

January 6, 2015

## *Curriculum Vitae*

### **Michael Weisberg**

Department of Philosophy  
University of Pennsylvania  
433 Cohen Hall  
Philadelphia, PA 19104-6304  
(215) 898-0417 (o)  
(267) 738-0676 (c)  
weisberg@phil.upenn.edu

### **EDUCATION**

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#### **Leland Stanford Junior University**

Ph.D. in Philosophy, 2003  
M.A. in Philosophy, 2002  
National Science Foundation Pre-doctoral Fellow

#### **University of California, San Diego**

B.S. Chemistry, B.A. Philosophy, 1999  
Honors with Highest Distinction in Philosophy

### **ACADEMIC APPOINTMENTS**

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2003–present **University of Pennsylvania**

Associate Professor of Philosophy (July 2009 – )  
Chair, Graduate Group in Philosophy (July 2011 – )  
Assistant Professor of Philosophy (July 2003 – June 2009)  
Member of the Graduate Group, History and Sociology of Science  
Affiliate Faculty, Institute for Research in Cognitive Science  
Affiliate Faculty, Center for Cognitive Neuroscience  
Consulting Scholar, Physical Anthropology Section, Penn Museum  
Faculty Fellow, Fisher-Hassenfeld College House (2005-2009)

- 2006–present **Center for Philosophy of Science, University of Pittsburgh**  
Associate
- 2006–present **Australia National University, Research School of Social Sciences**  
Philosophy Program Visitor (2006, 2009, 2012)  
Philosophy Fellow (2010)
- 2006–2007 **Chemical Heritage Foundation**  
Visiting Scholar

#### GRANTS AND AWARDS

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- National Science Foundation Scholar Award SES-0957189 (2010-2013, \$173,205)  
National Science Foundation Scholar Award SES-0620887 (2006-2008, \$115,376)  
Stanford University Centennial Teaching Award (2002)  
National Science Foundation Pre-Doctoral Fellowship (1999-2003)

#### PUBLICATIONS

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(\* indicated peer reviewed publication)

##### Books

1. Kovac, J. and M. Weisberg, ed. (2012), *Roald Hoffmann on the Art, Science, and Philosophy of Chemistry*, Oxford University Press.
2. Weisberg, M. (2013), *Simulation and Similarity: Using Models to Understand the World*, Oxford University Press.\*

##### Journal Articles

1. Kawahata, N. H., M. Weisberg, and M. Goodman (1999). "Synthesis of beta, beta-Dimethylated Amino Acids Utilizing the 9-Phenylfluorenyl Protecting Group." *Journal of Organic Chemistry*, 64, 4362–4369.\*
2. Weisberg, M. and R. Wood (2003). "Richard Rufus's Theory of Mixture." *Chemical Explanations: Characteristics, Development, Autonomy*, volume 988, *Annals of the New York Academy of Sciences*, 282–292.\*
3. Weisberg, M (2004). "Qualitative Theory and Chemical Explanation." *Philosophy of Science*, 71, 1071–1081.\*

4. Wood, R. and M. Weisberg (2004). "Interpreting Aristotle on Mixture: Problems of Elemental Composition from Philoponus to Cooper." *Studies in the History and Philosophy of Science*, 35, 681–706.\* [joint responsibility for research; secondary responsibility for writing]
5. Weisberg, M (2006). "Robustness Analysis," *Philosophy of Science*, 73, 730–742.\*
6. Lombrozo, T., A. Shtulman, and M. Weisberg (2006). "The Intelligent Design Controversy: Lessons from Psychology and Education." *Trends in Cognitive Sciences*, 10, 56–57.\*
7. Weisberg, M (2006). "Forty Years of 'The Strategy': Levins on Model Building and Idealization," *Biology and Philosophy*, 21(5), 623–645.\*
8. Weisberg, M (2007). "Who is a Modeler?," *British Journal for Philosophy of Science*, 58, 207–233.\*
9. Weisberg, M. (2007) "Three Kinds of Idealization," *The Journal of Philosophy*, 104 (12) 639–59.\*
10. Weisberg, M. and K. Reisman (2008). "The Robust Volterra Principle," *Philosophy of Science*, 75, 106–131.\*
11. Weisberg, M. (2008) "Challenges to the Structural Conception of Bonding," *Philosophy of Science*, 75, 932–946.\*
12. Lombrozo, T., A. Thanukos, and M. Weisberg (2008). "The Importance of Understanding the Nature of Science for Accepting Evolution," *Evolution: Education and Outreach*, 1(3), 290-298.\*
13. Mathewson, J. and M. Weisberg (2009), "The Structure of Tradeoffs in Scientific Modeling," *Synthese*, 170.\*
14. Weisberg, M. and R. Muldoon (2009). "Epistemic Landscapes and the Division of Cognitive Labor," *Philosophy of Science*, 76, 225-252\*
15. Leiter, B. and M. Weisberg (2010). "Why Evolutionary Biology is (so far) Irrelevant to Legal Regulation," *Law and Philosophy*, 29, 31–74.\*
16. Muldoon, R. and M. Weisberg (2010). "Robustness and Idealization in Models of Cognitive Labor," *Synthese*, 183, 161–174.\*

