

Marc Lange
Curriculum Vitae
October 2018

Department of Philosophy
The University of North Carolina at Chapel Hill
CB #3125 – Caldwell Hall
Chapel Hill, NC 27599-3125
919 962 3324 mlange@email.unc.edu

107 Yukon Lane
Chapel Hill, NC 27514
919 489 6259

Education

University of Pittsburgh, 1985-1990
M.A., Department of Philosophy, 1988
Ph.D., Department of Philosophy, 1990
Dissertation: The Design of Scientific Practice
Directed by Robert Brandom

Princeton University, 1981-1985
A.B., with Highest Honors, 1985, majoring in Philosophy
Senior thesis: Newcomb's Problem and Causal Decision Theory
Directed by David Lewis

Academic Positions

University of North Carolina at Chapel Hill, Department of Philosophy
Theda Perdue Distinguished Professor, July 2012-
Philosophy Department Chair, July 2011-
Faculty Fellow, UNC Institute of Arts and Humanities, 2011-
Bowman and Gordon Gray Distinguished Term Professor,
July 2009-June 2012
Associate Chair of Philosophy, July 2007-June 2011
Professor, August 2003-June 2012

- Fellow, DFG [Deutsche Forschungsgemeinschaft] Research Group Causation|Laws|Dispositions|Explanation, University of Cologne (Germany), November-December 2013
- Metaphysics of Science Summer School, Department of Theoretical Philosophy, University of Helsinki (Finland), July 2015
- Faculty, Duke University Summer Seminar in Neuroscience and Philosophy (SSNAP), May 2016, May 2017, May 2018
- Associate Member, Paris-IHPST (Institut d'Histoire et Philosophie des Sciences), March 2017-present

University of Washington, Seattle; Department of Philosophy
Professor, September 2001- June 2003
Associate Professor, July 1998-August 2001
Assistant Professor, July 1997-June 1998

University of California, Los Angeles; Department of Philosophy
Assistant Professor, July 1990-June 1997

Areas of Work Philosophy of science, and related regions of metaphysics, epistemology, and philosophy of mathematics

Publications

Books

Because Without Cause: Non-Causal Explanations in Science and Mathematics, Oxford Studies in Philosophy of Science (New York: Oxford University Press, 2016). Book symposia in *Philosophy and Phenomenological Research* (2018) and *Metascience* (2018). Reviewed at *Notre Dame Philosophical Reviews* (5.2.2017), *Mind* (2017), *Philosophia Mathematica* (2018), *Philosophical Review* (2018). Subject of “Author Meets Critics” session at Eastern Division meeting of the American Philosophical Association, New York, January 2019.

Laws and Lawmakers: Science, Metaphysics, and the Laws of Nature (Oxford University Press, 2009, hardcover and paperback). Some reviews: *Metascience* 20 (January 2011): 27-52, symposium with papers by John Carroll, Barry Loewer, and James Woodward (and my replies); *Ethics* 120 (January 2010): 431-7, reviewed by Mark Lance and Maggie Little; *Notre Dame Philosophical Reviews* (9.27.2011) by Ned Hall; *International Studies in the Philosophy of Science* 25 (2011): 83-86 by Barbara Vetter; *Philosophical Quarterly* 61 (2011): 415-418; *Choice* (March 2010); *Science and Education* 2011; *Spontaneous Generations: A Journal for the History and Philosophy of Science* 4 (2010): 266-9.

An Introduction to the Philosophy of Physics: Locality, Fields, Energy, and Mass (Oxford: Blackwell, 2002, hardcover and paperback). Some reviews: *Mind* 113 (2004): 562-565; *Review of Metaphysics* 57 (2004): 631; *Choice* 40 (January 2003): 859; *Il Sole 24 Ore* (Domenica, Italy), 23 November 2003, p. 34. First runner-up for 2004 British Society for the Philosophy of Science President’s Prize for the best textbook in the philosophy of science.

Natural Laws in Scientific Practice (New York: Oxford University Press, 2000 hardcover, 2007 paperback). Some reviews: *Philosophy and Phenomological Research* 71 (July 2005): 240-245 (Review Essay); *Philosophy of Science* 71 (April 2004): 222-224; *Annals of the Japan Association for Philosophy of Science* 12 (November 2003): 53-59; HOPOS [*International Society for the History of the Philosophy of Science*] *Newsletter* VIII:1 (spring/summer 2004): 10-11; *European Legacy* 8 (January 2003): 237-8; *Review of Metaphysics* 56 (December 2002): 435; *Choice* 38 (February 2001): 1101.

Invited pieces (book chapters, prefaces, articles, and encyclopedia entries)

“Reply to my Critics: On Explanations by Constraint”, contribution to a symposium on *Because Without Cause*, in *Metascience* 27:1 (March 2018), pp. 27-36.

“What Would Reasons For Trusting Science Be?”, Commentary on Tanner Lectures on Human Values (Naomi Oreskes, “Should We Trust Science?”), Princeton: Princeton University Press,

forthcoming.

“Laws of Physics”, in Eleanor Knox and Alastair Wilson (eds.), *Routledge Companion to the Philosophy of Physics*, New York: Routledge, forthcoming.

“Laws of Nature, Natural Necessity, and Counterfactual Conditionals,” in Otavio Bueno and Scott Shalkowski (eds.), *Routledge Handbook of Modality*, New York and London: Routledge, forthcoming.

“How the Explanations of Natural Laws Make Some Reducible Physical Properties Natural and Explanatorily Potent,” in Walter Ott and Lydia Patton (eds.), *Laws of Nature*. Oxford: Oxford University Press, 2018, pp. 181-204.

“Because Without Cause: Scientific Explanations by Constraint”, in Alexander Reutlinger and Jusa Saatsi (eds.), *Explanation Beyond Causation: Philosophical Perspectives on Non-Causal Explanations*, Oxford: Oxford University Press, 2018, pp. 15-38.

