmental Biology and the Problem of Innovation and Novelty", School of Life Sciences, Arizona State University, Tempe, AZ, February 2005. †

"Evolutionary Developmental Biology and the Problem of Innovation and Novelty", Dept. of Philosophy, University of Chicago, Chicago, IL, January 2005. †

2004

"Problem Agendas in Biological Research: The Case of Evolutionary Innovation and Novelty", Dept. of Philosophy, University of Missouri-Columbia, Columbia, MO, December 2004. †

"Problem Agendas in Biological Research: The Case of Evolutionary Innovation and Novelty", Dept. of Philosophy, University of California-San Diego, San Diego, CA, October 2004. †

"Larval Homology, Ectoderm Novelty, and Skeletal Arm Morphogenesis in the Sea Urchin Genus *Heliocidaris*", Dept. of Biology, Indiana University, IN, April 2004.

"Problem Agendas in Biological Research: The Case of Evolutionary Innovation and Novelty", Dept. of History and Philosophy of Science, Indiana University, Bloomington, IN, February 2004. †

"Problem Agendas in Biological Research: The Case of Evolutionary Innovation and Novelty", Division of History and Philosophy of Science, Notre Dame University, South Bend, IN, January 2004. †

2003

"Organizational Homology, Sea Urchin Larvae, and Ectoderm Novelty", Philosophy and Developmental Biology Workshop, Cambridge, MA, November 2003.

"N.J. Berrill and the evolutionary developmental biology of ascidians", History of Science Society Meeting 2003, Cambridge, MA, November 2003.

"Evaluating Larval Homologies in Closely Related Species with Different Developmental Modes" (Scientific Poster Presentation), Developmental Basis of Evolutionary Change, University of Chicago, Chicago, IL, October 2003.

"The Problem of Innovation and Novelty", International Society for the History, Philosophy, and Social Studies of Biology, University of Vienna, Vienna, Austria, July 2003.

"Morphological and Paleontological Perspectives for a History of Evo-Devo", Evolutionary Morphology Group, University of Chicago, Chicago, IL, May 2003. †

"Concepts and Conceptual Change: A Hybrid Investigative Framework for Philosophy of Science", Workshop on Cultural Evolution, University of Chicago, Chicago, IL, May 2003. †

2002

"Evolvability, Dispositions, and Intrinsicality", Philosophy of Science Association Meeting 2002, Milwaukee, WI, November 2002.

"Alternate Histories for Evo-Devo: Morphological and Paleontological Perspectives", Dibner Institute for the History of Science Workshop, "From Embryology to Evo-Devo", Cambridge, MA, October 2002. †

"Evolvability, Dispositions, and Intrinsicality", 1st Annual Conference on Recent Work in Biology and Philosophy, Duke University, June 2002.

"Comments on Menser ('Explaining Patterns of Stasis and Change in Kingdom *Animalia*: Developmental Constraints, Evo-devo, and Devo-evo')", Philosophy and Developmental Biology Workshop, University of Texas-Austin, April 2002. †

"Evolutionary Morphology, Innovation, and the Synthesis of Evolutionary and Developmental Biology", Philosophy of Biology Graduate Student Conference, University of Texas-Austin, April 2002.

"Causal Process Individuation, Contrastive Explanation, and Theoretical Generality. Comments on Brandon's "The difference between drift and selection: A reply to Millstein", Philosophy and History of Biology Workshop, University of Pittsburgh, March 2002.

2001

"Evolutionary Morphology, Innovation, and the Synthesis of Evolutionary and Developmental Biology", Pittsburgh/London Colloquium on Philosophy of Biology and Neuroscience, University of London, London, UK, September, 2001.

2000

"Darwin and *Cirripedia* Prior to 1846", Joint Atlantic Seminar on the History of Biology, Princeton University, Princeton, NJ, April, 2000.

OTHER CONFERENCE PARTICIPATION († = invited)

Poster Presentation ("What is a conserved (genetic) mechanism?"), Pan American Society for Evolutionary Developmental Biology, University of Calgary, Alberta, Canada, August 2017.

Commentator on *The Eugenic Mind Project* by Robert Wilson, International Society for the History, Philosophy, and Social Studies of Biology, University of São Paolo, Brazil, July 2017. †

Session Organizer for "From Biological Practice to Scientific Metaphysics: Prospects and Challenges", International Society for the History, Philosophy, and Social Studies of Biology, University of São Paolo, Brazil, July 2017.

