

Arthur B. Millman

Department of Philosophy

Associate Professor 1988-; Assistant Professor 1981-1988

Affiliate of Program in Critical and Creative Thinking, 1981-

Professional Preparation and Previous Appointments

A.B. cum laude, Physics, Columbia University, 1961

M.A., Philosophy, University of Chicago, 1963

Ph.D., Philosophy, University of Chicago, 1974

Assistant Professor, University of Southern California, 1974-76

Visiting Assistant Professor, University of British Columbia, 1976-78

Visiting Assistant Professor, University of Colorado at Boulder, 1978-81

Biographical Sketch

My research is primarily in the philosophy of science and related issues in ethics and public policy (environmental ethics, research ethics). I have developed an extended case study of Darwin's work in relation to problems of scientific discovery, theory construction, and conceptual change. This continues work going back to an NSF Grant for "A Case Study of Reasoning in Theory Construction (with Prof. Carol Smith). We published a paper on an aspect of this work as "Darwin's Use of Analogical Reasoning in Theory Construction." This paper shows that the familiar picture of Darwin's use in the Origin of the analogy between artificial and natural selection to provide support for his theory of natural selection needs to be supplemented by attending to his subtle use of analogical reasoning, as documented in his Notebooks. Darwin compared two domains and reshaped the comparison in the process of reasoning his way to finding the analogy in the first place. The case study suggests a pattern of analogical reasoning that has not been characterized before. I am currently working on several other aspects of the project, including the development of his non-essentialist species concept. Other related projects of mine related to the Darwin project deal with broader philosophical themes such as the nature of conceptual recombination and what I call "abductio ad absurdum." The latter paper explores whether criteria can be given for distinguishing between problematic novel ideas that are worth further development and other problematic novel ideas that are not.

I am also working on a book project "Toward a Naturalized Social Epistemology of Science." This draws together several strands of my work in the history and philosophy of science going back to work on Kuhn and Lakatos and several cases studies such as the Copernican Revolution and the Chemical Revolution associated with Lavoisier. My work on Darwin provides another case study of scientific change and the development of new fundamental scientific concepts. I try to show how social and rational consideration in the practice of science interpenetrate

I joined UMass Boston's Philosophy Department in 1981 at the same time that I began teaching in the CCT Program. My first task in the Program was to help develop the Science specialty area in connection with an NEH grant to the Program to work with

a cohort of science teachers. In the first years I mainly taught CCT 640 (Critical and Creative Thinking in Science and Technology) and CCT 645 (Seminar in Scientific Thinking). I co-taught with several faculty members including Carol Smith (Psychology), John Murray (CCT), Hilary Hopkins (CCT), and T.N. Margolis (Chemistry). The co-teaching with Carol Smith led to the research project focusing on Darwin's thinking in the construction of his theory of evolution by natural selection. This has resulted in a number of conference presentations and published papers. After resource constraints ruled out co-teaching in these courses I offered each of them myself several times. In recent years the scheduling needs of the Program have required me to teach the core courses CCT 601 (Critical Thinking) and Philosophy 501/601 (Foundations of Philosophical Thought) for the Program almost exclusively. In addition, I have been actively involved with the undergraduate program in Science, Technology, and Values, and co-directed it from its inception in 1993 until 2002.

Teaching and Advising

Courses for CCT

Critical Thinking

Foundations of Philosophical Thought

Critical and Creative Thinking in Science and Technology

Seminar in Scientific Thinking

Practicum in Critical and Creative Thinking

Critical Thinking Attitudes

Recent Courses for the Philosophy Department

Philosophy of Science

Technology and Values

Environmental Ethics

Philosophical Foundations of Public Policy

Moral and Social Problems

First Year Seminar in Contemporary Moral and Social Issues

Intermediate Seminar on the Meaning of Life

Advisees

Completed Masters, as major advisor

David Prentiss, Thomas Vendetti, Robert Tocci, MaryAnne Miller, Lisa Hayes, Neuza de Figueredo, Leor Alcalay, Jonathan Mahoney, Rossen Roussev, Setsuko Inoue, Alan Goldman, Ryan Mott, Christina Fasciana, Eileen Koestenbaum, Basye Hendrix, Paul Groff, Lyonel Prime, Elizabeth Naylor, Gretchen Heath, Jean Rene, Marnie Jain, Jeffrey Craig, Julie Johnstone

Service

CAS Collegiate Personnel Committee, 1992-93, 2002-03, 2004-05 (chair)

IRB, Human Subjects Committee, 1994-99, co-chair 1997-98

Chair, Department of Philosophy (2006, 2007-13)

