

DAVID JOHN BAKER

CURRICULUM VITAE

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APPOINTMENTS

Associate Professor of Philosophy, University of Michigan, 2014-present.
Assistant Professor of Philosophy, University of Michigan, 2008-2014.

EDUCATION

PhD. in Philosophy, Princeton University, September 2008. Advisor: Hans Halvorson.
B.S. in Philosophy (with Highest Honors) and Physics, University of Michigan, April 2003.

AREAS OF SPECIALIZATION

Philosophy of Physics, Philosophy of Science, Metaphysics.

AREAS OF COMPETENCE

Moral Philosophy, Logic, Philosophy of Religion, Epistemology.

PUBLICATIONS

- “Does String Theory Posit Extended Simples?” *Philosophers’ Imprint* 16 (2016): Issue 18.
- “The Philosophy of Quantum Field Theory.” *Oxford Handbooks Online* (2016): DOI 10.1093/oxfordhb/9780199935314.013.33
- “The Conventionality of Parastatistics,” with Hans Halvorson and Noel Swanson. *The British Journal for the Philosophy of Science* 66 (2015): 929-976.
- “How is spontaneous symmetry breaking possible? Understanding Wigner’s theorem in light of unitary inequivalence,” with Hans Halvorson. *Studies in History and Philosophy of Modern Physics* 44 (2013): 464-469.
- “Identity, Superselection Theory and the Statistical Properties of Quantum Fields.” *Philosophy of Science* 80 (2013): 262-285.
- “‘The Experience of Left and Right’ Meets the Physics of Left and Right.” *Nous* 46 (2012): 483-498.
- “Broken Symmetry and Spacetime.” *Philosophy of Science* 78 (2011): 128-148.
- “Symmetry and the Metaphysics of Physics.” *Philosophy Compass* 5 (2010): 1157-1166.
- “Antimatter,” with Hans Halvorson. *The British Journal for the Philosophy of Science* 61 (2010): 93-121.

- “Against Field Interpretations of Quantum Field Theory.” *The British Journal for the Philosophy of Science* 60 (2009): 585-609. (Winner of the 2010 Cushing Prize.)
- “Measurement outcomes and probability in Everettian quantum mechanics.” *Studies in History and Philosophy of Modern Physics* 38 (2007): 153-169.
- “Spacetime Substantivalism and Einstein’s Cosmological Constant.” *Philosophy of Science* (Proceedings) 72 (2005): 1299-1311.

Book Reviews

- Review of David Albert, *After Physics*. *Notre Dame Philosophical Reviews* (2015).
- Review of Frank Arntzenius, *Space, Time, and Stuff*. *Philosophy of Science* 81 (2014): 171-174.
- Review of Richard Healey, *Gauging What’s Real: The Conceptual Foundations of Gauge Theories*. *Mind* 119 (2010): 490-494.

PRESENTATIONS

- “Interpreting Supersymmetry,” Physics Old and New workshop in honor of Katherine Brading, Notre Dame University, March 2017.
- “Free Will in the Many-Worlds Interpretation of Quantum Mechanics,” invited talk to the Department of Philosophy, Western Michigan University, February 2016.
- “Does String Theory Posit Extended Simples?” invited talk at the Beyond Spacetime project, University of Illinois, Chicago, September 2015.
- “Determinism and Theories of Quantity,” Metaphysics of Quantity Conference, New York University, May 2015.
- “Symmetry and Abductive Equivalence,” Metaphysics Meets Philosophy of Physics Workshop, University of Rochester, September 2014.
- “Can We Make Do Without Observables? Evaluating Spacetime State Realism,” Rackham Interdisciplinary Workshop in Foundations of Modern Physics, University of Michigan, April 2013.
- “Some Consequences of Physics for the Comparative Metaphysics of Quantity,” invited talk to the Department of Philosophy, University of Miami, March 2013.
- “Identical Particles and Statistics in Superselection Theory,” invited talk to the Department of Philosophy, Princeton University, November 2012.
- “Some Consequences of Physics for the Comparative Metaphysics of Quantity,” Carolina Metaphysics Workshop, June 2012.
- “Physical and Metaphysical Symmetries,” James T. Cushing Lecture, Notre Dame University, April 2011.
- “Antimatter Without Antiparticles,” invited talk to the Perimeter Institute for Theoretical Physics, Waterloo, Ontario, March 2011.
- “How is Spontaneous Symmetry Breaking Possible?” invited talk to the Center for Philosophy of Science, University of Pittsburgh, February 2011.
- “Broken Symmetry and Spacetime,” invited talk to the Laboratoire des Recherches sur les Sciences de la Matière, Saclay (France), June 2010.
- “Physics, Philosophy and the Cosmological Constant,” with Aaron Pierce, Telluride Lecture, University of Michigan, February 2010.

