

# Curriculum Vitae

Giovanni Valente

## CONTACT

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## ACADEMIC POSITIONS

### Current positions

- From December 2017, Associate Professor in Logic and Philosophy of Science in the Mathematics Department at Politecnico di Milano, Italy
- From March 2018 to March 2020, Lise Meitner Scholar at the Paris-Lodron-Universität Salzburg, Austria
- From September 2010, Resident Fellow in the Center for Philosophy of Science, University of Pittsburgh, USA

### Previous positions

- August 2010 - November 2017, Assistant Professor (Tenure Track) in the Philosophy Department at University of Pittsburgh, USA
- September 2010 - November 2017, Secondary Appointment in the History and Philosophy of Science Department at University of Pittsburgh, USA
- September 2015 – July 2017, Humboldt Fellow in the Munich Center for Mathematical Philosophy at the Ludwig-Maximilians-Universität München, Germany

- September 2014 - August 2015, Director of Undergraduate Studies in the Department of Philosophy at University of Pittsburgh, USA
- July 2009 - July 2010, Post-doctoral Researcher in the Laboratoire des Recherches sur les Sciences de la Matière at the Commissariat à l'énergie atomique et aux énergies alternatives (CEA), Saclay, France

## UNIVERSITY EDUCATION

- Spring 2009, PhD, Philosophy, Committee for Philosophy and the Sciences, Department of Philosophy, University of Maryland, College Park.
- Fall 2003, Masters Degree, Department of Philosophy, University of Padua, Italy

## AREAS OF SPECIALIZATION

**Research:** Philosophy of Physics; Philosophy of Mathematical Sciences

**Teaching:** Philosophy of Physics; Philosophy of Science and Technology; Philosophy of Mathematics; Philosophy of Space and Time; Science and Public Policy

## PUBLICATIONS

### Publications in peer-reviewed journals

- 1) "Is there a Stability Problem for Bayesian Noncommutative Probabilities?", in *Studies in History and Philosophy of Modern Physics*, Volume 38, December 2007, pp.832-843. ISSN: 1355-2198
- 2) "John von Neumann's Mathematical 'Utopia' in Quantum Theory", in *Studies in History and Philosophy of Modern Physics*, Volume 39, November 2008, pp.860-871. ISSN: 1355-2198
- 3) "How Local are Local Operations in Local Quantum Field Theory?", co-author with Miklos Rédei, in *Studies in History and Philosophy of Modern Physics*, Volume 41, November 2010, pp. 346-353. ISSN: 1355-2198
- 4) "Can Entanglement be Destroyed by Any Local Operation in Relativistic Quantum Field Theory?", in *Philosophy of Science*, Volume 77, December 2010, pp.1029-1041. ISSN: 0031-8248

- 5) “Editorial: Reduction, Emergence and Physics”, co-author with Stephan Hartmann, in *Foundations of Physics*, Volume 41, June 2011, p. 919. ISSN: 0015-9018
- 6) “Local Disentanglement in Relativistic Quantum Field Theory”, in *Studies in History and Philosophy of Modern Physics*, Volume 44, November 2013, pp. 424-432. ISSN: 1355-2198
- 7) “Relativistic Causality in Algebraic Quantum Field Theory”, co-author with John Earman, in *International Studies in the Philosophy of Science*, Volume 28, July 2014, pp. 1-48. ISSN: 0269-8595
- 8) “The Approach Towards Equilibrium in Lanford's Theorem”, in *European Journal for Philosophy of Science*, Volume 4, October 2014, pp. 309-335. ISSN: 1879-4912
- 9) “Does the Reeh-Schlieder Theorem Violate Relativistic Causality?”, in *Studies in History and Philosophy of Modern Physics*, Volume 48, November 2014, pp. 147-155. ISSN: 1355-2198
- 10) “Editorial: Relativistic Causality”, co-author with James O. Weatherall, in *Studies in History and Philosophy of Modern Physics*, Volume 48, November 2014, pp. 48. ISSN: 1355-2198
- 11) “Time and Irreversibility in Axiomatic Thermodynamics”, co-author with Harvey R. Brown and Robert Marsland III, in *American Journal of Physics*, Volume 83, July 2015, pp. 628-634. ISSN: 0002-9505
- 12) “Lanford's Theorem and the Emergence of Irreversibility”, co-author with Jos Uffink, in *Foundations of Physics*, Volume 45, April 2015, pp. 404-438. ISSN: 0015-9018
- 13) “Restoring Particle Phenomenology”, in *Studies in History and Philosophy of Modern Physics*, Volume 51, August 2015, pp. 97-103. ISSN: 1355-2198
- 14) "On the Paradox of Reversible Processes in Thermodynamics", forthcoming in *Synthese*. <https://doi.org/10.1007/s11229-017-1560-3> . ISSN: 0039-7857

