

—CURRICULUM VITAE—

PAUL WILLIAM HUMPHREYS

Department of Philosophy, 120 Cocke Hall, University of Virginia, Charlottesville,
Virginia 22904-4780.

EDUCATION:

Ph.D., Philosophy, Stanford University, 1976.

M.S., Statistics, Stanford University, 1974.

M.A., Philosophy, Stanford University, 1974.

B.Sc., Logic and Physics, University of Sussex, 1971.

EMPLOYMENT:

Commonwealth Professor of Philosophy, University of Virginia, 2013-

Co-Director, Centre for the Study of Data and Knowledge, 2014-

Professor, University of Virginia, 1991-2013

Associate Professor, University of Virginia, 1984-1991.

Assistant Professor, University of Virginia, 1978-84.

Research Associate, Sociology Department, Stanford University, Fall 1975.

Visiting appointments at Ecole Normale Supérieure, Paris; Institut d'Histoire et
Philosophie des Sciences et des Techniques, Paris; UCLA (twice); Stanford University;
University of Arizona; University of Pittsburgh (Center for Philosophy of Science and
Philosophy Department); C.S.U. Long Beach.

BOOKS:

Philosophical Papers. New York: Oxford University Press (to appear) (A collection of my
papers on emergence, simulations, probability, and general philosophy of science.)

Oxford Handbook of the Philosophy of Science. (Editor-in-Chief). New York: Oxford
University Press, (print edition and on-line edition to appear, 2015)

Models, Simulations, and Representations (edited collection, with Cyrille Imbert).
Routledge, 2011.

Emergence: Contemporary Readings in Science and Philosophy (edited collection, with Mark Bedau). MIT Press (hardback and paperback editions, April 2008; second corrected printing 2010; second edition in planning stage)

Extending Ourselves: Computational Science, Empiricism, and Scientific Method. Oxford University Press, 2004. Paperback edition, 2007, Kindle edition 2014.

The New Theory of Reference (edited collection, with James Fetzer). Dordrecht: Kluwer Academic Publishers, 1998. Paperback edition, 1999

Patrick Suppes, Scientific Philosopher (edited collection). Volume 1: Probability and Probabilistic Causality. Volume 2: Philosophy of Physics, Theory Structure, Measurement Theory. Volume 3: Philosophy of Language, Logic, Action and Learning Theory. Dordrecht: Kluwer Academic Publishers, 1994.

The Chances of Explanation: Causal Explanation in the Social, Medical, and Physical Sciences. Princeton University Press, 1989. Paperback edition, 1992. Reissued in Princeton Legacy Library 2014. [Portions reprinted in *Scientific Inquiry*, Robert Klee (ed). Oxford: Oxford University Press].

ARTICLES:

'X-ray Data and Empirical Content' in *Logic, Methodology and Philosophy of Science XIV: Logic and Science Facing the New Technologies*. Peter Schroeder-Heister, Gerhard Heinzmann, Wilfrid Hodges, and Pierre Edouard Bour (eds). London: College Publications, 2015.

'Models of Data and Inverse Methods' in *Foundations and Methods from Mathematics to Neuroscience: Essays Inspired by Patrick Suppes*. Edited by Colleen E. Crangle, Adolfo Garcia de la Sienra, and Helen E. Longino. Stanford: CSLI Publications. 2015.

'More Is Different...Sometimes: Ising Models, Emergence, and Undecidability', pp. 137-152 in *Why More Is Different: Philosophical Issues in Condensed Matter Physics and Complex Systems*, Brigitte Falkenburg and Margaret Morrison (eds). Berlin: Springer, 2015.

'Explanation as Condition Satisfaction', *Philosophy of Science* **81** (2014), pp. 1103-1116.

'Data Analysis: Models or Techniques?', *Foundations of Science* **18** (2013), pp. 579-581.

'Emergence' in *Encyclopedia of Philosophy and the Social Sciences*, Byron Kaldis (ed). SAGE Publications, Inc. 2013.

'What Are Data About?' in *Computer Simulations and the Changing Face of Experimentation*, Eckhart Arnold and Juan Duran (eds). Cambridge: Cambridge Scholars Publishing, 2013.

'Scientific Metaphysics and Speculative Metaphysics', pp.51 – 78 (Chapter 3) in *Scientific Metaphysics*, Don Ross, James Ladyman, and Harold Kincaid (eds). Oxford: Oxford University Press, 2013.

'Computational Science' in *Oxford Bibliographies Online*. Published online at www.oxfordbibliographies.com, 2012.

'Unknowable Truths', *Logos & Episteme* **II** (2011), pp. 543-555.