Session Organizer for "Generic and Genetic Perspectives on Evolvability", International Society for the History, Philosophy, and Social Studies of Biology, University of São Paolo, Brazil, July 2017.

Summer Institute Co-organizer for "Practices of Individuation and Classification in Science", Banff, Canada, June 2017.

Mini-presentation on "What is a Conserved Mechanism?", Developmental Biology Center, Annual Retreat, University of Minnesota, May 2017. †

Summer Institute Co-organizer for "Reconceiving the Success of Science", Basel, Switzerland, August 2016.

Poster Presentation ("Integrating Generic and Genetic Explanations of Biological Phenomena"), Philosophy of Science Association Meeting, Atlanta, GA, November 2016.

Faculty Instructor/Co-organizer for "Biological Individuality", Winter School, History and Philosophy of Science Unit, University of Sydney, Sydney, Australia, July 2016. †

Conference Co-organizer for HOPOS 2016 (11th biennial meeting of the International Society for the History and Philosophy of Science), Minneapolis, MN, June 2016.

Workshop Co-organizer for "Integrating Generic and Genetic Approaches to Biological Phenomena—Evolutionary Novelty", Stillwater, MN, April 2016.

Session Chair for "Philosophy of the Life Sciences II", European Philosophy of Science Association Meeting, Düsseldorf, Germany, September 2015.

Session Chair for "Data Practices in Biology and Biomedicine", Society for Philosophy of Science in Practice, University of Aarhus, Denmark, June 2015. †

Panel Discussant for "Development of the Social Brain", 39th Minnesota Symposium on Child Psychology, University of Minnesota, Minneapolis, MN, October 2015. †

Session Co-organizer for "Physical Science Approaches to Organismal Development", International Society for the History, Philosophy, and Social Studies of Biology, University of Quebec-Montreal, Canada, July 2015.

Workshop Co-organizer for "Integrating Generic and Genetic Approaches to Biological Phenomena—Development", Stillwater, MN, April 2015.

Commentator on "Ignorance, Experience, and the Rehabilitation of Wonder at the Natural World" by Lisa Sideris, Nature, Ways of Knowing, and Moral Commitment: A Conversation on Religion, Science and the Anthropocene, University of Minnesota, Minneapolis, MN, August 2014. †

Workshop Participant for the "Future of Evolutionary Developmental Biology", National Evolutionary Synthesis Center, Durham, NC, December 2013. †

Discussant for "Philosophy of Biology and Biology Education", International Society for the History, Philosophy, and Social Studies of Biology, University of Montpellier, France, July 2013. †

Session Co-organizer for "Generic and Genetic Explanations of Evolvability and Evolutionary Novelty", International Society for the History, Philosophy, and Social Studies of Biology, University of Montpellier, France, July 2013.

Co-organizer for "*Philosophy & Theory in Biology*: Young Investigators Symposium", CUNY-Lehman, New York, April 2013.

Workshop participant for "What is an Individual?", University of Wisconsin-Madison, December 2012. †

Session Chair for "Thinking about the Clock in the Molecular Age", Fascinating Rhythms: A Conference on the History and Philosophy of Biological Rhythms Research, University of Minnesota, May 2012. †

Workshop Co-organizer for "Integration in Contemporary Biology: Philosophical Perspectives on the Dynamics of Interdisciplinarity", Minnesota Center for Philosophy of Science, Minneapolis, MN, September 2011.

Session Co-organizer for "Evo-devo and Explanatory Integration: Biological Practices and Physical Science", International Society for the History, Philosophy, and Social Studies of Biology, University of Utah, Salt Lake City, UT, July 2011.

Discussant for "Debating *Entwickelungsgeschichte*: Disputed Interpretations, Disputed Legacies", International Society for the History, Philosophy, and Social Studies of Biology, University of Utah, Salt Lake City, UT, July 2011. †

"Origins of Life", The Seven Pines Symposium XV, Stillwater, MN, May 2011. †

Workshop Participant in "Philosophical Perspectives on Causal Reasoning in Biology", Minnesota Center for Philosophy of Science, University of Minnesota, MN, May 2011. †

Session Chair for "Philosophy of Biology", American Philosophical Association – Central Division Meeting, Minneapolis, MN, March 2011. †

Discussant for "Debating Darwin: Philosophical Issues in Evolution and Natural Selection", University of California – Santa Barbara, CA, February 2011. †

Workshop Organizer for "Conceptual Change in Biological Science: Evolutionary Developmental Biology, 1981-2011", Max Planck Institute for the History of Science, Dahlem, Berlin, July 2010.