“Idealism and Incommensurability,” in Tyron Goldschmidt (ed.), *Idealism: New Essays in Metaphysics*, Oxford: Oxford University Press, 2017, pp. 259-274.

Preface to “Cambridge Philosophical Classics” reissue of D.M. Armstrong, *What Is a Law of Nature?* (1983), Cambridge University Press, 2016.

“How are Mental Illnesses Different?”, in Gary Gala and Daniel Moseley (eds.), *Philosophy and Psychiatry: Problems, Intersections, and New Perspectives*, New York and London: Routledge, 2015, pp. 36-51.

“Laws of Nature,” in Lawrence Sklar (ed.), *Physical Theory: Method and Interpretation*, New York: Oxford University Press, 2015, pp. 63-93.

“Laws of Nature,” in Martin Curd and Stathis Psillos (eds.), *Routledge Companion to the Philosophy of Science*, 2nd ed. New York: Routledge, 2014, pp. 235-244.

“How to Explain the Lorentz Transformations”, in Stephen Mumford and Matthew Tugby (eds.), *Metaphysics and Science (Mind Association Occasional Series)*, Oxford: Oxford University Press, 2013, pp. 73-98.

“What Would Natural Laws in the Life Sciences Be?”, in Kostas Kampourakis (ed.), *The Philosophy of Biology: A Companion for Educators*, Dordrecht: Springer, 2013, pp. 67-86.

“Are Some Things Naturally Necessary?”, in Tyron Goldschmidt (ed.), *The Puzzle of Existence: Why Is There Something Rather Than Nothing?* (Routledge Studies in Metaphysics), New York: Routledge, 2013, pp. 235-251.

“There Sweep Great General Principles Which All the Laws Seem to Follow”, in Karen Bennett and Dean Zimmerman (eds.), *Oxford Studies in Metaphysics*, volume 7, Oxford: Oxford University Press, 2012, pp. 154-185.

“Laws of Nature”, in *Oxford Bibliographies in Philosophy*, ed. Duncan Prichard, New York: Oxford University Press, 2012.

“Replies to my Critics”, contribution to a symposium on *Laws and Lawmakers*, in *Metascience* 20 (January 2011): 45-52.

“It Takes More Than All Kinds to Make a World”, in Joseph Campbell, Michael O'Rourke, and Matthew Slater (eds.), *Carving Nature at its Joints: Natural Kinds in Metaphysics and Science*, Cambridge: Bradford/MIT Press, 2011, pp. 53-84.

“Hume and the Problem of Induction,” in Dov Gabbay, Stephen Hartmann, and John Woods (eds.), *Handbook of the History of Logic, volume 10: Inductive Logic*, Amsterdam: Elsevier/North Holland, 2011, pp. 43-92.

“Causation in Classical Mechanics,” in Helen Beebe, Christopher Hitchcock, and Peter Menzies (eds.), *Oxford Handbook of Causation*, Oxford: Oxford University Press, 2009, pp. 649-660.

“Why do the Laws Explain Why?”, in Toby Handfield (ed.), *Dispositions and Causes*, Oxford: Oxford University Press, 2009, pp. 286-321.

“Scientific Inquiry”, in John Shand (ed.), *Central Issues of Philosophy*, Malden, MA: Blackwell, 2009, pp. 177-192.

“Laws of Nature,” in Martin Curd and Stathis Psillos (eds.), *Routledge Companion to the Philosophy of Science*, New York: Routledge, 2008, pp. 203-212.

“Laws and Theories,” in Sahotra Sarkar and Anya Plutynski (eds.), *A Companion to the Philosophy of Biology*, Malden, MA: Blackwell, 2008, pp. 489-505.

Articles in Donald Borchert (ed.), *Encyclopedia of Philosophy*, 2nd edition. Detroit: Macmillan Reference USA, 2006.

“Classical Mechanics, Philosophy of,” volume 2, pp. 279-284.

“Energy and Force,” volume 3, pp. 234-237.

“Laws, Scientific,” volume 5, pp. 220-225.

Book edited (with introductions to the papers anthologized)

Philosophy of Science: An Anthology (Malden, MA: Blackwell, 2007, hardcover and paperback).

Refereed articles

“Ground and Explanation in Mathematics”, *Philosopher’s Imprint*, forthcoming.

“What Would Normative Necessity Be?”, *The Journal of Philosophy* 115.4 (April 2018): 169-186.

“Mathematical Explanations That Are Not Proofs”, *Erkenntnis*, forthcoming.

“Are There both Causal and Non-Causal Explanations of a Rocket’s Acceleration?”, *Perspectives on Science*, forthcoming.

“A Reply to Craver and Povich on the Directionality of Distinctively Mathematical Explanations”, *Studies in History and Philosophy of Science* 67 (2018): 85-88.

“Transitivity, Self-Explanation, and the Explanatory Circularity Argument against Humean Accounts of Natural Law”, *Synthese* 195.3 (2018): 1337-1353.

“The Evidential Relevance of Explanatoriness: A Reply to Roche and Sober”, *Analysis* 77.2 (2017): 303-312.

“Is Kantian Projectivism the Only Hope for Grounding the Principal Principle? (No.)” *The Monist*, 100.3 (2017): 422-436.

“Fine’s Fragmentalist Interpretation of Special Relativity” (with Thomas Hofweber), *Noûs*, 51 (2017): 871-883. *

“Explanatory Proofs and Beautiful Proofs”, *Journal of Humanistic Mathematics* 6 (2016): 8-51, lead article in special issue on the nature and experience of mathematical beauty.

“Explanation, Existence, and Natural Properties in Mathematics – A Case Study: Desargues’ Theorem”, *Dialectica*, 69.4 (2015): 435-472, winner of the 2014 *Dialectica* prize competition on explanation in science and philosophy.

“Depth and Explanation in Mathematics”, *Philosophia Mathematica* 23 (2015): 196-214.

