

CURRICULUM VITAE OF GARY HATFIELD (March, 2017)

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Education B.A., B.F.A, Wichita State University, 1974
M.A., history of science, University of Wisconsin, Madison, 1976
M.A., philosophy, University of Wisconsin, Madison, 1977
Ph.D., history of science/philosophy/psychology, UW, Madison, 1979

Teaching Positions

Assistant Professor of Philosophy, Harvard, 1979-81
Assistant Professor of Philosophy, Johns Hopkins, 1981-87
Associate Professor of Philosophy, Pennsylvania, 1987-91
Professor of Philosophy, Pennsylvania, from 1991
Adam Seybert Prof. in Moral and Intellectual Philosophy, from 1999

Fellowships and Awards

Daniel S. Pajes Prize in Art History, 1971
Wisconsin Alumni Research Foundation Fellowship, 1974-75, 1978-79
National Science Foundation Graduate Fellowship, 1975-78
Hibbard Award (for study in Germany), summer, 1977
Vilas Travel Fellowship (doctoral research, Germany), summer, 1978
Research Associate in Psychology, Wisconsin, summer, 1980
ACLS Fellowship for Recent PhDs, 1983
Penn Summer Grant for Course Preparation, 1989
Research Group "Mind and Brain," ZiF, Bielefeld, summer, 1990
Research Group "Perception and Evolution," ZiF, Bielefeld, 1995-96
Co-director, Provost's Faculty Seminar, "The Power of Sight," 1996-99
Penn Research Foundation Grant, 2000-01
Penn Museum International Research Conference Funding, 2007
IRCS Workshop Funding, 2009
Penn Research Foundation Grant, 2009
Max Planck Institute for the History of Science, Summer Fellowship, Berlin, 2009
NSF Grant for a post-doctoral fellow in history and philosophy of perception, 2011-13
Mellon Faculty Fellow, Penn Humanities Forum, 2014-15
NEH Grant for work on the history of perceptual theory, 2015
Visiting Scholar, Logic & Phil. of Science, Univ. of California, Irvine, May-June 2016

Publications

Books

1. *The Natural and the Normative: Theories of Spatial Perception from Kant to Helmholtz* (Cambridge: MIT Press/Bradford Books, 1990), xii+366.
2. Translation of Kant's *Prolegomena*, with general introduction, notes, and selections from the *Critique of Pure Reason*. Cambridge Texts in the History of Philosophy (Cambridge: Cambridge University Press, 1997), xlv+188.
Revised edition with additional *Critique* selections and background source material (2004), xlv+223.
3. Edition of Kant's *Prolegomena*, with translator's introduction, apparatus, and notes; in *Theoretical Philosophy After 1781*, ed. by Henry Allison and Peter Heath, Cambridge Edition of the Works of Immanuel Kant (Cambridge: Cambridge University Press, 2002).

4. *Descartes and the Meditations* (London: Routledge, 2003), xxi+353.
Translation of same, Chinese simplified characters, by Shang Xin Jian, Peking University (Guilin City: Guangxi Normal University Press, 2007).
Translation of same, Chinese complex characters, by Chou Chun-tang, Huaan University, Taiwan (Taipei: Wu Nan Press, 2009).
5. *Perception and Cognition: Essays in the Philosophy of Psychology* (Oxford: Clarendon Press, 2009).
A collection of the author's essays, including three previously unpublished.
6. *Visual Experience: Sensation, Cognition, and Constancy*, ed. Gary Hatfield and Sarah Allred (Oxford: Oxford University Press, 2012).
7. *Evolution of Mind, Brain, and Culture*, ed. Gary Hatfield and Holly Pittman (Philadelphia: University of Pennsylvania Press, 2013).
8. *Descartes' Meditations*, 2nd ed., Routledge Guides to the Great Books (London: Routledge, 2014), xxi + 364 p. Augmented and fully revised version of #4.

Articles

1. William Epstein, Gary Hatfield, and Gerard Muise. "Perceived Shape at a Slant as a Function of Processing Time and Processing Load." *Journal of Experimental Psychology: Human Perception and Performance*, 3 (1977), 473-483.
2. William Epstein and Gary Hatfield. "Functional Equivalence of Masking and Cue Reduction in Perception of Shape at a Slant." *Perception and Psychophysics*, 23 (1978), 137-144.
3. William Epstein and Gary Hatfield. "The Locus of Masking Shape-at-a-Slant." *Perception and Psychophysics*, 24 (1978), 501-504.
4. "Force (God) in Descartes' Physics." *Studies in History and Philosophy of Science*, 10 (1979), 113-140. Reprinted in *René Descartes: Critical Assessments*, ed. by G. Moyal, 4 vols. (New York: Routledge, 1991), 4:123-152; and in *Descartes*, ed. by J. Cottingham, Oxford Readings in Philosophy (Oxford: Oxford University Press, 1998), pp. 281-310.
5. Gary Hatfield and William Epstein. "The Sensory Core and the Medieval Foundations of Early Modern Perceptual Theory." *Isis*, 70 (1979), 363-384.
6. Stephen M. Kosslyn and Gary Hatfield. "Representation without Symbol Systems." *Social Research*, 51 (1984), 1019-1045.
7. "Descartes's *Meditations* as Cognitive Exercises." *Philosophy and Literature*, 9 (1985), 41-58. Reprinted in *Descartes*, ed. by Tom Sorell (Aldershot: Ashgate, 1999), pp. 83-100.
8. "First Philosophy and Natural Philosophy in Descartes." In *Philosophy, Its History and Historiography*, ed. by A. J. Holland (Dordrecht: Reidel, 1985), 149-164.
9. "Spatial Perception and Geometry in Kant and Helmholtz." In *PSA 1984* (East Lansing, MI: Philosophy of Science Association, 1985), 2:569-587.
10. Gary Hatfield and William Epstein. "The Status of the Minimum Principle in the Theoretical Analysis of Vision." *Psychological Bulletin*, 97 (1985), 155-186.
11. "The Senses and the Fleshless Eye: The *Meditations* as Cognitive Exercises." In *Essays on Descartes' Meditations*, ed. by Amelie Rorty (Berkeley: University of California Press, 1986), 45-79.
12. "Cognition and Epistemic Reliability: Comments on Goldman." In *PSA 1986*, ed. by A. Fine and P. Machamer, 2 vols. (East Lansing, MI: Philosophy of Science Association, 1987), 2:312-318.
13. "Representation and Content in Some (Actual) Theories of Perception." *Studies in History and Philosophy of Science*, 19 (1988), 175-214.
14. "Neuro-Philosophy Meets Psychology: Reduction, Autonomy, and Physiological Constraints." *Cognitive Neuropsychology*, 5 (1988), 723-746.
15. "Science, Certainty, and Descartes." In *PSA 1988*, 2 vols. (East Lansing, MI: Philosophy of Science Association, 1989), 2:249-262.
16. "Computation, Representation, and Content in Noncognitive Theories of Perception." In *Rerepresentation: Readings in the Philosophy of Mental Representation*, ed. by Stuart Silvers (Boston: Kluwer, 1989), 255-288.
17. "Gibsonian Representations and Connectionist Symbol-Processing: Prospects for Unification." *Psychological Research*, 52 (1990), 243-252.
18. "Metaphysics and the New Science." In *Reappraisals of the Scientific Revolution*, ed. by David Lindberg and Robert Westman (Cambridge: Cambridge University Press, 1990), 93-166.