Session Chair for "Genomic Programs as Mechanism Schemas: A Non-Reductionist Interpretation", Philosophy of Biology at Madison (POBAM), University of Wisconsin–Madison, May 2010. †

Symposium Co-organizer for "Genetics and Religion: Prospects for Dialogue", University of Minnesota, Minneapolis, MN, September 2009.

Session Chair for "Information and Function", International Society for the History, Philosophy, and Social Studies of Biology, University of Queensland, Brisbane, Australia, July 2009. †

Session Organizer for "Probing the Philosophical Consequences of Experimental Practices in Developmental Biology", Society for the Philosophy of Science in Practice, University of Minnesota, Minneapolis, MN, June 2009.

"Emergence: From Physics to Biology", The Seven Pines Symposium XI, Stillwater, MN, May 2007. †

Session Chair for "Scientific Practice, Conceptual Change, and the Nature of Concepts", Concepts and Objectivity: Knowledge, Science, and Values, University of Pittsburgh, September 2006. †

Panel Discussion Chair for "Methods and Approaches to Biology", Southwest Colloquium on the History and Philosophy of Life Sciences, UC-Davis, April 2006. †

"Shifting Pasts: Four Dialogues on Change", Second German-American Frontiers of Humanities Symposium, Hamburg, Germany, October 2005. †

"Concept of the Gene in Contemporary Biology" Workshop, University of Pittsburgh, January 2003. †

"From Embryology to Evo-Devo", Dibner Institute Seminar on the History of Biology, Woods Hole, MA, May/June 2001.

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science; American Philosophical Association; History of Science Society; International Society for the History, Philosophy, and Social Studies of Biology; National Association of Scholars; Philosophy of Science Association; Society for the Philosophy of Science in Practice

SERVICE

Institutional

CLA 'Sneak Preview' for prospective students (2017, 2007); HSTM Director Search Committee (2017); CLA Showcase (2017); McKnight Land-Grant Professorship Selection Committee (2016, 2015); CLA Roadmap Initiative Committee – Research (2014-5); Academic Innovation Grants Committee (2013-2015); Graduate School Interdisciplinary Committee (2013-2015); CLA Winton Chair Committee (2013-2014); Biology, Society, and Environment Advisory Committee (2013-); CLA Individual Degree Program Committee (2012-2015); CLA Undergraduate Freshmen Scholarship Reviewer (2013, 2011); Imagine Fund Deputy Reviewer (2012); CLA College Day (2015, 2012, 2011, 2010, 2009); Honors Program Preview Seminar (2013, 2012); CLA Undergraduate Continuing Scholarship Reviewer (2010, 2009, 2008); CLA Course Review Committee (2009–2011); CLA Faculty Calling Outreach (2009); CLA Freshmen Research Award Faculty Participant (2008-2009)

Internal Affiliations: Minnesota Center for Philosophy of Science; Studies of Science and Technology Program (Director; Graduate Status); Conceptual Foundations in Evolutionary Biology Interdisciplinary Graduate Group; History of Science, Technology, and Medicine (Affiliate Faculty – Graduate Status); Religious Studies (Affiliate Faculty); Center and Program for Cognitive Sciences (Affiliate Faculty – Graduate Status)

Departmental

Placement Committee Chair (2017-8); Chair of Faculty Search Committee, History of Philosophy (2015-6); Library Liaison (2014-7); Salary Review Committee (2015, 2013); MCPS Governing Board (2014-); MCPS Executive Committee (2014-); Staffing and Awards (2014-5); Executive Advisory Committee (2014-); Colloquium Committee (2012-4, 2009, 2007); Placement Committee (2013-4); Committee on Committees (2014, 2013, 2012); Curriculum Development Committee (2012); Woodbridge Scholarship Award Committee (2012, 2007); Website Coordinator (2009–2014); Standing Search Committee (2008–); Admission and Aid Committee (2008); Departmental Planning Committee (2008)