“On ‘Minimal Model Explanations’: A Reply to Batterman and Rice”, *Philosophy of Science* 82 (2015): 292-305.

“Aspects of Mathematical Explanation: Symmetry, Unity, and Salience”, *Philosophical Review*, 123.4 (2014), pp. 485-531.

* This paper gives me an Erdős number of 4(!).

“Did Einstein Really Believe that Principle Theories are Explanatorily Powerless?” *Perspectives on Science* 22:4 (2014), pp. 449-463.

“What Makes a Scientific Explanation Distinctively Mathematical?”, *British Journal for the Philosophy of Science* 64 (2013), pp. 485-511.

reprinted in *The Philosopher's Annual*, volume XXXIII.

“Really Statistical Explanations and Genetic Drift”, *Philosophy of Science* 80 (2013), pp. 169-88.

“Grounding, Scientific Explanation, and Humean Laws”, *Philosophical Studies* 164 (2013), pp. 255-61.

“Conservation Laws in Scientific Explanations: Constraints or Coincidences?” *Philosophy of Science* 78 (2011), pp. 333-352.

“Can There Be *A Priori* Causal Models of Natural Selection” (with Alexander Rosenberg), *Australasian Journal of Philosophy* 89 (2011), pp. 591-99.

“Why Do Forces Add Vectorially? A Forgotten Controversy in the Foundations of Classical Mechanics”, *American Journal of Physics* 79 (2011), pp. 380-388.

“Meta-Laws of Nature and the Best System Account”, *Analysis* 71 (2011), pp. 216-222.

“What are Mathematical Coincidences (and Why Does It Matter)?” *Mind* 119 (2010), pp. 307-340.

“A Tale of Two Vectors”, *Dialectica* 63 (2009), special issue on the metaphysics of vectors, pp. 397-431.

reprinted in *The Philosopher's Annual*, volume XXIX.

“Dimensional Explanations”, *Noûs* 43 (2009), pp. 742-775.

“The End of Diseases”, *Philosophical Topics*, special issue on metaphysics and natural kinds, 35 (2007), pp. 265-292.

“Must the Fundamental Laws of Physics Be Complete?”, *Philosophy and Phenomenological Research* 78 (March 2009), pp. 312-345.

“Why Proofs by Mathematical Induction are Generally Not Explanatory,” *Analysis* 69 (2009), pp. 203-211.

“Could the Laws of Nature Change?”, *Philosophy of Science* 75 (January 2008), pp. 69-92.

“Why Contingent Facts Cannot Necessities Make”, *Analysis* 68 (April 2008), pp. 120-128.

“Laws and Meta-Laws of Nature”, *The Harvard Review of Philosophy* 15 (Fall 2007): 21-36.

“Laws and Meta-Laws of Nature: Conservation Laws and Symmetries,” *Studies in History and Philosophy of Modern Physics* 38 (2007), pp. 457-81.

“How to Account for the Relation Between Chancy Facts and Deterministic Laws,” *Mind* 115 (2006), pp. 917-946.

“Do Chances Receive Equal Treatment Under The Laws? Or: Must Chances Be Probabilities?”, *British Journal for the Philosophy of Science* 57 (2006), pp. 383-403.

“How Can Instantaneous Velocity Fulfill Its Causal Role?” *Philosophical Review* 114 (2005), pp. 433-468.

“Reply to Ellis and to Handfield on Essentialism, Laws, and Counterfactuals,” *Australasian Journal of Philosophy* 83 (2005), pp. 581-588.

“A Counterfactual Analysis of the Concepts of Logical Truth and Necessity,” *Philosophical Studies* 125 (2005), pp. 277-303.

“Ecological Laws: What Would They Be and Why Would They Matter?,” *Oikos [The Journal of the Nordic Ecological Society]* 110 (2005), pp. 394-403.

“Laws and Their Stability,” *Synthese* 144 (2005), pp. 415-432.

“Would Direct Realism Resolve the Classical Problem of Induction?,” *Noûs* 38 (2004), pp. 197-232.

“Bayesianism and Unification: A Reply to Wayne Myrvold,” *Philosophy of Science* 71 (April 2004), pp. 205-15.

“A Note on Scientific Essentialism, Laws of Nature, and Counterfactual Conditionals,” *Australasian Journal of Philosophy* 82 (June 2004), pp. 227-41.

“The Autonomy of Functional Biology: A Reply to Rosenberg,” *Biology & Philosophy*, 19 (January 2004), pp. 93-101.

"Who's Afraid of *Ceteris-Paribus* Laws? Or: How I Learned to Stop Worrying and Love Them," *Erkenntnis* 57 (2002), pp. 407-423.

reprinted in *Philosophy of Science: An Anthology*, Blackwell, 2007.

reprinted in *The Philosopher's Annual*, volume XXV.

reprinted in *Ceteris paribus Laws*, ed. J. Earman, C. Glymour, and S. Mitchell (Kluwer, 2003).

"Baseball, Pessimistic Inductions, and the Turnover Fallacy," *Analysis* 62 (October 2002), pp. 281-5.

"Okasha on Inductive Scepticism," *The Philosophical Quarterly* 52: 207 (April 2002), pp. 226-232.

"The Apparent Superiority of Prediction To Accommodation as a Side Effect: A Reply to Maher", *British Journal for the Philosophy of Science*, 52 (2001), pp. 575-88.

"The Most Famous Equation", *The Journal of Philosophy* 98: 5 (May 2001), pp. 219-38.

"Is Jeffrey Conditionalization Defective By Virtue of Being Non-Commutative? Remarks on the Sameness of Sensory Experience", *Synthese* 123:3 (June 2000), pp. 393-403.

"Salience, Supervenience, and Layer Cakes in Sellars's Scientific Realism, McDowell's Moral Realism, and the Philosophy of Mind", *Philosophical Studies*, 101 (2000), pp. 213-51.