19. "Reason, Nature, and God in Descartes." *Science in Context*, 3 (1990), 175-201.
20. "Representation in Perception and Cognition: Connectionist Affordances." In *Philosophy and Connectionist Theory*, ed. by W. Ramsey, D. Rumelhart, and S. Stich (Hillsdale, NJ: Lawrence Erlbaum, 1991), 163-195.
21. "Representation and Rule-Instantiation in Connectionist Systems." In *Connectionism and the Philosophy of Mind*, ed. by T. Horgan and J. Tienson (Boston: Kluwer, 1991), 90-112.
22. "Color Perception and Neural Encoding: Does Metameric Matching Entail a Loss of Information?" In *PSA 1992*, ed. by David Hull and Mickey Forbes, 2 vols. (East Lansing, MI: Philosophy of Science Association, 1992), 1:492-504.
23. "Descartes' Physiology and Its Relation to His Psychology." In *Cambridge Companion to Descartes*, ed. by John Cottingham (Cambridge: Cambridge University Press, 1992), 335-370.
24. "Empirical, Rational, and Transcendental Psychology: Psychology as Science and as Philosophy." In *Cambridge Companion to Kant*, ed. by Paul Guyer (Cambridge: Cambridge University Press, 1992), 200-227.
25. "Helmholtz and Classicism: The Science of Aesthetics and the Aesthetics of Science." In *Hermann von Helmholtz and the Foundations of Nineteenth-Century Science*, ed. by David Cahan (Berkeley, Los Angeles, London: University of California Press, 1993), 522-558.
26. "Reason, Nature, and God in Descartes" (expanded version). In *Essays on the Philosophy and Science of René Descartes*, ed. by Stephen Voss (New York: Oxford University Press, 1993), 259-287.
27. Commentary on Dennis Proffitt, "A Hierarchical Approach to Perception." In *Foundations of Perceptual Theory*, ed. by S. C. Masin (Amsterdam: Elsevier, 1993), pp. 93-98.
28. "Repräsentation und kognitive Regeln in konnektionistischen Systemen." In *Interdisziplinäre Perspektiven der Kognitionsforschung*, ed. by E. Scheerer and H. Hildebrandt (Frankfurt am Main: Verlag Peter Lang, 1993), 132-155.
29. William Epstein and Gary Hatfield. "Gestalt Psychology and the Philosophy of Mind," *Philosophical Psychology*, 7 (1994), 163-81.
30. "Psychology as a Natural Science in the Eighteenth Century," *Revue de Synthèse*, 115 (1994), 375-391.
31. "Remaking the Science of Mind: Psychology as a Natural Science." In Christopher Fox, Roy Porter, and Robert Wokler (eds.), *Inventing Human Science* (Berkeley: University of California Press, 1995), 184-231.
32. "Philosophy of Psychology as Philosophy of Science." In *PSA 1994*, ed. by David Hull, Mickey Forbes, and Richard Burian, 2 vols. (East Lansing, MI: Philosophy of Science Association, 1995), vol. 2, pp. 19-23.
33. "Review Essay: The Importance of the History of Science for Philosophy in General," review of books by Daniel Garber and Michael Friedman, *Synthese*, 106 (1996), 113-138.
34. "Was the Scientific Revolution Really a Revolution in Science?" In Jamil Ragep and Sally Ragep (eds.), *Tradition, Transmission, Transformation*, Collection de travaux de l'Académie internationale d'histoire des sciences (Leiden: Brill, 1996), 489-525.
35. "The Workings of the Intellect: Mind and Psychology." In *Logic and the Workings of the Mind: The Logic of Ideas and Faculty Psychology in Early Modern Philosophy*, ed. Patricia Easton. North American Kant Society Publications 5 (Atascadero, Calif.: Ridgeview Publishing Co., 1997), pp. 21-45.
36. "The Cognitive Faculties." In *Cambridge History of Seventeenth Century Philosophy*, ed. by M. Ayers and D. Garber (Cambridge: Cambridge University Press, 1998), pp. 953-1002.
37. "Wundt and Psychology as Science: Disciplinary Transformations," *Perspectives on Science* 5 (1997), 349-82.
38. "Attention in Early Scientific Psychology." In *Visual Attention*, ed. by R. D. Wright (New York: Oxford University Press, 1998), pp. 3-25.
39. "Kant and Empirical Psychology in the 18th Century." *Psychological Science*, 9 (1998), 423-428.
40. "Mental Functions as Constraints on Neurophysiology: Biology and Psychology of Vision." In *Where Biology Meets Psychology: Philosophical Essays*, ed. by V. Hardcastle (Cambridge: MIT Press, 1999), pp. 251-71.
41. "Descartes' Naturalism About the Mental." In *Descartes' Natural Philosophy*, ed. by Stephen Gaukroger, John Schuster, and John Sutton (London: Routledge, 2000), pp. 630-58.
42. "The Brain's 'New' Science: Psychology, Neurophysiology, and Constraint," *Philosophy of Science* 67 (2000), S388-403.
43. "René Descartes," in *The Modern Philosophers: Descartes to Nietzsche*, ed. by Steven Emmanuel (Oxford: Blackwell, 2001), pp. 1-27.
44. "Epistemology and Science in the Image of Modern Philosophy: Rorty on Descartes and Locke." In *Future Pasts: Reflections on the History and Nature of Analytic Philosophy*, ed. by Juliet Floyd and Sanford Shieh (Oxford University Press, 2001), pp. 393-413.

45. "The *Prolegomena* and the *Critiques of Pure Reason*," in *Kant und die Berliner Aufklärung*, ed. by V. Gerhardt, R. P. Horstmann, and R. Schumacher (Berlin: de Gruyter, 2001), pp. 185-208.
46. "Perception as Unconscious Inference," *Perception and the Physical World: Psychological and Philosophical Issues in Perception*, ed. by Dieter Heyer and Rainer Mausfeld (New York: Wiley, 2002), pp. 115-43.
47. "Psychology, Philosophy, and Cognitive Science: Reflections on the History and Philosophy of Experimental Psychology," *Mind and Language* 17 (2002), 207-32.
48. "Sense-Data and the Philosophy of Mind: Russell, James, and Mach," *Principia* 6 (2002), 203-30.
49. "Behaviorism and Psychology," in *Cambridge History of Philosophy, 1870-1945*, ed. by Thomas Baldwin (Cambridge: Cambridge University Press, 2003), pp. 640-8.
50. "Psychology Old and New," in *Cambridge History of Philosophy, 1870-1945*, ed. by Thomas Baldwin (Cambridge: Cambridge University Press, 2003), pp. 93-106.
51. "Representation and Constraints: The Inverse Problem and the Structure of Visual Space," *Acta Psychologica* 114 (2003), 355-78.
52. "Objectivity and Subjectivity Revisited: Color as a Psychobiological Property," *Colour Perception: Mind and the Physical World*, ed. by Rainer Mausfeld and Dieter Heyer (Oxford: Oxford University Press, 2003), pp. 187-202.
53. "What Were Kant's Aims in the Deduction?," *Philosophical Topics* 31 (2003), 165-98.
54. "Seeing-Dretske," *Philosophical Studies* 120 (2004), 19-35.
55. "Sense-Data and the Mind-Body Problem," *Perception and Reality: From Descartes to the Present*, ed. by Ralph Schumacher (Berlin: Mentis Verlag, 2004), pp. 305-31.
56. "Force and Mind-Body Interaction," in *Science and Cultural Diversity: Proceedings of the XXIst International Congress of the History of Science*, ed. by Juan Jose Saldana (Mexico City: Autonomous National University of Mexico, 2005), pp. 3074-89.
57. "History of Philosophy as Philosophy," in *Analytic Philosophy and History of Philosophy*, ed. by Tom Sorell and G. A. J. Rogers, Mind Association Occasional Series (Oxford: Oxford University Press, 2005), pp. 82-128.
58. "Introspective Evidence in Psychology," in *Scientific Evidence: Philosophical Theories and Applications*, ed. by Peter Achinstein (Baltimore, MD: Johns Hopkins University Press, 2005), pp. 259-86.
59. "Rationalist Theories of Sense Perception and Mind-Body Relation," in *Blackwell Companion to Rationalism*, ed. by Alan Nelson (Oxford: Blackwell, 2005), pp. 31-60.
60. "The Cartesian Circle," in *Blackwell Guide to Descartes' Meditations*, ed. by Stephen Gaukroger (Oxford: Blackwell, 2005), pp. 122-41.
61. "Kant on the Perception of Space (and Time)," in *Cambridge Companion to Kant and Modern Philosophy*, ed. by Paul Guyer (Cambridge: Cambridge University Press, 2006), pp. 61-93.
62. "The *Passions of the Soul* and Descartes' Machine Psychology," *Studies in History and Philosophy of Science* 38 (2007), pp. 1-35.
63. "The Reality of Qualia," *Erkenntnis* 66 (2007), pp. 133-68.
64. "Did Descartes Have a Jamesian Theory of the Emotions?" *Philosophical Psychology* 20 (2007), pp. 413-40.
65. "Animals," in *Companion to Descartes*, ed. by J. Broughton and J. Carriero (Oxford: Blackwell, 2007), pp. 404-25.
66. "Mental Acts and Mechanistic Psychology in Descartes' *Passions*," in *Descartes and the Modern*, ed. by Neil Robertson, Gordon McOuat, and Tom Vinci (Newcastle upon Tyne: Cambridge Scholars Publishing, 2008), 49-71.
67. "The Sixth Meditation: Mind-Body Relation, External Objects, and Sense Perception," in *Meditationen ueber die Erste Philosophie*, ed. by Andreas Kemmerling (Berlin: Akademie, 2009), 123-46.
68. "Hume, Space, and the Self, Review Essay: Marina Frasca-Spada: *Space and the Self in Hume's Treatise*. Cambridge: Cambridge University Press, 2002." *British Journal for the History of Philosophy* 17.5 (2009), 1011-19.
69. "Psychology in Philosophy: Historical Perspectives," in *Psychology and Philosophy: Inquiries into the Soul from Late Scholasticism to Contemporary Thought*, ed. by Sara Heinämaa and Martina Reuter (Dordrecht: Springer, 2009), 1-25.
70. "Rationalist Roots of Modern Psychology," in *Routledge Companion to Philosophy of Psychology*, ed. by John Symons and Paco Calvo (London: Routledge, 2009), 3-21.