Professional

Grant Review Panel, National Science Foundation, Science, Technology, and Society Division, 2017

Chair, 1st Annual Poster Forum, Philosophy of Science Association, 2016

Member-at-Large (elected), Section on History & Philosophy, American Association for the Advancement of Science, 2016–2020

Organizing Committee Co-Chair, Biennial Meeting of the International Society for the History of Philosophy of Science, Minneapolis, MN, 2016

General Editor of *Minnesota Studies in Philosophy of Science*, 2014–
Volume 20: Gorham, G., B. Hill, E. Slowik, and C.K. Waters (eds.). 2016. *The Language of Nature*

Reassessing the Mathematization of Natural Philosophy in the Seventeenth Century. Minneapolis, MN: University of Minnesota Press.

Founding editor of *Philosophy & Theory in Biology* (online, open-access, peer-reviewed journal – now entitled *Philosophy, Theory & Practice in Biology*: http://www.ptpbio.org/) with Massimo Pigliucci (CUNY-Lehman), Jonathan Kaplan (Oregon State University), and Joan Roughgarden (Stanford University), 2009–2014

Philosophy, Theory & Practice in Biology, Editorial Board, 2015–

&HPS – Integrated History and Philosophy of Science Steering Committee, 2009–2015; Integrated History and Philosophy of Science Executive Council, 2015–

Metascience Editorial Board, 2010–

Bioscience Editorial Board, 2012–

Journal of Experimental Zoology (Mol Dev Evol) Editorial Board, 2013–

Science: Philosophy, History and Education Book Series (Springer), Editorial Board, 2013–

Council Member (elected), International Society for the History, Philosophy, and Social Studies of Biology, 2013–2017

***Referee / Reviewer**
(2017) *British Journal for Philosophy of Science*, Cambridge University Press, *Developmental Biology*, *History and Philosophy of the Life Sciences*, *Journal of Experimental Zoology (Mol Dev Evol)*, MIT Press, *Philosophy, Theory & Practice in Biology*, Princeton University Press, *Synthese*.
(2016) Annual Meeting Reviewer for Society for Exact Philosophy, *Biology & Philosophy*, *British Journal for Philosophy of Science*, *Journal of Experimental Zoology (Mol Dev Evol)*, Program Committee for "Infinite Idealizations in Science" (Munich Center for Mathematical Philosophy), Research Foundation – Flanders (Postdoctoral Fellow Referee), *Studies in the History and Philosophy of Biological and Biomedical Science* (2x), *Synthese*, University of Chicago Press
(2015) *Biology & Philosophy*, *British Journal for Philosophy of Science*, &HPS5 Proceedings, *Genome*, National Science Foundation, *Philosophy of Science*, Program Committee for "(Re)engineering Biology" (Pittsburgh-CPS); *Science Education*, Springer, *Studies in the History and Philosophy of Science*, *Studies in the History and Philosophy of Biological and Biomedical Science, Zoologischer Anzeiger*
(2014) *British Journal for Philosophy of Science*, John Templeton Foundation, *Philosophical Studies*, Springer, *Studies in the History and Philosophy of Science*, *Synthese* (2x)
(2013) *Evolutionary Biology*; *Mind & Matter*, *British Journal for Philosophy of Science*, *Journal of Experimental Zoology (Mol Dev Evol)*, *Studies in the History and Philosophy of Biological and Biomedical Science*, Program Committee for "Reduction and Emergence in the Sciences" (CAS-LMU Munich); Research Foundation – Flanders (Postdoctoral Fellow Referee)
(2012) *Bioscience*, Internet Encyclopedia of Philosophy, John Templeton Foundation, *Journal of Experimental Zoology (Mol Dev Evol)*, National Science Foundation (Science and Society Division), *Studies in the History and Philosophy of Science Part A*, Young Researchers Prize (Société de Philosophie des Sciences)
(2011) *British Journal for Philosophy of Science*, *Biology & Philosophy*, *Evolution & Development* (2x), John Templeton Foundation, *Journal of Experimental Zoology (Mol Dev Evol)*, *Philosophy of Science* (2x), *Science & Education* (2x)
(2010) *Biology & Philosophy*, *British Journal for Philosophy of Science*, Canada Research Chairs Program – College of Reviewers, *Erkenntnis*, *Evolution & Development*, Konrad Lorenz Institute for Evolution & Cognition Research, *Philosophy of Science* (2x), *Psychology Research and Behavioral Management*
(2009) *Acta Biotheoretica* (2x), *BioScience*, *Erkenntnis, Philosophy of Science* (2x)
(2008) Oxford University Press (2x); Springer; National Science Foundation (Frontiers in Integrative Biological Research); Western Canadian Philosophical Association; *Erkenntnis*
(2007) *Biology & Philosophy*; *The Quarterly Review of Biology*; *International Studies in the Philosophy of Science*; *Philosophy of Science* (2x)

