
CRAIG CALLENDER

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Philosophy Department
UC San Diego
La Jolla, CA 92093-0119
USA

Positions

Professor of Philosophy, UC San Diego, 2005-Present
Associate Professor of Philosophy, UC San Diego, 2002-2005
Assistant Professor of Philosophy, UC San Diego, 2000-2002
Senior Lecturer in Philosophy, Logic & Scientific Method, LSE, 2000
Lecturer in Philosophy, Logic & Scientific Method, LSE, 1996-2000

Profile

Philosophy of Physics, Philosophy of Science, Metaphysics

Education

Providence College, BA in Philosophy & Humanities, 1990, summa cum laude
Rutgers University, PhD in Philosophy, 1997

Five Publications Relevant to the Proposal

1. *What Makes Time Special*, Oxford University Press, 2016, 400 pages
 2. *The Oxford Handbook of Philosophy of Time*, editor, Oxford University Press, 2011, 689 pages.
 3. "Thank Goodness That Argument is Over: Explaining the Temporal Value Asymmetry" *Philosopher's Imprint* 2012, 1-16, with Chris Suhler.
 4. "The Common Now" *Philosophical Issues*, 18, 339-361, 2008.
 5. "Shedding Light on Time" *Philosophy of Science*, 67, 2000, S587-S599.
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Books

1. *What Makes Time Special*, Oxford University Press, 2016, ~400 pages
2. *The Oxford Handbook of Philosophy of Time*, Editor, Oxford University Press, 2011, 689 pages.
3. *Introducing Time*, Icon/Totem Press, December 2001. Re-issued as *Introducing Time: A Graphic Guide*, May 2010. Translated into Croatian, Italian, German, French, Thai, Turkish, and others.
4. *Physics Meets Philosophy at the Planck Scale*, Cambridge University Press, 2001, with Nick Huggett. Translated into Chinese.
5. *Time, Reality and Experience*, Editor, 2002, Cambridge University Press.

