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Shorter Curriculum Vitae

LINDLEY DARDEN

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University of Maryland
College Park, MD 20742

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Academic Training

Rhodes College : B. A. (Philosophy) 1968

University of Chicago

A. M. (Philosophy) 1969

S. M. (Biology) 1972

Ph.D. (Conceptual Foundations of Science) 1974

Honors

Honored Instructor in Transfer2Terp, University of Maryland, 2014

Distinguished Scholar Teacher, University of Maryland, 2006

Fellow, American Association for the Advancement of Science, Elected 1995

University Fellowships, 1970-1974

Phi Beta Kappa, 1968; B. A. with distinction, 1968

University positions

Professor of Philosophy, University of Maryland College Park, 1993-present

Affiliate Professor in the Department of History and in the

Behavior, Evolution, Ecology, and Systematics (BEES) Concentration

Area, the Computational Biology, Bioinformatics and Genomics (CBBG)

Concentration Area, and the Molecular & Cellular Biology (MOCB) of

the Biological Sciences Graduate Program (BISI),

Member, the Moulton Laboratory for Computational Biology at the Institute for
Bioscience and Biotechnology Research at UM Shady Grove, 2015-present

Member, Committee on the History and Philosophy of Science (CHPS), 1974-

2002, Chairperson of CHPS 1984-86; Associate Chair, 2001-2002

Associate Professor of Philosophy and History, University of Maryland College
Park, 1979-1993.

Associate Professor, Institute for Advanced Computer Studies, University of
Maryland (UMIACS), 1985-87

Assistant Professor of Philosophy and History, University of Maryland College
Park, 1974-1979

Instructor in Philosophy and Humanities, Moraine Valley Community College,
Palos Hills, Illinois, 1969-1970

Visiting positions

Clark-Way-Harrison Visiting Professor of Philosophy, Washington University,
St. Louis, Missouri, Jan-May, 2008
Visiting Professor of Philosophy, University of Paris and in the Centre Cavailles
for History and Philosophy of Science of the Ecole Normale Supérieure,
Paris, June 2006
Fellow, Center for Philosophy of Science, University of Pittsburgh, January-May,
1997
Visiting Professor, Laboratory of Molecular Genetics and Informatics,
Rockefeller University, New York, February-June, 1994
Visiting Associate Professor, Laboratory for Artificial Intelligence Research,
Department of Computer and Information Science, Center for Cognitive
Science, Ohio State University, August 1990-August 1991
Visiting Scholar, Department of the History of Science, Harvard University, Fall,
1982
Visiting Scholar, Heuristic Programming Project (later, Knowledge Systems
Laboratory), Computer Science Department, Stanford University, Fall,
1980

Publications

Books

In Search of Mechanisms: Discoveries Across the Life Sciences,
with Carl F. Craver, University of Chicago Press, October 2013.
Choice Outstanding Academic Book of 2014

*Reasoning in Biological Discoveries: Mechanism, Interfield Relations, and Anomaly
Resolution*. Cambridge Studies in Biology and Philosophy. New York:
Cambridge University Press, 2006. Paperback 2009.

Theory Change in Science: Strategies from Mendelian Genetics, New York: Oxford
University Press, Series in History and Philosophy of Biology, 1991.

Editor

Special Issue: *Mechanisms in Biology, Studies in History and Philosophy of Biological
and Biomedical Sciences*. Introduction, "Mechanisms in Biology," by Carl Craver
and Lindley Darden, Guest Editors, v. 36, Issue 2, June 2005.

PSA 1996, Proceedings of the 1996 Biennial Meeting of the Philosophy of Science
Association, Part I: Contributed Papers, *Philosophy of Science*, Supplement to
Volume 63, September 1996.

PSA 1996, Proceedings of the 1996 Biennial Meeting of the Philosophy of Science
Association, Part II: Symposium Papers, *Philosophy of Science*, Supplement to
Volume 64, December 1997.