(2006) National Science Foundation (Science and Society Division); MIT Press; *BioScience*; *Heredity*; *Journal of Experimental Zoology (Molecular Developmental Evolution)*
(2005) *Journal of the History of Biology*; Stanford Encyclopedia of Philosophy; *Journal of Experimental Zoology (Mol Dev Evol)* (2x)
(2004) *Journal of Experimental Zoology (Mol Dev Evol)*

Other
Co-organizer of the History and Philosophy of Science and Mathematics Seminar Series (2005-6; sponsored by the Institute for Humanities Research, UCSC)

TEACHING EXPERIENCE (summary only)

University of Minnesota
Fall 2017 – Instructor for undergraduate course "Philosophy of the Biological Sciences"
Fall 2015 – Instructor for undergraduate course "Philosophy of the Biological Sciences"
Fall 2014 – Co-instructor for graduate seminar "Philosophy of the Biological Sciences"
Spring 2014 – Instructor for undergraduate course "Science, Technology, and Society: Darwin and Design"
Fall 2013 – Instructor for undergraduate course "Philosophy of the Biological Sciences"
Fall 2013 – Instructor for undergraduate course "Scientific Reasoning"
Spring 2013 – Instructor for undergraduate course "Science, Technology, and Society: Darwin and Design"
Spring 2013 – Instructor for undergraduate/graduate course "19th Century Philosophy of Science"
Fall 2012 – Instructor for undergraduate course "Philosophy of the Biological Sciences"
Fall 2012 – Instructor for undergraduate course "Scientific Reasoning"
Fall 2011 – Co-instructor for graduate seminar "Evolutionary Developmental Biology"
Fall 2011 – Instructor for undergraduate course "Scientific Reasoning"
Fall 2010 – Co-instructor for undergraduate course "Philosophy of the Biological Sciences"
Spring 2010 – Co-instructor for faculty seminar "Corporeal Epistemologies: Body and Knowing Across the Disciplines" (Institute for Advanced Study)
Fall 2009 – Instructor for undergraduate course "Science, Technology, and Society: Darwin and Design"
Fall 2009 – Instructor for undergraduate course "Scientific Reasoning"
Fall 2008 – Instructor for undergraduate course "Science, Technology, and Society: Darwin and Design"
Fall 2008 – Instructor for undergraduate course "Scientific Reasoning"
Spring 2008 – Instructor for undergraduate/graduate course "19th Century Philosophy of Science"
Spring 2008 – Instructor for undergraduate course "Fossils and Philosophy: Historical Knowledge"
Fall 2007 – Instructor for undergraduate course "Science, Technology, and Society: Darwin and Design"
Fall 2007 – Instructor for undergraduate course "Scientific Reasoning"
Spring 2007 – Instructor for undergraduate course "Philosophy of the Biological Sciences"
Spring 2007 – Instructor for undergraduate course "Scientific Reasoning"
Fall 2006 – Instructor for graduate seminar "Reductionism in Biology"

Fall 2006-Fall 2016: Co-leading the interdisciplinary Biology Interest Group (through the Minnesota Center for Philosophy of Science) – meets weekly, is attended by faculty and graduate students from across the university, and routinely hosts visiting scholars as guest speakers/participants.

Teaching Development Activities: Center for Teaching and Learning Workshop ("Active Lectures"), August 2009; Early Career Teaching Program, 2011-12; Center for Writing Workshop, Teaching with Writing Series (Senior Seminars, Senior Papers, Senior Projects: Structuring Capstone-Level Writing Experiences), Panel Participant, 2012.