Articles, Chapters, Notes

1. "What Becomes of a Causal Set" *British Journal for the Philosophy of Science*, 2015, w/ Chris Wuthrich.
 2. "One World, One Beable" *Synthese* 2014, 1-25.
 3. "Turn and Face the Strange...Ch-ch-changes: Philosophical Questions Raised by Phase Transitions" *Handbook of Philosophy of Physics*, 2013, (ed.) R. Batterman, OUP, with Tarun Menon.
 4. "Thank Goodness That Argument is Over: Explaining the Temporal Value Asymmetry" *Philosopher's Imprint* 2012, 1-16, with Chris Suhler.
 5. "Hot and Heavy Matters in the Foundations of Statistical Mechanics" *Foundations of Physics*, 2011.
 6. "Does Quantum Mechanics Clash with the Equivalence Principle—and Does It Matter?" *European Journal for Philosophy of Science*, 2011, with Elias Okon.
 7. "The Past Histories of Molecules" in *Probabilities in Physics*, Claus Beisbart and Stephan Hartmann's (eds), Oxford University Press, 2011.
 8. "Metaphysics and Philosophy of Science" in *Companion to Philosophy of Science*, Stephen French and Jaahu Saatsi (eds.), Continuum, 2011.
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9. "Time's Ontic Voltage" in *Future of Philosophy of Time*, edited by Adrian Bardon, Routledge, 2011.
 10. "Special Sciences, Conspiracy and the Better Best System Account of Laws", *Erkenntnis*, with Jonathan Cohen, 2010.
 11. "Is Time an Illusion?" *Scientific American*, June 2010. [Reprinted in SciAm's special edition, A Matter of Time 2012. Reprinted as "Why Some Physicists Want to Get Rid of Time", 2014]
 12. "The Past Hypothesis Meets Gravity" in Gerhard Ernst and Andreas Hüttemann (eds.): *Time, Chance and Reduction. Philosophical Aspects of Statistical Mechanics*. Cambridge University Press, 2010.
 13. "A Better Best System Account of Lawhood", with Jonathan Cohen, *Philosophical Studies* 145(1):1-34, 2009.
 14. "The Metaphysics in Quantum Theory", in *Compendium of Quantum Physics: Concepts, Experiments, History and Philosophy*, F. Weinert, K. Hentschel and D. Greenberger (eds.) Springer, 2009.
 15. "On Finding Time in Quantum Mechanics" *Einstein, Relativity, and Absolute Simultaneity*, (ed.) Craig, W.L. and Smith, Q. Routledge Press, 2009.
 16. "Interview on Philosophy of Physics" in *Foundations and Philosophy of Physics*. Juan Ferret (ed.) Automatic Press, 2009.
 17. "The Common Now" *Philosophical Issues*, 18, 339-361, 2008.
 18. "The Emergence and Interpretation of Probability in Bohmian Mechanics" *Studies in History and Philosophy of Modern Physics*, 38, 351-379, 2007.
 19. "There is No Special Problem About Scientific Representation" with Jonathan Cohen, special issue on scientific representation, *Theoria*, 55: 67-85, 2006
 20. "Time in Physics" *Encyclopedia of Philosophy*, 2nd edition, 2005, MacMillan.
 21. "Answers in Search of a Question: 'Proofs' of the Tri-Dimensionality of Space" *Studies in History & Philosophy of Modern Physics*, 36, 113-136, March 2005.
 22. "Realist Ennui and the Base Rate Fallacy" *Philosophy of Science*, 71(3): 320-338. July 2004, with P.D. Magnus.
 23. "Measures, Explanation and Time: Can We Explain the Boundary Conditions of the Universe?" *British Journal for the Philosophy of Science*, 55, 195-217, June 2004.
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24. "Who's Afraid of Maxwell's Demon—and Which One?" *Quantum Limits to the Second Law*, edited by D. Sheehan, American Institute of Physics, December 2002, pp. 399-407. Reprinted as "A Collision Between Dynamics and Thermodynamics" in *Entropy* 2004, 6, 11-20.
 25. "Is There a Puzzle About the Low Entropy Past?" for Hitchcock, C. (ed.) *Contemporary Debates in the Philosophy of Science*, chapter 12, Blackwell, 2003
 26. "Chapter 8: Philosophy of Space-time Physics" in *Blackwell Guide to Philosophy of Science*, edited by Peter Machamer and Michael Silberstein, (Basil Blackwell, 2002), with Carl Hoefer, pp. 173-198..
 27. "Taking Thermodynamics (Too) Seriously" *Studies in the History and Philosophy of Modern Physics*, 32, 4, 2001, 539-53.
 28. "Thermodynamic Time Asymmetry" *The Stanford Encyclopedia of Philosophy* (Winter 2001 Edition), Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/win2001/entries/time-thermo/>>.
 29. "Physics Meets Philosophy at the Planck Length: Introduction" *Physics Meets Philosophy at the Planck Length*, CUP 2001, with Nick Huggett, 1-32.
 30. "Why Quantize the Gravitational Field (or any other Field for that Matter)?" *Philosophy of Science*, 2001, S382-S394, with Nick Huggett.
 31. "Humean Supervenience and Rotating Homogeneous Matter" *Mind*, 110, Jan. 2000, 25-43.
 32. "Shedding Light on Time" *Philosophy of Science*, 67, 2000, S587-S599.
 33. "Is Time 'Handed' in a Quantum World?" *Proceedings of the Aristotelian Society*, June, 2000, 247-269.
 34. "Introduction" *Studies in the History & Philosophy of Modern Physics*; 2000, 31B, 2, 129-134.
 35. "Topology Change and the Unity of Space" *Studies in the History and Philosophy of Modern Physics*, 31B, 2, 2000, 227-246, with R. Weingard.
 36. "Reducing Thermodynamics to Statistical Mechanics: The Case of Entropy" *Journal of Philosophy*, XCVI, July 1999, 348-373.
 37. "Nonlocality in the Expanding Infinite Well" *Foundations of Physics Letters* 11, 1998, No. 5, 495-98, with R. Weingard.
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38. "The View From No-when" *British Journal for the Philosophy of Science* 49, 1998, 135-159.
 39. "What is 'The Problem of the Direction of Time'?" *Philosophy of Science* 63, v.2, 1997, 223-34.
 40. "Trouble in Paradise? Problems for Bohm's Theory" *Monist*, 1997, 80, 1, 24-43, with R. Weingard.
 41. "Time, Bohm's Theory and Quantum Cosmology" *Philosophy of Science*, 1996, 63, 470-74, with R. Weingard
 42. "Answer to Question #22" ["Is there a gravitational force or not?,"] *American Journal of Physics*, 1996, 64,5, 528, with R. Weingard.
 43. "An Introduction to Topology" *Monist*, 1996, 79, No. 1, 21-33, with R. Weingard.
 44. "Bohmian Cosmology and the Quantum Smearing of the Initial Singularity" *Physics Letters A* 208, 1995, 59-61, with R. Weingard.
 45. "The Metaphysics of Time Reversal: Hutchison on Classical Mechanics" *British Journal for the Philosophy of Science* 1995, 46, No. 3, 331.
 46. "Answer to Question #15 [What space scales participate in cosmic expansion?]" *American Journal of Physics*, 1995, 63,9, 780, with R. Weingard.
 47. "Wilful Ignorance, Knowledge, and the "Equal Culpability" Thesis: A Study of the Deeper Significance of the Principle of Legality" *Wisconsin Law Review*, 1994, 1, 29-69, with D. Husak.
 48. "A Bohmian Model of Quantum Cosmology" *Philosophy of Science* 1994, 1, S228-237, with R. Weingard.

