

MELINDA BONNIE FAGAN

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Areas of Specialization:

Philosophy of Science, Epistemology, Philosophy of Biology

Areas of Competence:

History of Science, Bioethics, Philosophy of Social Science

Employment

Assistant Professor of Philosophy, July 2007-present
Rice University, Houston, Texas

Education

Ph.D., History and Philosophy of Science, minor in Philosophy, June 2007

Indiana University, Bloomington, Indiana

Dissertation: *Integrative Pragmatism and Scientific Inquiry*

Committee: Elisabeth Lloyd, Colin Allen, Jordi Cat, Tom Gieryn, Jutta Schickore, Fred Schmitt

M.A., History and Philosophy of Science, September 2005

Indiana University, Bloomington, Indiana

M.A., Philosophy, May 2002

University of Texas at Austin, Austin, Texas

Master's Report: *Mechanistic and Reductive Explanation in Biology: a Comparison of Recent Accounts*.

Advisors: Robert Causey, Fred Kronz

Ph.D., Biological Sciences, January 1998

Stanford University, Stanford, California

Dissertation: *Botryllus schlosseri historecognition locus and HSP70 genes*.

Committee: Irving Weissman, David Epel, Patricia Jones, George Somero, Virginia Walbot

B.A., Biology, *Summa cum laude*, Highest Honors, June 1992

Williams College, Williamstown, Massachusetts

Thesis: *An Analysis of the Mating System of a Marginal Population of Lonicera hirsuta (Caprifoliaceae)*

Advisor: Henry Art

Fellowships and Awards

Humanities Research Center Collaborative Research Fellowship, Rice University 2009-10
Mosle Research Award, Rice University, 2007-2009
Louise McNutt Dissertation Year Fellowship, Indiana University, 2006-2007
Doctoral Dissertation Improvement Grant, National Science Foundation, 2006-2007
Mikal Lynn Sousa Award for Excellence in Graduate Scholarship, Indiana University, 2006
Norwood Russell Hanson Prize, Best Graduate Student Paper in History and Philosophy of Science, Indiana University, 2005
Chancellor's Fellowship, Indiana University, 2002-2007
Richard S. Westfall Travel Fellowship, Department of HPS, Indiana University, 2004
Women in Science Program Travel Award, Indiana University, 2004
University Fellowship, University of Texas at Austin, 2000-2002
Howard Hughes Predoctoral Fellowship, Howard Hughes Medical Institute, 1993-1997
Dwight Botanical Prize, Williams College, 1992
Barry M. Goldwater Science Scholarship, Williams College, 1990

I. RESEARCH

Publications

- Fagan, Melinda B. 'Stems and standards: social interaction in the search for blood stem cells.' *Journal of the History of Biology* (in press).
- Fagan, Melinda B. Theory and practice in the field: Wallace's work in natural history, 1844-1858. In: Smith, Charles H. and Beccaloni, George (eds.) *Natural Selection and Beyond The Intellectual Legacy of Alfred Russel Wallace*, Oxford University Press, 2008.
- Fagan, Melinda B. Wallace, Darwin and the practice of natural history. *Journal of the History of Biology* 40: 601-635. 2007.
- Fagan, Melinda B. The search for the hematopoietic stem cell: social interaction and epistemic success in immunology. *Studies in History and Philosophy of Biological and Biomedical Sciences* 38: 217-237, 2007.
- Fagan, Melinda, Forber, Patrick, García Deister, Vivette, Haber, Matthew H., Hamilton, Andrew, and Yamashita, Grant. Meeting Report: First ISHPSSB Off-Year Workshop. *Biology and Philosophy* 20(4): 927 – 929, 2005.
- Liu, J., Shu, W., Fagan, M.B., Nunberg, J.H., and Lu, M. Structural and functional analysis of the HIV-1 gp41 core containing an Ile573 to Thr substitution: implications for membrane fusion. *Biochemistry* 40: 2797-2807, 2001.
- Lu, M., Stoller, M.O., Wang, S., Liu, J., Fagan, M.B., and Nunberg, J.H. Structural and functional analysis of interhelical interactions in the Human Immunodeficiency Virus Type 1 gp41 envelope glycoprotein by alanine-scanning mutagenesis. *Journal of Virology* 75: 11146-11156, 2001.
- Fagan M B., Weissman I L. Linkage analysis of *HSP70* genes and historecognition locus in *Botryllus schlosseri*. *Immunogenetics* 47: 468-476, 1998.

Fagan M B., Weissman I L. Characterization of a polymorphic protein localized to vascular epithelium in *Botryllus schlosseri*: role in tunic synthesis? *Molecular Marine Biology and Biotechnology* 7: 204-213, 1998.

Fagan M B., Weissman I L. Linked *HSP70* genes in the colonial protochordate *Botryllus schlosseri*. *Hereditas* 127: 25-35, 1997.

Fagan M B., Weissman I L. Sequence and characterization of two *HSP70* genes in the colonial protochordate *Botryllus schlosseri*. *Immunogenetics* 44: 134-142, 1996.

