
CRAIG CALLENDER

ccallender@ucsd.edu

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

Positions

Tata Chancellor Chair of Philosophy, 2023-
Professor of Philosophy, UC San Diego, 2005-
Co-Director, Institute for Practical Ethics, 2017-
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
Visiting Fellow, Centre for Time, University of Sydney, 2015
Visiting Fellow, SOCRATES, University of Hannover, 2024

Profile

Philosophy of Science, Philosophy of Physics, Metaphysics, Applied Ethics

Education

Providence College, BA, Philosophy & Humanities, 1990
Rutgers University, PhD, Philosophy, 1997

Books

1. *What Makes Time Special?*, Oxford University Press, July 2017. Winner of the 2018 Lakatos Award, 2022 Suppes Prize. Paperback, 2023. Audiobook, 2023. Translated into Mandarin.
2. *The Oxford Handbook of Philosophy of Time*, Editor, Oxford University Press, 2011, 689 pages.

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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

6. Navigating Synergies vs Trade-offs between Climate Change Mitigation and Biodiversity Conservation, *Nature Biodiversity*, forthcoming, with Shermin de Silva, Aseem Prakash, Dale Jamieson, Kristy Ferraro, and Karen Kovaka.
7. Support US OCTOPUS Act to Keep Octopuses Wild, *Science* 385, 721-722, with J. Jacquet et al, 2024.
8. The Prodigy That Time Forgot: The Incredible and Untold Story of John von Neumann, Bassi, A., Goldstein, S., Tumulka, R., Zanghi, N. (eds.) *Physics and the Nature of Reality: Essays in Memory of Detlef Dürr*, 2024.
9. Fighting Disinformation with Sunshine: Promoting Funding Transparency in Science, International Science Council, August 7, 2024.
10. Screening Out Neurodiversity, *Kennedy Institute of Ethics Journal* 2023, 33, 1, 21-54, with Jada Wiggleton-Little.
11. Quantum Mechanics: Keeping It Real? *The British Journal for the Philosophy of Science* 74, 4, 2023.
12. Temporal Neutrality Implies Exponential Discounting, *Philosophy of Science* 90, 1469-1479, 2023.
13. Going “Humean” on the Flow of Time, with Bosco G. Aspirichaga, in *Timing and Time Perception*, 2023.

14. Humean Laws of Nature: The End of the Good Old Days, in Michael Hicks, Siegfried Jaag and Christian Loew (eds.) *Humean Laws for Human Agents*, Oxford: Oxford University Press, 2023.
 15. Fossil-Fuel Money is Warping Climate Research: Universities Must Require Full Funding Disclosure. *The Chronicle of Higher Education*. Sept 29, 2022.
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16. Is Discounting for Tense Rational? Christoph Hoerl, Teresa McCormack and Alison Fernandes (eds.) *Temporal Asymmetries in Philosophy and Psychology*, 2022.
17. On the Horns of a Dilemma: Let the Northern White Rhino Vanish or Intervene? *Ethics, Policy, and Environment*, 2021.
18. No Time for Time from No-Time, *Philosophy of Science* 88, 1172-1184, 2021 with Eugene Chua.
19. The Normative Standard for Future Discounting, *Australian Philosophical Reviews*, 2021, 227-253.
20. Reply to Critics, *Australian Philosophical Reviews*, 2021, 309-321.
21. Metaphysics in Free Fall. *IAI TV*. 3 Feb 2021.
22. Making Science Better: Lessons From the COVID-19 Front. *Issues in Science Technology*. June 10, 2020.
23. Time in Cosmology, *Routledge Companion to Philosophy of Physics*, E. Knox and A. Wilson, (eds.) 2021, with Casey McCoy.
24. Time, Flow, and Space, *Behavioral and Brain Sciences* 42, 2019. Response to Hoerl and McCormack's BBS target, "Thinking in and about time: A dual systems perspective on temporal cognition"
25. Can We Quarantine the Quantum Blight?, *Scientific Realism and the Quantum* Oxford University Press, edited by Saatsi and French, 2020.
26. Rules of the Road for Insect Gene Drive Research and Testing. *Nature Biotechnology* 35, 716-718, 2017, with Adelman et al.