Book reviews

1. "Book Note: "Chance and Temporal Asymmetry" edited by Alistair Wilson", *Australasian Journal of Philosophy*, 2015.
 2. "Review of Ney & Albert's 'The Wave Function: Essays on the Metaphysics of Quantum Mechanics' *British Journal for the Philosophy of Science*, 2014
 3. "There is No Theory of Everything" *New Scientist*, September 2010. (Review of Hawking and Mlodinow's *The Grand Design*.)
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4. "Can the Multiverse Explain Time's Arrow?" *New Scientist*, January 2010.
(Review of Carroll's *From Eternity to Here*)
 5. "Review of Robin LePoidevin's *Images of Time*" *Notre Dame Philosophical Reviews*, 2008
 6. "Review of M. Jammer's *Concepts of Simultaneity*" *Isis* 2008, 99, 158-160.
 7. "Not So Cool" *Metascience*, 2007, 16, 147-151.
 8. "Review of J. Butterfield's *Arguments of Time*" *Philosophy of Science*, July 2005.
 9. "Review of C. Liu and G. Emch's *Logic of Thermo-Statistical Physics*" *Studies in History and Philosophy of Modern Physics*, 2004, 541-544.
 10. "Review of D. Albert's *Time and Chance*" *Metascience*, 2002, 11, 1, 43-46.
 11. "Review of P. Smith's *Explaining Chaos*" *Mind* 2001, 439, 839-844.
 12. "Review of J. Earman's *Bangs, Crunches, Whimpers and Shrieks*" *Philosophical Review* 1998, 107, 142-146.
 13. "Review of J. Cushing, A. Fine and S. Goldstein (eds). *Bohmian Mechanics and Quantum Theory: An Appraisal*" *British Journal for the Philosophy of Science*, 1998, 49, 332-337.
 14. "Review of H. Price's *Time's Arrow and Archimedes' Point*" *Metascience*, roundtable review, 1997, 11, 68-71.
 15. "Review of M. Dorato's *Time and Reality*" *British Journal for the Philosophy of Science*, 1997, 48, 117-20.
 16. "Review of S. Savitt's *Time's Arrow Today*" *Canadian Philosophical Reviews*, 16, 1, 1996, 59-61.