"Why Are the Laws of Nature So Important to Science?", *Philosophy and Phenomenological Research* LIX: 3 (September 1999), pp. 625-652.

"Calibration and the Epistemological Role of Bayesian Conditionalization", *The Journal of Philosophy* XCVI: 6 (June 1999), pp. 294-324.

"Laws, Counterfactuals, Stability, and Degrees of Lawhood", *Philosophy of Science* 66 (June 1999), pp. 243-267.

"Inductive Confirmation, Counterfactual Conditionals, and Laws of Nature," *Philosophical Studies*, 85, #1 (January 1997), pp. 1-36.

"Laws of Nature, Cosmic Coincidences, and Scientific Realism," *Australasian Journal of Philosophy* 74, #4 (December 1996), pp. 614-638.

"Life, Artificial Life, and Scientific Explanation," *Philosophy of Science* 63 (June 1996), pp. 225-244.

reprinted in Mark Bedau and Carol Cleland (eds.), *The Nature of Life: Classical and Contemporary Perspectives*, Cambridge: Cambridge University Press, 2010, pp. 236-48.

"Spearman's Principle," *The British Journal for the Philosophy of Science* 46 (December 1995),

pp. 503-521.

"Are There Natural Laws concerning Particular Biological Species?," *The Journal of Philosophy* XCII: 8 (August 1995), pp. 430-451.

"Dispositions and Scientific Explanation," *Pacific Philosophical Quarterly*, 75:2 (June 1994), pp. 108-132.

"Earman on the Projectibility of Grue," *PSA 1994* [Proceedings of the Biennial Meeting of the Philosophy of Science Association], volume 1, ed. D. Hull, M. Forbes, and R. Burian, pp. 87-95.

"Scientific Realism and Components: The Case of Classical Astronomy," *The Monist* 77:1 (January 1994), pp. 111-127.

"When Would Natural Laws Have Been Broken?," *Analysis* 53:4 (October 1993), pp. 262-269 (shared top prize awarded in *Analysis* Annual Essay Competition).

"Lawlikeness," *Noûs* 27 (1993), pp. 1-21.

"Natural Laws and the Problem of Provisos," *Erkenntnis* 38 (1993), pp. 233-248.

reprinted in John Carroll (ed.), *Readings on Laws of Nature* (Pittsburgh: University of Pittsburgh Press, 2004), pp. 161-175.

reprinted in Alexander Bird and James Ladyman (eds.), *Arguing About Science* (Abington, UK: Routledge, 2013), pp. 455-465.

"Armstrong and Dretske on the Explanatory Power of Regularities," *Analysis* 52:3 (July 1992), pp. 154-159.

"Hui Shih's Logical Theory of Descriptions: A Philosophical Reconstruction of Hui Shih's Ten Enigmatic Arguments," *Monumenta Serica* 38 (1988-89), pp. 95-114.

Other Articles

"Is 'Artificial Life' Alive?," in *Artificial Life*, catalogue for exhibition at Consolidated Works, a Seattle contemporary arts center, 1999.

"Can Science Answer Moral Questions?," in *Race and Other Misadventures*, ed. L. Reynolds and L. Lieberman (Dix Hills, New York: General Hall, 1996), pp. 378-396.

Book Reviews

"Comments on Kment's *Modality and Explanatory Reasoning*" – contribution to book

symposium, *Philosophy and Phenomenological Research* 91 (2015): 508-515.

Review of “Causal Reasoning in Physics” by Mathias Frisch (Cambridge University Press, 2014), *American Journal of Physics* 83 (2015): 477.

“Abstraction and Depth in Scientific Explanation” – contribution to book symposium on “Depth: An Account of Scientific Explanation”, by Michael Strevens, *Philosophy and Phenomenological Research* 84 (2012): 483-491.

Review of “Nature’s Metaphysics” by Alexander Bird, *Philosophical Review*, 119(1), January 2010, pp. 97-99.

“Structuralism with an Empiricist Face?”, contribution (in Italian) to a debate on Bas van Fraassen, “Scientific Representation: Paradoxes of Perspective”, *Iride: Filosofia E Discussione Pubblica* (Bologna), 58 (December 2009), pp. 713-17.

reprinted (in English) in *IRIS. European Journal of Philosophy and Public Debate* 2 (April 2010), pp. 252-6.

Review of “The Metaphysics Within Physics” by Tim Maudlin, *Mind* 118 (January 2009), pp. 197-200.

Review of “Causation, Physics, and the Constitution of Reality: Russell’s Republic Revisited” edited by Huw Price and Richard Corry, *Notre Dame Philosophical Reviews*, November 2007.

“Farewell to Laws of Nature?”, essay review of “Laws in Nature” by Stephen Mumford, *Studies in History and Philosophy of Science A*, 37 (2006), pp. 361-69.

Review of “Theory and Reality: An Introduction to the Philosophy of Science” by Peter Godfrey-Smith, *Australasian Journal of Philosophy*, 83 (March 2005), pp. 122-124.

Review Essay on “Dynamics of Reason” by Michael Friedman, *Philosophy and Phenomenological Research*, 68 (May 2004), pp. 702-712.

Review of "Scientific Realism: How Science Tracks Truth" by Stathis Psillos, *Philosophical Books* 42: 4 (October 2001), pp. 317-20.

Review of "Laws of Nature" by John Carroll, *Philosophical Quarterly*, 47 (October 1997), pp. 526-529.

Other

Contributed to *The Oxford English Dictionary* the earliest known use of the word “Cepheid.”

Letter to William Safire reprinted in Safire, *The Right Word in the Right Place at the Right Time: Wit and Wisdom from the Popular Language Column in the New York Times Magazine* (New York: Simon & Schuster, 2004), p. 402.

Panelist for askphilosophers.org; contributed to *What is the Opposite of a Lion? And 99 Other Philosophical Questions Answered* (London: Hodder & Stoughton, 2007); contributed to *What Should I Do: Philosophers on the Good, the Bad, and the Puzzling*, ed. Alexander George (Oxford: Oxford University Press, 2011) – both volumes derived from answers posted on askphilosophers.org.