Articles

- "Multilevel Mechanisms of Evolutionary Change," translated to Chinese by Hsiao-Fan Yeh, *Taiwanese Journal for Science, Technology and Medicine* 21 (October 2015): 209-234.
- "Book Summary: *In Search of Mechanisms: Discoveries Across the Life Sciences*," *Taiwanese Journal for Science, Technology and Medicine* 21 (October 2015): 235-244. "Replies to Comments on Craver and Darden (2013), *In Search of Mechanisms*," *Taiwanese Journal for Science, Technology and Medicine* 21 (October 2015): 273-286.
- "Molecular Biology," (2015, substantial revision) with James Tabery and Monika Piotrowska, *The Stanford Encyclopedia of Philosophy* (2015 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/sum2015/entries/molecular-biology/>
- "Mechanisms versus Causes in Biology and Medicine" in Hsiang-Ke Chao, Szu-Ting Chen, and Roberta L. Millstein (eds.), (2013) *Mechanism and Causality in Biology and Economics*. The Netherlands: Springer, pp. 19-34.
- "Discovering Mechanisms in Molecular Biology: Finding and Fixing Incompleteness and Incorrectness," (2009) in J. Meheus and T. Nickles (eds.), *Models of Discovery and Creativity*. Dordrecht: Springer, pp. 43-55.
- "Reductionism in Biology," (2009) with Carl F. Craver, Invited and Refereed Keynote Article. *Encyclopedia of Life Sciences*. Chichester, UK: John Wiley & Sons, Ltd. <http://www.wels.net> Doi: 10.1002/9780470015902.a0003356
- "Molecular Biology," (2009-2015) with James Tabery, *The Stanford Encyclopedia of Philosophy* (2009 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/entries/molecular-biology/>
- "Thinking Again About Mechanisms," *Philosophy of Science* 75 (5) (2008): 958-969.
- "Mechanisms and Models," in David L. Hull and Michael Ruse (eds.), *Cambridge Companion to Philosophy of Biology*. New York: Cambridge University Press, (2007), pp. 139-159.
- "Flow of Information in Molecular Biological Mechanisms," *Biological Theory* 1 (3) (2006): 280-287.
- "Anomaly Identification and Resolution for the Central Dogma of Molecular Biology," in H-J. Rheinberger and S. de Chadarevian (eds.), *History and Epistemology of Molecular Biology*, Berlin: Max Planck Institute for History of Science, 2006, pp. 127-139.

- "Relations Among Fields: Mendelian, Cytological and Molecular Mechanisms," *Studies in History and Philosophy of Biological and Biomedical Sciences* 36 (2005) 349-371.
- "Strategies for Discovering Mechanisms: Schema Instantiation, Modular Subassembly, Forward/Backward Chaining," *Philosophy of Science (Supplement)* (2002) 69: S354-S365.
- "Strategies in the Interfield Discovery of the Mechanism of Protein Synthesis," with Carl Craver, *Studies in History and Philosophy of Biological and Biomedical Science* 33 (2002) 1-28.
- "Discovering Mechanisms: A Computational Philosophy of Science Perspective," in Klaus P. Jantke and Ayumi Shinohara (eds.), *Discovery Science* (Proceedings of the 4th International Conference, DS2001). New York: Springer-Verlag, pp. 3-15.
- "Discovering Mechanisms in Neurobiology: The Case of Spatial Memory," with Carl Craver, in Peter Machamer, R. Grush, and P. McLaughlin (eds.) (2001), *Theory and Method in Neuroscience*. Pittsburgh, PA: University of Pittsburgh Press, pp. 112-137.
- "Thinking About Mechanisms," with Peter Machamer and Carl Craver, *Philosophy of Science* 67 (2000): 1-25.
Translated to Italian and reprinted: "Riflettere sui meccanismi" in Raffaella Campaner (ed.), *La causalità tra filosofia e scienza*. Bologna: Gedit Edizioni, 2007, pp. 153-168. Translated to Polish and French.
- "Genetics," in Edward Craig (ed.), *Routledge Encyclopedia of Philosophy*, v. 3. New York: Routledge, 1998, pp. 12-16.
- "Anomaly-driven Theory Redesign: Computational Philosophy of Science Experiments," in Terrell W. Bynum and James Moor (eds.), *The Digital Phoenix: How Computers are Changing Philosophy*, Oxford: Blackwell, 1998, pp. 62-78.
Reprinted in Italian, 2001.
- "Recent Work in Computational Scientific Discovery," in Michael G. Shafto and Pat Langley (eds.), *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society*, Mahwah, NJ: Lawrence Erlbaum, 1997, pp. 161-166.
- "Exemplars, Abstractions, and Anomalies: Representations and Theory Change in Mendelian and Molecular Genetics," in Gereon Wolters and James G. Lennox (eds.), *Concepts, Theories, and Rationality in the Biological Sciences: The Second Pittsburgh-Konstanz Colloquium in the Philosophy of Science*. Pittsburgh, PA: University of Pittsburgh Press, 1995, pp. 137-158.
- "Reasoning Strategies in Molecular Biology: Abstractions, Scans, and Anomalies," coauthored with Michael Cook, in D. Hull, M. Forbes, and R. M. Burian (eds.),

