

## Sheldon R. Smith

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### **Current Position**

Professor, Department of Philosophy, University of California, Los Angeles.

### **Education**

Ph.D., Philosophy, 1998, Ohio State University.

B.A., Philosophy, *Magna Cum Laude*, 1991, Pomona College.

### **Areas of Specialty**

Philosophy of Science, Philosophy of Physics, Philosophy of Applied Mathematics.

### **Areas of Competence**

Metaphysics, History of Modern Philosophy, Philosophy of Language.

### **Publications**

1. (Forthcoming.) "Kant's Foundations for Newtonian Science", forthcoming in the *Oxford Handbook of Newton*, Eric Schliesser and Chris Smeenk, eds., Oxford University Press.
2. "Incomplete Understanding of Concepts: The Case of the Derivative", *Mind*, doi: 10.1093/mind/fzv068, 2015.
3. "The Mystery of Applied Mathematics: A case study in mathematical development involving the fractional derivative." *Philosophia Mathematica*, 22 (1): 35-69, 2014.
4. "Kant's Picture of Monads in the *Physical Monadology*." in *Studies in the History and Philosophy of Modern Science*, 44: 102-111, 2013.
5. "Causation in Classical Mechanics" in the *Oxford Handbook of Philosophy of Physics*, Robert Batterman, ed. Oxford University Press, 107-140, 2013. (Invited Paper.)
6. "Does Kant Have a Pre-Newtonian Picture of Force in the Balance Argument? An Account of How the Balance Argument Works." in *Studies in the History and Philosophy of Modern Science*, 2012. Special issue devoted to Kant's relation to Newton.
7. "Elementary Classical Mechanics and the Principle of the Composition of Causes," *Synthese*, 173 (3):353-373, 2010.
8. "Symmetries and the Explanation of Conservation Laws in the Light of the Inverse Problem in Lagrangian Mechanics," *Studies in the History and Philosophy of Modern Physics*, 39: 325-345, 2008.
9. "Causation and Its Relation to 'Causal Laws'," *The British Journal for the Philosophy of Science*, 58 (4): 659-688, 2007.
10. "Continuous Bodies, Impenetrability, and Contact Interactions: The View from the Applied Mathematics of Continuum Physics," *The British Journal for the Philosophy of Science*, 58 (3): 503-538, 2007.
11. "Special Cases, Composition of Causes, and the Complexity of Nature," *Studies in the History and Philosophy of Modern Physics*, 38 (1): 80-96, 2007.
12. "Are Instantaneous Velocities Real and Really Instantaneous? An Argument for the Affirmative," *Studies in the History and Philosophy of Modern Physics*, 34: 261-280, 2003. (Published with a response by Frank Arntzenius, Rutgers University.)
  - a. "Author's Response [to Frank Arntzenius]," *Studies in the History and Philosophy of Modern Physics*, 34: 283, 2003.

13. “*Ceteris Paribus* Lost,” (with John Earman and John Roberts), *Erkenntnis* (Special Issue), 57: 281-301, 2002. Special issue of *Erkenntnis* republished as *Ceteris Paribus Laws*, John Earman, Clark Glymour, and Sandra Mitchell, eds., Springer-Verlag, 2003.
14. “Violated Laws, *Ceteris Paribus* Clauses, and Capacities,” *Synthese*, 130 (2): 235-264, 2002.
15. “Models and the Unity of Classical Physics: Nancy Cartwright’s Dappled World,” *Philosophy of Science*, 68: 456-475, 2001.
16. “Resolving Russell’s Anti-Realism About Causation: The Connection Between Causation and the Functional Dependencies of Mathematical Physics,” *The Monist*, 83 (2): 274-295, April 2000.

### ***Works in Progress***

1. “Further Thoughts on *Ceteris Paribus* Laws.”
2. “*Ceteris Paribus* Laws in Continuum Mechanics?”
3. “Pressures on the Word ‘Law’ in Physics.”