UC Santa Cruz
Spring 2006 – Instructor for undergraduate course "Philosophy of Biology"
Spring 2006 – Instructor for undergraduate course "Introduction to Logic"
Winter 2006 – Instructor for undergraduate course "Nature of Science: Introduction to Philosophy of Science"
Fall 2005 – Instructor for undergraduate course "Philosophy of Science: Darwin and Design"

Indiana University, Bloomington

Spring 2004 – Associate Instructor for the undergraduate course "Evolution"
Instructor: Rudolf Raff
Fall 2003 – Associate Instructor for the undergraduate course "Evolution and Diversity"
Instructor: Michael Wade
Spring 2003 – Inquiry Curriculum Enhancement Team, HHMI grant, Dept. of Biology, Indiana University: designed, implemented, and assessed the effectiveness of novel teaching modules in the discussion section curriculum of the introductory lecture course "Evolution and Diversity"
Fall 2002 – Inquiry Curriculum Enhancement Team (as above)

University of Pittsburgh

Summer 2002 – Independent Instructor for undergraduate course "Darwinism and its Critics"
Summer 2001 – Independent Instructor for undergraduate course "Darwinism and its Critics"
Spring 2000 – Independent Instructor for undergraduate course "Myth and Science"
Summer 1999 – Independent Instructor for undergraduate course "Problem Solving"
Spring 1999 – Teaching Assistant for undergraduate course "Einstein for Everyone"
Instructor: John Norton
Fall 1998 – Teaching Assistant for undergraduate course "Thinking about the Environment"
Instructor: Bruce Glymour

Guest Lectures

September 2017 – "Understanding Biological Reasoning: A Philosophical Perspective", delivered at the University of Minnesota for the undergraduate course "Introduction to Biology, Society, and Environment" [BSE 2001] (*also delivered in January 2017, September 2016, March 2016, September 2015, January 2015, February 2014, September 2013, February 2013, September 2011, and April 2011*)
Primary Instructor: R. Squires/K. Klink, PhD, Geography, Environment and Society (CLA)

March 2017 – "Not Science, but Sciences, and Why it Matters", delivered at Sip of Science, National Center for Earth-Surface Dynamics and St. Anthony Falls Laboratories, Minneapolis, MN.

October 2016 – "Not Science, but Sciences, and Why it Matters", delivered at the University of Minnesota for the undergraduate honors seminar "Ways of Knowing and Science" [AGRI 1902H]
Primary Instructor: Craig Hassel, PhD, Food Science and Nutrition (CFANS)

September 2016 – "Philosophy of Science (in Practice)", delivered at the University of Minnesota for the graduate seminar "Orientation to Scientific Thought" [HORT 8280]
Primary Instructor: Ruth Shaw, PhD, Ecology, Evolution, and Behavior (CBS)

September 2016 – "Understanding Biological Reasoning: A Philosophical Perspective", delivered at the University of Minnesota for the undergraduate/graduate course "Research Proposals: From Ideas to Strategic Plans" [ANSC 3091V/5091] (*also delivered in February 2016 and October 2015)*
Primary Instructor: Milena Saqui-Salces, PhD, Animal Science (CFANS)

April 2016 – "Not Science, but Sciences, and Why it Matters", delivered to the Campus Atheists, Skeptics, and Humanists (*also delivered to Truth in Science and Engineering in March 2016*)

September 2015 – "Understanding Biological Reasoning: A Philosophical Perspective", delivered at the University of Minnesota for the undergraduate course "Biology Colloquium" (*also delivered in April 2015*)
Instructor: Dahsol Lee, Student Leader, College of Biological Sciences (CBS)

April 2014 – "Emerging Perspectives on Evolution", delivered at Bethel University Seminary for the graduate course "Theology and Science"
Primary Instructor: Kenneth Reynhout, PhD, Theology

April 2013 – "Why Centipedes are Odd and Philosophy is Relevant to Biology", delivered for the College of Biological Sciences "Common Time" sequence for freshmen majors (CBS)

May 2011 – "Darwin's Functional Reasoning", delivered at the Minneapolis College of Art and Design for the undergraduate course "Reading and Writing 2"
Primary Instructor: Neal Jahren, PhD, Biochemistry, Molecular Biology and Biophysics

March 2011 – "Interdisciplinary Lessons for the Teaching of Biology from the Practice of Evo-devo", delivered at the STEM (Science, Technology, Engineering, and Mathematics) Education Center, University of Minnesota

February 2011 – Panel discussant (with Lynn Nyhart and Ronald Numbers) for the movie *Creation: The True Story of Charles Darwin*, "Darwin Day 2011", University of Wisconsin – Madison

