

Curriculum Vitae

Frederick M. Kronz
29 March 2002

Academic Address

Department of Philosophy
The University of Texas at Austin
Austin, TX 78712-1180

Home Address

513 East Mary Street
Austin, TX 78704
1-512-447-4720 (phone)

Other Coordinates

kronz@mail.utexas.edu (email)
1-512-471-5203 (phone)
1-512-471-4806 (fax)

Education

Ph.D. Johns Hopkins University, Philosophy, 1985
MA Johns Hopkins University, Philosophy (with 28 credit-hours in physics), 1980
BA University of Pittsburgh, Philosophy (with 36 credit-hours in mathematics), 1978

Employment

Associate Professor, The University of Texas at Austin, 1992-2002
Assistant Professor, The University of Texas at Austin, 1985-1992
Instructor, The University of Maryland at College Park, Fall 1984

Areas of Specialty

History and Philosophy of Science, Philosophy of Physics, Philosophy of C.S. Peirce

Areas of Competence

Metaphysics, Epistemology, History of Ancient Philosophy, History of Early Modern Philosophy, Symbolic Logic

Publications

- “Emergence and Quantum Mechanics,” with Justin Tiehen. It is forthcoming in the June 2002 volume of *Philosophy of Science*.
- “The Complementary Roles of Chance and Lawlike Elements in Peirce’s Evolutionary Cosmology,” with Amy McLaughlin in *Between Chance and Choice: Interdisciplinary Perspectives on Determinism*, Robert Bishop and Harald Atmanspacher (eds.), (Imprint Academic, in press).
- “Range of Violations of Bell’s Inequality by Entangled Photon Pairs,” *Physics Letters A* 279: 287-290, 2001.
- “A Model of a Chaotic Open Quantum System,” *Proceedings of the 1998 Biennial Meeting of the Philosophy of Science Association*: 446-453, 2000.
- “Bohm’s Ontological Interpretation and Its Relation to Three Formulations of Quantum Mechanics,” *Synthese* 117: 31-52, 1999.
- “Nonseparability and Quantum Chaos.” *Philosophy of Science* 65: 50-75, 1998.
- “Many Realisms,” with Harald Atmanspacher, *Acta Polytechnica Scandinavica, Mathematics Computing & Management in Engineering Series*, no. Ma91: 31-43, 1998. Harald is the primary author.
- “Theory and Experience of Time.” *Time, Temporality and Now*. Edited by Harald Atmanspacher and Eva Ruhnau. (New York: Springer Verlag, 1997). 7-22.
- “Is Chaos Indeterministic?” with Robert Bishop, *Proceedings of The Tenth International Congress of Logic, Methodology, and Philosophy of Science*, (Boston: Kluwer, 1997). Robert is the primary author.
- “Carnap and Achinstein on Evidence.” *Philosophical Studies* 67: 151-167, 1992.
- “The Projection Postulate and the Time-Energy Uncertainty Relation.” *Philosophy of Science* 59: 1-15, 1992.
- “Quantum Entanglement and Nonideal Measurements: A Critique of Margenau’s Objections to the Projection Postulate.” *Synthese* 89: 229-251, 1991.

“Jarrett Completeness and Superluminal Signals.” *Proceedings of the 1990 Biennial Meeting of the Philosophy of Science Association, Vol. I*: 227-239, 1990.

“Hidden Locality, Conspiracy and Superluminal Signals.” *Philosophy of Science* 57: 420-444, 1990.

“Aristotle, the Direction Problem, and the Structure of the Sublunar Realm.” *The Modern Schoolman* 67: 247-257, 1990.

“EPR: The Correlations Are Still a Mystery.” *Philosophy of Science* 55: 631-639, 1988.

Book Reviews

Roberto Torretti’s *The Philosophy of Physics* (Cambridge U. Press, 2001) forthcoming in the *British Journal for Philosophy of Science*.

Lawrence Sklar’s *Philosophy of Physics* (Westview Press, 1992), *Review of Metaphysics* 48: 168, 1994.

Nancy Cartwright’s *Nature’s Capacities and Their Measurement* (Oxford University Press, 1989) in *Philosophy of Science* 61: 155-157, 1994.

Bas van Fraassen’s *Quantum Mechanics: An Empiricist View* (Oxford University Press, 1991) in *Isis* 84: 620-621, 1993.

Christopher Ray’s *Philosophy of Time and Space* (Routledge Press, 1991) in *Mind* 102: 681, 1993.

Research in Progress

“Unitarily Inequivalent Representations in Algebraic Quantum Theory,” with Tracy Lupher. It was submitted 15 November 2001 to the *International Journal for Theoretical Physics* for the selected proceedings of the fifth biennial Quantum Structures conference.