“What it all Means” [Letter to the Editor], *The New York Times*, February 9, 2011, Sunday Book Review, p. 6.

WUNC 91.5 FM (National Public Radio) interviewed by Frank Statio on “The State of Things” show on space (August 25, 2010)

“Popular Science” [Letter to the Editor], *The New York Times*, May 31, 2009, Sunday Book Review, p. 5.

Letter to the Editor (on counterfactual reasoning), *The Chronicle of Higher Education* LII: 18 (January 6, 2006), p. B18

Letter to the Editor (on quantum mechanics and the history of physics), *The New Yorker*, May 30, 2011, p. 5.

Contributed video on Hempel’s paradox of confirmation to Wi-Phi [open access Wireless Philosophy] www.wi-phi.com, July 2015 – see https://www.youtube.com/watch?v=_SKmqh5Eu4Y

Interviewed by 3:AM Magazine in issue of June 24, 2017:
<http://www.3ammagazine.com/3am/law/>

The Daily Ant Philosophy Phriday column: “Ants are Alive”, September 1, 2017
<https://dailyant.com/2017/09/01/philosophy-phriday-ants-are-alive/>

Successfully (and alone) asked UNC Student Stores to remove tobacco products from its shelves

Successfully (and alone) asked UNC for the Morehead Planetarium’s longstanding annual “Star of Bethlehem” show to be eliminated (see *Daily Tar Heel*, December 1 2008).

Member of American Philosophical Association (APA), Philosophy of Science Society (PSA).

Awards and Research Grants

2016 Distinguished Teaching Award for Post-Baccalaureate Instruction, University of North Carolina at Chapel Hill

“Explanation, Existence, and Natural Properties in Mathematics – A Case Study: Desargues’ Theorem” awarded Dialectica Essay Prize 2014 (July 2015).

“What Makes a Scientific Explanation Distinctively Mathematical?” selected for *The Philosopher’s Annual*, volume XXXIII, as one of the ten best articles published in philosophy in 2013.

Fellowship in Department of Philosophy, University of Cologne (Germany), November-December 2013.

“A Tale of Two Vectors” selected for *The Philosopher’s Annual*, volume XXIX, as one of the ten best articles published in philosophy in 2009.

D. Earle Pardue Fellow, Institute for the Arts and Humanities, University of North Carolina at Chapel Hill, Faculty Fellowship for spring term 2011 (won through university-wide competition).

Awarded a University of North Carolina Pogue Competitive Research Leave (university-wide competition for one term of research sabbatical), fall term 2010.

Bowman and Gordon Gray Distinguished Term Professorship for Excellence in Undergraduate Teaching, University of North Carolina at Chapel Hill, awarded 2007, term 2009-12.

"Who's Afraid of *Ceteris-Paribus* Laws? Or: How I Learned to Stop Worrying and Love Them" selected for *The Philosopher’s Annual*, volume XXV, as one of the ten best articles published in philosophy in 2002.

UW Humanities Center grant (\$10,000) to develop the UW Young Humanities Scholars Program for high schoolers, 1998-99.

UW Faculty "Tools for Transformation" Curriculum Development Award, to develop courses in the philosophy of physics and an undergraduate major in the history and philosophy of science, 1998-1999 (with Andrea Woody).

UCLA Chancellor's Faculty Career Development Award, UCLA, 1995

"When Would Natural Laws Have Been Broken?," tied for top prize awarded in *Analysis Annual Essay Competition*, 1993

Andrew Mellon Fellowship in the Humanities, Woodrow Wilson National Fellowship Foundation, 1985

Alexander Guthrie McCosh Prize in Philosophy, 1985 (awarded by the Princeton University Philosophy Department for the finest senior thesis in any area of philosophy)

Dickinson Prize, 1985 (awarded by the Princeton University Philosophy Department for the finest senior thesis in logic or the theory of knowledge)

Class of 1876 Memorial Prize for Debate in Politics, 1983 (awarded by the American Whig-Cliosophic Society of Princeton University)

United States Presidential Scholar, 1981

National Merit Scholar, 1981

Professional Service

Program Committee member for the 11th MuST (Munich-Sydney-Tilburg/Turin) Philosophy of Science Conference, 2018.

Program Committee member for the 2016 meeting of the Philosophy of Science Association

Associate Editor, *British Journal for the Philosophy of Science*, September 2011-January 2015

Member of Editorial Board, *Philosophy of Science*, 2009-current

Member of APA Eastern Division Advisory Committee (on Philosophy of Science) to the Program Committee, January 2012-January 2015

Chair (2006) and member (2005) of Program Committee for APA Eastern Division and James Prize Committee.

Program Committee member for the 1998 meeting of the Philosophy of Science Association

Nominating Editor, *Philosophers' Annual* (2009-current)

Editorial Board member, *Journal of Mathematics* (2012-2017)

Academic Board member, *Praxis* philosophy journal (University of Manchester, UK) (2013-present)

Referee:

of journal articles for *Philosophical Review*, *Journal of Philosophy*, *Philosophy of Science*, *British Journal for the Philosophy of Science*, *Mind*, *Philosophers' Imprint*, *Nous*,