### ***Invited Presentations***

1. “*Ceteris Paribus* Laws in Continuum Mechanics?” to the University of Pittsburgh Center for Philosophy of Science Annual Lecture Series, April 12, 2013.
2. “The Miracle of Applied Mathematics”
  - a. to the University of California, Irvine Logic and Philosophy of Science Department Colloquium Series, November 18, 2011.
  - b. to the Marschak Colloquium, UCLA, March 2, 2012.
3. “Further Thoughts on *Ceteris Paribus* Laws” to the Workshop on *Ceteris Paribus* Laws at Lund University, Lund, Sweden, November 4, 2011.
4. “Aspects of Causation in Classical Physics” to *der Deutschen Physikalischen Gesellschaft*, Bonn, Germany, March 16, 2010.
5. “The Derivative and Incomplete Understanding” to the University of South Carolina Departmental Colloquium, November 20, 2009.
6. “Causation in Classical Physics” to the University of South Carolina Reading Group in the Philosophy of Science, November 20, 2009.
7. “The Misguided Sociology of Causal Action in Classical Mechanics” to the UCSD Science Studies Departmental Colloquium Series, May 4, 2009.
8. “Does Elementary Classical Mechanics Obey the Principle of the Composition of Causes?”
  - a. to the University of Pittsburgh Center for the Philosophy of Science Workshop on Causation, January 26, 2008.
  - b. to the Pacific Meeting of the APA, March 19, 2008.
9. “Kant on Forces and the Structure of Matter”
  - a. to the UCLA History of Science and Medicine colloquium series, June 4, 2007.
  - b. to the University of Southern California colloquium series, November 11, 2007.
  - c. to the University of Western Ontario Philosophy Department, March 10, 2008.

- d. to the CalTech Humanities and Social Sciences Seminars Series, September 8, 2010.
10. "Locality Conditions, Retarded Fields, and 'Thick' Causation." to the University of Maryland conference "Causation and Mechanism", May 4, 2007.
11. Comments on Mathias Frisch's *Inconsistency, Asymmetry and Non-Locality: A Philosophical Investigation of Classical Electrodynamics*, "Author Meets Critics" Session of the Pacific APA, March 25, 2006.
12. Response to Jeremy Butterfield's "Relationism and the Rigid Body: Counting Possibilities in Classical Mechanics." Steven Humphrey Conference on the Philosophy of Science, UC Santa Barbara, February 20, 2005.
13. "Notions of Cause in Classical Physics and their Relation to Laws"
  - a. to Cal State Northridge, September 28, 2005.
  - b. to Cal State Los Angeles, November 29, 2004.
  - c. to the "Interdisciplinary Conference in the Philosophy and History of Science" at UCLA, November 7, 2004.
14. "Special Cases, Composition of Causes, and the Complexity of Nature: The Derivation of Constitutive Equations with Cross-Effects in Non-Equilibrium Thermodynamics" to the Southern California Philosophy Conference, UC Irvine, October 30, 2004.
15. "Continuous Bodies and Contact Interactions: The View from Applied Mathematics"
  - a. to the Department of History and Philosophy of Science, Indiana University, November 4, 2005.
  - b. to *L'Institut d'Histoire et de Philosophie des Sciences et des Techniques de L'Université de Paris I*, Conference on the Limits of Set Theory in the Formalization of Basic Mathematical Notions, Paris, France, June 22, 2005.
  - c. to the U.C. Irvine, Laguna Beach "Workshop on the Philosophy of Mathematics," March 5-7, 2004.
16. "Armstrong on the Relationship Between Laws and Causation"
  - a. to the Department of Philosophy of UCLA, February 6, 2003.
  - b. to the Department of Philosophy of UC Santa Barbara, January 27, 2003.
  - c. to the Department of Philosophy of UC San Diego, January 17, 2003.
17. "Are Instantaneous Velocities Real? A Response to Russell and Arntzenius" to the U.C. Irvine, Laguna Beach "Workshop on the Philosophy of Mathematics in Application," March 8-10, 2002.
18. "The Alleged Conflict Between Laws and Causation", to the History and Philosophy of Science Colloquium Series, The University of Colorado, Boulder, January 1998.
19. "Newton and Leibniz on Absolute Space-time", to the Department of Physics, Denison University, Fall 1995.

### ***Major Grants and Awards***

1. Recipient of National Science Foundation Grant SES-441192. Full release time, 12 month research grant to research the relationship between physical laws and causation.
2. University Fellow, Ohio State University, September 1991 - August 1992.

### ***Academic Positions***

Spring 2012 – Present	Professor of Philosophy, University of California, Los Angeles.
Spring 2007 – Spring 2012	Associate Professor of Philosophy, University of California, Los Angeles.
Fall 2003 – Spring 2007	Assistant Professor of Philosophy, University of California, Los Angeles.
Fall 1998 – Spring 2002	Assistant Professor of Philosophy, Metropolitan State College of Denver.
Fall 1995	Adjunct Instructor, Denison University.
Fall 1994 – Spring 1996	Lecturer/Graduate Teaching Associate, Ohio State University.