February 2010 – "Famous Thinkers Change Their Mind (With Subtlety): The Case of Charles Darwin and Asa Gray", delivered at the "Darwin Day" event for the Campus Atheists and Secular Humanists (CASH)

February 2010 – "Understanding Biological Reasoning: Concepts, Explanations, & Interdisciplinarity", delivered to the Osher Lifelong Learning Institute for the series 'Afternoon with the Liberal Arts'

March 2008 – "Interdisciplinarity in Philosophical Perspective", delivered at the University of Minnesota for the NSF Integrative Graduate Education and Research Traineeship (IGERT) graduate seminar
Primary Instructor: Claudia Neuhauser, PhD, Ecology and Evolutionary Biology

April 2007 – "Temporality in Explanations of Ontogeny: Making the Continuous Discrete", delivered at the University of Minnesota for the graduate seminar "Matters of Time"
Primary Instructors: David Fox, PhD, Geology and Geophysics; Sally Kohlstedt, PhD, History of Science and Technology; Ann Waltner, PhD, History

September 2006 – "Science and Theology in History", delivered at the University of Minnesota for the undergraduate course "Origins"
Primary Instructor: Chris Macosko, PhD, Chemical Engineering and Materials Science

February 2004 – "Homology: How Can We Trace Evolutionary History with Structure?", delivered at Indiana University for the undergraduate course "Evolution"
Primary Instructor: Rudolf Raff, PhD, Biology

March 2002/2001/2000 – "Darwinism and Christianity", delivered at Carnegie Mellon University for the undergraduate course "Christianity and Science"
Primary Instructor: Gary Patterson, PhD, Physical Chemistry

March 2002 – "Charles Lyell, Geology, and Darwin", delivered at the University of Pittsburgh for the undergraduate course "Darwinism and its Critics"
Primary Instructor: James G. Lennox, PhD, History and Philosophy of Science

Graduate Student, Directed Study, and Senior Project Supervision

Fall 2017 – Dissertation committee member (reader) for Katelin Krieg (English)
Fall 2017 – Dissertation committee member (reader) for Ryan Knigge (Anthropology)
Fall 2017 – Thesis proposal committee member for Justin Ivory
Fall 2017 – Three-paper exam committee member for Max Dresow
Spring 2017 – 2 Senior Projects supervised
Spring 2017 – Three-paper exam committee member for Femke Kuiling
Spring 2017 – Graduate Directed Study on Plato's *Republic* with John Heydinger (HSTM)
Fall 2016 – Dissertation committee member (reader) for Patrick Laine and Maria Rebolleda-Gomez (EEB)
Fall 2016 – PhD candidacy exam committee member for Allen Goebl (Psychology)
Fall 2016 – Preliminary examination committee for John Heydinger (HSTM)
Fall 2016 – Three-paper exam committee member for Justin Ivory and Femke Kuiling
Summer 2016 – Dissertation committee member (advisor) for Jack Powers