Philosophy and Public Policy program development, 1984-88

Co-Director Science, Technology and Values Program, 1993-2002
CAS Academic Affairs Committee, 1987-90, 91-92, co-chair Fall 1988
CAS Graduate Review Committee, 1990-91
Philosophy Department Personnel Committee, 1981-5, 86-
CCT Administrative Committee, 1981-
Philosophy Department Coordinator of Advising, 1989-97
Philosophy Department Graduate Planning Committee, 1993-5
Philosophy Department Self-Study Committee, 1993
Ad Hoc Committee on the Writing Proficiency Exam, 1989
Faculty Council Academic Affairs Committee, 1989-91, 1992-96, chair, 1994-96
Committee on Undergraduate Teacher Preparation, 1990
Provost's Summer/Fall Faculty Research Grant Committee, 1993
Provost's Junior Faculty Grant Committee, 1993
Accreditation Task Force on Planning and Evaluation, 1993-95
Chancellor's Planning Council, 1994-99
Search Committees, Graduate College of Education
Faculty Council Intercollegiate Programs Committee, co-chair, 1998-2000
CAS Budget and Long Range Planning Committee, 2000- , chair 2000-2002
Provost's Implementation Committee on the new colleges, 2003
Faculty Council Graduate Studies Committee, 2012-

Service to the Community and Profession

Referee for Philosophy of Science
Referee for NSF Program in History and Philosophy of Science
Reviewer for Wadsworth Publishing Co.
Reviewer for Broadview Press
Beaverbrook Step Board of Directors, 1985-

Grants, Fellowships & Awards

Grant from McCormack Institute Faculty Research Program in Applied Public Policy for project on "Conflict of Interest in University/Industry Research Partnerships," 1992-93
NSF Grant for project on "A Case Study of Reasoning in Theory Construction" with C.L. Smith, 1987-88
GTE Foundation Lectureship Grant to fund lecture series on "Biology, Philosophy, and Public Policy," 1986-87
NEH summer stipend for project on "Ethical Issues in Risk-Benefit Analysis of Technologies," 1982
Grant awarded by the Colorado Humanities Program to be Humanist-in-Residence at the Colorado Front Range Project and liaison between the Project and the Center for the Study of Values and Social Policy at the University of Colorado
Associate Project Director for NEH Pilot Project on "Human Values and Social Policy" at the University of Colorado Boulder, awarded Spring 1981

Publications

- Translated book: Rachel Elior, Jewish Mysticism: The Infinite Expression of Freedom (Oxford, England: Littman Library of Jewish Civilization, 2007, 2010), with Yudith Nave.
- “Darwin’s Use of Analogical Reasoning in Theory Construction” (with C.L. Smith), Metaphor and Symbol 12 (1997): 159-187.
- “Falsification and Grunbaum’s Duhemian Theses,” Synthese 82 (1990): 23-52.
- “Critical Thinking Attitudes: A Framework for the Issues,” Informal Logic 10 (1988): 45-50.
- Review of David Kohn, ed., The Darwinian Heritage, Journal of the History of the Behavioral Sciences 24 (1988): 413-415.
- “Understanding Conceptual Structures: A Case Study of Darwin’s Early Thinking (with C.L. Smith), in David N. Perkins, Jack Lochhead, and John C. Bishop (eds.), Thinking (Hillsdale, N.J.: Lawrence Erlbaum, 1987), 197-211.
- “Reichenbach on Scientific Discovery,” in Peter Caws (ed.), Philosophy in the Life of a Nation (New York: Bicentennial Symposium of Philosophy, 1976), 447-451.
- “The Plausibility of Research Programs,” in Frederick Suppe and Peter D. Asquith (eds.), PSA 1976, vol. 1 (East Lansing: Philosophy of Science Association, 1976), 140-148.

Works in Progress

- “Conflicts of Interest and Scientific Objectivity”
- “Abductio ad Absurdum: On the Introduction of New Hypotheses”
- “Scientific Freedom: Proliferation in Practice”
- “The Origin of Darwin’s Species Concept”
- “Issues in Environmental Ethics”

Presentations and Workshops

- “Scientific Freedom: Proliferation in Practice,” UMB Philosophy Department series, Fall 2002.
- “New Directions in Fostering Critical Thinking” (with Peter Taylor), UMB Center for the Improvement of Teaching, April 2002.
- “Abductio ad Absurdum,” UMB Philosophy Department Series, May 2001.
- “Conflict of Interest and Scientific Objectivity,” Research on Research Integrity Conference November 2000 (Office of Research Integrity, Department of Health and Human Services).
- “Environmental Justice,” Science-in-Society, Society-in-Science Conference sponsored by the CCT Program, July 1999.
- Panel on “What is Education for – A Living or for Life?” UMB Center for the Improvement of Teaching, October 1998.
- “Thinking Strategies, Ethics, and New Reproductive Technologies,” Sixth International Conference on Thinking, MIT, July 1994