“Mathematical and Philosophical Elements of Quantum Mechanics in Rigged Hilbert Space,” with Robert Bishop. It will be submitted in May 2002 to the *British Journal for Philosophy of Science*.

“Philosophical Aspects of the Ergodic Hierarchy,” with Jossi Berkovitz and Roman Frigg. It will be presented at a philosophy of physics conference in May (organized by Berkovitz and Jeff Bub).

“Dirac versus von Neumann,” for the *Stanford Electronic Encyclopedia of Philosophy*. It will be submitted this summer.

“A Peircean Fast-Track to Confirmation” with Amy McLaughlin. It was accepted by the PSA for presentation at the November 2002 biennial meeting as part of a symposium that I organized on Achinstein’s new theory of evidence, which he develops in *The Book of Evidence* (Oxford 2001).

Two other papers are being negotiated, one is a second paper on algebraic quantum theory with Tracy Lupher (the first was mentioned earlier in this section), and the other is with Olimpia Lombardi on statistical mechanics and irreversibility.

Presentations

“Emergence and Quantum Mechanics,” Sigma Club presentation, Center for Philosophy of Natural and Social Science, London School of Economics, 14 June 2001

“The Complementary Roles of Chance and Lawlike Elements in Peirce’s Evolutionary Cosmology,” Workshop on determinism sponsored by the Institut für Grenzgebiete der Psychologie (at Freiburg, Germany), Ringberg Castle at Tegernsee, Germany, 6 June 2001

“Inequivalent Representations in Algebraic Quantum Theory.”

- The 5th Biennial International Quantum Structures Association Conference in Cesena & Cesenatico, Italy, 1 April 2001
- The 17th Biennial Philosophy of Science Association Meeting “PSA 2000” in Vancouver, British Columbia, 4 November 2000.
- 4th Quadrennial International Fellows Conference, Bariloche, Argentina, 23 June 2000
- 11th International Congress on Logic, Methodology, and Philosophy of Science, Krakow, Poland, 21 August 1999.

“The Myth of the Limit: Peirce on Truth, Evolution, and Chance.”

- Colloquium Presentation, Department of Philosophy, The University of Virginia, 22 August 2000.

- 5th International Philosophy Colloquium in Bariloche, Argentina, on 29 June 2000.
- “Bohm’s Ontological Interpretation and Its Relation to Three Formulations of Quantum Mechanics.”
- Colloquium presentation, Department of Philosophy, Merton College, Oxford University, 28 May 1999.
 - The Center for Philosophy of Science, University of Pittsburgh, 20 January 1998.
- “Chaos in a Model of an Open Quantum System.”
- Sigma Club presentation, Center for Philosophy of Natural and Social Science, London School of Economics, 20 May 1999.
 - Colloquium presentation, Department of Physics, University of Stuttgart, 4 May 1999.
 - Symposium contribution, The Biennial Meeting of the Philosophy of Science Association, 22-24 October 1998.
- “Does Scientific Explanation Need Causation?” Colloquium presentation, Institut für Grenzgebiete der Psychologie, Freiburg, Germany, 6 May 1999
- “Chaos in the Quantum Domain.” History and Philosophy of Science Seminar Series, Department of Philosophy, The University of Texas at Austin, 8 October 1998.
- “Determinism and the Structure of Space.” Colloquium presentation, Department of Philosophy, The Johns Hopkins University, 21 April 1998.
- “Nonseparability and Quantum Chaos.”
- The Center for Philosophy of Science, University of Pittsburgh, 21 January 1997.
 - The Max-Planck-Institut für Extraterrestrische Physik at Garching, Germany, during a one month visit beginning mid-December 1997.
 - The International Congress on Logic, Methodology and Philosophy of Science in Florence, Italy, 20 August 1995.
- “Quantum Chaos: Philosophical Paradox or Normal Science.” The Fall 1996 colloquy, Department of Philosophy, The University of Texas at Austin, 15 November 1996.
- “Theory and Experience of Time.” Workshop on time sponsored by the Max Planck Institute, Ringberg Castle at Tegernsee, Germany, 22 February-1 March 1996.
- “The Projection Postulate and the Time-Energy Uncertainty Relation.” The International Congress of Logic, Methodology and Philosophy of Science at Uppsala, Sweden, 7-14 August 1991.
- “Carnap and Achinstein on Evidence.” The Central Division meeting of the American Philosophical Association, 25-28 April 1991.
- “Jarrett Completeness and Superluminal Signals.” The biennial meeting of the Philosophy of Science Association, 18-21 October 1990.
- “Locality Conditions and Conspiracy Theories.” The Central Division meeting of the American Philosophical Association, 25-28 April 1990.
- “Natural Motion and the Structure of the Sublunar Realm.” The Workshop on Ancient Philosophy, the University of Texas at Austin, 22-24 February 1990.
- “EPR: The Correlations Are Still a Mystery.”
- The Central Division meeting of the American Philosophical Association in Chicago, 30 April-3 May 1987.
 - The Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science in Austin, 31 March-4 April 1987.