### Special Issues Edited

- 1) “Reduction, Emergence and Physics”, co-editor with Stephan Hartmann, Special Issue of *Foundations of Physics*, Volume 41, June 2011. ISSN: 0015-9018
- 2) “Relativistic Causality”, co-editor with James O. Weatherall, Special Issue of *Studies in History and Philosophy of Modern Physics*, Volume 48, November 2014. ISSN: 1355-2198

## **Books**

- 1) “Causalità Relativistica. Problemi filosofici all’incontro di teoria dei quanti e relatività ristretta”, MIMESIS editore, November 2016. ISBN: 9788857538112

## **FUNDED PROJECTS AND AWARDS**

### **Visiting Research Fellowships**

- 1) Visiting Fellowship at the Tilburg Center for Logic and Philosophy of Science, Tilburg, The Netherlands: February-July 2008
- 2) NSF Dissertation Grant recipient for a two-months stay at Princeton University: August-September 2008
- 3) Visiting Fellowship at the Institut d’Histoire et de Philosophie des Sciences et des Techniques, Paris, France: October 2008-March 2009
- 4) Visiting Fellowship at the Logic and Philosophy of Science Department, University of California, Irvine, USA: March-June 2009
- 5) Visiting Fellowship at the Centre for Time, Sydney, Australia: November-December 2009
- 6) Visiting Fellowship at the Descartes Center, Utrecht, The Netherlands: June 2011
- 7) Visiting Scholarship at the Trinity College, Cambridge, UK: September-November 2013

### **Grants for research projects**

- 1) Humboldt Fellowship for Experienced Researchers from the Alexander von Humboldt Foundation, integrated by a Carl Friedrich von Siemens Research Fellowship, in the Munich Center for Mathematical Philosophy at the Ludwig-Maximilians-Universität München, Germany: September 2015-July 2017. Project title: “Relativistic Causality and Independence between Quantum Field Systems”. Principal Investigator (63.000€)
- 2) Lise Meitner Scholarship from the Austrian Science Fund (FWF), in the Department of Philosophy at the Paris-Lodron-Universität Salzburg, Austria: dates to be decided. Project title: “From Causality to the Fundamental Structure of the World: Time and Ontology in Quantum Field Theory”. Principal Investigator (166.180€)

## Prizes

- 1) Prize “Accademia Olimpica” for masters thesis in a scientific area, Vicenza, Italy, 2004
- 2) Prize “Accademia Nazionale delle Scienze, detta dei XL” for masters thesis in History of Physics, Rome, Italy, 2004
- 3) “James Cushing Memorial Prize 2014” in the History and Philosophy of Physics, for the paper “Local Disentanglement in Relativistic Quantum Field Theory”