- “The Philosophy of Quantum Field Theory,” invited talk to the Department of Philosophy, University of Illinois-Chicago, May 2009.
- “Broken Symmetry and Spacetime,” Philosophy of Quantum Field Theory Workshop, University of Western Ontario, April 2009.
- “Antimatter Without Antiparticles,” invited talk to the Department of Logic and Philosophy of Science, University of California-Irvine, January 2009.
- “Against Field Interpretations of Quantum Field Theory,” job talk at Cornell University, New York University, Ohio State University, University of Michigan, University of South Carolina and University of Wisconsin, January-February 2008.
- “Observability and Causal Connectability,” invited talk to the Department of Philosophy, Stony Brook University, May 2007.
- “Quantum Electromagnetism: A Theory With No Potential?” invited talk to the Mathematics Club, Stony Brook University, May 2007.
- “The Everettian Fuzzy Link,” invited talk to the Committee for Philosophy and the Sciences, University of Maryland at College Park, April 2007.
- “Measurement Outcomes and Probability in Everettian Quantum Mechanics,” graduate seminar in Interpretations of Quantum Mechanics, University of Pittsburgh, April 2006.
- “Spacetime Substantivalism and Einstein’s Cosmological Constant,” 19th Biennial Meeting of the Philosophy of Science Association (PSA 2004). Austin, Texas, November 2004.
- “Lingering Problems With Probability in Many-Worlds Quantum Mechanics,” Logic, Math and Physics Graduate Conference. University of Western Ontario, May 2004. (Winner of the 2004 Clifton Prize.)

TEACHING

- The Worldview of Modern Science (Science and Religion) – Michigan, Winter 2017.
- Graduate Seminar (Survey of Philosophy of Science) – Michigan, Fall 2016.
- Problems of Space and Time – Michigan, Fall 2015.
- Philosophy of Religion – Michigan, Winter 2014, Winter 2016.
- Introduction to Logic – Michigan, Winter 2014.
- Graduate Seminar (Metaphysics of Physics and Many-Worlds) – Michigan, Winter 2013.
- Science Fiction and Philosophy – Michigan, Fall 2012, Winter 2016, Winter 2017.
- Graduate Seminar (Mirror Symmetry, Time Reversal and Charge) – Michigan, Winter 2011.
- Graduate Proseminar (with Allan Gibbard) – Michigan, Fall 2010.
- Freshman Seminar in Science Fiction and Philosophy – Michigan, Fall 2009, Winter 2010.
- Introduction to Philosophy of Religion – Michigan, Winter 2009, Fall 2010, Fall 2013, Fall 2015.
- Honors Introduction to Logic – Michigan, Fall 2008, Winter 2009, Fall 2009.
- Graduate Seminar (Many-Worlds Quantum Mechanics) – Michigan, Fall 2008.

AWARDS AND FELLOWSHIPS

- UM MCubed 2.0 interdisciplinary grant, “From physical principles to Hamiltonian and Lagrangian dynamics” (with Christine Aidala, Lydia Bieri and Gabriele Carcassi), 2016-2017.

UM Global Challenges for a Third Century Phase 1 grant, “Developing and Pretesting an Innovative Health Risk Assessment” (with Victor Strecher and Pedja Klasnja), 2013.

NSF Science and Technology Studies Grant for Collaborative Research, “Identical Particles and Statistics in Superselection Theory” (with Hans Halvorson), 2011-2012.

James T. Cushing Memorial Prize in the History and Philosophy of Physics, Notre Dame University, 2010.

Denise Fellowship, University of Michigan, 2008-present.

Mrs. Giles Whiting Foundation Honorific Fellowship in the Humanities, 2007-2008.

NSF Graduate Research Fellowship, 2004-2007.

Princeton University Prize Fellowship, 2005-2007.

Robert Clifton Memorial Book Prize in the philosophy of physics, University of Western Ontario, 2004.

Princeton University Fellowship, 2003-2004.

William K. Frankena Prize for excellence in the Philosophy concentration, University of Michigan, 2003.

Elsa L. Haller Prize for best undergraduate philosophy paper, University of Michigan, Spring 2003.

Elsa L. Haller Prize, University of Michigan, Fall 2002.

NSF Research Experience for Undergraduates grant in high-energy physics, Fermilab/University of Michigan, Summer 2001.

PROFESSIONAL SERVICE AND AFFILIATIONS

Peer referee for National Science Foundation Science, Technology and Society program, Social Sciences and Humanities Research Council of Canada, John Templeton Foundation, *Philosophical Studies*, *The Philosophical Review*, *Philosophy of Science*, *Foundations of Physics*, *Journal for General Philosophy of Science*, *Dialectica*, *Synthese*, *Philosophers' Imprint*, *British Journal for the Philosophy of Science*, *European Journal for the Philosophy of Science*, *Pacific Philosophical Quarterly*, *European Journal of Analytic Philosophy*, and *Studies in History and Philosophy of Modern Physics*.

LSA Representative to University Senate Assembly, June 2013-present.

Member of graduate studies committee, Michigan, 2015-present.

Member, graduate student instructor training committee, Michigan, 2009-2010, 2015-present.

Member and advisor, undergraduate studies committee, Michigan, 2008-2015.

Member, junior search committee, Michigan, 2008-2009, 2010-2011 and 2012-2013.

Member, Michigan Center for Theoretical Physics, 2008-present.

Faculty advisor, Michigan undergraduate philosophy club, 2009-2015.

Faculty advisor, Phi Sigma Tau philosophy honor society (Michigan chapter), 2009-2010.

Faculty advisor, *Meteorite* undergraduate journal, 2009-present.

APRIL 2017