- PSA 1994*, v. 2. East Lansing, MI: Philosophy of Science Association, pp. 179-191.
- "Interfield Theories and Strategies for Theory Change," in Hans V. Rappard, Pieter J. Van Strien, Leendert P. Mos, and William J. Baker (eds.), *Annals of Theoretical Psychology*, v. 9, 1993. New York: Plenum Press, pp. 141-144. (A response to W. Woodward and D. Devonis, "Toward a New Understanding of Scientific Change: Applying Interfield Theory to the History of Psychology" same volume.)
- "Protein Sequencing Experiment Planning Using Analogy," coauthored with Brian Kettler, in L. Hunter, D. Searls, and J. Shavlik (eds.), *Proceedings of the First International Conference on Intelligent Systems for Molecular Biology*, Menlo Park, CA: AAAI Press, 1993, pp. 216-224.
- "Character," in *Keywords in Evolutionary Theory*, E. F. Keller and E. Lloyd (eds.), Cambridge, MA: Harvard University Press, 1992, pp. 41-44.
- "Strategies for Anomaly Resolution," in R. Giere (ed.), *Cognitive Models of Science, Minnesota Studies in the Philosophy of Science*, Vol. 15. Minneapolis: University of Minnesota Press, 1992, pp. 251-273.
- "Diagnosing and Fixing Faults in Theories" in J. Shrager and P. Langley (eds.). *Computational Models of Scientific Discovery and Theory Formation*. San Mateo, CA: Morgan Kaufmann, 1990, pp. 319-346.
- "Selection Type Theories," coauthored with Joseph A. Cain, *Philosophy of Science* 56 (1989) 106-129.
- "Hull and Selection," coauthored with Joseph A. Cain, *Biology and Philosophy* 3 (1988), pp. 165-171.
- "Hypothesis Formation Using Part-Whole Interrelations," coauthored with Roy Rada, in David Helman (ed.) *Analogical Reasoning*, Dordrecht: Reidel, 1988, pp. 341-375. (Preprint issued as UMIACS Technical Report, February, 1987, UMIACS-TR-87-17, CS-TR-1832.)
- "Hypothesis Formation via Interrelations," coauthored with Roy Rada, in A. Prieditis (ed.), *Analogica*. Los Altos, California: Morgan Kaufmann, 1988, pp. 109-127. (First Draft issued as UMIACS Technical Report, February, 1986, UMIACS-TR-86-4, CS-TR-1628.)
- "Viewing History of Science as Compiled Hindsight," *AI Magazine* 8 (2) Summer 1987, pp. 33-41. (Issued as UMIACS Technical Report, October, 1986, UMIACS-TR-86-20, CS-TR-1715.) "Darden's Response" to a letter to the editor, *AI Magazine* 8 (4) Winter 1987, p. 11.