Research Awards Granted

Visiting Scholar’s Award by the Center for Philosophy of Science at the University of Pittsburgh for the Spring 1998 semester.

Faculty Research Award by the University Research Institute of the University of Texas at Austin for the Spring 1998 semester.

National Science Foundation Scholar’s Award for the Spring 1997 semester.

Other Awards and Grants

Travel Grant and stipend to participate in the 4th Quadrennial International Fellows Conference, Bariloche, Argentina, 22-26 June 2000.

Travel Grant and stipend to facilitate collaboration with Harald Atmanspacher, a research scientist at The Institut für Grenzgebiete der Psychologie, Freiburg, Germany, 1-18 May 1999. Research Topic: Emergence in the Physical Sciences.

Travel Grant and stipend to facilitate collaboration with Harald Atmanspacher, a research scientist at The Max-Planck-Institut für Extraterrestrische Physik at Garching, Germany, 12 December 1996 to 9 January 1997. Research Topic: Realism in the Physical Sciences.

Travel Grant to attend the time workshop at Tegernsee, Germany, sponsored by The Max-Planck-Institut für Extraterrestrische Physik, Garching, Germany, 22 Feb to 1 March 1996.

Travel Grant to attend the International Congress on Logic, Methodology and Philosophy of Science at Florence, provided by the Philosophy of Science Association, August 1995.

Summer Research Award, University Research Institute, University of Texas, Austin, 1986.

Director of History and Philosophy of Science Program (June 1992 to May 1998)

I revitalized the program by starting a reading group in the summer of 1992. The group met biweekly year round for four years. Besides organizing and running that group, I made special efforts to recruit graduate students and to obtain special funds for outside speakers. I also persuaded the Department to add a lower-division course in philosophy of science.

Professional Services Performed

Refereed papers for *Philosophy of Science*, *Synthese*, *Erkenntnis*, and *Foundations of Physics*

M.A. and Ph.D. Thesis Supervision

Amy McLaughlin, wrote her M.A. report under my supervision in Spring 1998. She was admitted to candidacy in May 2001. Thesis title: "Peircean Truth and Scientific Progress."

Tracy A. Luper, wrote a senior thesis and M.A. report under my supervision. He was admitted to candidacy in November 1998. Thesis title: "Philosophical Foundations of Algebraic Quantum Theory." He visited Oxford in the fall 2000 semester while on a Continuing University Fellowship. He recently transferred to the University of Pittsburgh to complete his dissertation under the direction of John Earman, Rob Clifton, and Laura Reutsche.

Robert C. Bishop, Ph.D. granted December 1999. Thesis title: "Quantum Indeterminacy, Chaotic Dynamics and Free Will." Robert is a researcher in the theory group at the Institut für Grenzgebiete der Psychologie in Freiburg, Germany. He was hired in January 2000.

Craig W. Hansen (deceased), Ph.D. granted May 1989. Thesis title: "The Many Worlds and Modal Interpretations of Quantum Mechanics." Craig was an assistant and then an associate professor at Winona State University in Minnesota from 1989 to 1998.

Courses Taught

Graduate Seminars

- Philosophical Consequences of Quantum Mechanics
- Beyond the Standard Formalism of Quantum Mechanics
- Philosophical Consequences of Chaos Theory
- Introduction to Philosophy of Science
- History and Philosophy of Modern Science
- Explanation and Scientific Realism
- Theories of Evidence
- Emergence, Supervenience and Reduction
- Identity and Individuation
- Philosophy of Time

Upper-Division Courses

- Philosophical Consequences of Quantum Mechanics
- History and Philosophy of Quantum Mechanics
- Philosophical Consequences of Chaos Theory
- Philosophy of Space and Time

- Darwin, Evolution and Philosophy
- Scientific Method
- Emergence, Supervenience and Reduction
- History of Philosophy of Science: 1840-1934
- C.S. Peirce: Pragmatism and the Philosophy of Science
- History of Ancient Philosophy
- History of Early Modern Philosophy

Lower-Division Courses

- Knowledge and Reality
- Science and Philosophy
- Introductory Symbolic Logic
- Introduction to Logic

References

Peter Achinstein, Professor

Department of Philosophy
Johns Hopkins University

John Earman, Professor

Department of History and Philosophy of Science
University of Pittsburgh

Arthur Fine, Professor

Department of Philosophy
University of Washington at Seattle

Bas van Fraassen, Professor

Department of Philosophy
Princeton University

Paul Humphreys, Professor

Department of Philosophy
The University of Virginia

Dr. Michael Redhead

Centre for Philosophy of Natural and Social Science
London School of Economics