## INVITED TALKS AND PRESENTATIONS AT INTERNATIONAL CONFERENCES

- 1) “Can Bayesian Probability Theory Be Consistent with Quantum Mechanics?”, 4<sup>th</sup> International Summer School in Philosophy, Probability and Physics, Konstanz, Germany, August 2005
- 2) “John von Neumann and the ‘Unsolved Problem’ in Quantum Mechanics”, HOPOS Conference 2006, Paris, France, June 2006
- 3) “Some Rationality Constraint on a Noncommutative Conditionalization Rule”, Axiomatics of measurements and connections with computing and information retrieval II, Pavia, Italy, June 2006
- 4) “Is there a Stability Problem for Bayesian Noncommutative Probabilities?”, 1<sup>st</sup> European Philosophy of Science Association Conference, Madrid, Spain, November 2007
- 5) “Irreversibility and Typicality: What it Takes for a Statistical Version of Boltzmann’s H-theorem”, workshop on “Reduction, Emergence and Physics”, Tilburg, The Netherlands, April 2008
- 6) “Does Violation of Bell-type Locality Imply Non-separability in Quantum Field Theory”, University of Utrecht, The Netherlands, May 2008
- 7) “Entanglement and Operational Separability in Algebraic Quantum Field Theory”, Tilburg, The Netherlands, workshop on “Causality and Locality in Physics”, Tilburg (the Netherlands), June 2008
- 8) “On the Persistence of Entanglement in Relativistic Quantum Field Theory”, University of Maryland, USA, November 2008
- 9) “On the Persistence of Entanglement in Relativistic Quantum Field Theory”, PSA Meeting 2008, Pittsburgh, USA, November 2008

- 10) “On the Persistence of Entanglement in Relativistic Quantum Field Theory”, LARSIM, Saclay, France, February 2009
- 11) “On the Persistence of Entanglement in Relativistic Quantum Field Theory”, Department of Philosophy, University of Pittsburgh, USA, February 2009
- 12) “On the Persistence of Entanglement in Relativistic Quantum Field Theory”, Southern California Philosophy of Physics Reading Group, Irvine, USA, April 2009
- 13) "Will Anyone Say Exactly What Lanford's Theorem Proves?", Centre for Time, Sydney, Australia, December 2009
- 14) "Can Entanglement be Destroyed by Any Local Operation in Relativistic Quantum Field Theory?", Workshop on "Decoherence and Quantum Darwinism: disentangling the classical from the quantum", Centre for Time, Sydney, Australia, December 2009
- 15) "Will Anyone Say Exactly What Lanford's Theorem Proves?", LARSIM, Saclay, France, December 2009
- 16) "Can Lanford's Theorem be Extended in Time?", PSA Meeting 2010, Montreal, Canada, November 2010
- 17) "Local Disentanglement in Relativistic Quantum Field Theory", Sigma Club, London School of Economics, London, UK, November 2012
- 18) "Lanford's Theorem and the Emergence of Irreversibility", Cambridge, UK, November 2012
- 19) "Local Disentanglement in Relativistic Quantum Field Theory", Cambridge, UK, November 2012
- 20) "Entanglement, Relativistic Causality and Independence between Microscopic Subsystems", IHPST, Paris, France, November 2012
- 21) "Local Disentanglement in Relativistic Quantum Field Theory", Munich Centre for Mathematical Philosophy, Germany, December 2012
- 22) "Entanglement, Relativistic Causality and Independence between Quantum Field Systems", University of Southern California, USA, May 2013
- 23) “Entanglement, Relativistic Causality and Independence between Quantum Field Systems”, Workshop on “Relativity Meets Quantum Theory”, London, UK, November 2013
- 24) “Lanford's Theorem and the Arrow of Time”, Conference on “New Directions in the Foundations of Physics”, Washington DC, USA, April 2014

- 25) “Relativistic Causality and Local Disentanglement in Quantum Field Theory”, LPS, University of California at Irvine, USA, May 2014
- 26) “Relativistic Causality and Local Disentanglement in Quantum Field Theory”, Politecnico di Milano, Italy, March 2015
- 26) “Relativistic Causality and Local Disentanglement in Quantum Field Theory”, James T. Cushing Lecture, Notre Dame, USA, April 2015
- 27) “Restoring Particle Phenomenology”, IFICC, Santiago, Chile, December 2015
- 28) “Relativistic Causality and Local Disentanglement in Quantum Field Theory”, Università di Ferrara, Italy, September 2016
- 29) “Causality and Particle Phenomenology”, LARSIM, Saclay, France, May 2017
- 30) “On the Paradox of Reversible Processes in Thermodynamics”, Workshop on “Tatjana Afanassjewa and her legacy: New perspectives on irreversibility”, Salzburg, Austria, June 2017
- 31) “Equivalence and Inequivalence in Quantum Symmetry Breaking”, Conference on “Symmetries and Asymmetries in Physics”, Hannover, Germany, July 2017
- 32) “On the Paradox of Reversible Processes in Thermodynamics”, Conference on “The Second Law”, Munich, Germany, September 2017