- "Relating Two Knowledge Bases: The Role of Identity and Part-Whole," coauthored with Roy Rada and John Eng, in J. C. Boudreaux, B. W. Hamill, and R. Jernigan (eds.), *The Role of Language in Problem Solving 2*. Holland: Elsevier, 1987, pp. 71-90. (Issued as UMIACS Technical Report, February, 1986, UMIACS-TR-86-3, CS-TR-1627.)
- "Reasoning in Theory Construction: Analogies, Interfield Connections, and Levels of Organization," in *Foundations of Biology*, ed. P. Weingartner and G. Dorn, Vienna, Austria, Hölder-Pichler-Tempsky, 1986, pp. 99-107.
- "Reasoning to New Theories: Analogies, Interfield Connections, and Abstract Theory Types," in *Essays on Creativity and Science*, ed. Diane DeLuca, Hawaii Council of Teachers of English, Honolulu, Hawaii, 1986, pp. 25-30.
- "Relations Among Fields in the Evolutionary Synthesis," in *Integrating Scientific Disciplines*, ed. B. Bechtel, Dordrecht: Martinus Nijhoff, 1986, pp. 113-123.
- "Hugo de Vries's Lecture Plates and the Discovery of Segregation," in *Annals of Science* 42 (1985) 233-242.
- "Artificial Intelligence and Philosophy of Science: Reasoning by Analogy in Theory Construction," *PSA 1982 v.2*, ed. T. Nickles and P. Asquith, Philosophy of Science Association, East Lansing, Michigan, pp. 147-161.
- "Reasoning by Analogy in Scientific Theory Construction," in *Proceedings of the 1983 International Machine Learning Workshop*, University of Illinois of Urbana, 1983, pp. 32-38.
- "Aspects of Theory Construction in Biology," in *Logic, Methodology and Philosophy of Science VI. Proceedings of the Sixth International Congress of Logic, Methodology and Philosophy of Science* (Hanover 1979), North-Holland Publishing Co., 1982, pp. 463-477.
- "Theory Construction in Genetics," in *Scientific Discovery: Case Studies*, ed. T. Nickles, Reidel, Dordrecht, Holland, 1980, pp. 151-170.
- "Teaching Philosophy of Biology," *Teaching Philosophy* 2 (1979) 153-161.
- "Discoveries and the Emergence of New Fields in Science," *PSA 1978 v.1*, ed. P. D. Asquith and I. Hacking, Philosophy of Science Association, East Lansing, Michigan, 1978, pp. 149-160.
- "The Heritage of Logical Positivism: A Reassessment," *PSA 1976 v.2*, ed. F. Suppe and P. Asquith, Philosophy of Science Association, East Lansing, Michigan, 1977, pp. 242-258.

"William Bateson and the Promise of Mendelism," *Journal of the History of Biology* 10 (1977) 87-106.

"Interfield Theories," coauthored with Nancy Maull, *Philosophy of Science* 44 (1977) 43-64. Excerpts reprinted in *Interdisciplinary Analysis and Research*, ed. D. Chubin, A. Porter, F. Rossini, and T. Connolly, Lomond Publication, Mt. Airy, Maryland, 1986, pp. 307-321. Excerpts reprinted in Schick, Theodore, Jr. (ed.), *Readings in the Philosophy of Science: From Positivism to Postmodernism*. Mountain View, CA: Mayfield Publishing Company, 2000, pp. 138-147.

"Reasoning in Scientific Change: Charles Darwin, Hugo de Vries, and the Discovery of Segregation," *Studies in the History and Philosophy of Science* 7 (1976) 127-169.

"The Unity of Science: Interfield Theories," coauthored with Nancy Maull-Roth, in *Contributed Papers of the 5th International Congress of Logic, Methodology, and Philosophy of Science*, International Union of History and Philosophy of Science, London, Ontario, Canada, 1975.

Book Reviews

Review of Miguel Garcia-Sancho's *Biology, Computing, and the History of Molecular Sequencing: From Proteins to DNA, 1945-2000* in *Isis: Journal of the History of Science Society* (forthcoming).