71. "Mandelbaum's Critical Realism," in *Maurice Mandelbaum and American Critical Realism*, ed. by Ian Verstegen (London: Routledge, 2010), 46-64.
72. "Kant and Helmholtz on Primary and Secondary Qualities," in *Primary and Secondary Qualities: The Modern Debate*, ed. by Larry Nolan (Oxford: Oxford University Press, 2011), 304-38.
73. "Transparency of Mind: The Contributions of Descartes, Leibniz, and Berkeley to the Genesis of the Modern Subject," in *Departure for Modern Europe: A Handbook of Early Modern Philosophy (1400-1700)*, ed. by Hubertus Busche (Hamburg: Felix Meiner Verlag, 2011), pp. 361-75.
74. "Philosophy of Perception and the Phenomenology of Visual Space," *Philosophic Exchange* 42 (2011), 31-66.
75. "Mechanizing the Sensitive Soul," in *Matter and Form in Early Modern Science and Philosophy*, ed. Gideon Manning (Leiden: Brill, 2012), pp. 151-86.
76. "Psychology," in *The Cambridge History of Philosophy in the Nineteenth Century (1790-1870)*, ed. Allen W. Wood and Songsuk Susan Hahn (Cambridge: Cambridge University Press, 2012), pp. 241-262.
77. "Koffka, Koehler, and the 'Crisis' in Psychology," *Studies in History and Philosophy of Science* 43 (2012), 483-92.
78. "Psicologia, Filosofia e Ciencia Cognitiva: Reflexiones Sobre a Historia e a Filosofia da Psicologia Experimental," trans. Saulo de Freitas Araujo and Gary Hatfield. In *Historia e Filosofia da Psicologia: Perspectivas Contemporaneas*, ed. Saulo de Freitas Araujo (Juiz de Fora Brasil: Editora UFJF, 2012), pp. 223-58. (Original English version, 2002.)
79. "Phenomenal and Cognitive Factors in Spatial Perception," in *Visual Experience*, ed. Gary Hatfield and Sarah Allred (Oxford: Oxford University Press, 2012), pp. 35-62.
80. "Descartes on Sensory Representation, Objective Reality, and Material Falsity," in *Descartes' Meditations: A Critical Guide*, ed. Karen Detlefsen (Cambridge: Cambridge University Press, 2013), pp. 127-50.
81. "Perception and Sense Data," in *Oxford Handbook of the History of Analytical Philosophy*, ed. M. Beaney (Oxford: Oxford Univ. Press, 2013), pp. 948-74.
82. "Psychology, Epistemology, and the Problem of the External World: Russell and Before," in *Historical Turn in Analytic Philosophy*, ed. Erich Reck (London: Macmillan, 2013), pp. 171-200.
83. "Russell's Progress: Spatial Dimensions, the From-Which, and the At-Which," in *Self, World, and Art: Metaphysical Topics in Kant and Hegel*, ed. Dina Emundts (Berlin: De Gruyter, 2013), pp. 321-44.
84. "Activity and Passivity in Theories of Perception: Descartes to Kant," in *Active Perception in the History of Philosophy: From Plato to Modern Philosophy*, ed. Jose Filipe Silva and Mikko Yrjonsuri (Berlin: Springer, 2014), pp. 275-89.
85. "The Cartesian Psychology of Antoine Le Grande," in *Cartesian Empiricisms*, ed. Mihnea Dobre and Tammy Nyden (Berlin: Springer, 2014), pp. 251-74.
86. "Cognition," in *The Routledge Handbook of Embodied Cognition*, ed. Lawrence Shapiro (London: Routledge, 2014), pp. 361-73.
87. "The Emergence of Psychology," in *Oxford Handbook of British Philosophy in the Nineteenth Century*, ed. W. J. Mander (Oxford: Oxford University Press, 2014), pp. 324-44.
88. "Kant on the Phenomenology of Touch and Vision," *Kant's Lectures on Anthropology: A Critical Guide*, ed. Alix Cohen (Cambridge: Cambridge University Press, 2014), pp. 38-56.
89. "Psychological Experiments and Phenomenal Experience in Size and Shape Constancy," *Philosophy of Science* 81.5 (2014), 940-53.
90. "On Natural Geometry and Seeing Distance Directly in Descartes," in *Mathematizing Space: The Objects of Geometry from Antiquity to the Early Modern Age*, ed. Vincenzo de Risi (Berlin: Birkhaeuser, 2015), pp. 157-192.
91. "Natural Geometry in Descartes and Kepler," *Res Philosophica* 92 (2015), 117-148. (*Res Philosophica* continues *Modern Schoolman*.)
92. "Radical Empiricism, Critical Realism, and American Functionalism: James and Sellars," *HOPOS: The Journal of the International Society for the History of Philosophy of Science* 5 (2015), 129-153.
93. "Perception in Philosophy and Psychology in the 19th and Early 20th Centuries," in *Oxford Handbook of the Philosophy of Perception*, ed. Mohan Matthen (Oxford: Oxford University Press, 2015), pp. 100-117.
94. "Objectifying the Phenomenal in Experimental Psychology: Titchener and Beyond," *Philosophia Scientiae* 19 (2015), 73-94.
95. "L'Homme in Psychology and Neuroscience," in *Descartes' Treatise on Man and Its Reception*, ed. Stephen Gaukroger and Delphine Antoine-Mahut (New York: Springer, 2016), pp. 269-85.

96. "L'attention chez Descartes: aspect mental et aspect physiologique," *Les Etudes philosophiques* 120 (2017), 7-25.
97. "Perceiving as Having Subjectively Conditioned Appearances," *Philosophical Topics* 44.2 (2016), 145-72.
98. "Descartes: New Thoughts on the Senses," *British Journal for the History of Philosophy*, forthcoming in a special issue on Mental Powers in Early Modern Philosophy, ed. F. Boccaccini & A. Marmodoro (31 pages in ms).
99. "Geometry and Visual Space from Antiquity to the Early Moderns," in: *Space*, edited by Andrew Janiak, Oxford Philosophical Concepts (New York: Oxford University Press), forthcoming (37 pages in ms).

Reviews and *brevia*:

1. "Helmholtz and the Physiological Foundations of Music Perception." In *Proceedings of the Sixteenth International Congress of the History of Science* (Bucharest, 1981), vol. 4, 299-307.
2. Review of Paul Sherman, *Colour Vision in the Nineteenth Century: The Young-Helmholtz-Maxwell Theory*, in *Bulletin of the History of Medicine*, 57 (1983), 304-305.
3. Review of John Losee, *A Historical Introduction to the Philosophy of Science*, 2nd edition, in *Teaching Philosophy*, 6 (1983), 76-78.
4. Review of Harry Paul, *The Edge of Contingency: French Catholic Reaction to Scientific Change from Darwin to Duhem*, in *The Historian*, 45 (1983), 410-411.
5. Review of Diogenes Allen, *Mechanical Explanations and the Ultimate Origin of the Universe According to Leibniz*, in *The Eighteenth Century: A Current Bibliography*, n.s. 9 (1983), VI:642-643.
6. "Cartesio medico della beatitudine mentale," review of Richard Carter, *Descartes' Medical Philosophy: The Organic Solution to the Mind-Body Problem*, in *KOS: Revista di cultura e storia delle scienze mediche, naturali e umane*, vol. 1, no. 7 (Sept. 1984), 8-9.
7. Review of Gideon Freudenthal, *Atom und Individuum im Zeitalter Newtons*, in *The Eighteenth Century: A Current Bibliography*, n.s. 8 (New York: AMS Press, 1986), 189-190.
8. "Perception." *Encyclopedia Americana* (Danbury: Grolier, 1986), 21:689-693.
9. Review of Husain Sarkar, *A Theory of Method*, in *Isis*, 77 (1986), 125.
10. Review of Alvin Goldman, *Epistemology and Cognition*, in *Philosophical Review*, 98 (1989), 386-390.
11. Review of Marinus Dirk Stafleu, *Theories at Work: On the Structure and Functioning of Theories in Science, in Particular During the Copernican Revolution*, in *Isis*, 81 (1990), 340-341.
12. Review of Manfred Kuehn, *Scottish Common Sense in Germany, 1768-1800: A Contribution to the History of Critical Philosophy*, in *Isis*, 81 (1990), 574-575.
13. Review of Salvatore Nicolosi, *Il dualismo da Cartesio a Leibniz: Cartesio, Cordemoy, La Forge, Malebranche, Leibniz*, in *Isis*, 82 (1991), 136-137.
14. Review of Jean-Pierre Schobinger (ed.), *Die Philosophie des 17. Jahrhunderts. Volume 3: England*, in *Isis*, 83 (1992), 126-128.
15. Reply to N. Pastore's review of *The Natural and the Normative*, *Journal of the History of the Behavioral Sciences*, 29 (1993), 57-8.
16. Review of H. B. Barlow, C. M. Blakemore, and M. Weston-Smith (eds.), *Images and Understanding: Thoughts about Images, Ideas about Understanding*, in *Philosophical Psychology*, 6 (1993), 212-16.
17. Review of Theo C. Meyering, *Historical Roots of Cognitive Science: The Rise of a Cognitive Theory of Perception from Antiquity to the Nineteenth Century*, in *Philosophy of Science*, 60 (1993), 662-4.
18. Review of Menachem Fisch and Simon Schaffer (eds.), *William Whewell: A Composite Portrait*, in *Isis*, 84 (1993), 811.
19. Review of R. Steven Turner *In the Eye's Mind: Vision and the Helmholtz-Hering Controversy*, in *Isis*, 86 (1995), 664-5.
20. Review of Roger Ariew and Marjorie Grene (eds.), *Descartes and His Contemporaries: Meditations, Objections, and Replies*, in *Journal of the History of Philosophy*, 35 (1997), 624-6.
21. "Hermann von Helmholtz." In *Encyclopedia of Empiricism*, ed. E. Barbanell and D. Garrett (Westport, Conn.: Greenwood Press, 1997), pp. 129-31.
22. "Ralph Cudworth." "Guillaume Lamy." "Daniel Sennert." In *Cambridge History of Seventeenth Century Philosophy*, ed. by M. Ayers and D. Garber (Cambridge: Cambridge University Press, 1998), pp. 1418, 1444, 1463.