Synthese, Erkenntnis, Studies in History and Philosophy of Modern Physics, European Journal for the Philosophy of Science, Foundations of Physics, Oikos [The Journal of the Nordic Ecological Society], Dialectica, Artificial Life, Canadian Journal of Philosophy, International Studies in the Philosophy of Science, Manuscripto [Brazil], Philosophical Quarterly, Theoria, Philosophy and Phenomenological Research, Australasian Journal of Philosophy, Biological Reviews, American Journal of Physics, Oxford Studies in Metaphysics and Sanders Prize for Metaphysics, Journal of Humanistic Mathematics, Studies in the History and Philosophy of Science, Philosophia Mathematica;

of book manuscripts for University of Chicago Press, Oxford University Press, Blackwell Publishers, Palgrave Macmillan UK, Princeton University Press, Routledge, Wadsworth Publishing Company, Mayfield Publishing Company, University of Pittsburgh Press, University of Edinburgh Press, Rutgers University Press, Cambridge University Press;

of grant proposals for the National Science Foundation (Science, Technology, and Society Program) for many years, Swiss National Science Foundation, Danish Council for Independent Research (Ministry of Science, Innovation, and Higher Education); the National Science Centre of Poland (Narodowe Centrum Nauki – NCN);

of symposium papers for *Alife VI* [artificial life] (1998) and *Alife VII* (2000); of Special One-Time SSHRC (Social Sciences & Humanities Research Council) Institutional Grant proposals for The University of Lethbridge (Lethbridge, Alberta, Canada) in September, 1999; of papers for *Topics in Contemporary Philosophy*, volume 9, MIT Press, ed. Joseph Keim Campbell, Michael O'Rourke, and Matthew Slater, forthcoming; *Routledge Companion to The Philosophy of Language*, ed. G. Russell and D. Graff (forthcoming); volume edited by Léna Soler deriving from Les Treilles Workshop on “Science As It Could Have Been”, France, July 2009.

of course proposals for the Summer University program of the Central European University, Budapest (CEU)

Nominating Committee, *Wesley C. Salmon Memorial Lecture Committee*, University of Pittsburgh, 2010-current. Research assistant for Professor Salmon in preparing *Four Decades of Scientific Explanation*, 1988.

External examiner for Doctor of Philosophy, Australian National University, 2013; for Ph.D. at University of Notre Dame, 2017; for Ph.D. at University of Illinois at Chicago. Examiner for Habilitationsschrift at University of Munich, 2017.

Organized quarterly meetings of the Southern California Philosophy of Science Group, 1993-1997, and ran the Group's electronic mailing list and bulletin board

Co-directed the Carnap-Reichenbach Centennial Symposium, UCLA, 18-19 October 1991

University Service

College of Arts and Sciences, Dean's Advisory Committee, July 2017-present

Office of Distinguished Scholarships, various interviewing committees (e.g., Rhodes, Mitchell, Carnegie Junior Fellows), November 2017-present

Chair, Post-Baccalaureate Teaching Awards Selection Committee and Member, University Teaching Award Selection Committee, 2016-17

Member, Bowman and Gordon Gray Distinguished Term Professorship Selection Committee, 2013-14

Member, Committee for the Michael Polanyi Visiting Lectureship in the History and Philosophy of Natural Science, 2010-

Member, Parr Center for Ethics Faculty Advisory Committee (ex officio), 2011-

Presentations

Refereed

“Two Kinds of Identity Explanations”

Symposium on Non-Causal Explanation, Philosophy of Science Association Biennial Meeting (PSA 2014), Chicago – November 2014

“Really Statistical Explanations and Genetic Drift”

POBAM [Philosophy of Biology @ Madison] Workshop, Madison, WI – June 2012

“Conservation Laws in Scientific Explanations: Constraints or Coincidences?”

British Society for the Philosophy of Science, Dublin – July 2010

“How to Account for the Relation Between Chancy Facts and Deterministic Laws”

Philosophy of Science session, Central Division Meeting of the American Philosophical Association, Chicago – April 2005

“Do Chances Receive Equal Treatment Under the Laws”

Southern Society for Philosophy and Psychology, Durham – March 2005

"The Apparent Superiority of Prediction to Accommodation as a Side-Effect"

Philosophy of Science Association Biennial Meeting, Vancouver -- November 2000

"Is Jeffrey-Conditionalization Really Non-Commutative?"

Philosophical Logic session, Pacific Division Meeting of the American Philosophical

Association, Berkeley -- April 1999

"Earman on the Projectibility of Grue"

Philosophy of Science Association Biennial Meeting, New Orleans, October 1994

"Can Accidental Generalizations Be Confirmed Inductively?"

Philosophy of Science colloquium, Pacific Division Meeting of the American Philosophical Association, Los Angeles -- March 1994

"Scientific Realism and Components"

Society for Realist/Anti-Realist Discussion, Los Angeles -- March 1994

"When Would Natural Laws Have Been Broken?"

Pacific Division Meeting of the American Philosophical Association, San Francisco -- March 1993

Invited

"What Could Mathematics Be for It to Function in Distinctively Mathematical Scientific Explanations?"

11th Annual Auburn Philosophy Conference, Auburn University – April 2019

"Replies to my Critics"

Invited symposium on my book, *Because Without Cause*, at the Eastern Division Meeting of the American Philosophical Association, New York – January 2019

"‘There Sweep Great General Principles Which All the Laws Seem to Follow’"

University of Toronto Institute for the History and Philosophy of Science and Technology (IHPST) – April 2018

"Thomas Kuhn on Scientific Revolutions"

Carolina Public Humanities Weekend Seminar on Scientific Revolutions, Chapel Hill – September 2017

"Are There Both Causal and Non-Causal Explanations of a Rocket's Acceleration?"

"Unifying the Debates: Mathematical and Non-Causal Explanations" conference, Paris-IHPST (Institut d'Histoire et Philosophie des Sciences), Sorbonne – June 2017

"Grounding and Explanation in Mathematics"

"Metaphysical Explanation, Mathematical Explanation: New Perspectives" conference, Paris-IHPST (Institut d'Histoire et Philosophie des Sciences), Sorbonne – February 2017

Commentary on Tanner Lectures on Human Values (Naomi Oreskes, "Should We Trust Science?")