17. Weisberg, M. and P. Needham (2010), "Matter, Structure, and Change: Aspects of Philosophy of Chemistry in the 21st Century," *Philosophy Compass*, 5, 927–937.\*
18. Weisberg, M. (2010), "Target-directed Modeling," *The Modern Schoolman*, 87, 251–266.\*
19. Muldoon, R., T. Smith, and M. Weisberg (2012). "Segregation That No One Seeks," *Philosophy of Science*, 79, 38–62.\*
20. Weisberg, M. (2012), "Getting Serious about Similarity," *Philosophy of Science* 79, 785–794.\*
21. Weisberg, M. (2013), "Modeling Herding Behavior and Its Risks," *Journal of Economic Methodology*, 20, 6–18.\*
22. Evans, M., V. Grimm, K. Johst, T. Knuuttila, R. de Langhe, C. Lessells, M. Merz; M. O'Malley, S. Orzack, M. Weisberg, D. Wilkinson, O. Wolkenhauer, and T. Benton (2013), "Do simple models lead to generality in ecology?" *Trends in Ecology and Evolution*, 28, 578–583.\*
23. Elliott-Graves, A. and M. Weisberg (2014) "Idealization," *Philosophy Compass*, 9, 176–185.\*
24. Santana, C. and M. Weisberg (2014) "Group-level Traits are Not Units of Selection," *Behavioral and Brain Sciences*, 37: 271-272.
25. Weisberg, M. (2014) "Remeasuring Man," *Evolution and Development*, 6: 166–178, 10.1111/ede.12077.\*
26. Weisberg, M. "Understanding the Emergence of Population Behavior in Individual-Based Models," forthcoming in *Philosophy of Science*.\*
27. Evans, M. Benton, T., Grimm, V., Lessells, C., O'Malley, M., Moustakas, A., and Weisberg, M. (2014) "Data availability and model complexity, generality, and utility: a reply to Lonergan," *Trends in Ecology & Evolution*, online first.\*

#### **Book Chapters and Encyclopedia Articles**

1. Weisberg, M (2005). "Water is Not H<sub>2</sub>O." *Philosophy of Chemistry: Synthesis of a New Discipline*. Eds. D. Baird, et al. New York: Springer, 337-345.\*
2. Weisberg, M (2005). "The Key to Electricity." *The Autobiography of Benjamin Franklin*. Penn Reading Project Edition. Ed. Peter Conn. Philadelphia: University of Pennsylvania Press, 159-162.

3. Weisberg, M (2009). "New Approaches to the Division of Cognitive Labor." *New Waves in Philosophy of Science*, Ed. P.D. Magnus and Jacob Busch. New York: Palgrave Macmillan.\*
4. Weisberg, M., P. Needham, and R. Hendry (2011), "Philosophy of Chemistry," *The Stanford Encyclopedia of Philosophy* (Spring 2011 Edition), Edward N. Zalta (ed.), <<http://plato.stanford.edu/archives/spr2011/entries/chemistry/>>.\*
5. Weisberg, M. (2012) "Chemical Modeling," *Handbook for Philosophy of Chemistry* (pp. 355–363), R. Hendry, P. Needham, and A. Woody (eds.). Amsterdam: Elsevier.\*
6. Weisberg, M., "Validating Idealized Models," forthcoming in *The Experimental Side of Modeling*, I. Peschard and B. van Fraassen (eds.).\*
7. "Modeling," forthcoming *The Oxford Handbook of Philosophical Methodology*, J. Hawthorne and T. Gendler (eds.), 26pp.\*

#### Essays and Book Reviews

1. "Why Not a Philosophy of Chemistry?" Review of *Of Minds and Molecules*, *American Scientist*, 89 (6), November 2001.
2. Review of *Science, Truth, and Democracy*, by Philip Kitcher. *Angewandte Chemie* 2000, 114 (16), 3189-3190 (German) and *Angewandte Chemie International Edition in English* 2002, 41 (16) 3064-3066.
3. "Chemistry and the Scientific Method" Review of *Chemical Discovery and the Logicians' Program* by Jerome A. Berson. *Chemical and Engineering News*, 82 (12), 2004.
4. Review of *In Mendel's Mirror*, by Philip Kitcher, *The Philosophical Review*, 119, 2005, 419–423.
5. "Darwin's Bash." *The Philadelphia Inquirer*, February 12, 2006.
6. "Richard Levins' Philosophy of Science [editor's introduction]," *Biology and Philosophy*, 21(5) 2006, 603–605.
7. "Do you only have a brain?" Review of Thomas Nagel's *Mind and Cosmos*, in *The Nation*, October 22, 2012, with Brian Leiter.