23. "Scientific Method." *Routledge Encyclopedia of Philosophy*, 10 vols., ed. by Edward Craig (London and New York: Routledge, 1998), 8:576-581. Reprinted (in abbreviated form) in *Shorter Routledge Encyclopedia of Philosophy* (London and New York: Routledge, 2005), 946-50.
24. Review of John W. Yolton, *Perception and Reality: A History from Descartes to Kant*, in *Archiv für Geschichte der Philosophie*, 80 (1998), 226-8.
25. "René Descartes." *Encyclopedia of Psychology*, ed. by A. E. Kazdin, 8 vols. (New York: Oxford University Press, 2000), 2:482-5.
26. "Perception, History of the Concept," in *International Encyclopedia of the Social and Behavioral Sciences*, ed. by N. J. Smelser and P. B. Balters (Amsterdam: Pergamon, 2001).
27. Review of Michael Oberhausen and Riccardo Pozzo (eds.), *Vorlesungsverzeichnisse der Universität Königsberg (1720-1804)*, 2 vols., *Forschungen und Materialien zur Universitätsgeschichte*, 1 (Stuttgart: frommann-holzboog, 1999), in *Isis* 93 (2002), 693-4.
28. "Psychology and Pneumatology," in *Storia della scienza, Vol. V, La Rivoluzione scientifica*, ed. D. Garber (Istituto della Enciclopedia Italiana, 2002).
29. "Epistemology," "Rationalism," and "Reason," in *Encyclopedia of the Enlightenment*, ed. by Alan C. Kors, 4 vols. (Oxford University Press, 2003), 2:10-20, 3:392-8, 404-9.
100. "On the Function of Colour Vision," commentary on L. T. Maloney, in *Colour Perception: Mind and the Physical World*, ed. by Rainer Mausfeld and Dieter Heyer (Oxford: Oxford University Press, 2003), pp. 301-2.
30. "Epistemology," in the *Europe 1450 to 1789: Encyclopedia of the Early Modern World*, 6 vols., ed. by Jonathan Dewald (New York: Charles Scribner's Sons/Thomson-Gale, 2004), 2:314-17.
31. Review of Lilli Alanen, *Descartes's Concept of Mind* (Cambridge, Mass.: Harvard University Press, 2003), in *British Journal for the History of Philosophy* 13 (2005), 168-172.
32. Review of Desmond M. Clarke, *Descartes's Theory of Mind* (Oxford: Clarendon Press, 2003), in *International Philosophy Quarterly* 45 (2005), 124-127.
33. Review of Michael Tye, *Consciousness and Persons: Unity and Identity* (Cambridge, Mass.: The MIT Press, 2003), in *Review of Metaphysics* 59 (2006), 687-688.
34. Review of Janet Broughton, *Descartes' Method of Doubt* (Princeton: Princeton University Press, 2002), in *Mind* 115 (2006), 394-399.
35. "Psychology and Philosophy," in *Continuum Encyclopedia of British Philosophy*, ed. by Anthony Grayling, Andrew Pyle, and Naomi Goulder, 4 vols. (London: Thoemmes, 2006), 3:2613-2621.
36. Review of Desmond M. Clarke, *Descartes: A Biography* and Richard Watson, *Cogito, Ergo Sum: The Life of René Descartes*, *Isis* 99 (2008), 177-178.
37. "René Descartes," *Stanford Encyclopedia of Philosophy* (Winter 2008 Edition), Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/win2008/entries/descartes/>>.
38. Review of John Bickle (ed.), *Philosophy and Neuroscience* (Oxford UP, 2009), for *Notre Dame Philosophical Reviews* (2010), 3000 words.
39. "Good Gestalt: Metzger on Seeing," review of Metzger, *Laws of Seeing*, *Metascience* 20 (2011), 81-85.
40. Review of Michael Friedman and Alfred Nordmann, eds., *The Kantian Legacy in Nineteenth-Century Science*, *HOPOS: The Journal of the International Society for the History of Philosophy of Science* 2 (2012), 172-177.
41. Review of David Hyder, *The Determinate World: Kant and Helmholtz on the Physical Meaning of Geometry*, *Isis* 103 (2012), 769-770.
42. "René Descartes," in *The Stanford Encyclopedia of Philosophy* (Spring 2014 Edition), ed. Edward N. Zalta.
43. "Sensation," in *Encyclopedia of Aesthetics*, ed. Michael Kelly, 6 vols. (Oxford: Oxford University Press, 2014), 5: 549-53.
44. Review of Mogens Laerke, Justin E. H. Smith, and Eric Schliesser, eds., *Philosophy and Its History: Aims and Methods in the Study of Early Modern Philosophy*, *Notre Dame Philosophical Reviews* (2014), 2600 words.
45. "Is anybody there?" Review of Jennifer M. Groh, *Making Space: How the brain knows where things are* (Belknap Press, 2014). *Times Literary Supplement*, 25 November 2015.
46. Review of Stephen Gaukroger, *The Collapse of Mechanism and the Rise of Sensibility: Science and the Shaping of Modernity, 1680-1760*. *British Journal for the History of Philosophy*, 24.1 (2016), 181-185.
47. "Animal," "Nature," and "Perception," entries in *The Cambridge Descartes Lexicon*, ed. Lawrence Nolan (Cambridge: Cambridge University Press, 2016), 19-26, 535-7, 574-9.

Public Lectures, Keynotes, Plenaries

1. "Science Examines the Arts: Helmholtz on Painting and Music," Lecture series celebrating the opening of the John Crerar Science Library, University of Chicago, 1985.
2. "An Historical Approach to the Mind-Body Problem," Johns Hopkins Special Evening Lecture Series, "Mind and Brain: The Inner Frontier," 1986.
3. "Reason, Nature, and God in Descartes," Featured Lecture, Conference Celebrating the 350th Anniversary of Descartes's *Discourse*, San Jose, 1988.
4. "Is the Mind the Brain?" Alumni/Faculty Exchange, "The Mind and the Brain," Penn 250th Celebration, 1990.
5. "Descartes and the Mechanistic Universe: World without Ends?" Philomathean Lecture Series, Penn, March, 1991.
6. "Epistemology and the Image of Modern Philosophy: Rorty on Descartes and Locke," Austin-Hempel Lecture, Dalhousie University, June, 1991.
7. "Descartes and the Mind," Descartes at 400 Lecture Series, Tufts University, December, 1996.
8. "Descartes as a Philosopher: Legacy and Contribution," Année Descartes, French Institute for Culture and Technology, Penn, March, 1997.
9. "Psychological Science: Things or Functions? Comments on Dennett's 'Things About Things'," first annual Benjamin and Anne A. Pinkel Endowed Lecture, Penn, October, 1998.
10. "The Separation of Philosophy and Psychology: Past Dependency and Intellectual Identity," Symposium on Past Dependencies, Stanford Presidential Lectures and Symposia in the Humanities and Arts, November, 1999.
11. "The *Passions of the Soul* and Descartes' Machine Psychology," Descartes Lecture Series, University of King's College, April, 2004.
12. "Many Nothings," Exhibition Walkthrough for "The Big Nothing," Institute for Contemporary Art, Penn, April, 2004.
13. "Mind, Culture, and Biology," Keynote Address, George Washington University Undergraduate Philosophy Conference, Washington, D.C., April, 2005.
14. "The Body: A Mind of Its Own," Mutable Body Lectures, New Perspectives Program, Indiana University, South Bend, January, 2006.
15. Response to Charles Kahn, "Aristotle vs. Descartes on the Concept of the Mental," Philomathean Society Public Lecture, September, 2007.
16. "Mind-Body Causation and Neutral Monism: Helmholtz, Mach, and James," Closing Address, British Society for the History of Philosophy annual meeting, March, 2008.
17. "Berkeley's New Theory: Embodiment, Perception, and Action," George Berkeley's New Theory of Vision: 300 Years Later, A Series of Interdisciplinary Lectures, Brown University, February 2009.
18. "New Thoughts on Linear Perspective and Visual Experience," Plenary Talk, Seventh Principia International Symposium, UFSC, Florianopolis, SC, Brazil, Aug. 2011.
19. "Descartes on Sensory Representation, Objective Reality, and Material Falsity," Keynote Address, Quebec Seminar in Early Modern Philosophy, Sherbrooke, Sept., 2011.
20. "Perceptual Realism and the Phenomenology of Visual Space," Public Lecture, Center for Philosophic Exchange, SUNY Brockport, Oct. 2011.
21. "The Embodied Eyes: On Seeing Distance Directly in Descartes," Westfall Lecture, Department of History and Philosophy of Science, Indiana University, Dec. 2011.
22. "Perceptual Realisms and the Phenomenology of Visual Space," Virgil C. Aldrich Lecture, Department of Philosophy, University of Utah, Sept. 2012.
23. "On Natural Geometry and Seeing Distance Directly in Descartes," Keynote, Princeton-Penn-Columbia Graduate Conference in the History of Philosophy, Apr. 2013.
24. "Why Does Perceptual Realism Matter?" Plenary Address, Fechner Day 2013: The 29th Meeting of the International Society for Psychophysics, Freiburg, Oct., 2013.
25. "On Natural Geometry and Seeing Distance Directly in Descartes," Keynote lecture, 4th Annual New York City Workshop in Early Modern Philosophy, Fordham University, New York, Mar., 2014.
26. "Baumgarten, Wolff, Descartes, and the Origins of Psychology," Keynote lecture, Alexander Baumgarten's Metaphysics: Sources, Interpretation and Influence, La Salle University, Philadelphia, Mar., 2014.
27. "Rethinking Descartes on the Senses," Keynote, South Central Seminar in the History of Early Modern Philosophy, Texas A&M University, May, 2014.