### ***Teaching Experience, UCLA***

Philosophy 8, Introduction to the Philosophy of Science, Spring 2004; Fall 2005; Winter 2007; Spring 2008; Spring 2009; Spring 2010; Spring 2011; Winter 2012; Winter 2013; Winter 2014; winter 2015.
Philosophy 124, Historical Philosophy of Science, Spring 2007; Spring 2009; Winter 2012; Spring 2015s.
Philosophy 125, Contemporary Philosophy of Science, Winter 2004; Spring 2006; Winter 2008; Fall 2009.
Philosophy 130, Philosophy of Space and Time, Winter 2006; Fall 2006; Winter 2009; Fall 2010; Winter 2013; Winter 2015.
Philosophy 131, Science and Metaphysics, Spring 2004; Fall 2004; Winter 2008, Winter 2010.
Philosophy, Graduate Seminar on <i>Ceteris Paribus</i> Laws, Fall 2014.
Philosophy, Graduate Seminar on Abduction co-taught with Sam Cumming, Spring 2014.
Philosophy, Graduate Seminar in the Philosophy of Science (on Metametaphysics), Spring 2013.
Philosophy, Graduate Seminar in the Philosophy of Science (on Pierre Duhem's <i>The Aim and Structure of Physical Theory</i> ), Spring 2012.
Philosophy, Graduate Seminar in the Philosophy of Science (on Penelope Maddy's <i>Second Philosophy</i> ), Spring 2011.
Philosophy, Graduate Seminar in the Philosophy of Science (on thinking thoughts involving concepts which one incompletely understands), Spring 2010.
Philosophy, Graduate Seminar in the Philosophy of Science (on Mark Wilson's <i>Wandering Significance</i> ), Fall 2008.
Philosophy, Graduate Seminar in the Philosophy of Science (on Reichenbach's <i>Theory of Relativity and A Priori Knowledge</i> ), Fall 2007.
Philosophy, Graduate Seminar in the Philosophy of Science (on Scientific Realism) co-taught with Chris Smeenk, Spring 2006.
Philosophy, Graduate Seminar in the Philosophy of Science (on Kant's <i>Metaphysical Foundations of Natural Science</i> ) co-taught with Chris Smeenk, Fall 2005.
Philosophy, Graduate Seminar in the Philosophy of Physics (on Interpretations of Quantum Mechanics), Spring 2005.
Philosophy, Graduate Seminar in the Philosophy of Science (on Humean Supervenience of Laws of Nature), Winter 2004.

### ***Teaching Experience Pre-UCLA***

*Upper Level Undergraduate:* Philosophy of Science (3 semesters), Philosophy of Language (1 semester), History of Science (2 semesters), History of Modern Philosophy (1 semester), Introduction to Symbolic Logic (2 semesters).

*Lower Level Undergraduate:* Introduction to Philosophy (12 semesters, 2 quarters), Introduction to Ethics (4 semesters, 2 quarters), Introduction to [Informal] Logic (4 quarters).

### ***Selected Service UCLA***

Vice Chair, Summer 2012-Spring 2015.

Graduate Advisor, Fall 2010-Summer 2014; Summer 2015-Present.

Graduate Teaching Assistant Coordinator, Fall 2009-Spring 2010.

Graduate Placement Committee, 2008-9.

Graduate Admissions Committee, 2007-8.

Mangasar M. Mangasarian Fellowship Committee (Grad Div), Winter 2014, 2015.

Lenart Travel Fellowship Committee Member (Dean's Office), Spring 2008, 2009.

Philosophy Department Colloquium Coordinator, Summer 2004 – Summer 2007.

Co-convenor of the UCLA Philosophy of Science Conference, 2004 (with Chris Smeenk and John Bragin), 2005-2006 (with Chris Smeenk), 2014-15 (with Katrina Elliott).

Search Committee:

at the Eastern APA in Washington DC, Winter of 2003.

at the Eastern APA in Boston, Winter of 2004.

at the Eastern APA in Baltimore, Winter of 2014.

Reviewer of Grant Proposals for the National Science Foundation (SES Division).

Outside Promotion Reviews (Tenure / Full / Distinguished Professor): 2013, 2014 (3 times), 2015 (2 times).

Journal and Book Refereeing:

*Philosophical Quarterly*, 2003; *Synthese*, 2003, 2006; *Erkenntnis*, 2004, 2007, 2014; *The Canadian Journal of Philosophy*, 2004; *Theoria*, 2006; *Australasian Journal of Philosophy*, 2007, 2009; *Hume Studies*, 2007; *British Journal for the Philosophy of Science*, 2007, 2008, 2010, 2013, 2015; *Philosopher's Imprint*, 2008, 2010; *Pacific Philosophical Quarterly*, 2008; *Dialectica*, 2009; *Studies in the History and Philosophy of Modern Physics*, 2009, 2010; *Philosophy of Science*, 2010 (twice), 2012, 2013 (four times), 2014; *Proceedings of the European Philosophy of Science Association*, 2012; Oxford University Press (Book), 2013; *Archiv für Geschichte der Philosophie*, 2015.