## **ORGANIZATION OF WORKSHOPS AND CONFERENCES**

- 1) Symposium: “The Legacy of Hilbert: the Sixth Problem”, Co-organizer (with Brandon Fogel), HOPOS Conference 2006, Paris, France, June 2006
- 2) Workshop: “Quantum Phenomena and Quantum Information”, Co-organizer (with Marisa Dalla Chiara), Florence, Italy, July 2007
- 3) Workshop: “Reduction, Emergence and Physics”, Organizer, Tilburg, The Netherlands, April 2008

- 4) Workshop: “Causality and Locality in Physics”, Organizer, Tilburg, The Netherlands, June 2008
- 5) Symposium: “Algebraic Quantum Field Theory: Locality, Causality and Correlations Between Space-like Separated Systems”, Organizer, PSA Meeting 2008, Pittsburgh, USA, November 2008
- 6) Symposium: "Boltzmann's Legacy: Outstanding Philosophical Issues in Modern Approaches to Statistical Mechanics", Organizer, PSA Meeting 2010, Montreal, Canada, November 2010
- 7) Workshop: "On the Foundations of Quantum Field Theory: Lagrangian vs Algebraic", Co-organizer (with Robert W. Batterman), Center for Philosophy of Science, Pittsburgh, USA, October 2011
- 8) Conference: "Irvine-Pittsburgh-Princeton Conference on the Mathematical and Conceptual Foundations of Physics", Co-organizer (with Hans Halvorson, Michael Miller and Jim Weatherall), Center for Philosophy of Science, Pittsburgh, USA, April 2013
- 9) Workshop: "Relativistic Causality in Quantum Field Theory and General Relativity", Co-organizer (with John Earman and Jim Weatherall), Center for Philosophy of Science, Pittsburgh, USA, April 2013
- 10) Workshop: "Quantum Time", Co-organizer (with Tom Pashby and Bryan Roberts), Center for Philosophy of Science, Pittsburgh, USA, March 2014
- 11) Conference: "Second Irvine-Pittsburgh-Princeton Conference on the Mathematical and Conceptual Foundations of Physics", Co-organizer (with Jeff Barrett, Benjamin Feintzeig, Hans Halvorson and Jim Weatherall), Irvine, USA, March 2014
- 12) Workshop: "Gauge Theories", Co-organizer (with Jeff Barrett, Hans Halvorson and Jim Weatherall), Irvine, USA, March 2014
- 13) Workshop: “Uncertainty in Climate Modeling”, Co-organizer (with Marina Baldissera Pacchetti and Elay Schech), Pittsburgh, USA, February 2015
- 14) Workshop: “Climate Modeling and Public Policy”, Co-organizer (with Marina Baldissera Pacchetti), Pittsburgh, USA, February 2015
- 15) Conference: "Third Irvine-Pittsburgh-Princeton Conference on the Mathematical and Conceptual Foundations of Physics", Co-organizer (with Hans Halvorson, Michaela McSweeney and Jim Weatherall), Princeton, USA, March 2015