28. "Rethinking Descartes on Sense Perception," Keynote, Summer School on Epistemology and Cognition, University of Groningen, Aug., 2014.
29. "Perceptual Realisms and the Phenomenology of Visual Space," Larwill Lecture, Kenyon College, Oct., 2014.
30. "Attention in Descartes: Neurophysiology Meets Phenomenality," Keynote, Colloque international: Conceptions et usages de l'attention au XVIIe siècle, jointly organized by the University of Liege and the Free University of Brussels, Mar., 2015.
31. "Color as Surface Presenter and Difference Maker," Keynote address, conference on Ecological Perception: Amodal and Multimodal Trends, University of Edinburgh, May, 2015.
32. "Seeing Pictures: Mind, Image, and World," Dean's Lecture Series, College of Art, Media & Design, University of the Arts, Philadelphia, Oct., 2016.
33. "Varieties of Visual Intelligence," Keynote, Inaugural Symposium: Philosophical Understanding of Visual Intelligence, Institute for Visual Intelligence, New York City, Nov., 2016.

Papers Presented: Colloquia, Workshops, Seminars, and Panels

1. "The Sensory Core: From Kepler to Titchener" (written with William Epstein). Annual Meeting of Cheiron, Washington, D.C., 1976.
2. "Force (God) in Descartes' Physics." Midwest Junto of the History of Science, Lawrence, Kansas, 1978.
3. "Helmholtz and Nineteenth Century Visual Theory." History of Science Society Annual Meeting, Madison, 1978.
4. "Direct Theory versus Constructivism: Contrasting Kinds of Perceptual Explanation." Society for Philosophy and Psychology, Chicago, 1981.
5. "Helmholtz and Nineteenth Century Theories of Perception." History of Science Departmental Colloquium, Harvard, 1981.
History of Science Departmental Colloquium, Johns Hopkins, 1981.
6. "Helmholtz and the Physiological Foundations of Music Perception." Sixteenth International Congress of the History of Science, Bucharest, 1981.
7. "Physics and Physiology in Early Experimental Psychology: Gestalt Psychology as a New Explanatory Strategy." History of Science Society, Los Angeles, 1981.
8. "First Philosophy and Natural Philosophy in Descartes." Joint session of the History of Science Society and Philosophy of Science Association, Philadelphia, 1982.
9. "Direct and Constructivist Approaches to Perception." International Congress on Event Perception, Vanderbilt University, 1983.
Cognitive Science Group, University of Pennsylvania, 1984.
10. "The Senses and the Fleshless Eye: Descartes' *Meditations* as Cognitive Exercises." Royal Institute Conference on Philosophy and Its History, Lancaster, 1983.
History of Science Departmental Colloquium, Harvard, 1983.
Philosophy Club, Wellesley College, 1983.
Conference on Science and Religion in Early Modern Europe, Johns Hopkins, 1985.
11. "Spatial Perception in Kant and Helmholtz." Philosophy of Science Association, Chicago, 1984.
Psychology Departmental Colloquium, Johns Hopkins, 1984.
12. "Metaphysics and the New Science." Philosophy Departmental Colloquium, University of Pennsylvania, 1984.
History of Science Departmental Colloquium, Johns Hopkins, 1984.
13. "On Reading Galileo." Joint presentation with Owen Hannaway, History of Science Departmental Colloquium, Johns Hopkins, 1986.
14. "Theory Making and Testing in Evolutionary Biology." Commentary at the UMCP-UMBC-JHU Joint Philosophy Colloquium, 1986.
15. "Information and Representation in Noncognitive Theories of Perception." American Psychological Association, Washington, D.C., 1986.
16. "Kant and Psychology." Conference on Science and the Enlightenment, Edinburgh, 1986.
17. "Cognition and Epistemic Reliability." Comment on Goldman, Philosophy of Science Association, Pittsburgh, 1986.

18. "Representation and Content in Some (Actual) Theories of Perception." Philosophy Colloquium, University of Maryland, College Park, 1986.
Philosophy Colloquium, Duke University, 1986.
Cognitive Science Group, University of Pennsylvania, 1987.
19. "Epistemology and the Image of Modern Philosophy: Reflections on Descartes and Locke." Descartes Colloquium, University of Cincinnati, 1987.
Tsomas Colloquium on Theories of Cognition in Seventeenth and Eighteenth Century Philosophy, Rice University, 1988.
20. "Perception and Modularity." Commentary on papers by Jerry Fodor and Zenon Pylyshyn, Greater Philadelphia Philosophy Consortium, 1988.
21. "Reason, Nature, and God in Descartes." History and Sociology of Science Departmental Colloquium, Penn, 1988.
Merton Workshop, Tel Aviv and Jerusalem, 1988.
NEH Summer Seminar on Seventeenth Century Philosophy, Brown, 1988.
22. "Science, Certainty, and Descartes." Philosophy of Science Association, Chicago, 1988.
23. "On the Alleged Representation/Process Complementarity." Cognitive Neuropsychology Workshop, Johns Hopkins, 1988.
Psychology Departmental Colloquium, Penn, 1989.
24. "Immediate Experience and Cartesian Experience." Commentary at Conference on the Intellectual World of Seventeenth-Century France: Descartes in Context, Newberry Library Center for Renaissance Studies, 1989.
25. "Representation in Perception and Cognition: Connectionist Affordances." Mind and Brain Group, ZiF, Bielefeld, 1989.
26. "Helmholtz: The Science of Aesthetics and the Aesthetics of Science." History of Science Society, Gainesville, 1989.
Conference on Helmholtz, University of Chicago, 1990.
27. "Galileo: Uncommon Philosopher or Platonic Metaphysician?" Colloquium in History and Philosophy of Science, Cornell University, 1990.
28. "Representation and Connectionist Systems." Greater Philadelphia Philosophy Consortium Working Group, Drexel, 1990.
29. "Gibsonian Representations and Connectionist Symbol-Processing: Prospects for Unification." Cognitive Science Colloquium, University of Oldenburg, 1990.
30. "Representation and Rule-Instantiation in Connectionist Systems." Mind and Brain Group, ZiF, Bielefeld, 1990.
Philosophy Colloquium, University of Wisconsin, 1990.
Cognitive Science Group, Brown University, 1990.
31. "Was There a Scientific Revolution in the Seventeenth Century?" History of Science Society, Seattle, 1990.
32. "Epistemology and Science in the Evaluation of Modern Philosophy: Rorty on Descartes and Locke." APA Central Division Meetings, April, 1991.
33. "Why I Am Not a Barlowist." Laboratory of Neural Microcircuitry, Penn, May, 1991.
34. "Representational Content and Environmental Context." Cornell Cognitive Science Symposium, June, 1991.
Austin-Hempel Lecture to Departments of Psychology and Philosophy, Dalhousie University, June, 1991.
35. "Recent Developments in the Mind-Body Problem." Alfred I. duPont Institute, Wilmington, Delaware, 1991.
36. "Knowing Minds: Helmholtz and the Neo-Kantians on Methodological and Conceptual Differences between the *Natur-* and *Geisteswissenschaften*." Conference on Neurobiology and Narrative, Reilly Center for Science, Technology, and Values, University of Notre Dame, 1992.
37. "Color Perception and Neural Encoding: Does Metameric Matching Entail a Loss of Information?" Philosophy of Science Association, Chicago, 1992.
38. "Knowing Minds: Helmholtz and the Neo-Kantians on the *Natur-* vs. *Geisteswissenschaften*." Center for History and Philosophy of Science, Johns Hopkins University, 1992.
Philosophy Colloquium, University of Western Ontario, March, 1993.
Philosophy Colloquium, VPI, April, 1994.
39. "Was the Scientific Revolution a Revolution in Philosophy?" Conference on Science and Cultural Exchange in the Premodern World, University of Oklahoma, February, 1993.