'Contextual Emergence' *Philosophical Research*, Chinese Academy of Social Sciences. November 2011 (in Chinese)

'Computational Science and Its Effects', pp. 131-142 (Chapter 9) in *Science in the Context of Application, Boston Studies in the Philosophy of Science* **274**. Martin Carrier and Alfred Nordmann (eds). Springer, 2011. (Previously published in a slightly different version as 'Computational Science and Its Effects', *ZfF Mitteilungen*, Zentrum für interdisziplinäre Forschung, Bielefeld, 2008.)

'What Simulations Can Do That Experiments Cannot, and Vice Versa', *Artificial Life XII*, Harold Fellerman et al. (eds). Cambridge: MIT Press, 2010.

'Some Relations Between Formal Structure and Conceptual Content in Simulations', pp. 1-8 in *CoSMoS 2010: Proceedings of the 2010 Workshop on Complex Systems, Modeling, and Simulation*, S. Stepney et al. (eds). Frome: Luniver Press, 2010.

'Conceptual Sea Changes', *Spontaneous Generations* **4** (2010), pp. 111-115 online at <http://spontaneousgenerations.library.utoronto.ca/index.php/SpontaneousGenerations>

'Causation and Reduction' pp. 632-646 (Chapter 30) in *The Oxford Handbook on Causation*, Peter Menzies and Christopher Hitchcock (eds). Oxford: Oxford University Press (2009).

'Network Epistemology', *Episteme* **6** (2009), pp. 221-229.

'The Philosophical Novelty of Computer Simulation Methods', *Synthese* **169** (2009), pp. 615-626.

`Computational Economics', pp.371-385 (Chapter 13) in *Oxford Handbook on Philosophy and Economics*, Harold Kincaid and Don Ross (eds). Oxford: Oxford University Press 2009

`Thinking Outside the Brain' *Collapse V: The Copernican Imperative* (2009), pp.____ (To help support the publishers of *Collapse*, copies of this article are available by purchase only from <http://blog.urbanomic.com/urbanomic/archives/2006/01/orders.html>)

`Computational and Conceptual Emergence' *Philosophy of Science* 75 (2008), pp. 584-594

`Synchronic and Diachronic Emergence', *Minds and Machines* 18 (2008), pp. 431-442

`Probability Theory and Its Models' pp. 1-11 in *Probability and Statistics: Essays in Honor of David A. Freedman*, Terry Speed and Deborah Nolan (eds). Institute of Mathematical Statistics Collections, 2007.

`Andrei Nikolaevich Kolmogorov', *New Dictionary of Scientific Biography*. New York: Charles Scribners and Sons, 2007.

`Self-Assembling Systems', *Philosophy of Science* 73 (2006)

`Epistemolog del Siglo XXI' *Anthropos* 214 (2007)(in Spanish)

`Foreword' to *Four Decades of Scientific Explanation* by Wesley Salmon. Pittsburgh: University of Pittsburgh Press, 2006.

Articles on `Emergence', `Patrick Suppes', and `Wesley Salmon' in *The Encyclopedia of Philosophy* (Second Edition), Donald Borchert (ed). New York: MacMillan, 2006.

`Teorías de caución y explicación: ¿necesariamente verdaderas o dominio_específicas?' pp. 19-33 in *Causalidad y explicación: Homenaje a Wesley Salmon*. Enrahonar: Quaderns de Filosofia 37, José Díez Calzada and Carl Hoefer (eds). Bellaterra: Universitat Autònoma de Barcelona, 2006. (in Spanish and Catalan) Also appeared in English as `Theories of Causation and Explanation: Necessarily True or Domain-Specific?', London School of Economics Technical Report CTR 15-04.

Articles on `Closure', `Crucial Experiments', `Definitions: Explicit and Implicit', `Falsifiability', `Observation and Theory', `Scientific Revolutions', `Theory-Ladenness' for *The Oxford Companion to Philosophy* (Second Edition), Ted Honderich (ed). Oxford: Oxford University Press, 2005.

`Some Thoughts on Wesley Salmon's Contributions to the Philosophy of Probability', *Philosophy of Science* **71** (2004) pp. 942-949.

`Some Considerations on Conditional Chance' *British Journal for the Philosophy of Science* **55**(2004), pp. 667-680.

`Scientific Knowledge' in *The Handbook of Epistemology*. I. Niiniluoto, M. Sintonen, and J. Wolenski (eds). Dordrecht: Kluwer Academic Publishers, 2003.

`Computational Models', *Philosophy of Science* **69** (2002), pp. S1-S11.