27. Black Hole Thermodynamics: More Than a Formal Analogy?" unpublished manuscript, <https://philsci-archive.pitt.edu/13195/>.
 28. Time Lost, Time Regained, *Metaphysics and Cognitive Science*, Goldman, A. and McLaughlin, B. (eds), Oxford University Press, 2019.
 29. What Becomes of a Causal Set, *British Journal for the Philosophy of Science*, 2016, with Christian Wuthrich.
 30. 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
 31. Return of the Stingy Oddsmaker, The Stone, *New York Times* (online), July 25.
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32. One World, One Beable, *Synthese* 2014, 1-25.
33. 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.
34. Thank Goodness That Argument is Over: Explaining the Temporal Value Asymmetry, *Philosopher's Imprint* 2012, 1-16, with Chris Suhler.
35. Hot and Heavy Matters in the Foundations of Statistical Mechanics, *Foundations of Physics* 41, 960-981, 2011.
36. Does Quantum Mechanics Clash with the Equivalence Principle—and Does It Matter?, *European Journal for Philosophy of Science*, 2011, with Elias Okon.
37. The Past Histories of Molecules, in *Probabilities in Physics*, Claus Beisbart and Stephan Hartmann's (eds), Oxford University Press, 2011.
38. Metaphysics and Philosophy of Science, in *Companion to Philosophy of Science*, Stephen French and Jaahu Saatsi (eds.), Continuum, 2011.
39. Time's Ontic Voltage, in *Future of Philosophy of Time*, edited by Adrian Bardon Routledge, 2011.
40. Special Sciences, Conspiracy and the Better Best System Account of Laws,

41. 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]
 42. 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.
 43. A Better Best System Account of Lawhood, with Jonathan Cohen, *Philosophical Studies* 145(1):1-34, 2009.
 44. 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.
 45. On Finding Time in Quantum Mechanics, *Einstein, Relativity, and Absolute Simultaneity*, (ed.) Craig, W.L. and Smith, Q. Routledge Press, 2009.
 46. Interview on Philosophy of Physics, in *Foundations and Philosophy of Physics*. Juan Ferret (ed.) Automatic Press, 2009.
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47. The Common Now, *Philosophical Issues*, 18, 339-361, 2008.
 48. The Emergence and Interpretation of Probability in Bohmian Mechanics, *Studies in History and Philosophy of Modern Physics*, 38, 351-379, 2007.
 49. There is No Special Problem About Scientific Representation, with Jonathan Cohen, special issue on scientific representation, *Theoria*, 55: 67-85, 2006
 50. Time in Physics, *Encyclopedia of Philosophy*, 2nd edition, 2005, MacMillan.
 51. 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.
 52. Realist Ennui and the Base Rate Fallacy, *Philosophy of Science*, 71(3): 320-330, July 2004, with P.D. Magnus.
 53. 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.

the Universe? *British Journal for the Philosophy of Science*, 55, 199-217, 2004.

54. 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.
 55. Is There a Puzzle About the Low Entropy Past?, for Hitchcock, C. (ed.) *Contemporary Debates in the Philosophy of Science*, chapter 12, Blackwell, 2003
 56. 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..
 57. Taking Thermodynamics (Too) Seriously, *Studies in the History and Philosophy of Modern Physics*, 32, 4, 2001, 539-53.
 58. 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/>>. Updated with substantive revision in 2021.
 59. Physics Meets Philosophy at the Planck Length: Introduction, *Physics Meets Philosophy at the Planck Length*, CUP 2001, with Nick Huggett, 1-32.
 60. Why Quantize the Gravitational Field (or any other Field for that Matter)? *Philosophy of Science*, 2001, S382-S394, with Nick Huggett.
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61. Humean Supervenience and Rotating Homogeneous Matter, *Mind*, 110, Jan. 2000, 25-43.
 62. Shedding Light on Time, *Philosophy of Science*, 67, 2000, S587-S599.
 63. Is Time 'Handed' in a Quantum World?, *Proceedings of the Aristotelian Society*, June, 2000, 247-269.
 64. Introduction, *Studies in the History & Philosophy of Modern Physics*; 2000, 31 2, 129-134.