40. "Images and the Imaged: Causal, Informational, and Presentational Analyses." Philosophy of Mind Group, University of Toronto, 1993.
41. "Metaphysics, Natural Philosophy, and 'Physics' in Descartes." APA Pacific Division meeting, San Francisco, March, 1993.
42. "The Natural and the Mental." Conference on Normativity and Naturalism, University of Toronto, April, 1993.
Philosophy Colloquium, Wichita State University, November, 1993
PNP Colloquium, Washington University, St. Louis, February, 1994.
43. "Psychology as a Natural Science in the Eighteenth Century." Conference on Psychology and Its Frontiers, Université René Descartes, Paris, June, 1993.
Amer. Soc. for Eighteenth Century Studies, Charleston, March, 1994.
Center for the Study of Science in Society, VPI, April, 1994.
Eighteenth Century Studies Seminar, University of Notre Dame, October, 1994.
44. "Natural vs. Human Sciences: Kant and the Neo-Kantians." Philosophy Colloquium, Towson State University, November, 1993.
45. "Color and Representational Content: Metameric Matching and the Distal Focus of Perception," Conference on Color Science and Philosophy, Penn IRCS, April, 1994.
University of Notre Dame, Seminar in philosophy of science, October, 1994
46. "Was the Scientific Revolution Really a Revolution in Science?" University of Notre Dame, History and Philosophy of Science Colloquium, October, 1994
Leibniz Society, Boston, December, 1994
Philosophy Colloquium, University of British Columbia, February, 1995.
47. "Philosophy of Psychology as Philosophy of Science." Philosophy of Science Association, New Orleans, October, 1994.
48. "Attention in Early Natural Scientific Psychology." Vancouver Cognition Conference, February, 1995.
49. "The Workings of the Intellect: Mind and Psychology." Conference on Logic and the Workings of the Mind: Ramus to Kant, University of Western Ontario, May, 1995.
50. "Sensory Physiology and the Geometry of Visual Space," Conference on Modern Mathematical Thought: Its History and Philosophy, University of Pittsburgh and Carnegie Mellon University, September, 1995.
51. "The Development of Natural Scientific Psychology: History and Myth," History of Science Society, Minneapolis, October, 1995.
52. "Color as a Psychobiological Property." Philosophy Colloquium, C.U.N.Y. Graduate Center, April, 1996.
Colloquium series "Perception and Evolution," ZiF, Bielefeld, May, 1996.
53. "Psychology as a Natural Science." Conference on the History of the Philosophy of Science, Roanoke, Virginia, April, 1996.
54. "Perception, Qualia, and Psycho-Neural Laws" (jointly authored with Ed Pugh), Psychology Colloquium, University of Oldenburg, June, 1996.
Philosophical Color Group, ZiF, Bielefeld, June, 1996.
55. "The Workings of the Intellect: Mind and Psychology." Philosophy Colloquium, Humboldt University, Berlin, June, 1996.
56. "Psychology as a Natural Science: Disciplinary Transformations." Max Planck Institute for the History of Science, Berlin, June, 1996.
Colloquium series "Perception and Evolution," ZiF, Bielefeld, June, 1996.
57. "Unconscious Inference in Perceptual Theory," Group on Perception and Evolution, ZiF, Bielefeld, June, 1997.
58. "Mental Functions as Constraints on Neurophysiology: Biology and Psychology of Color Vision," biennial meeting, International Society for the History, Philosophy, and Social Study of Biology, Seattle, July, 1997.
59. "What Is Cognitive Science?," Penn IRCS Friday Colloquium, January, 1998.
60. "Wundt and Völkerpsychologie," biennial meeting of the Working Group for the History of the Philosophy of Science, South Bend, Indiana, March, 1998.
61. "What the Mind Can Tell Us about the Brain," Philosophy Colloquium, Penn, March, 1998
Philosophy Colloquium, University of Western Ontario, September, 1998
62. "Mental Functions as Constraints on Neurophysiology: Visual Psychology and Physiology," CogSci98, Madison, August, 1998.

63. "The Brain's 'New' Science: Psychology, Neurophysiology, and Constraint," Philosophy of Science Association, Kansas City, October, 1998.
64. "Hume on the Intellect and Understanding," Hume Society, Berkeley, April, 1999.
65. "Descartes' Naturalism About the Mental," Philosophy Programme, School of Advanced Study, University of London, June, 1999.
66. "Perception as Unconscious Inference: Alhazen to Rock," miniconference on perception and empiricism, Department of Philosophy, University College London, June, 1999.
67. "Epistemology and Knowing in Modern Philosophy," first of three lectures on Cognition and Knowing in Modern Philosophy, Pontifical Catholic University of Rio de Janeiro, October, 1999.
68. "Science and the Understanding in Descartes and Locke," Pontifical Catholic University of Rio de Janeiro, October, 1999.
69. "Hume and Kant on the Understanding," Pontifical Catholic University of Rio de Janeiro, October, 1999.
70. "What Can the Mind Tell Us about the Brain?," Center for Moral and Mental Philosophy, Federal University of Rio de Janeiro, October, 1999.
Philosophy Colloquium, Rutgers University, October, 1999.
71. "Epistemology and Knowing in Modern Philosophy," Center for Philosophy and the Human Sciences, Federal University of Santa Catarina, Florianopolis, October, 1999.
72. "The Prolegomena and the Critiques of Pure Reason," Invited lecture, Ninth International Kant Congress, Berlin, March, 2000.
73. "Philosophy, and the History of Science: On Telling the Players," Fourth International Joint Meeting of the British Society for the History of Science, the Canadian Society for the History and Philosophy of Science, and the History of Science Society, St. Louis, Missouri, August, 2000.
74. "Kant, Hume, the Prolegomena, and the Two Critiques," Philosophy Colloquium, University of Massachusetts, Amherst, October, 2000.
75. "Cartesian Zombies: Brain, Mind, and Psychology in Descartes," New England Seminar in Early Modern Philosophy, Amherst College, March, 2001; Philosophy Colloquium, Pontifical Catholic University of Rio de Janeiro, August, 2001; Workshop on Mechanism, Materialism, and the Mental, Rutgers University, November, 2001; Philosophy Colloquium, Columbia University, December, 2002.
76. "The Second Meditation and the Four Cogitos," Department of Philosophy, University of Ottawa, April, 2001; Conference on Reason and Cause, co-sponsored by the Midwest Seminar in the History of Early Modern Philosophy and the Centre d'études Cartésiennes (Université de Paris IV-Sorbonne), University of Chicago, May, 2002.
77. "Force and Mind-Body Interaction," in the session Force and Energy in Modern Natural Philosophy, XXIst International Congress of History of Science, Mexico City, July, 2001.
78. "Sense-Data and the Philosophy of Mind: Mach, James, and Russell," Second Principia International Symposium, Florianopolis, Brazil, August, 2001.
79. "The Notion of Cognitive Faculties in Modern Philosophy," three seminars given at the Center for Philosophy and the Human Sciences, Federal University of Santa Catarina, Florianopolis, August, 2001.
80. "Sense-Data and the Mind-Body Problem," Symposium on Mental Representation and Reality: Theories of Perception from Descartes to the Present, Humboldt University, Berlin, October, 2001; Philosophy Colloquium, Harvard University, March, 2003.
81. Critic, "Author Meets Critics: David Owen, *Hume's Reason*," Pacific Division APA, Seattle, March, 2002.
82. Commentator on Fred Dretske, "Change Blindness," Oberlin Colloquium in Philosophy, "Philosophy of Perception," April, 2002.
83. "The New Psychology and the Mind-Body Problem," Hopos, Montreal, June, 2002.
84. "Getting Objects for Free," presented at the invitation of the Equipe Rationalites contemporaines, Dept. of Philosophy, University of Paris-Sorbonne (Paris IV), the Institut Jean Nicod, and the Department d'études cognitives de l'ENS, May, 2003.
85. "The Relations Between Psychology and the Neurosciences," Seminar on the Naissance de la psychologie scientifique, Dept. of Philosophy, University of Paris-Sorbonne (Paris IV), May, 2003.
86. "Getting Objects for Free: The Philosophy and Psychology of Object Perception," Fourth International Conference on Cognitive Science, Sydney, Australia, July 13-17, 2003.
87. "Physicists Against Physicalism," Third Principia International Symposium, Florianopolis, Brazil, September, 2003.

88. "Object Perception and *de re* Reference," Philosophy Colloquium, University of Goias, Goiania, Brazil, September, 2003.
89. "The Reality of Qualia," Internationaler Konferenz Wahrnehmung und Status sekundärer Eigenschaften, Bielefeld, September, 2003.
90. "Psychology in Philosophy: Historical Perspectives," Psychology in Philosophy: Intellectual and Social Aspects from Late Scholasticism to Contemporary Thought, Helsinki, October, 2003.
91. "Descartes' *Passions*: Machine Psychology and the Mind," Philosophy Colloquium, Wichita State University, November, 2003.
92. "Descartes' Mind-Body Dualism," Consciousness Discussion Group, Penn Medical School, December, 2003.
93. "Kantian Things and Conditional or Contingent Necessity: Comments on a Paper by Robert Greenberg," Central Division APA, Chicago, April, 2004.
94. "Introspective Evidence in Psychology," Ursinus College Methodology Symposium, April, 2004.
95. "Was Kant Out to Refute Hume in the First *Critique*?", Thirty-First Meeting of the Hume Society, Tokyo, August, 2004.
96. "The Geometry of Visual Space," Perceptual Dynamics Colloquium, Riken Brain Science Institute, Tokyo, August, 2004.
97. "Cartesian Zombies: The Psychology of Machines," Center for History and Philosophy of Science, Johns Hopkins University, November, 2004.
98. "What Were Kant's Aims in the Deduction?," First *Critique* Seminar, Department of Philosophy, Stanford University, April, 2005.
99. "Descartes' *Passions of the Soul* and the Principle of Habituation or Association," Southeast Seminar in Early Modern Philosophy, University of Virginia, October, 2005.
100. "On Perceptual Constancy," Conference on Brain, Language and Cognition, Center for Cognitive Sciences, University of Minnesota, October, 2005.
101. "What Can the Mind Tell Us About the Brain?," Minnesota Center for Philosophy of Science, University of Minnesota, October, 2005.
102. "Consciousness and Qualia," Brown Bag Discussion, Department of Philosophy, Indiana University, South Bend, January, 2006.
103. "On Perceptual Constancy and the Geometry of Visual Space," Philosophy Colloquium, CUNY Graduate Center, New York, February, 2006; Philosophy Colloquium, Ohio State University, April, 2006.
104. "Kant on Spatial Perception, Apperception, and Introspective Awareness," Mind and Language Seminar, New York University, February, 2006.
105. "Color as a Psychobiological Property," First Penn-UNAM Philosophy Encounter, Philosophy of the Biological Sciences in an Historical Context, Autonomous National University of Mexico, May, 2006.
106. "American Functionalism and Behaviorism," Enriching the Context: Naturalism, Empiricism, and Realism in American Philosophy and Psychology, 1870-1930, International Society for the History of the Philosophy of Science, Paris, June, 2006.
107. "Perceptual Constancy and Visual Space," Lunchtime Seminar Series, Institute of Philosophy, School of Advanced Study, University of London, October, 2006.
108. "Mental Acts and Mechanistic Psychology in Descartes' *Passions*," invited talk, Oxford Seminar in Early Modern Philosophy, Oxford University, October, 2006.
109. "What Can Contextual History of Philosophy Do for Philosophy?," Symposium on Approaches to the History of Philosophy, Eastern Division APA, December, 2006.
110. "Transparency of Mind: The Contribution of Descartes, Leibniz and Berkeley to the Genesis of the Modern Subject," invited talk, European Society for Early Modern Philosophy, First International Congress, Essen, March, 2007.
111. "Psychology in *Mind*: From the Mind-Body to the Physiology-Psychology Problem," Berkeley-UCSF Colloquium in History of Science, Technology, and Medicine, Berkeley, October, 2007.
112. "Mechanizing the Sensitive Soul," conference on Hylomorphism in Early Modern Philosophy, CalTech, Pasadena, May 2008.
113. "In What Ways Was Helmholtz Kantian?" Symposium on The Natural and the Neo-Kantian: Empirical Science and Neo-Kantianism, meeting of the International Society for the History of Philosophy of Science (HOPOS), Vancouver, June 2008.