Princeton University – November 2016

“Some Questions about Disease and Diseases”

The Health and Humanities Exchange (HHEX), UNC-Chapel Hill – November 2016

“The Paradox of the Ravens”

Philosophy Café, Mystery Brewing Public House, Hillsborough, NC – October 2016

“Grounding, Scientific Explanation, and Reducible Physical Properties”

Keynote speaker, “Ground in the Philosophy of Science” conference satellite to meeting of the Society of the Metaphysics of Science, Geneva (Switzerland) – September 2016

“Putting Explanation Back Into ‘Inference to the Best Explanation’”

Keynote speaker, “Hempel and Beyond” conference celebrating the 50th anniversary of *Aspects of Scientific Explanation*; Research Group on Causation, Laws, Dispositions, and Explanation, University of Cologne (Germany) – September 2015

“Metaphysics at the Ranch”, Tucson, AZ – January 2016

Inaugural Stephen Humphrey Lecture in the Philosophy of Science, Department of Philosophy, University of California, Santa Barbara -- March 2016

Department of Philosophy, King’s College London – May 2016

“Laws of Nature”

Carolina Science Café, NC Science Festival and Moorehead Planetarium and Science Center, Chapel Hill, NC – April 2015

Metaphysics of Science Summer School, Department of Philosophy, University of Helsinki (Finland) – July 2015

“What is Explanation in Mathematics?”

Invited symposium on “Mathematical Explanation” at the Central Division Meeting of the American Philosophical Association, St. Louis – February 2015

Department of Philosophy, Wake Forest University – February 2016

Comments on Arnon Levy’s “Scientific Explanation: A Two-Dimensional Approach”

UNC-Hebrew University Annual Symposium, Chapel Hill – May 2014

“Depth and Explanation in Mathematics”

Department of Logic and Philosophy of Science, Workshop on Mathematical Depth, University of California, Irvine – April 2014

“Explanations by Constraint”

Department of Philosophy, University of Cologne (Germany) – December 2013

“The Explanatory Power of (Some) Reducible Physical Properties”

Department of Philosophy, University of Miami (FL) – April 2013

Department of Philosophy, University of Cologne (Germany) – November 2013

Metaphysics of Science Summer School, Department of Philosophy, University of Helsinki (Finland) – July 2015.

“Aspects of Mathematical Explanation”

Department of Philosophy, Claremont McKenna College, Claremont, CA – March 2013

Division of Humanities, California Institute of Technology, Pasadena, CA – March 2013

Department of Philosophy, University of Miami (FL) – April 2013

Rotman Institute of Philosophy and Department of Philosophy Conference on Science and Reality, University of Western Ontario – November 2013

Keynote speaker, Workshop: “Explaining Without Causes: Non-Causal Explanation in the Sciences, Mathematics, and Philosophy”, University of Cologne (Germany) – December 2013

Conference on Beauty and Explanation in Mathematics, Departments of Philosophy, Mathematics, and Science and Mathematics Education, University of Umea, Sweden – March 2014

“What Would Natural Laws in the Life Sciences Be?”

Invited symposium on “Laws in the Life Sciences” at the Eastern Division Meeting of the American Philosophical Association, Atlanta -- December 2012

“What Makes a Scientific Explanation Distinctively Mathematical?”

Triangle Philosophy of Science Ellipse, Durham – November 2012

“Why are the Laws of Nature So Important to Science?”

Department of Philosophy, Case Western Reserve University – September 2012

“How to Explain the Lorentz Transformations”

Department of Philosophy, University of South Carolina – November 2012

“Really Statistical Explanations and Genetic Drift”

British Society for the Philosophy of Science Special Seminar on Choice and

- Explanation, Brasenose College, Oxford (UK) -- June 2012
- “The Logic of Scientific Reasoning”
St. Thomas More High School, Raleigh, NC – January 2012
- “Explanation in Mathematics”
Department of Philosophy, New York University – November 2010
- Department of Philosophy, University of Washington/Seattle – February 2011
- Carolina Friends School, Upper School Science Symposium – February 2011
- Hopkins Center for History and Philosophy of Science, Johns Hopkins University –
March 2012
- Department of Philosophy, Case Western Reserve University – September 2012
- Department of Philosophy, University of South Carolina – November 2012
- “RS Explanations and Genetic Drift”
Seminar on scientific explanation, Department of Philosophy, University of
Washington/Seattle – February 2011
- “There sweep great general principles which all the laws seem to follow”
University of Michigan Spring Philosophy Colloquium (“Laws and Counterfactuals”) –
March 2011
- Department of Philosophy, University of Cologne (Germany) – November 2013
- Philosophy Society and Department of Mathematics, University of Umea, Sweden –
March 2014
- “The Rule of Law”
Invited symposium on “Laws of Nature” at the Eastern Division Meeting of the American
Philosophical Association, Boston – December 2010
- Department of Philosophy and Program in Science and Society, and WesFest (events for
prospective undergraduates), Wesleyan University – April 2011
- “Symmetry, Unity, and Salience in Mathematical Explanation”
Swarthmore, Haverford, and Bryn Mawr Colleges/Mellon Foundation 3d Annual
Colloquium in Mathematics and Philosophy, Swarthmore, Pennsylvania – April 2010
- “A Tale of Two Vectors”

Keynote, Metaphysics of Science conference, AHRC Metaphysics of Science Project (Universities of Birmingham, Bristol, and Nottingham), Nottingham, UK – September 2009

Department of Philosophy, MIT – April 2010

Author Meets Critics session on Alexander Bird, *Nature's Metaphysics*
Central Division Meeting of the American Philosophical Association, Chicago – February 2009

“The Rule of Law – and of Meta-Law”
Department of Philosophy, Rutgers University – November 2008.

Boston Colloquium in the Philosophy of Science – September 2008

“What is a Physical Law?”
75th Annual Meeting of the Southeastern Section of the American Physical Society (APS), Raleigh, North Carolina – October 2008.

“It Takes More Than All Kinds to Make a World”
Inland Northwest Philosophy Conference (INPC), plenary session, University of Idaho/Washington State University – March 2008

“What Would A Mathematical Coincidence Be?”
Department of Philosophy, North Carolina State University – January 2008.