`Mathematical Modeling in the Social Sciences" in *Guidebook to the Philosophy of Social Science*, P. Roth and S. Turner (eds). Oxford: Blackwell, 2002.

`Analytic and Synthetic Understanding" in *Science, Explanation, and Rationality: The Philosophy of Carl G. Hempel*. J. Fetzer (ed). Oxford: Oxford University Press, 2000. Reprinted in a revised form (in Spanish) in *Causación, explicación, y contrafácticos*, Hernan Miguel (ed). Ciudad Autónoma de Buenos Aires: Prometeo Libros, 2014.

`Extending Ourselves" in *Science at Century's End: Philosophical Questions on the Progress and Limits of Science*. J. Massey et al (eds). Pittsburgh: University of Pittsburgh Press, 1999.

`Probability: Interpretations of' in *The Routledge Encyclopedia of Philosophy*, E. Craig (ed), Routledge, 1999. Reprinted in abbreviated form in *The Concise Routledge Encyclopedia of Philosophy* and in its entirety in *The Shorter Routledge Encyclopedia of Philosophy*.

`Are There Algorithms that Discover Causal Structure?" (with David Freedman) *Synthese* **121**(1999), pp. 29_54. (Earlier version appeared as "Rejoinder to Korb and Wallace and to Spirtes, Glymour, and Scheines" U.C. Berkeley, Dept of Statistics, Technical Report #514, March 1998.)

`Causation' in *A Companion to the Philosophy of Science*, W.H. Newton_Smith (ed), Blackwells, 1999

"Instrumentation and Observation" in M. Dalla Chiara, R. Guintini, F. Landisa (eds), *Philosophy of Science in Florence, 1995*.Dordrecht: Kluwer Academic Publishers, 1998

"Sociological Models", pp. 253_264, in P. Blau and A. Sica (eds). *What is Social Theory?: The Philosophical Debates*. Oxford: Blackwell, 1998.

`Emergence, Not Supervenience', *Philosophy of Science* **64** (1997), pp.. S337-S345

"How Properties Emerge", *Philosophy of Science* **64** (1997), pp. 1-17. [Reprinted in Bedau and Humphreys (2008)]

`Escaping the Propositional Prison`, *The Monist* **80** (1997), pp.368-388.

"A Critical Appraisal of Causal Discovery Algorithms", pp. 249-263 in *Causality in Crisis?: Statistical Methods and the Search for Causal Knowledge in the Social Sciences*. Vaughn. McKim and Stephen Turner (eds). University of Notre Dame Press, 1997.

"The Grand Leap" (with David Freedman) *British Journal for the Philosophy of Science*, **47**(1996) pp. 113-123. [Reprinted in *Statistical Models and Causal Inference: A Dialogue with the Social Sciences*, David A. Freedman (edited by David Collier, Jasjeet Sekhon, and Philip Stark). Cambridge University Press, 2009.]

`Aspects of Emergence', *Philosophical Topics* **24** (1996), pp. 53-70.

Articles on Alonzo Church, John von Neumann, and Wesley Salmon in *The Biographical Dictionary of Twentieth Century Philosophers*, S. Brown et al (eds). Routledge (1996).

"Understanding in the Not-So-Special Sciences", *Southern Journal of Philosophy*,**XXIV**(Supplement) (1995), pp. 99-114.

"Computational Empiricism" *Foundations of Science*, **1** (1995), pp. 119-130. [Reprinted in *Topics in the Foundations of Statistics*, Bas van Fraassen (ed). Dordrecht: Kluwer Academic Publishers, 1996]

"Computational Science and Scientific Method", *Minds and Machines* **5** (1995), pp. 499-512.

"Abstract and Concrete", *Philosophy and Phenomenological Research* **55**(1995), pp. 157-161.

`Philosophy of Science' in *The Encyclopedia of Bioethics*, Warren Reich (editor). (1st and 2nd editions) New York: MacMillan Publishing Company, 1995. Updated version in 3rd edition, 2003. Updated version in *Bioethics, 4th Edition*. Edited by Bruce Jennings. Farmington Hills, MI: Macmillan Reference USA, 2014.

"Numerical Experimentation" in *Patrick Suppes: Scientific Philosopher, Volume 2*. P. Humphreys (ed.). Kluwer Academic Press, Dordrecht, 1994.

"Greater Unification Equals Greater Understanding?" *Analysis* **53** (1993), pp. 183-188.