Review of James T. Costa's *The Annotated Origin: A Facsimile of the First Edition of On the Origin of Species, by Charles Darwin*, with Introduction and Notes, *Annals of Science* 70 (2013): 417-419. DOI: 10.1080/00033790.2010.518769

Review of William Bechtel's *Discovering Cell Mechanisms*, in *Journal of the History of Biology* (2007): 185-187.

Review of Marcel Weber's *Philosophy of Experimental Biology*, *ISIS* 97 (March 2006): 198-199.

Review of Michael Ruse's *Darwin and Design: Does Evolution Have a Purpose?* in *ISIS*, 95 (2004): 338-339.

Review of Nathaniel C. Comfort's *The Tangled Field: Barbara McClintock's Search for the Patterns of Genetic Control* in *Bulletin of the History of Medicine* 77 (2003) 987-989.

Review of Paul Thagard, *How Scientists Explain Disease*, in *Philosophy of Science* 67 (2000): 352-354.

Review of Donald Gillies, *Artificial Intelligence and Scientific Method*, in *Minds and Machines* 10 (2000): 301-304.

Essay review of William Bechtel and Robert Richardson's *Discovering Complexity in Biology & Philosophy* 12 (1997) 101-107.

Essay review, "Generalizations in Biology," of Kenneth Schaffner's *Discovery and Explanation in the Biomedical Sciences*, in *Studies in History and Philosophy of Science* 27 (1996) 409-419.

Essay review of "Is Artificial Intelligence a Degenerating Program: A Review of Hubert Dreyfus' *What Computers Still Can't Do*," coauthored with John Strom, in *Artificial Intelligence* 80 (1996) 151-170.

- Review of Scott Kleiner's *Logic of Discovery* in *Philosophical Psychology* 8 (1995) 426-429.
- Review of John Losee's *Philosophy of Science and Historical Enquiry*, coauthored with Stefan Amann, in *Quarterly Review of Biology* 65 (1990) 57-58.
- Review of Paul Thagard's *Computational Philosophy of Science*, in *Isis* 81 (1990) 153-154.
- Review of Edward D. Garber, ed., *Genetic Perspectives in Biology and Medicine*, in *Journal of the History of Medicine and Allied Sciences*, 43 (1988) 90-92.
- Review of E. Sober's, *The Nature of Selection: Evolutionary Theory in Philosophical Focus*, in *Teaching Philosophy* 9 (1986) 365-366.
- Review of D. R. Griffin's *The Question of Animal Awareness*, 2nd. ed., in *British Journal for the Philosophy of Science* 34 (1983) 399-403.
- Review of E. A. Carlson's *Genes, Radiation and Society: The Life and Work of H. J. Muller* in *Journal of the History of Medicine and Allied Sciences* 38 (1983) 369-371.
- Review of Garland Allen's *Thomas Hunt Morgan* in *Philosophy of Science* 47 (1980) 662-666.
- Review of A. Caplan's *The Sociobiology Debate* and Michael Ruse's *Sociobiology: Sense or Nonsense?* in *Isis* 71 (1980) 653-654.
- Review of John Farley's *The Spontaneous Generation Controversy from Descartes to Oparin* in *Origins of Life* 9 (1979) 352.

Grants

- National Endowment for the Humanities Collaborative Grant, with Carl Craver, "Discovering Mechanisms: Strategies from the History of Biology," 2011-2013.
- General Research Board Grant, University of Maryland, "Science as an Error Correcting Process," Fall 2008.
- General Research Board Grant, University of Maryland, "Discovering Mechanisms," Spring 2004.
- National Science Foundation, Program in Science and Technology Studies, Scholars Award for Lindley Darden, PI, and Carl Craver, Research Associate, "Discovery of Mechanisms in Molecular Biology," 1999-2002
- General Research Board Grant, University of Maryland, "Adaptive Mutation: Challenge to Molecular Biology and Evolutionary Theory," Fall, 1996.
- National Science Foundation Grant, Program for Visiting Professorships for Women, "A Model for Anomaly Resolution in Scientific Change," Ohio State University, August, 1990-August 1991.
- General Research Board Grant, University of Maryland, "A Model for Anomaly Resolution in Scientific Change," Fall, 1990.