114. Comment on Charles Wallis, "Dual-Use Neural Systems and Theories of Mental Representation," 34th annual meeting of the Society for Philosophy and Psychology, Philadelphia, June 2008.
115. "Descartes' Contemporaries," European Science Foundation Summer School, The Soul: From the Aristotelian scientia de anima to Early Modern Psychology, Roudboud University, Nijmegen, Netherlands, July 2008.
116. "Koehler, Koffka, and the 'Crisis' in Psychology," workshop on Crisis Debates in Psychology, Max Planck Institute for the History of Science, Berlin, October 2008.
117. "Descartes' Mechanization of the Sensitive Soul: The Internal Senses," Institute Colloquium, Max Planck Institute for the History of Science, Berlin, October 2008.
118. "Getting Objects for Free (or Not): The Philosophy and Psychology of Object Perception," Lunchtime Seminar Series, Institute of Philosophy, School of Advanced Study, University of London, October 2008.
119. "Descartes' Rehabilitation of the Senses," Oxford Seminar in Early Modern Philosophy, Oxford University, October 2008.
120. "Getting Objects for Free," Cognitive Lunch, Department of Psychology, University of Virginia, October 2008.
121. "Descartes' Mechanization of the Sensitive Soul," Department of Philosophy Colloquium, University of Virginia, October 2008.
122. "Koehler, Koffka, and the 'Crisis' in Psychology," Annual Meeting of the History of Science Society, Pittsburgh, November 2008.
123. Comments on papers by Mark Johnson and Taylor Carman, GPPC Symposium on "New Approaches to the Mind/Body Problem," Swarthmore College, November, 2008.
124. "Perceptual and Cognitive Factors in Spatial Perception," IRCS Workshop on Cognitive and Developmental Factors in Perceptual Constancy, Penn, February, 2009.
125. "Internal Senses in the Medievals and in Descartes," Department of Philosophy and UMB Philosophy Club, University of Massachusetts, Boston, April, 2009.
126. "Descartes' Rehabilitation of the Senses," Early Modern Workshop, Department of Philosophy, Harvard University, April, 2009.
127. "Psychoneural Linking Laws," session on the Status of Laws in the Psychological Sciences, 101st meeting of the Southern Society for Philosophy and Psychology, Savannah, Georgia, April, 2009.
128. "Visual Studies at Penn," Visual Studies faculty group, Franklin & Marshall College, Lancaster, Pennsylvania, April, 2009.
129. "On the Disciplinary Identity of Psychology: 1732-1933," Klopsteg Seminar Series in Science in Human Culture, Northwestern University, May 2009.
130. "Berkeley, Gibson, and Visual Space," Colloquium, Institute for Psychology in cooperation with the Philosophical Seminar, Christian-Albrechts-University in Kiel, Germany, June 2009.
131. "Berkeley, Gibson, and the Geometry of Visual Space," Laboratoire d'Histoire des Sciences et de Philosophie, Archives Henri Poincaré, Nancy University, France, June 2009.
132. "Berkeley, Gibson, and Visual Space," colloquium, Institute for Psychology in cooperation with the Philosophical Seminar, Christian-Albrechts-University in Kiel, Germany, June 2009.
133. "Koehler, Koffka, and the 'Crisis' in Psychology," authors' workshop, special journal issue on the Crisis Debates in Psychology, Max Planck Institute for the History of Science, Berlin, June 22-23, 2009.
134. "On Berkeley's Mediate Objects of Sight and Their Phenomenology: In response to Van Cleve," Philosophical Perspectives on Spatial Perception, Department of Philosophy, Harvard University, Oct. 2010.
135. "Phenomenal and Cognitive Factors in Spatial Perception," American Philosophical Assoc., Central Division Meetings, Chicago, Feb. 20, 2010.
136. "Color as a Psychobiological Property," Interdisciplinary Studies of Medicine Interest Group, Penn Medical School, Feb. 25, 2010.
137. "Phenomenal and Cognitive Factors in Spatial Perception," Southern Society for Philosophy and Psychology, Atlanta, April 17, 2010.
138. "Descartes on Objective Reality and Material Falsity," New York/New Jersey Early Modern Research Group, John Jay College, New York, April 19, 2010.
139. Invited panel discussant, Conference Towards a Non-Physicalist Monist Solution to the Mystery of Consciousness, 17-19 June 2010, at Dartington Hall in Devon.
140. "On the Reception of Descartes' Machine Psychology," Integrated History and Philosophy of Science, Third Meeting (&HPS3), Bloomington, Indiana, Sept. 2010.

141. "On Berkeley's Mediate Objects of Sight and Their Phenomenology: In response to Van Cleve," Philosophical Perspectives on Spatial Perception, Department of Philosophy, Harvard University, Oct. 2010.
142. "The Reception of Descartes' Machine Psychology in Medical Writers and Natural Philosophy," History of Science Society Annual Meeting, Montreal, Nov. 2010.
143. "Perception as Active: Plan for a Philosophical History," Workshop on volumes for the Oxford Philosophical Concepts series, Columbia University, Dec. 2010.
144. "Psychological Experiments and Phenomenal Experience in the Perceptual Constancies," Philosophical Issues in Experimental Science, Southern Society for Philosophy and Psychology, 103rd Meeting, New Orleans, Louisiana, Mar. 2011.
145. "The Focus of Attention: Past and Present Theories," Mind, Brain, and Behavior Undergraduate Workshop 2011: Attention in Philosophy, Psychology, and the Neurosciences: Historical Origins and Present Concerns, Harvard University, Mar. 2011.
146. "Russell's Progress: Spatial Dimensions, the From-Which, and the At-Which," Joint colloquium, Department of Philosophy, Department of Logic and Philosophy of Science, University of California, Irvine, May, 2011.
147. "Russell's Progress: Spatial Dimensions, the From-Which, and the At-Which," Conference on Metaphysics in Kant and Hegel, Institute of Philosophy, Humboldt University, Berlin, June, 2011.
148. "The Embodied Mind and the Bodily Machine in Descartes," Center for Philosophic Exchange, SUNY Brockport, Oct. 2011.
149. "Remarks on Perceptual Realism and the Phenomenology of Visual Space," Modern Mind: Philosophical Conversations in Honor of Gary Hatfield, Penn, Nov. 2011.
150. "The Embodied Eyes: On Seeing Distance Directly in Descartes," VLST Lecture Series, Penn, Nov. 2011.
151. "American Critical Realism: James and Sellars," Conference on Pragmatism in Philosophy of Science, University of San Francisco, Mar. 2012.
152. "On Natural Geometry and Seeing Distance Directly in Descartes," conference on Space, Geometry and the Imagination: From Antiquity to the Modern Age, Max Planck Institute for the History of Science, Berlin, Aug. 2012.
153. "Consciousness and the Cartesian Theater," at Harvard Oxford-Philosophical-Concepts Workshop on Consciousness, Cambridge, Mass., Oct. 2012.
154. "Psychological Experiments and Phenomenal Experience in Shape Constancy," in Introspective Evidence in the Scientific Study of Perception, PSA Symposium, Nov. 2012.
155. "The Geometry of Perceptual Experience: Euclid to Descartes," conference for the Oxford Philosophical Concepts volume on Space, Duke University, Apr. 2013.
156. "Psychological Experiments and Phenomenal Experience in Size and Shape Constancy," Seminar on Experimental Psychology and Phenomenology, Ecole Normale Supérieure, Paris, June, 2013.
157. "American 'New' and Critical Realism: William James and Roy Wood Sellars," Workshop: From Cambridge (on the Cam) to Cambridge (Mass) by way of Wien and Berlin, Ecole Normale Supérieure, Paris, June, 2013.
158. "On Natural Geometry and Seeing Distance Directly in Descartes," Philosophy Colloquium, CUNY Graduate Center, Sept., 2013.
159. "Descartes on Seeing Distance Directly," Henle Conference: Descartes, Saint Louis University, Apr., 2014.
160. "The Stimulus Error and Experimental Design: The Manipulation of Perceptual 'Set'," &HPS5, Vienna, June, 2014.
161. "Eye and Mind: Disciplinarity and Multi-Disciplinarity," Architecture grad student forum, Penn, Sept., 2014.
162. "Natural Geometry in Kepler and Descartes," Philosophy Seminar, Kenyon College, Oct., 2014.
163. "Subjectivity and Objectivity Reconsidered: Descartes and Goethe," Penn Humanities Forum, Feb., 2015.
164. Sole presenter, Workshop on Descartes' Natural Geometry, Institute for Advanced Studies in the Humanities, University of Edinburgh, June, 2015.
165. "Descartes and the Brain," Cheiron: The International Society for the History of the Behavioral and Social Sciences, 47th Annual Meeting, University of Kansas, June, 2015.
166. "Animal Cognition: Controversies over the Animal Soul," Academy Colloquium Controversies in Early Modern Psychology, Royal Netherlands Academy of Arts and Sciences, July, 2015.
167. "Perceiving as Having Subjectively Conditioned Appearances," Colloquium, Dept. of Logic and Philosophy of Science, UC-Irvine, May, 2016.
168. "Attention in Descartes: Mental and Physiological," Scientia Workshop, Dept. of Philosophy, UC-Irvine, June, 2016.