- 16) Workshop: "Equivalent Theories", Co-organizer (with Hans Halvorson, Michaela McSweeney and Jim Weatherall), Princeton, USA, March 2015
- 17) Workshop: "Sustainable Attention: Communicating Risk to the Public", Co-organizer (with Olga Kuchinskaya, John Lyne, Gordon Mitchell, Jim Lennox, Peter Machamer, Sandy Mitchell, Bob Batterman, Japa Pallikkathayil, Edward Stricker), Pittsburgh, USA, April 2015
- 18) Conference: "Fourth Irvine-Pittsburgh-Princeton Conference on the Mathematical and Conceptual Foundations of Physics", Co-organizer (with Nora Boyd, Hans Halvorson, John Norton and Jim Weatherall), Pittsburgh, USA, March 2016
- 19) Workshop: "Field Theories", Co-organizer (with Nora Boyd, Hans Halvorson, John Norton and Jim Weatherall), Pittsburgh, USA, March 2016
- 20) Workshop: "Symmetry and Symmetry Breaking in Physics", Co-organizer (with Alexei Grinbaum), Paris, France, December 2016
- 21) Workshop: "Tatjana Afanassjewa and Her Legacy: New Perspectives on Irreversibility", Co-organizer (with Charlotte Werndl and Lena Zuchowski), Salzburg, Austria, June 2017
- 22) Workshop: "With and Without Measure: Symmetry and Symmetry Breaking", Co-organizer (with Erik Curiel, Neil Dewar and Patricia Palacios), Munich, Germany, June 2017
- 23) Summer School: "Philosophy of Quantum Field Theory", Co-organizer (with Gino Tarozzi, Mario Alai, Isabella Tassani, Claudio Calosi, Giovanni Macchia and Pierluigi Graziani), Urbino, Italy, June 2018
- 24) Conference: "First Irvine-Munich-PoliMi-Salzburg Conference in Philosophy and Foundations of Physics", Co-organizer (with Erik Curiel, Patricia Palacios, Jim Weatherall and Charlotte Werndl), Salzburg, Austria, September 2018
- 25) Workshop: "Time in Physics", Co-organizer (with Erik Curiel, Patricia Palacios, Jim Weatherall and Charlotte Werndl), Salzburg, Austria, September 2018
- 26) Conference: "Analogical Reasoning in Science and Mathematics", Co-organizer (with Marianna Antonutti Marfori, Erik Curiel, Michele Ginammi and Patricia Palacios), Munich, Germany, October 2018

## **TEACHING EXPERIENCE**

### **Undergraduate courses**

- 1) Introduction to Logic (Teaching Assistant), at University of Maryland, USA: Fall 2005, Fall 2007
- 2) Philosophy of the Arts (Teaching Assistant), at University of Maryland, USA: Spring 2006, Spring 2007
- 3) Philosophy of Science (Teaching Assistant), at University of Maryland, USA: Fall 2006
- 4) Philosophy of Space and Time, at University of Maryland, USA: Fall 2007
- 5) Philosophy and Science, at University of Pittsburgh, USA: Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015. Spring 2016
- 6) Topics in Philosophy of Science, at University of Pittsburgh, USA: Spring 2011, Spring 2012, Spring 2014, Fall 2014
- 7) Philosophy of Twentieth Century Physics, at University of Pittsburgh, USA: Fall 2011

### **Graduate courses**

- 1) Causality and Non-locality in Algebraic Quantum Field Theory, at University of Pittsburgh, USA: Fall 2010
- 2) The Emergence of Irreversibility in Classical Statistical Mechanics, at University of Pittsburgh, USA: Fall 2011
- 3) Relativistic Causality in Quantum Field Theory and General Relativity, at University of Pittsburgh, USA: Spring 2013
- 4) Climate Modeling and Public Policy, at University of Pittsburgh, USA: Spring 2015
- 5) Field Theories, at University of Pittsburgh, USA: Spring 2016

## **Students advising**

- Director of Undergraduate Studies, in the Department of Philosophy at University of Pittsburgh, USA (academic year 2014-2015)
- Faculty advisor for the Undergraduate Philosophy of Science Club (academic years 2011-2012, 2012-2013, 2013-2014, 2014-2015) and for the Undergraduate Philosophy Club (academic year 2014-2015) at University of Pittsburgh, USA
- Member of the PhD dissertation committee of the following students at University of Pittsburgh, USA: Meghan Dupree (April 2014, now Assistant Professor at Loyola University Maryland); Tom Pashby (April 2014, now Assistant Professor at University of Chicago); Bryan Roberts (May 2012, now Assistant Professor at the London School of Economics); Elay Shech (April 2015, now Assistant Professor at Auburn University)

## **OTHER PROFESSIONAL SERVICE**

- Elected Member of the Council of the Società Italiana di Logica e Filosofia della Scienza (2017-2020)
- Chair of the Annual Lectures Series at the Center for Philosophy of Science at University of Pittsburgh, USA (2011-2015)
- Member of the Program Committee of the 17th European Meeting on the Foundations of Physics (2013) and Member of the Program Committee of the 18th European Meeting on the Foundations of Physics (2016)
- Referee for the following journals: British Journal for Philosophy of Science, European Journal for Philosophy of Science, Foundations of Physics, International Studies in Philosophy of Science, Philosophy of Science, Studies in History and Philosophy of Modern Physics