"Seven Theses on Thought Experiments" in *Philosophical Problems of the Internal and External World: Essays Concerning the Philosophy of Adolf Grünbaum*, G. Massey, A. Janis, N. Rescher (eds). Pittsburgh: University of Pittsburgh Press, 1993. (European edition, Konstanz: Universitätsverlag Konstanz, 1993).

"Computer Simulation" pp. 497-506 in *PSA 1990, Volume 2*, A. Fine, M. Forbes, and L. Wessels, (eds), East Lansing, Philosophy of Science Association, 1991.

"A Conjecture Concerning the Ranking of the Sciences", *Topoi* **8** (1990), pp. 67-70.

"Scientific Explanation: The Causes, Some of the Causes, and Nothing but the Causes" in *Minnesota Studies in the Philosophy of Science, Volume XIII*. P. Kitcher and W. Salmon (eds). University of Minnesota Press, Minneapolis, 1989.

'Degenerescence (Lakatos)'; 'Dependence fonctionnelle et explication fonctionnelle'; and 'Niveau d'explication' in *Encyclopedie Philosophique, Vol II*, Andre Jacob (Directeur de la Publication), Presses Universitaires de France, 1989.

"Causal, Structural, and Scientific Realisms" pp. 241-252 in *Midwest Studies in Philosophy XII*, P. French, T. Uehling, and H. Wettstein (eds.). University of Minnesota Press, Minneapolis, 1988.

"Sull'Interpretazione dei Modelli Causali" pp. 113-129 in *Epistemologia ed economia*, M.C. Galavotti and G. Gambetta (eds), CLUEB Editrice Bologna, Bologna, 1988.

"Non-Nietzschean Decision Making" pp. 253-268 in *Probability and Causality*. J. Fetzer (ed). Dordrecht: D. Reidel and Company, 1988.

'Induction' in *The New Palgrave: A Dictionary of Economic Theory and Doctrine*, J. Eatwell, M. Milgate, and P. Newman (eds.). The MacMillan Press, London, 1988. [Reprinted in *The New Palgrave: Selected Reprints, Utility and Probability*. The MacMillan Press, 1990.]

"How Scientific Is Quantitative Risk Analysis?" in *Biomedical Ethics Reviews* **1986** R. Almeder and J. Humber (eds.). Clifton, N.J.:Humana Press.

"Quantitative Probabilistic Causality and Structural Scientific Realism" pp. 329-342 in *PSA 1984, Proceedings of the 1984 Biennial Meetings, Volume 2: Symposia*, P. Asquith and P. Kitcher (eds). Philosophy of Science Association, East Lansing, 1986.

"Causality in the Social Sciences: An Overview" *Synthese* **68** (1986), pp.1-12.

"Why Propensities Cannot Be Probabilities", *The Philosophical Review* **94** (1985), pp.557-570. [Reprinted in *Philosophy of Probability: Contemporary Readings*, Antony Eagle (ed). Routledge, 2011]

"Philosophical Explanations and Scientific Explanations", pp. 172-189 in *Principles of Philosophical Reasoning*, J.H. Fetzer (ed.), A.P.Q. Library of Philosophy. New York: Rowman and Littlefield, 1984.

"Aleatory Explanations Expanded", pp. 208-223 in *PSA 1982, Proceedings of the 1982 Biennial Meetings, Volume 2: Symposia*, P. Asquith and T. Nickles (eds.). East Lansing: Philosophy of Science Association, 1983.

"Probabilistic Causality and Multiple Causation", pp. 25-37 in *PSA 1980, Proceedings of the 1980 Biennial Meeting, Volume 2: Symposia*, P. Asquith and R. Giere (eds.). Philosophy of Science Association, East Lansing, 1981.

"Aleatory Explanations", *Synthese* **48** (1981), pp.225-232. [Reprinted in *Theory, Evidence and Explanation*. P. Lipton (ed). Dartmouth Publishing Company, 1995.]

"Is 'Physical Randomness' Just Indeterminism in Disguise?", pp. 98-113 in *PSA 1978, Proceedings of the 1978 Biennial Meeting, Volume 2: Symposia*, P. Asquith and Ian Hacking (eds.). East Lansing: Philosophy of Science Association, 1981.

"Theoretical Consequences of the Status Characteristics Formulation" (with Joseph Berger), *American Journal of Sociology* **86** (1981), pp. 953-983.

"Cutting the Causal Chain" *Pacific Philosophical Quarterly* **61** (1980), pp. 305-314.

"A Note on Demopoulos' Paper 'Locality and the Algebraic Structure of Quantum Mechanics'", pp. 145-147 in *Studies in the Foundations of Quantum Mechanics*, Patrick Suppes (ed.). East Lansing: Philosophy of Science Association, 1980.