Apple Macintosh Software Development Grant, Instructional Computing Programs, University of Maryland, College Park, "Forming Hypotheses about Parts and Wholes: Graphic and Knowledge Representation Framework," Summer, 1988.

Special Research Assignment, Division of Arts and Humanities, University of Maryland, "Theory Construction in Biology," Fall, 1986.

National Science Foundation Subcontract from Wayne State University, "Reasoning by Analogy in Medical Knowledge Bases," Co-principal investigator with Roy Rada of the National Library of Medicine, 1985-1986.

Funding for Joint Atlantic Seminar in History of Biology (general operating funds and graduate student travel), from Division of Arts and Humanities, Graduate School, and Parents Association, University of Maryland, Spring, 1986.

Travel Grants, International Union for the History and Philosophy of Science, 1977, 1979, 1983.

General Research Board Grant, University of Maryland, "Methods of Theory Construction," August-December, 1984.

American Council of Learned Societies, Research Fellowship, "Reasoning in Theory Construction," July-December, 1982.

General Research Board Grant, University of Maryland, "Construction of the Theory of the Gene," 1981.

National Science Foundation, Program in the History and Philosophy of Science, "General Aspects of Theory Development: A Case Study of The Theory of the Gene," 1978-1979.

National Endowment for the Humanities, "Patterns of Reasoning in the Discovery of New Ideas," Summer Stipend, 1976.

General Research Board Grant, University of Maryland, "The Concept of a Scientific Field," 1975.

Grants to Graduate Students on which LD served as PI

"R. A. Fisher and Randomized Experimental Design," National Science Foundation, Program in Science and Technology Studies, Doctoral Dissertation Research Grant to Lindley Darden, PI as Advisor to Nancy Hall for research expenses related to her dissertation, 2001-2002. Completed 2003.

"Theory Evaluation in Population Genetics," National Science Foundation, Program in Science and Technology Studies, Doctoral Dissertation Research Grant to Lindley

Darden, PI as Advisor to Rob Skipper, for research expenses related to his dissertation, 1999-2000. Completed August 2000

Recent Presentations

Participated in the following meetings as an organizer and/or presenter:

2016: "Building Theories: Hypotheses and Heuristics in Science" Sapienza University of Rome, July 2016

2015: "Authors meet Critics: *In Search of Mechanisms*," and "Speciation Mechanisms, Genomes, and Reproductive Isolation" at the **International Society for History Philosophy and Social Studies of Science (ISHPSSB)**, Montreal, July 2015. Commentator on Sandy Mitchell's "Why after 50 years are protein X-ray crystallographers still in business?" Bogenfest, **Center for Philosophy of Science**, Pittsburgh, March 2015.

2014: "Mechanistic Explanation and Multilevel, Multifield Integration via Mechanism Scaffolding," at conference **Minding the Gap: Research at the Intersection of the Life and Social Sciences**, University of Colorado, Denver, September, 2014. "Discovering Mechanisms: Evaluating Mechanism Schemas," **Computational Bioscience Program, University of Colorado Medical School**, September 29, 2014. "Descartes and Mechanisms: Comparing the 17th C. Mechanical Worldview with the Contemporary New Mechanistic Philosophy of Science" **Soochow University, Taipei, Taiwan** March 5, 2014. Keynote speaker and Author meets Critics session on Craver and Darden, *In Search of Mechanisms*, **Japan-Taiwan Workshop in Philosophy and History of Biology**, National Chung Cheng University, Chia-Yi, Taiwan, March 2014

Recent Talks at universities: University of Colorado Medical School, 2015; Soochow University, Taipei, Taiwan, 2014; Georgia Institute of Technology, 2010; Georgia State University, 2008; Washington University in St. Louis, 2008; University of Georgia, Athens 2006; University of Paris, Sorbonne, 2006; Georgia Institute of Technology, 2004; University of Pittsburgh, 2003; University of Notre Dame, 2000; Pittsburgh's Center for Philosophy of Science Annual Lecture Series, 2000

Other Professional Activities

International Society for History, Philosophy, and Social Studies of Biology, (ISHPSSB)

President, 2001-2003

Chair, ISHPSSB Site Selection Committee, 2003 meeting

Member of ISHPSSB Council, 1999-2001; Chair, ISHPSSB Operations Committee 1999-2001; Committee on Operations of the Society 2015-2017.