“Dimensional Explanations in Physics”
Department of Philosophy, Conference on Causation and Mechanisms, University of Maryland at College Park – May 2007.

“Laws of Nature”
North Carolina Philosophical Society – February 2007

“Laws and Meta-Laws of Nature”
Department of Philosophy, Princeton University – February 2007

Department of Philosophy, University of North Carolina at Chapel Hill – March 2007.

Department of Philosophy, University of Michigan – November 2007

“Laws of Nature and Natural Necessity”
Duke University Program in the History and Philosophy of Science, Technology, and Medicine (HiPSTeM) and National Humanities Center Initiative in Science and the Humanities – November 2006

- “Einstein, Philosophy of Physics, and Excess Baggage”
Duke Society of Fellows, Duke University – April 2006
- “Laws of Nature: Their Stability, Their Necessity, and the Autonomy of Inexact Sciences”
Department of Philosophy, Kansas State University – February 2006
- Department of History and Philosophy of Science, University of Indiana, Bloomington –
October 2005
- Plenary Session of Annual Meeting, British Society for the Philosophy of Science,
Canterbury, UK – July 2004
- Joint Committee for Philosophy and the Sciences (CPaS)/Department of Philosophy
Colloquium, University of Maryland at College Park – April 2004
- Department of Philosophy, University of North Carolina at Chapel Hill – February 2003
- “How to Account for the Relation Between Chancy Facts and Deterministic Laws”
Department of Philosophy Conference/Workshop “Descrying the World in Physics,”
Columbia University and Rutgers University – April 2005
- “*Copenhagen* and Quantum Metaphysics”
“Mentoring the Bomb: A Weekend Seminar Featuring a Performance of *Copenhagen* by
the PlayMakers Repertory Company,” Program in the Humanities and Human Values,
University of North Carolina at Chapel Hill – February 2005
- James M. Johnson Center for Undergraduate Excellence, University of North Carolina at
Chapel Hill – January 2005
- “Do Chances Receive Equal Treatment Under the Laws”
Triangle Philosophy of Science Ellipse, Chapel Hill – December 2004
- “Einstein and Excess Baggage”
Department of Physics, University of North Carolina at Chapel Hill – April 2004
- “How Can Instantaneous Velocity Fulfill Its Causal Role”
Triangle Philosophy of Science Ellipse, Chapel Hill – March 2004
- “The Philosophy of Physics”
Simpson Center for the Humanities – New Works in Print Series, University of
Washington, February 2002
- “Laws and Their Stability”

Department of Logic and Philosophy of Science, University of California at Irvine –
October 2002

Department of Philosophy, University of Texas at Austin – October 2002
Center for Statistics and the Social Sciences, University of Washington – January 2003

Conference on Laws of Nature and Dispositions, University of Alabama at Birmingham –
February 2003

“Laws of Nature and Counterfactual Conditionals”
The University of Washington Academy, Seattle – October 2003

"Physical Law and Scientific Reasoning"
Bellevue Community College -- March 2001

"The Most Famous Equation"
19th Annual Meeting of the Columbia History of Science Group, Friday Harbor
Laboratories -- March 2001

"How Could Explanations in the Special Sciences Be Autonomous and Irreducible?"
Department of Philosophy and Colloquium in the Studies of Science and
Technology, University of Minnesota -- November 2000

"Is 'Artificial Life' Literally Alive?"
At Consolidated Works, in connection with their art show "Artificial Life",
Seattle -- October 1999.

Comment on Jim Woodward, "Explanation and Invariance"
Philosophy of Science Session, Eastern Division Meeting of the American Philosophical
Association, Philadelphia -- December 1997.

"What Is So Important About the Laws of Nature?"
Department of Philosophy, University of British Columbia, Vancouver -- September
1997

Response to Joseph, LaPorte, "Essential Membership", Philosophy of Biology Session
Eastern Division Meeting of the American Philosophical Association, Atlanta --
December 1996

"Law and the Lonely Proton"
Claremont Colleges, Claremont, California -- October 1996

Philosophy Department, University of Washington -- January 1997

"The Epistemological Role of Bayesian Conditionalization"

Southern California Philosophy of Science Group, Los Angeles -- October 1995

"Function Ascriptions and Functional Explanations in Biology"

UCLA Center for the Study of Evolution and the Origin of Life [CSEOL], Los Angeles,
December 1994

"Inductive Confirmation, Counterfactual Conditionals, and Laws of Nature"

UCLA Cognitive Science Group, Los Angeles, November 1994

Response to Philip Kitcher, "Reviving the Enlightenment: Prospects for Scientific Objectivity in a Complicated World," UC Riverside 4th Annual Philosophy Conference ("Science and Objectivity") -- April 1994

Invited "Commentator-at-large", Princeton-Rutgers Conference on the Relations Between Epistemology and the Philosophy of Science -- April 1994

"Lawlikeness"

Southern California Philosophy of Science Group, Irvine -- March 1992

Response to Wesley Salmon, "Ornithology in a Cubical World: Reichenbach on Realism"

Carnap-Reichenbach Centennial Symposium, Los Angeles -- October 1991

"Scientific Realism: From A To Z"

Department of Philosophy, University of California, Los Angeles -- March 1991

"Laws, Confirmation, and Reasons for Belief"

Department of Philosophy and Religion, Colgate University -- February 1990

Department of Philosophy, University of California, Davis -- February 1990

Department of Philosophy, University of California, Los Angeles -- February 1990

Ph.D. Students – Dissertation Director

Ansgar Simon (completed 1995)

Chris Pearson (completed 2007)

Katrina Elliott (completed 2011)

Elanor Taylor (completed 2012)

Finnur Dellson (completed 2014)

Lindsay Brainard (completed 2017)

Chris Dorst (completed 2018)

Francesco Nappo (in progress)

Alfredo Watkins (in progress)