"Randomness, Independence, and Hypotheses" *Synthese* **36** (1977), pp.415-426.

REVIEWS:

'Scientific versus Analytic Metaphysics'. A review essay of *Everything Must Go* by James Ladyman and Don Ross (with John Collier and Don Spurrett). Oxford: Oxford University Press, 2007. *Metascience* **19** (2010)

'Invariance, Explanation, and Understanding'. A review essay of *Making Things Happen* by James Woodward. Oxford: Oxford University Press, 2003. *Metascience*

Review of *Models as Mediators*, M.Morgan and M. Morrison (eds). *Studies in the History and Philosophy of Modern Physics* **33B** (2002), pp. 374_377.

Review Essay on *Causation and Explanation* by Wesley Salmon. *The Journal of Philosophy* **97**(2000).

Review of *Four Decades of Scientific Explanation* by Wesley Salmon; *Mind*. (1992).

Review of *Nuts and Bolts for the Social Sciences* by Jon Elster, *Philosophy of the Social Sciences*(1991).

Review of *Scientific Explanation and the Causal Structure of the World* by Wesley Salmon, *Foundations of Physics* (1986).

Review of *One World and Our Knowledge of It* by Jay F. Rosenberg, *British Journal for the Philosophy of Science* **34** (1983).

Review of *Hans Reichenbach: Logical Empiricist*, W. Salmon (ed.), *Philosophy of Science* **49**(1982).

Review of *Science, Belief, and Behaviour: Essays in Honour of R.B. Braithwaite*, D.H. Mellor (ed.), *Philosophical Review* **91**(1982).

Review of *Inference, Method, and Decision* by Roger Rosenkrantz, *International Studies in Philosophy* **13** (1980).

Review of *Plausible Reasoning* by Nicholas Rescher, *Journal of Symbolic Logic* **43** (1978).

OTHER PUBLICATIONS: "Rationality and the New Philosophy of Science", *Loki Science Magazine*, May 1983.

"Runway" pp. 72-74 in *See 'Ville Run: A Collection of Running Tales*. Heather H. Ramsey (ed). Charlottesville: Pathbinder Publishing, 2005.

Preface (in French) to Marion Vorms, *Qu'appelle-t-on <<théorie scientifique>> aujourd'hui?* Paris: Vuibert, 2012

Preface to *Emergences*, Gilbert Belaubre (ed) (Springer, to appear)

Foreword to *Ontology, Epistemology, and Teleology for Modeling and Simulation*, Andreas Tolk (ed). Springer Intelligent Systems Library, 2012.

GRANTS AND AWARDS:

Co-PI (with S. Hartmann (Tilburg), R. Frigg (LSE), J. Dubucs (Paris), J. Diez (Barcelona)) for Dutch Science Foundation (NWO) grant 'Modeling in the Social and Behavioral Sciences' 2010-2012.

American Council of Learned Societies Fellowship, 2008-2009.

Professeur des Universités 1ère classe, Ecole Normale Supérieure, June 2008.

NSF Scholars Award 'Concepts of Dynamic Emergence' for Spring 2006.

Chercheur associé étranger research fellowship, Centre National de la Recherche Scientifique, Paris, September 1 2005-November 30 2006.

Co-Director (with William Wimsatt) Two conferences on Modelling and Simulation, March 1998 and October 1998. NSF Grant SES 9618078.

NSF Travel Award, Summer 1995.

IUHPS/AFOS Grant, Summer 1994.

ACLS Travel Award, Summer 1994.

NSF Research Grant SBER93-11982 "Levels of Scientific Understanding" Summer 1993.

Director, NEH Summer Seminar for College Teachers "Explanation, Causation and Empiricism". University of Virginia, June 10 - August 2, 1991. Repeated in new form as "Causation, Explanation and Empiricism" University of Virginia, June 19 - August 11, 1995.

NSF Research Grant DIR-89-11393 "Methodological Issues in Computer Simulation", Summers 1989, 1990.

Project Director, NEH conference on The Autonomy of Philosophy. University of Virginia, April 1986.

NSF Scholars Award SES 84-10898 "The Bearing of Formal Methods in the Social Sciences on the Unity of Science Thesis" 1984_85.

Fellowship, Center for Philosophy of Science, University of Pittsburgh, 1983-84.

Sesquicentennial Awards, Center for Advanced Studies, University of Virginia, 1983-84, Fall 1990, Spring 1996, Fall 2001, Fall 2008.

National Science Foundation Research Grant SES-82-05563, Summer 1983.

University of Virginia Faculty Research Awards, Summer 1982, Summer 1988, Summer 1996.