Summer 2016 – Dissertation committee member (reader) for William Bausman
Spring 2016 – 2 Senior Projects supervised
Spring 2016 – Thesis proposal committee member for Kele Cable (HSTM)
Spring 2016 – PhD candidacy exam committee member for Noah Gettle (Ecology, Evolution, and Behavior)
Fall 2015 – 2 Senior Projects supervised; 1 Undergraduate Directed Study supervised
Fall 2015 – Thesis proposal committee member for Cameron Lazaroff-Puck (HSTM)
Fall 2015 – Preliminary examination committee for Cameron Lazaroff-Puck (HSTM) and Kele Cable (HSTM)
Summer 2015 – Dissertation committee member (reader) for Shay Logan
Summer 2015 – Viva voce PhD examination for James Lowe (University of Exeter, UK)
Spring 2015 – PhD candidacy exam committee member for Katherine Liu (Ecology, Evolution, and Behavior)
Spring 2015 – 3 Senior Projects supervised; 1 Undergraduate Directed Study supervised
Fall 2014 – Dissertation committee member (reader) for Mark Herr
Fall 2014 – 1 Senior Project supervised; 3 Undergraduate Directed Studies supervised
Summer 2014 – 1 Undergraduate Directed Study supervised
Summer 2014 – M.A. exam committee member for Stephanie Hake
Summer 2014 – Departmental Research Partnership Program supervisor for Tom Doyle
Spring 2014 – PhD candidacy exam committee member for Katelin Krieg (English)
Spring 2014 – Undergraduate Honors exam committee member for Brendan Caldwell
Spring 2014 – Thesis proposal committee member for Jack Powers
Spring 2014 – Thesis proposal committee member for Ryan Knigge (Anthropology)
Spring 2014 – 2 Senior Projects supervised
Spring 2014 – PhD candidacy exam committee member (external) for Bradley Wood (Louisiana State Univ.)
Spring 2014 – Dissertation committee member (co-advisor) for Tom Doyle
Fall 2013 – Thesis proposal committee member for Molly Paxton
Fall 2013 – Doctoral preliminary oral exam committee member for Maria Rebolleda-Gomez
Fall 2013 – 1 Senior Project supervised; 1 Undergraduate Directed Study supervised
Fall 2013 – Three-paper exam committee member for Jack Powers
Summer 2013 – Graduate Research Partnership Program supervisor for Molly Paxton
Spring 2013 – Dissertation committee member (reader) for Joe Martin (HSTM)
Spring 2013 – 2 Senior Projects supervised; 1 Undergraduate Directed Study supervised
Spring 2013 – Three-paper exam committee member for Molly Paxton
Spring 2013 – M.A. thesis proposal committee member for David VanAcker
Fall 2012 – 1 Senior Project supervised; 3 Undergraduate Directed Studies supervised
Fall 2012 – Three-paper exam committee member for Molly Paxton
Summer 2012 – Dissertation committee member (reader) for Anastasia Panagopoulos
Summer 2012 – Departmental Research Partnership Program supervisor for Jack Powers
Spring 2012 – Thesis proposal committee member for Patrick Laine
Spring 2012 – Three-paper exam committee member for Leia Rollag
Spring 2012 – 2 Undergraduate Research Opportunity Projects (UROPs) supervised
Fall 2011 – M.A. exam committee member for Joe Martin (HSTM)
Fall 2011 – Dissertation committee member (reader) for Nathan Crowe (HSTM)
Fall 2011 – Thesis proposal committee member for Will Bausman
Fall 2011 – 2 Undergraduate Directed Studies supervised
Fall 2011– Three-paper exam committee member for Leia Rollag
Spring 2011 – 2 Senior Projects supervised (both Honors Theses)
Spring 2011 – M.A. exam committee member for Patrick Norton
Fall 2010 – 2 Senior Projects supervised
Fall 2010 – Three-paper exam committee member for Will Bausman and Patrick Norton
Summer 2010 – Dissertation committee member (reader) for Deepanwita Dasgupta
Summer 2010 – Departmental Research Partnership Program supervisor for Leia Rollag
Spring 2010 – Thesis proposal committee member (co-advisor) for Tom Doyle and Joe Martin (HSTM)
Fall 2009 – Preliminary examination committee for Joe Martin (HSTM)
Fall 2009 – 1 Undergraduate Directed Study supervised
Fall 2009 – Thesis proposal committee member for Maran Wolston and Mark Herr
Fall 2009 – Three-paper exam committee member for Marisol Brito
Summer 2009 – Preliminary examination committee for Nathan Crowe (HSTM)

Fall 2008 – Thesis proposal committee member for Anastasia Panagopoulos
Fall 2008 – 1 Senior Project supervised
Fall 2008 – Three-paper exam committee member for Marisol Brito
Summer 2008 – Dissertation committee member (reader) for Barton Moffatt
Summer 2008 – Graduate Research Partnership Program supervisor for Tom Doyle
Spring 2008 – 3 Senior Projects supervised
Fall 2007 – 1 Undergraduate Directed Study supervised
Fall 2007 – Directed study with Nathan Crowe on "Darwin and Design"
Spring 2007 – 5 Senior Projects supervised
Fall 2006 – Dissertation committee member (reader) for Toben LaFrancois
Fall 2006/Spring 2007 – Three-paper exam committee member for Jessica Slind
Winter 2006 – Directed study with Robert Harada on "Theories of Scientific Progress" [UCSC]
Fall 2005/Winter 2006 – Qualifying exam committee member for Zachary Fruhling [UCSC]

REFERENCES

AVAILABLE UPON REQUEST