Work in Progress

'Social epistemology and scientific inquiry: the search for the blood stem cell' (under review)

'Ludwik Fleck and the social constitution of scientific objectivity' (accepted)

Objectivity in Practice (under review)

'Social construction revisited' (under review).

'Collective scientific knowledge: theory and confirmation' (ms. in progress)

Presentations

9th International Congress Of Immunology. San Francisco, CA, USA, July 23-29, 1995.

"*HSP70* and historecognition in *Botryllus schlosseri*." (poster presentation)

5th International Workshop on MHC Evolution, Visby, Gotland, Sweden, May 22-26, 1997.

"Linkage analysis of *HSP70* genes in the colonial protochordate *Botryllus schlosseri*."

2004 Vienna Summer University: Scientific World Conceptions, "The Quest for Objectivity." University of Vienna, Austria, July 19-30, 2004. "The collector and the species-man."

California Academy of Sciences, Colloquium on History and Philosophy of Science, San Francisco, CA, USA, March 10, 2005. "Science as action."

University of Minnesota Graduate Student Conference: Beyond Dichotomies, Across the Boundaries: Interdisciplinary Investigations of Dynamic Interactions in Biological and Social Sciences. Minneapolis, MN, USA, April 14-17, 2005. "Science as action: the individual-social dichotomy in social epistemology."

2005 Meeting of the International Society for the History, Philosophy, and Social Studies of Biology, University of Guelph, Ontario, Canada, July 13-17, 2005. "Shared goals and interdisciplinary interactions in contemporary immunology."

Norwood Russell Hanson Prize Lecture, Department of History and Philosophy of Science, Indiana University, January 20, 2005. "Darwin, Wallace, and the practice of natural history."

Southwest Colloquium in the History and Philosophy of the Life Sciences, University of California at Davis, CA, March 31-April 2, 2006. "Science as social action: the search for the hematopoietic stem cell."

Philosophy/History & Philosophy of Science Miniconference on Philosophical and Scientific Methodologies, Indiana University, Bloomington, IN, May 8, 2006. Commentary on: Swain, Alexander and Weinberg “The instability of philosophical intuitions: running hot & cold on truetemp.”

Seminar in Social Ethics and Normative Theory, Stanford University, Stanford, CA, May 19, 2006. “Science as social action: a hybrid account.”

California Academy of Sciences, Colloquium on History and Philosophy of Science, San Francisco, CA, USA, October 5, 2006. “Integrative pragmatism and scientific inquiry.”

Department of History and Philosophy of Science, Indiana University, January 12, 2007. ‘Science as social action: how to construct scientific objectivity.’

Department of Philosophy, University of California Santa Cruz, January 18, 2007. ‘Science as social action: how to construct scientific objectivity.’

Department of Philosophy, Rice University, January 26, 2007. ‘Science as social action: how to construct scientific objectivity.’

Department of Philosophy, University of California at Davis, January 29, 2007. ‘Science as social action: how to construct scientific objectivity.’

Program in Science and Technology Studies, University of California at Davis, January 30, 2007. ‘The search for the hematopoietic stem cell: immunology and epistemic success.’

Science and Philosophy Symposium, University of Stony Brook, New York, NY, March 10, 2007. ‘Social epistemology of stem cell research.’

2007 Meeting of the International Society for the History, Philosophy, and Social Studies of Biology, University of Exeter, Exeter, UK, July 25-29, 2007. ‘Stems and standards: social mechanisms for managing complexity in immunology.’

Integrated History and Philosophy of Science (&HPS1), Center for Philosophy of Science, University of Pittsburgh, Pittsburgh, PA, October 13, 2007. ‘Social epistemology of scientific inquiry: beyond case studies in history vs. philosophy.’

Department of Philosophy, University of Western Ontario, October 26, 2007. ‘Stems and standards: scientific objectivity and the search for the blood stem cell.’

Darwin Day 2008, Secular Students Association, Rice University, Houston, TX, February 9, 2008. ‘The co-discoverers: Darwin and Wallace.’

Pragmatism and Naturalism Workshop, Tilburg Center for Logic and Philosophy of Science, Tilburg, The Netherlands, May 8, 2008. ‘Integrative Pragmatism as social epistemology of Science.’

History of Philosophy of Science (HOPOS) 2008, University of British Columbia, Vancouver, Canada, June 19, 2008. ‘Fleck and the social constitution of scientific objectivity.’

British Society for the Philosophy of Science. University of St. Andrews, Scotland, UK, July 11, 2008. ‘Social epistemology and science.’

Weissman Lab Retreat, Rocky Mountain Labs, Hamilton, MT, July 21, 2008. 'Philosophy of science: knowledge, experiment and society.'

2008 Biochemistry and Cell Biology Departmental Retreat, Rice University, October 13, 2008. 'Bridging gaps: philosophy of science, philosophy of biology.'