National Science Foundation Research Grant SOC-77-08837, Summer 1978.

Fulbright-Hays Travel Award 1971.

English Speaking Union Fellow 1971.

PROFESSIONAL AND ACADEMIC:

Series Editor, *Oxford Studies in the Philosophy of Science* 1999-

Senior Editor, *Oxford Research Reviews* 2012 -

Editor, *Synthese*, 1990-1998. Area editor, General philosophy of science and methodology, 2007-2011 ; Editorial Board 2012 - ; Review Editor, 1988-1998.

Executive and Founding Editor, *Foundations of Science*, 1993-1998

Editorial Boards, *Philosophy of Science*, 1991-2009 ; *Foundations of Science*, 1999 - ;

Consulting Editor, *Episteme*, 2003-. Scientific Committee *Lato Sensu: Revue de la Société de philosophie des sciences* 2011 - ; *American Philosophical Quarterly* 1985-89, 1990-93, 1999-2006; Advisory Board *Logos and Episteme: An International Journal of Epistemology*. (Romanian Academy of Sciences).

Reviewer for *Mathematical Reviews* 2010-2014

Guest Editor, *The Monist* issue on Models and Simulations (June 2014)

National Board of Officers, American Philosophical Association, July 2007- 2010

Chair, Committee on International Cooperation, American Philosophical Association, July 2007-July 2010

Governing Board, Philosophy of Science Association, 1997-2001.

Chairman, Nominating Committee, Philosophy of Science Association 1988-89.

Chair, Philosophy of Science Association Essay Prize Competitions 1998, 2004.

Vice-President, Association for the Foundations of Science, 1995-99.

Philosophy Documentation Center Governing Board, 2001-

National Review Panel, Philosophy Fellowships, National Endowment for the Humanities, 2005; NEH Philosophy and Religion Summer Seminars, 1992, 1995.

Associate, Center for Philosophy of Science, University of Pittsburgh, 1995-

University of Virginia: Chairman, Philosophy Department, 1996-97; 1999- 2004.

Summer Chairman, 1980, 1981, 1999-2001, 2002-2004. Director of Undergraduate Studies, 1981-83, 85-89, 92-94. Director of Graduate Studies, 1989-90, 1994-95.

Director, Graduate Admissions, 2011 - , Cognitive Science Program Supervisory Committee 1992-. Arts & Sciences Promotion and Tenure Committee 1994, 1995. Lower Division Advisor, 1981-83, 2002-. Echols Scholars advisor 1993-2001 . Echols Faculty Fellow 2014- ,Faculty Associate, Echols-Humphreys Association, 1982-83.

SELECTED TALKS AND LECTURES

Upcoming invited talks: Symposium on the Humanistic and Societal Implications of Astrobiology, Library of Congress, May 2015; Principal Lecturer, summer school on The Computational Turn, Vienna, July 4-18 2015; Studying Knowledge Transfer and its Context, Center for Advanced Study, Ludwig-Maximilians-University, Munich, September 2015; Keynote speaker, Conference on Emergence, University of Colorado at Boulder, October 2015; 'World-making through physical and biological modeling representation' workshop, University of the Basque Country, December 2015; Computer Simulations in Science symposium, American Philosophical Association Eastern Division meetings, Washington DC, January 2016.

'Ontological Emergence', invited symposiast, American Philosophical Association Eastern Division meetings, Philadelphia, December 2014

'The Dynamics of Emergence', Emergence and Reduction workshop, IHPST Paris, October 2015.

'Propensities and Statistical Models' Institute of Philosophy, London, October 2015.

'Inferring the Explanatory Role of Causal Models in Complex Systems', Causality and Complexity in the Sciences conference, University of Cologne, September 2014.

"Emergence: A Tutorial for Astrophysicists and Philosophers", Cognitive Astrophysics workshop, Carnegie Observatories, Pasadena, January 2014

'The Dynamics of Emergence' Between Biology and Physics Conference, Van Leer Jerusalem Institute and Tel Aviv University, Israel, December 2012.

'Testing Models of Complex Systems', PSA 2012, San Diego, CA, November 2012.

"The Use of Stylized Facts in Social Models", Explanation, Models, And Simulation In Social And Behavioral Sciences Workshop, Barcelona October 2012.

'The Epistemological Status of Data from Computed Tomography' Models and Simulations 5, Helsinki, June 2012

'Models of Data" Fifty Years On', symposium for Patrick Suppes' 90th birthday, Stanford University March 2012

'Using Models: Interpretation and Computational Issues, Deutsche Physikalische Gesellschaft e.V., Berlin, March 2012

'What Counts as Data? Simulations, CT Scans, and Optical Telescopes', Computer Simulations and the Changing Face of Experiments conference, University of Stuttgart, September 2011.