169. "The Natural and the Normative and The Facts in Perception: Two Works Revisited," Symposium on *The Natural and the Normative* at 25: Psychology, Perception, and Measurement in Kant and Helmholtz, at HOPOS, meeting of the International Society for the History of Philosophy of Science, June, 2016.

Professional Activities

University

- Coordinator, Cognitive Science Workshop, Penn, 1988-89
- Graduate Group, History and Sociology of Science, from 1988
- Graduate Chair in Philosophy, 1989-1993, 2001-07
- Secretary of the Senate Executive Committee, 1990-1991; on SEC, 1989-92
- Institute for Research in Cognitive Science, Penn, from 1990
- Graduate Council of the Faculties, 1993-95
- Chair in Philosophy, 1992-1998
- SAS Personnel Committee, 1999-2000
- Humanities Panel, University Research Foundation, 1999-
- Visual Studies Committee, 2001-
- Chair of Visual Studies Committee and Program Director, 2002-03, 2010-11, 2014-
- Chair, Humanities Panel, University Research Foundation, 2003-
- SAS Committee on Undergraduate Education, 2011-

Extramural

- Member, American Philosophical Association, Cognitive Science Society, Forum for the History of the Human Sciences, History of Science Society, North American Kant Society, Philosophy of Science Association, Southern Society of Philosophy and Psychology, Society for Philosophy and Psychology.
- Referee on manuscripts and proposals for: Cambridge University Press, Cornell University Press, Hackett Publishing Co., Kluwer Academic Publishers, MIT Press, North American Kant Society, Norton & Co., Oxford University Press, University of Pittsburgh Press, Routledge, Susquehanna University Press, University of Wisconsin Press, Yale University Press; *Acta Psychologica*, *Archiv fflr Geschichte der Philosophie*, *Brain and Cognition*, *British Journal for the History of Philosophy*, *British Journal for the History of Science*, *Canadian Journal of Philosophy*, *Cognition*, *Configurations*, *Critical Inquiry*, *Ecological Psychology*, *History of Philosophy Quarterly*, *History of Psychology*, *History of the Human Sciences*, *HOPOS: The Journal of the International Society for the History of Philosophy of Science*, *Intellectual History Review*, *Isis*, *Journal of Experimental Psychology*, *Journal of the History of the Behavioral Sciences*, *Journal of the History of Ideas*, *Journal of the History of Philosophy*, *Journal of Speculative Philosophy*, *Kant Studien*, *Mind & Language*, *MLN*, *Nous*, *Perception*, *Philosophical Psychology*, *Philosophy & Phenomenological Research*, *Philosophy of Science*, *Principia*, *Psychological Research*, *Ratio*, *Studies in History and Philosophy of Science*, *Synthese*.
- Referee on appointments and promotions for: Drexel University; Harvard University; University of California, Berkeley; University of California, Irvine; University of California, San Diego; Cambridge University; Pennsylvania State University; University of Western Ontario; Johns Hopkins; University of South Carolina; CUNY; College of Medicine, Pennsylvania State University; Stanford University; University of California, San Diego; Columbia University; Yale University; Dalhousie University; University of Nebraska; Lehigh University; University of Massachusetts, Amherst; Tufts University; Princeton University; University of Cyprus; University of Iowa; University of Michigan; University of Notre Dame; University of Pittsburgh; University of Virginia.
- Referee on grants and fellowships for: American Council of Learned Societies; American Philosophical Society; CUNY; Drexel University; National Endowment for the Humanities; National Science Foundation; Netherlands Organization for Scientific Research; Royal Society of New Zealand; Social Sciences and Humanities Research Council of Canada; Swiss National Science Foundation, Division of Humanities and Social Sciences.
- Seminar discussion, first three chapters of *Visual Experience*, Logic and Philosophy of Science, UC-Irvine, May, 2016.
- Seminar discussion, Berkeley's *New Theory of Vision*, Logic and Philosophy of Science, UC-Irvine, June, 2016.

Editorial Board, *Philosophical Psychology*, from 1996
Editorial Board, *History of Philosophy Quarterly*, 1994-97
Editorial Board, *Philosophy of Science*, 1995-2007
Steering Committee, Working Group on the History of the Philosophy of Science (HOPOS), 1997-99
Program Committee, Philosophy of Science Association, 1993-94, 2005-06.
Program Committee, HOPOS, 2000
Vice Chair, Greater Philadelphia Philosophy Consortium, 1999-2002; Chair 2002-05. Member, Board of Directors, 1995-2008.
Romanell Lecture Committee, American Philosophical Association, 2005-07
Primary organizer for the Penn Museum International Research Conference on the Evolution of Mind (Sep. 2007).
Editorial Board, *British Journal for the History of Philosophy*, 2010-15.

Dissertations Supervised

1. Arthur Weissman, "Environmental Change from the Perspectives of Aesthetics and Geomorphology," Department of Geography and Environmental Engineering, JHU, 1982 (181 pp.). (De facto supervisor.)
2. Lawrence A. Shapiro, "Representational Content in Cognitive Psychology," 1992 (245 pp.).
Dr. Shapiro is Professor of Philosophy and Chair at the University of Wisconsin--Madison.
3. Blake Dutton, "Descartes' Theistic Metaphysics in Its Scholastic Context," 1993 (212 pp.). Co-supervised.
Dr. Dutton is Associate Professor of Philosophy at Loyola University, Chicago.
4. Lanier Anderson, "The Influence of Perspective: An Interpretation and Defense of Nietzsche's Epistemology," 1993 (410 pp.). Co-supervised. Dr. Anderson is Professor of Philosophy at Stanford University.
5. Alison Simmons, "Making sense: The Problem of Phenomenal Qualities in Late Scholastic Aristotelianism and Descartes," 1994 (343 pp.). Dr. Simmons is Professor of Philosophy at Harvard University.
6. Lisa Shabel, "Kant's Philosophy of Mathematics," 1998 (278 pp.).
Dr. Shabel is Associate Professor of Philosophy at the Ohio State University.
7. Peter Schwartz, "Function, Dysfunction, and Disease in Biology and Medicine," 1999 (389 pp.).
Dr. Schwartz, who also received the M.D., pursued his residency at Brigham and Women's Hospital in Boston and was half-time in the Department of Philosophy, Boston University, 2001-04. He is now in the Medical School at Indiana University, and teaches part-time in philosophy at IUPUI.
8. Gary Purpura, "Comparing Animals: How to Investigate the Uniqueness of the Human Mind," 1999 (192 pp.).
Dr. Purpura is now an Assistant Dean in the College of Arts and Sciences at Penn.
9. Anya Plutynski, "Modeling Evolution," 2001 (275 pp.).
Dr. Plutynski is Associate Professor of Philosophy at Washington University in St. Louis.
10. Marc Cohen, "Self-Interpretation and Emotion," 2002 (193 pp.).
Dr. Cohen is Associate Professor of Business and Philosophy at Seattle University.
11. Allison Crapo, "Making It External: Continu'd and Distinct Body in Hume's Treatise on Human Nature," 2003 (162 pp.).
Dr. Crapo has obtained the J.D. and is now Attorney Of Counsel at the National Center for Youth Law, San Francisco.
12. Morgan Wallhagen, "Attention to Consciousness," 2004 (371 pp.).
Dr. Wallhagen teaches in the Stanford University on-line high school.
13. Yumiko Inukai, "The Bundling of the Self: The Empirical Basis for the Unity of the Self in Hume and James," 2005 (202 pp.).
Dr. Inukai is Associate Professor of Philosophy at the University of Massachusetts, Boston.
14. Jeffrey Scarborough, "Perception in Action," 2005 (223 pp.).
Dr. Scarborough teaches in the Stanford University on-line high school.
15. Scott Edgar, "Anti-Psychologism, Objectivity, and the Marburg School Neo-Kantians," 2009.
Dr. Edgar is Assistant Professor of Philosophy at St. Mary's University, Halifax.