65. Topology Change and the Unity of Space, *Studies in the History and Philosophy of Modern Physics*, 31B, 2, 2000, 227-246, with R. Weingard.
66. Reducing Thermodynamics to Statistical Mechanics: The Case of Entropy *Journal of Philosophy*, XCVI, July 1999, 348-373.
67. Nonlocality in the Expanding Infinite Well, *Foundations of Physics Letters* 11, 1998, No. 5, 495-98, with R. Weingard.
68. The View From No-when, *British Journal for the Philosophy of Science* 49, 1998, 135-159.
69. What is 'The Problem of the Direction of Time'?, *Philosophy of Science* 63, v.2 1997, 223-34.
70. Trouble in Paradise? Problems for Bohm's Theory, *Monist*, 1997, 80, 1, 24-43, with R. Weingard.
71. Time, Bohm's Theory and Quantum Cosmology, *Philosophy of Science*, 1996, 63, 470-74, with R. Weingard
72. Answer to Question #22" ["Is there a gravitational force or not?,"], *American Journal of Physics*, 1996, 64,5, 528, with R. Weingard.
73. An Introduction to Topology, *Monist*, 1996, 79, No. 1, 21-33, with R. Weingard
74. Bohmian Cosmology and the Quantum Smearing of the Initial Singularity *Physics Letters A* 208, 1995, 59-61, with R. Weingard.
75. The Metaphysics of Time Reversal: Hutchison on Classical Mechanics, *British Journal for the Philosophy of Science* 1995, 46, No. 3, 331.
76. Answer to Question #15 [What space scales participate in cosmic expansion?], *American Journal of Physics*, 1995, 63,9, 780, with R. Weingard.

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77. 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. [Cited in Justice Kennedy's dissent, May 31, 2011.]

1, 29-69, with D. Husak. [Cited in Justice Kennedy's dissent, May 31, 2011, in
GLOBAL-TECH APPLIANCES, INC. v. SEB S. A. (No. 10-6)]

78. A Bohmian Model of Quantum Cosmology, *Philosophy of Science* 1994, 1, S228-237, with R. Weingard.

Book reviews

79. Review of Ney & Albert's 'The Wave Function: Essays on the Metaphysics of Quantum Mechanics' *British Journal for the Philosophy of Science*, 2014
80. There is No Theory of Everything" *New Scientist*, September 2010. (Review of Hawking and Mlodinow's *The Grand Design*.)
81. Can the Multiverse Explain Time's Arrow?, *New Scientist*, January 2010. (Review of Carroll's *From Eternity to Here*)
82. Review of Robin LePoidevin's *Images of Time*" *Notre Dame Philosophical Reviews*, 2008
83. Review of M. Jammer's *Concepts of Simultaneity*, *Isis* 2008, 99, 158-160.
84. Not So Cool, *Metascience*, 2007, 16, 147-151.
85. "Review of J. Butterfield's *Arguments of Time*" *Philosophy of Science*, July 2005.
86. Review of C. Liu and G. Emch's *Logic of Thermo-Statistical Physics*, *Studies in History and Philosophy of Modern Physics*, 2004, 541-544.
87. Review of D. Albert's *Time and Chance*, *Metascience*, 2002, 11, 1, 43-46.
88. Review of P. Smith's *Explaining Chaos*, *Mind* 2001, 439, 839-844.
89. Review of J. Earman's *Bangs, Crunches, Whimpers and Shrieks*, *Philosophical Review* 1998, 107, 142-146.
90. 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.
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91. Review of H. Price's *Time's Arrow and Archimedes' Point*, *Metascience*, roundtable review, 1997, 11, 68-71.
 92. Review of M. Dorato's *Time and Reality*, *British Journal for the Philosophy of Science*, 1997, 48, 117-20.
 93. Review of S. Savitt's *Time's Arrow Today*, *Canadian Philosophical Reviews*, 16, 1, 1996, 59-61.