Member of the David Hull Prize Committee, 2011; Chair, 2013.

Past-President, Member of the Council, Chair, Nominating Committee, 2003-2005; Member, Nominating Committee 1993-95

Co-chair of the ISHPSSB Poster Session Committee, Brandeis University, July 1993

Member of the Program Committee, ISHPSSB, Northwestern University, July 1991

Philosophy of Science Association

Editorial Board, *Philosophy of Science*, 1981-present

Member, Philosophy of Science Association Committee on Prizes, 2014

Member, Search Committee for journal *Philosophy of Science*

Editor-in-Chief, 2008

Member, Search Committee for journal *Philosophy of Science*

Editor-in-Chief, 1998

Program Chair and Editor of two special issues of the journal

Philosophy of Science containing refereed and edited articles from

the meeting, Philosophy of Science Association Meeting,

October 31-November 3, 1996, Cleveland, Ohio

Elected to Governing Board, 1979-1983.

Consulting Editor, *Studies in History and Philosophy of Biological and Biomedical Sciences*, 2003-present

Program Committee Reviewer and Session Chair, ACM Creativity & Cognition 2011 Conference, Atlanta, GA, November 2011. (ACM=Association of Computing Machinery)

Member-at-large, Section L, History and Philosophy of Science, American Association for the Advancement of Science, 1997-2001

Invited Panel Member, Panel on National Endowment for the Humanities Fellowships, Philosophy subsection, Washington, D. C., July 1998

Advisory Editor, *Artificial Intelligence*, Special Journal Issue on Scientific Discovery, Volume 91, Number 2, April, 1997

Program Committee, American Association of Artificial Intelligence Spring 95 Symposium, Systematic Methods of Scientific Discovery, Stanford, March, 1995.

Co-organizer, with Michiel Noordewier, Workshop on Machine Learning and Molecular Biology, Machine Learning Conference, Rutgers University, July, 1994

Invited Panel Member, National Science Foundation Program for grants in History and Philosophy of Science, 1989-1992

Panel member, ELSI Special Review Committee, National Center for Human Genome Research, National Institutes of Health, June 1994.

Program committee member and session organizer (with Peter Karp), "Artificial Intelligence and Philosophical Foundations," for Conference on Bioinformatics, Integration of Organismic and Molecular Data Bases and Use of Expert Systems in Biology, George Mason University, July, 1990

Program Chair and Local Arrangements, Joint Atlantic Seminar in the History of Biology, University of Maryland, April 1986

Invited Panel Member, NEH Review Panel for grants in Humanities, Science and Technology, May 1984, and March 1987.

Memberships

Philosophy of Science Association

History of Science Society

International Society for History, Philosophy, and
Social Studies of Biology
American Philosophical Association
International Society for Computational Biology

Recent University Service

Departmental Service (for Philosophy unless Committee on the History and Philosophy of Science (CHPS), Committee on Cognitive Studies, or History Department are specified)

Co-Placement Officer for graduate students, 2015-2016
Chair's Advisory Committee, Graduate Admissions, 2014-15
Tenure review committee, fall 2014
Chair's Advisory Committee; Graduate Affairs Committee, 2012-13
Promotion Review Committee, fall 2012
Departmental Chair Search Committee, spring 2012
Departmental News Officer, spring 2009; spring 2011
Placement Officer for graduate students, 1999-2003; fall 2005; 2009-2010
Graduate Admissions Committee, spring 2009
Departmental Salary Committee, elected spring 2007
Search Committee, Assistant Professor in ancient philosophy, 2006-7
Departmental Advisory Committee, elected 2005-2006
Graduate Affairs Committee, fall 2005
Graduate Student Professional Development Seminar, fall 2005
Tenure Review Committee, fall 2005
Search Committee, Visiting Assistant Professor of Philosophy, spring 2005