'Some Differences Between Data from Simulations and Experiments', invited lecture, 14th Congress of Logic, Methodology and Philosophy of Science, Nancy, France, July 2011

'Scientific Ontology and Speculative Ontology', University of Valparaiso, Chile, July 2011

'Contextual Emergence' , Sociedad Argentina de Análisis Filosófico, Buenos Aires, Argentina, July 2011; University of Barcelona, June 2011, Center for Philosophy of Science Annual Lecture Series 50th Anniversary, University of Pittsburgh, November 2010.

'The Simulation Game', Conference on Knowing and Understanding Through Computer Simulations, Paris, June 2011

'Analytic and Scientific Metaphysics', APA Pacific Division meetings, April 2011

'The Solitary Philosopher and the Collaborating Scientist', APA Pacific Division meetings, April 2011

'Unknowable Truths' Virginia Commonwealth University, February 2011

'Modern Computational Science', Guangzhou Higher Education MegaCenter, December 2010.

'The Mind and Its Relation to Physics', South China Normal University, December 2010.

'The Knowledge Paradox and Cognitive Capabilities.' Plenary address, Limits of the Knowledge Society conference, Romanian Academy, Iasi Romania, October 2010.

'The Limits of Knowledge', Scientific Achievement: Progress and Problems workshop, University of Pittsburgh, September 2010.

'What Simulations Can Do That Experiments Cannot', Artificial Life XII Conference, Odense, Denmark, August 2010

`Some Relations Between Formal Structure and Conceptual Content in Simulations',
Keynote Talk, 3rd Complex Systems Modeling and Simulations Workshop, Odense,
Denmark, August 2010

`Causality in Science', Dalla Lana School of Public Health, University of Toronto, June
2010.

"Qualitative versus Quantitative Modeling in the Social Sciences", Paris, May 2010

Plenary workshop participant on Exploring the Methodology of Simulations, Models and
Simulations 4 conference, University of Toronto, May 2010.

`Reduction and Emergence', Conference in Honor of Bill Wimsatt, University of
Chicago, April 2010

`Origins, Foundations, and Philosophical Views on Emergence', CNRS conference on
The Origins of the Universe, Paris, March 2010

`Computer Simulations and Materiality', IHPST workshop on Thought Experiments and
Computer Simulations, Paris, March 2010

`Metaphysics for Metahumans', Does Scientific Naturalism Exclude Metaphysics?
conference, University of Alabama, Birmingham, November 2009. (video available on-
line)

`Holism, Self-Organization, and Conceptual Emergence in Physical and Social
Systems', Institute for Complexity Sciences, Arrábida, Portugal, July 2009

`The Interface Problem of Computer Simulations', keynote address at Science College,
Ruhr University Bochum, June 2009

`Emergence and Logical Analysis' Tsinghua University, Beijing, China, May 2009
Seminar Presentation on *Extending Ourselves*, Chinese Society for the Dialectics of
Nature, Beijing, May 2009.

`Why is Mathematics Applicable?' Beijing Normal University, China, May 2009

`Probabilities and Chances' IHPST/Konstanz conference on probability and causality in
physics and biology, Paris, February 2009.

Three lectures on emergence. University of Hyderabad, India, December 2008.

`Templates, Complexity, and Automated Science', Keynote Address, APCAP, Indian
Institute of Technology, Bangalore, India.

'Endogenous Uncertainty and the Dynamics of Social Constraints', poster presentation at National Academy of Sciences Keck Futures Initiative on Complexity Theory, November 2008

'Computational Epistemology: Avoiding the Anthropocentric Trap', Conference on Simulations and Social Epistemology, University of Leuven, October 2008

'Emergence', Chicago Humanities Festival, Chicago, October 2008.

'Analytic Metaphysics and Scientific Metaphysics', Ecole Normale Supérieure, Paris, June 2008

'Propensities and Probabilities', IHPST, Paris, June 2008

'On Computational Templates, IHPST, Paris, June 2008

'A Defence of Ontological Emergence', International School on Complexity 9 :Emergence in the Physical and Biological Worlds, Ettore Majorana Foundation, Sicily, April 2008.

'Computational Templates: Representation and Application', University of Helsinki, November 2007.

'Theories for Agent Based Simulations' Models and Simulation 2, Tilburg University, Netherlands, October 2007.

Presentation at Idealizations Workshop, Tilburg University, Netherlands, October 2007.