Conferences organized

1. Time, Reality and Experience. The Royal Institute of Philosophy Annual Conference. Sept 2000, London School of Economics.
 2. UCI-UCSD Philosophy of Science Workshop, UCSD, June 2003.
 3. Society for Exact Philosophy Annual Meeting, UCSD, May 2006, with Jonathan Cohen.
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4. Time, Physics and Philosophy, UCSD, May 18-19, 2012.

Talks

I've given presentations at many professional philosophy and foundations of physics conferences, universities, workshops, etc. These include talks at Oxford, Cambridge, London, Leeds, Vancouver, Montreal, Toronto, Edinburgh, Tilburg, Utrecht, Paris, Sheffield, Barcelona, Athens, Jerusalem, Konstanz, Cologne, Munich, Bristol, Brighton, Sydney, Copenhagen, Keflavik, Nancy, Mexico City, in addition to many US cities. Details available upon request.

Professional experience (selected and condensed)

1. Editor, Philosophy of Science section, *Notre Dame Philosophical Reviews*, 2012-
 2. Guest Editor, *Entropy*, special issue on Arrow of Time, 2012; *Studies in the History and Philosophy of Modern Physics*, special issue on relativity, 2000
 3. Chair of Local Organizing Committee, PSA-HSS San Diego 2012
 4. Editor, *Philosopher's Compass: Philosophy of Science*, Blackwell, 2004-2007.
 5. Deputy Editor, *British Journal for the Philosophy of Science*, 1997-8.
 6. Associate Editor, *Mind*, 1998-2000.
 7. Governing Board, Philosophy of Science Association, 2006-2009
 8. Lakatos Award Book Selector, 2012-2015
 9. Associate Member, Centre for Philosophy of Time, Università degli Studi di Milano, Italy
 10. Program Committees: Biennial Meeting of Philosophy of Science Association., 2010, 2006, 2002; Pacific APA, 2006-2009; International Society for the Study of Space-time, 2004, 2006; *Beyond Spacetime*, 2015
 11. National Science Foundation, 3-year term, STS funding panel, 2001-2004
 12. PSA Panel for Best Paper by a Junior Philosopher, 2004
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13. Editorial Advisory Board: both Studies in the History & Philosophy of Modern Physics and Philosophy of Science
 14. Co-Director of the London School of Economic's CPNSS , 1996-1998.
 15. Management Committee, London School of Economic's CPNSS, 1996–2000.
 16. External PhD examiner in both philosophy and physics, including at Illinois-Chicago, Cambridge University, ANU, Melbourne, Saskatwan.
 17. External accessor for roughly 3-6 external promotions per year, including Cornell, Yale, Rutgers, Pittsburgh, Indiana, NYU.
 18. External accessor for many national science foundations, including the NSF, Swiss, Israeli, and Canadian foundations

Campus (selected and condensed)

1. Chair of Philosophy, 2013-
 2. Graduate Council, 2012-13
 3. Director of Graduate Studies, 2003-7
 4. Chancellor's SPI OMICS Advisory Committee, 2015-
 5. Chancellor's SPI "Addressing Disparities..." Advisory Committee, 2015
 6. Co-chair, OMICS Search in Bioethics and biopolicy, 2015-
 7. Chair, Muir Executive Committee, 2009-10
 8. Stem Cell Advisory Committee, 2014
 9. Integrated Stem Cell Advisory Committee, 2015-
 10. Muir Environmental Studies Steering Committee, 2005-
 11. Alumni Affairs, UC San Diego & You, Los Angeles, 2015, speaker
 12. PhD Supervision: Casey McCoy, John Dougherty, Nat Jacobs, Tarun Menon, Ioan Muntean, Mark Newman, Nick Bostrom (LSE)
 13. PhD and MAS Committees: I've served on scores of committees, including ones in philosophy, physics, math, music and oceanography.
 14. Search Committees:
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15. Committee on Affirmative Action and Diversity (CAAD), Fall 2006, FWS 2007-2008.
 16. Science Studies Program Executive Board, 2007
 17. CEP Subcommittee on Undergraduate Courses, 2009-2010