College and Divisional Service

Search Committee, Assistant Professor of History of Science, 2007
College of Arts and Humanities CORE curriculum subcommittee, 2004-2006

Campus and University Service

Member, University Animal Care and Use Committee, 1985-87,
1997-2007, 2009-10; 2012-present
Provost's Distinguish Scholar-Teacher Selection Committee, 2016
Flagship Fellowship Committee, Graduate School, 2014-15
Phi Beta Kappa University Selection Committee, 2005-2006; 2009; 2015
Provost's Cluster Hire Review Committee, spring 2012

Selected list of courses taught :

History and Philosophy of Modern Biology
Historical and Philosophical Issues in Biotechnology,
History of Microbiology, Biochemistry, and Molecular Biology
History of Evolutionary Theory
Philosophy of the Environment
Philosophy of Biology I and II
Philosophy of Science I and II
Introductory Logic
History of Modern Philosophy

Descartes and Mechanisms
 iSeries Course: Investigating Darwin's Dangerous Idea
 Honors seminar: Investigating Darwin's Dangerous Idea
 Honors seminar on Creativity in Art and Science
 Honors seminar on Secrets of Life: Discoveries in Molecular Biology
 Honors seminar on Philosophy of the Environment
 Graduate CORE course: Philosophy of Science
 Graduate Seminar in History and Philosophy of Science and Technology
 Graduate Seminar on Computational Philosophy of Science
 Graduate Seminar on Analogical Reasoning
 Graduate Seminar on Discovery in Genetics
 Graduate Seminar on History and Philosophy of Molecular Biology
 Graduate Seminar on Unity/Disunity in Science
 Graduate Seminar on Explanation and Theory Change
 Graduate Seminar on Explanation and Unification in Science
 Graduate Seminar on Mechanisms: The 17th C. Mechanical World View
 and Contemporary Mechanisms in Science
 Graduate Seminar on Mechanisms, Causation, and Evolutionary Theory
 Graduate Seminar on Mechanisms: Discovery and Explanation
 Graduate Seminar on Mechanisms and Ontology

Selected Advisees

Joe Cain, MA, 1989, Current position: Professor of History and Philosophy of Biology,
 University College London
 Eric Kupferberg, MA, 1989, Current position: Senior Fellow, College of Professional
 Studies Northeastern University, Boston.
 Pamela Henson, Ph.D., 1990, Current position: Historian, The Smithsonian Institution,
 Washington, DC
 Martha Keyes, MA, 1996 (did not seek academic position)
 Carl F. Craver, 1999, Postdoctoral fellow, Current position: Professor of Philosophy,
 Washington University at St. Louis
 Robert Skipper, Jr., Ph.D. 2000, Current position: Associate Professor and Chair of
 Philosophy, University of Cincinnati
 Nancy Hall, MA 1995, Ph.D. 2002, Current position: Associate Professor, University of
 Delaware; Research Associate, Department of Philosophy, University of
 Maryland, College Park.
 Jason Shepard, MA 2004. Attended law school.
 Jason Baker, BA with honors in Philosophy, 2004; currently Ph.D. student in Bioethics,
 University of Pittsburgh
 Tudor Baetu, FQRSC Postdoctoral Fellow, 2008-2010, with support from the Province of
 Quebec, Canada; currently: faculty member, University of Bristol
 Barros, D. Benjamin (2008), MA 2013. "Natural Selection as a Mechanism," *Philosophy
 of Science* 75: 306-322. Philosophy of Science Association Graduate Student
 Essay Prize for 2006. Current position: Dean and Professor of Law, Toledo
 College of Law, Toledo, Ohio

Lane DesAutels, Ph.D. 2014, Dissertation: "Mechanism and Chance: Toward an Account of Stochastic Mechanism for the Life Sciences". Currently: Assistant Professor of Philosophy & Religion, Missouri Western State University, St. Joseph, Missouri