Major Awards

1. UCSD Chancellor's Associates Faculty Award for Excellence in Graduate Teaching, 2007
2. Lakatos Award, London School of Economics, 2018
3. UCSD Chancellor's Associates Faculty Excellence Award for Excellence in Research, 2019
4. Patrick Suppes Prize in Philosophy of Science, The American Philosophical Society, 2022
5. 28th Annual Bergmann Lecture, University of Iowa, 2023

Selected 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.
 4. Philosophy of Physics Spring Retreat, James Reserve 2008
 5. Philosophy of Physics Spring Retreat, James Reserve 2009
 6. Time, Physics, and Philosophy, UCSD, May 18-19, 2012.
 7. Open-mindedness and Skepticism in Science, UCSD, with V.S. Ramachandran, 2018.
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8. Time, Physics, and the Observer, FQXi, May 2018
9. Workshop on Intervening in Nature, Wrigley Institute, Catalina Island, with Karen Kovaka and Ann Thresher, 2023.
10. New Thinking in Conservation, UCSD, with Dale Jamieson, 2024.
11. Disinformation Summer Institute, UCSD, with Jennifer Jacquet, Naomi Oreskes, and Jevin West, 2025.

Service, External (selected)

1. President, Philosophy of Science Association, 2025-2027
2. Governing Board, Philosophy of Science Association, 2023-2029, 2006-2009
3. Founding Faculty and Co-Director, Institute for Practical Ethics, 2017-
4. Scientific Freedom and Responsibility Committee, International Science Council, 2019-2022
5. President, Philosophy of Time Society, 2017-2020
6. Faculty, The John Bell Institute, Croatia
7. Editor, *Notre Dame Philosophical Reviews*, philosophy of science section, 2012-2017
8. Chair, Local Organizing Committee, PSA-HSS San Diego 2012
9. Editor, *Philosopher's Compass: Philosophy of Science*, Blackwell, 2004-2007.
10. Deputy Editor, *British Journal for the Philosophy of Science*, 1997-8.
11. Associate Editor, *Mind*, 1998-2000.
12. Lakatos Award Book Selector, 2012-2023
13. Associate Member, Centre for Philosophy of Time, Università degli Studi di Milano, Italy
14. 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

15. National Science Foundation, STS funding panel, 2001-2004

16. Co-Director of the London School of Economic's CPNSS, 1996-1998.

17. Management Committee, London School of Economic's CPNSS, 1996–2000.

18. External PhD examiner, promotion accessor, grant foundation reviewer in both philosophy and physics for many schools and foundations.

Service, Campus (selected)

1. Committee on Campus Climate Change, UCSD Academic Senate, 2021-2024
Chair, 2023-2024

2. Chancellor's Strategic Plan Initiative, 2024, Faculty Lead on new Climate Action Initiative

3. Director, SPLASH summer program for transfer students, 2024, 2025

4. Executive Committee, Tata Institute for Genetics and Society, 2023-

5. Curriculum design: new Bioethics minor and Environmental Ethics minor.

6. PATH Program, Division of Arts and Humanities, outreach and summer activities

7. Department Chair, Philosophy, 2013-2016

8. Search Chair, Philosophy, 2022, 2018, 2015, 2006

9. Graduate Council, 2012-13

10. Director of Graduate Studies, 2003-7

11. Chancellor's Strategic Plan Initiative, OMICS Advisory Committee, 2015-6

12. Chancellor's SPI "Addressing Disparities..." Advisory Committee, 2015-

13. Co-chair, OMICS Search in Bioethics and Biopolicy, 2015-17
 14. Chair, Muir Executive Committee, 2009-10
 15. Stem Cell Advisory Committee, 2014
 16. Integrated Stem Cell Advisory Committee, 2015-
 17. Muir Environmental Studies Steering Committee, 2005 and many after
 18. Committee on Affirmative Action and Diversity, 2006-2008.
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19. Science Studies Program Executive Board, 2007
20. CEP Subcommittee on Undergraduate Courses, 2009-2010