'Computational Science as a Revolutionary Development' ZiF, Bielefeld, Germany, September 2007.

'Three Concepts of Emergence' Ohio University, September 2007, Virginia Commonwealth University, January 2008, University of Chicago, February 2008.

'Computational Templates as Representations' 7th Understanding Complex Systems Symposium, University of Illinois, May 2007.

Presentation of an agent based model of constrained search strategies (with Tiha von Ghyczy), Max Planck Institute for Human Development, Berlin, February 2007.

Presentation at Symposium on Complex Systems Engineering, The RAND Corporation, Santa Monica, January 2007.

'Computational and Conceptual Emergence', Philosophy of Science Association Biennial Meetings, Vancouver, November 2006.

`Computational Templates as Cross-Disciplinary Bridges', Unity of Science Conference, Lisbon, October 2006.

`Synchronic and Diachronic Emergence' Philosophy Department, University of Pennsylvania, September 2006.

`Philosophy of Computational Modeling', Institute for Research in Cognitive Science, University of Pennsylvania, September 2006.

`Computer Simulations and the Philosophy of Science', North American Computing and Philosophy Conference, Rensselaer Polytechnic Institute, August 2006. Abbreviated version given at HOPOS meetings, Paris, June 2006.

`Some Methodological Issues in Computer Simulations', Keynote Address, First Annual Conference on Philosophical Issues in Models and Simulations, Paris, June 2006.

`From Telescopes to Transhumans', Western Michigan University, February, 2006.

`Computer Assisted Mathematics', Invited Address, Philosophy of Mathematics Special Interest Group at American Mathematical Society/Mathematical Association of America Joint Meetings, San Antonio, January 2006.

`Some Philosophical Issues in Computer Simulations' (discussion with Peter Galison), IHPST, November 2006.

`Comments on Jean-Paul Delahaye's `Ressemblance entre objets', Ecole Normal Supérieure, September 2005.

`Horizontal Emergence', Rutgers/Columbia conference on philosophy of physics, April 2005; symposium at APA Central Division meetings, April 2005, London School of Economics, June 2006.

`Response to Paul Teller and to Malcolm Forster', Author Meets Critics session on Extending Ourselves, APA Pacific Division meetings, San Francisco, March 2005.

`Computational Science', University of Maryland, College Park, February 2005

`Self-Assembling Systems', symposium at Philosophy of Science Association meetings, Austin, Texas, November 2004

`Genetic Engineering, Nanotechnology, and the Human Future' University of Virginia, June 2004.

Comments on James Woodward's Making Things Happen, Author Meets Critics session, APA Central Division meetings, April 2004.

`Pattern Emergence', conference on emergence, Institut d'Histoire et de Philosophie des Sciences et des Techniques, University of Paris I, April 2004; revised version given at Yale University, October 2004 and Western Michigan University, February 2006.

`Conflicts in Knowledge' New Literary History symposium, University of Virginia, October 2003.

`Theories of Causation and Explanation: Contingently or Necessarily True?' conference on Wesley Salmon's work, Barcelona, August 2003.

`Computer Modelling', conference on simulation and representation, ZiF, Bielefeld, Germany, June 2003.

`Two Models of Emergence', Center for Complex Systems, University of Michigan, March 2003.

`Metaphors as Thought Amplifiers', Santa Fe Institute, February 2003.

`A Taxonomy of Constraints' conference on Space and Constraints, University of Virginia, August 2002.

`Philosophical Aspects of Causal Inference', Graduate Student Summer Workshop on Methodology, Population Research Institute, Penn State University, July 2002.

`Agent-Based Models for Imitation and Strategy', University of Konstanz, June 2002

`Chances', All Souls College, Oxford, April 2002; University of Konstanz Philosophy Department, June 2002; University of Michigan Philosophy Department, March 2003.

Invited participant, National Cancer Institute Conference on Causal Inference, Snowbird, Utah, August 2001

`Automated Causal Reasoning" talk to UVA Cognitive Science Workshop, April 2001

`Judea Pearl's Account of Causality", Pacific Division APA meetings, March 2001

`Empiricism and the Limits of Scientific Knowledge", Limits of Scientific Knowledge Workshop, University of Pittsburgh, February 2001.

`Twenty-First Century Empiricism" (3 lectures), Third Summer School on the Theory of Knowledge, Warsaw, Poland, August 2000.

`Complexity as a Modeling Tool", University of Virginia Systems Engineering Department, March 2000.

`Scientific Empiricism", Johns Hopkins University, April 2000 and University of Virginia, February 2000.

[Revised April 2015]