Grants and Awards

1. AHRB research leave award, 2000, UK
2. Dean's Summer Fellowship, 2002
3. UCSD Chancellor's Associates Faculty Excellence Award for Graduate Teaching, 2007
4. FQXi Third Prize in Essay Competition, 2009
5. FQXi mini-grant, 2010, \$4920
6. UCMEXUS grant, 2009-10, \$37,000
7. DAH Initiative Award, \$2500
8. FQXi Large Grant, 2011-13, \$102,000
9. Center for Humanities Faculty Fellow, UCSD, 2014-15
10. International Collaborator Award, University of Sydney, 2013, \$15,000
11. Discovery Grant, Australian Research Council, 2015, application pending

Media

1. *Through a Wormhole with Morgan Freeman*, Science Channel, May 2015, featured guest.
 2. Can Time Go Backwards? Interview with *San Diego Magazine*, May 2015. <http://www.sandiegomagazine.com/Blogs/Cityfiles/Spring-2015/Can-Time-Go-Backwards-Local-prof-goes-Through-the-Wormhole/>
 3. *Philosophy at 3:AM, Questions and Answers with 25 Top Philosophers*, Richard Marshall, Oxford University Press, 2014, chapter 6.
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4. "Nothing to See Here: Demoting the Uncertainty Principle" The Stone, *New York Times* (online), July 21, 2013. Reprinted in *The Stone Reader*, Norton/Liveright, 2015. Discussed in Mother Jones.
 5. *Closer to Truth*. Six online interviews at the Copenhagen Library by PBS's Robert Kuhn. Available at <http://www.closetotruth.com/contributor/craig-callender/profile>
 6. "Return of the Stingy Oddsmaker" The Stone, *New York Times* (online), July 25.
 7. Subject Matters. A public Q&A after the April 5, 2014 showing of *Time and the Conways*, Old Globe Theater (San Diego)
 8. *Falling Through Time*. A public lecture broadcast on ABC TV Big Ideas. It was shown on Aug 27, 2013 on ABC1 and repeated on ABCNEWS24
 9. *The New Great Time War*. The Philosopher's Zone, ABC Radio National, Oct 6, 2013. Interviewed by Joe Gelonesi
 10. World Science Festival. New York, 2013. *A Matter of Time*. NPR's Ira Flatow interviewing me, Tim Maudlin, Max Tegmark and Paul Davies.
 11. *What Is Time? The Biggest Questions*. Podcast interview by Tony Sobrado
 12. *Illusions of Time and Self*. Podcast interview for FQX by Carinne Piekema
 13. *Evolving Time's Arrow*. Profile of my work by Anil Ananthaswamy.
 14. "The Time is Gone" by Nicola Nosengo, *L'Espresso*, January 19, 2012
 15. "Is Time an Illusion?" *Scientific American*, June 2010. [Reprinted in SciAm's special edition, *A Matter of Time 2012*. Reprinted as "Why Some Physicists Want to Get Rid of Time", 2014]
 16. Bloggingheads.tv (video of me discussing string theory with Woit, quantum mechanics and time's arrow with Maudlin, time w/ Barbour, and the environment w/ Odenbaugh)
 17. Philosophy TV (video of me discussing metaphysics with Schaffer, multiverse and entropy with Carroll)
 18. Quoted in *New Scientist*: Saving Time. Physics Killed It. Do We Need It Back? (2013); in *New Scientist*, Why Has Space Exactly Three Dimensions? (2013); in "Skipping Along with the Heavyweights of Time", *New Scientist* June 2010; in *Inside Science* and *Huffington Post*, "Why Does Time Flow Forward?" <http://www.insidescience.org/content/why-does-time-flow-forward/1625>; in Zeeya Meerali, "Is the Future Already Written?" *Discover*, 2015
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