Presentations

I've given presentations at many professional conferences, universities, workshops etc. These include talks in Buenos Aires, Lisbon, Hannover, Lugano, Oxford, Cambridge, London, Leeds, Vancouver, Montreal, Toronto, Edinburgh, Tilburg, Utrecht, Sheffield, Barcelona, Athens, Jerusalem, Konstanz, Cologne, Munich, Bristol, Brighton, Sydney, Copenhagen, Keflavik, Nancy, Pais, Mexico City, in addition to many US cities. I've also spoken at various non-academic venues, such as on disinformation to the German Embassy, on environmental justice to the Board of Latino Legislative Leaders, and more. Details available upon request.

Grants

1. AHRB research leave award, 2000, UK
2. Dean's Summer Fellowship, 2002
3. FQXi mini-grant, 2010

4. UCMEXUS postdoctoral grant, 2009-10
 5. DAH Initiative Award
 6. FQXi Large Grant, 2011-13
 7. Center for Humanities Faculty Fellow, UCSD, 2014-15
 8. International Collaborator Award, University of Sydney, 2013
 9. Discovery Grant, Australian Research Council, 2015
 10. Time and the Observer, FQXi, 2016-18
 11. Time: The Scientific and Folk Perspectives, Australian Research Council, external investigator, 2018-2023
 12. Booting Up a Mirror Cell, NSF, consultant, 2019-2023
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13. Neurodiversity in Tech: Using Interactive Decision Theory and Augmented Reality to Enable Employment for Adults with Autism Spectrum Disorder, NSF, 2019-2023

Media (selected)

Television

1. *Through a Wormhole with Morgan Freeman*, Science Channel, Season 6, episode 2, aired May 6, 2015. Available on Amazon Prime, etc.
2. *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
3. Fewer Students Are Choosing Humanities — What San Diego Colleges Are Doing About It, KPBS profile of my class field trip, 2018.

Radio

4. Newton's Exploding Clock, The Philosopher's Zone, Australian Broadcasting Corporation. Interviewed by Sam Baron, 2021
5. What is Time? Radio New Zealand interview by Jim Mora, 2017
6. *The New Great Time War*. The Philosopher's Zone, ABC Radio National, Oct 6 2013. Interviewed by Joe Gelonesi

Interviews

7. New Research Is Clear: Fossil Fuel-Funded University Research Is Warping Policy, *Drilled*, 2024
 8. Scientific Freedom: An Interview with Craig Callender, Institute for Arts and Ideas, 2021
 9. Can We Stop Time? *Livescience*, 2021
 10. Strange Times, *Triton Magazine*, 2020
 11. Parting Words, *Politico*, 2020
 12. Covid-19 Science and Ethics, *Social Sciences in China Press*, 2019
 13. Are We All Wrong about Black Holes? Quanta Magazine, Wired, Apple News, 2019
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14. Can Time Go Backwards? *San Diego Magazine*, May 2015.
15. *Philosophy at 3:AM, Questions and Answers with 25 Top Philosophers*, Richard Marshall, Oxford University Press, 2014, chapter 6.
16. *Closer to Truth*. Six online interviews at the Copenhagen Library by PBS's Robert Kuhn. Available at <http://www.closertotruth.com/contributor/craig-callender/profile>
17. *Evolving Time's Arrow*. FQXi profile of my work by Anil Ananthaswamy.
18. "The Time is Gone" by Nicola Nosengo, *L'Espresso*, January 19, 2012