Stem Cell Short Course, Baker Institute, Rice University, January 8, 2009. 'Artificial gametes and reproductive cloning.' (Round-table discussion)

Seminar in Medical Humanities, Department of Philosophy and the Medical Humanities, Indiana University, Indianapolis, March 27, 2009. 'The search for the blood stem cell: a case study in social epistemology of science.'

Workshop on Methods in the Life Sciences, Department of History and Philosophy of Science, Indiana University, Bloomington, March 28, 2009. 'Methods talk' and social epistemology of experiment.' (invited talk)

Research Appointments

Undergraduate Research Assistant, Department of Biology, Williams College, Summer 1991 (Joan Edwards, Henry Art: field ecology of *Lonicera hirsuta* mating system)

Laboratory Technician, Ares Advanced Technology, Randolph, MA (September 1992 to December 1992 (cytokine purification and characterization)

Doctoral Fellow, Weissman Laboratory, Stanford University, January 1994 to December 1997 (comparative immunology, evolution of historecognition)

Post-Doctoral Fellow, Nunberg Laboratory, University of Montana, Missoula, MT, April 1999 to May 2000 (HIV-1 vaccine research).

Research Assistant, Department of Philosophy, University of Texas at Austin, Spring 2000 (Daniel Bonevac: formal logic)

Research Assistant, Department of HPSC, Indiana University, June 2004 (Elisabeth Lloyd: genic selectionism)

II. TEACHING

Courses taught:

Assistant Professor, Department of Philosophy, Rice University

Introduction to Philosophy of Science (Fall 2007)

Theory of Knowledge (Fall 2007, Spring 2009)

Philosophy of Biology (Spring 2008)

Philosophy of Science (Spring 2009)

Seminar in Social Epistemology (Spring 2008)

Seminar in Pragmatism: Rational Practices (Fall 2008)

Philosophical Challenges and Engineering Applications of Stem Cells (Spring 2010*)

(co-taught with Prof. Ann Saterbak, Dept. of Bioengineering, Rice University)

Instructor, Department of History and Philosophy of Science, Indiana University
Scientific Reasoning (Fall 2003, Spring 2004, Fall 2004, Spring 2005)
Bioethics (Fall 2005, Spring 2006)

Teaching Assistant, Philosophy Department, University of Texas at Austin
Philosophy of Science (Fall 2000)
Human Nature (Fall 2001)
Formal Logic (Spring 2002)

Teaching Assistant, Department of Biological Sciences, Stanford University
Introductory Ecology (Spring 1993)
Introductory Biochemistry and Molecular Biology (Fall 1995)
Molecular and Cellular Immunology (Winter 1996)

* In preparation.

Student Advising:

Undergraduate Honors Thesis: Julia Bursten (2008); Ashley Allen (reader; 2008)
Graduate Research and Qualifying Exam: Jacob Kolman (2009), Heather Phillips (2008-9)

III. PROFESSIONAL ACTIVITIES

University

Co-organizer, Cultural Studies of Science and Technology workshop, 2009-2010.
Faculty Sponsor, Secular Students of Rice (Fall 2008-present)
Faculty Associate, Jones College (Fall 2008-present)
Scientia Institute Fellow, organizing committee (2008-2009, 'Biopolitics')

Department

Graduate Admissions Committee, Rice Dept. of Philosophy (2009)
Tsanoff Committee for Undergraduate Prize in Philosophy (2007-2008)
Faculty Search Committees, Rice Dept. of Philosophy (2007-2009)
Student Representative, Search Committee (Spring 2004, Department of History and Philosophy of Science, Indiana University).

Professional

Organizing

Advisory Committee, Qatar Stem Cell Workshop on Science and Policy "Saving Lives or Crossing Lines," Doha, Qatar, March 15, 2009.

Organizer, *Kansas v. Darwin* screening and discussion, Rice University, February 18 & 19, 2009.

Advisory Committee, 2nd ISHPSSB Off-Year Workshop, "Future Directions in Biology Studies" (FDIBS), Indiana University, Bloomington, IN, USA, July 26-30, 2006.

Organizer, “Perspectives on Immunology” Session (July 16), 2005 Meeting of the International Society for the History, Philosophy, and Social Studies of Biology, University of Guelph, Ontario, Canada, July 13-17, 2005.

Co-organizer, 1st ISHPSSB Off-Year Workshop, “Future Directions in ISH” (FDISH), University of San Francisco, CA, USA, September 23–26, 2004

Refereeing

BioScience, Perspectives on Science, Philosophy of Science, International Studies in the Philosophy of Science, Studies in History and Philosophy of Biological & Biomedical Sciences, Synthese, Philosophical Quarterly

Societies

Phi Beta Kappa (1991)

Sigma Xi (1992)

Philosophy of Science Association (2000-present); PSA Women’s Caucus (2008-present)

International Society for History, Philosophy and Social Studies of Biology (2000-present)

American Philosophical Association (2006-present)

International Society for History of Philosophy of Science (2008-present)

International Society for Stem Cell Research (2009)