#### Museum Exhibits

1. Monge, J., S. Cox, M. Weisberg, and M. Yudell, “Year of Proof: The Making and Unmaking of Race.” University of Pennsylvania Museum of Archeology and Anthropology, September 2012–August 2013.

#### **Under Review and In Preparation**

1. Boyer, T., C. Mayo-Wilson, M. Weisberg (eds.), *Scientific Collaboration and Collective Knowledge*, all chapters received and under review.
2. Benton, T. and M. Weisberg, “Models, evidence and grand challenges: perspectives from science and policy,” in preparation.
3. Weisberg, M. and R. Muldoon, *Science as a Landscape*, in preparation.

#### **TEACHING**

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**University of Pennsylvania, 2003-present**

**Table of course titles and enrollments at end of document.**

#### **Ph.D. Thesis Supervisor**

Matthew Bateman (defended 2012)  
Alkistis Elliott-Graves (defended 2014)  
Emily Parke (current)  
Shereen Chang (current)  
Carlos Santana (current)  
Karen Kovaka (current)

#### **Ph.D. Committee Member**

Matthew Katz (defended AY2008)  
Scott Edgar (defended AY2009)  
Veronica Muriel (defended AY2013)  
Doug Weck (current)  
Rob Willison (current)  
Thomas Noah (current)  
Daniel Fryer (current)  
Marie Barnett (current)  
Devin Curry (current)  
Nabeel Hamid (current)

#### **M.A. Thesis Supervisor**

Paul Mitchell (AY 2014)

**Undergraduate Research and/or Thesis Advisor**

Shivana Naidoo (AY 2004)  
Rosemary McKenna (AY 2005)  
Samuel Bookler (AY 2006)  
Eric King (AY 2006)  
Jack Cohen (AY 2006)  
Jaclyn Link (AY 2006)  
Anna Tuchman (AY2007)  
Daniel Singer (AY2007, AY2008)  
Joshua Matz (AY 2008)  
Martin Bouda (AY 2008)  
Benjamin Naecker (AY2009)  
Marc Werner (AY2009)  
Varun Balan (AY2009)  
Jennifer Marsh (AY2009)  
Jonathan Packer (AY2010)  
Alaina Pirraglia (AY2010)  
Kevin Huntington (AY2011)  
Jeffrey Ho (AY2011)  
Kory Johnson (AY2011)  
Jonathan Iwry (AY2014)

**MLA Thesis Advisor**

Max Kimbrough

**COLLOQUIA AND PRESENTATIONS** \_\_\_\_\_

1. "Jean Perrin and Molecular Reality"  
UCSD History of Chemistry Summer Colloquium July, 1998  
Stanford Undergraduate Philosophy Association, Winter 2001
2. "Water is Not H<sub>2</sub>O"  
International Society for Philosophy of Chemistry, August, 1999  
UCSD History of Chemistry Summer Colloquium July, 1999  
Berkeley–Stanford Graduate Philosophy Conference, June 2001
3. "Can Quine 'Quine' Similarity?"  
International Society for the Philosophy of Chemistry, August 2001  
Berkeley–Stanford Graduate Philosophy Conference, May 2000

4. "Reaction Mechanisms and Underdetermination"  
American Chemical Society, August 2001
5. "Has Neurath's Raft Sprung a Leak? An Assessment of Friedman's Challenge to Epistemological Holism"  
Berkeley-Stanford Graduate Philosophy Conference, May 2002
6. "Richard Rufus' Theory of Mixture"  
International Society for Philosophy of Chemistry, August 2002
7. "Qualitative Theory and Chemical Explanation"  
Philosophy of Science Association, November 2002
8. "Tradeoffs in Biological Modelling"  
International Society for History, Philosophy, and Social Study of Biology, July 2003
9. "Modeling in Chemistry"  
International Society for Philosophy of Chemistry, August 2004
10. "Who is a Modeler?"  
Institute for Research in Cognitive Science, September 2004  
Indiana University HPS Department, October 2004  
Center for Philosophy of Science (Pittsburgh), November 2004
11. "Darwin's Theories of Evolution"  
Ursinus College, March 2005  
Washington and Lee University, April 2006
12. Evolution and Intelligent Design (varia)  
Anti-Defamation League Civil Rights Committee, Spring 2005  
Spruce College House, Spring 2005  
Penn Science Cafe, September 2005  
Fisher-Hasenfeld College House, October 2005  
Philomethan Society, October 2005  
Penn ACLU, November 2005  
King's Court College House, November 2005  
BBC World Service TV, December 2005  
BBC Channel 4 TV News, December 2005  
BBC World Service Radio, December 2005  
BBC "Up All Night" Radio Program, December 2005



13. “Robustness Analysis”  
 Department of Biology, University of Pennsylvania, November 2004  
 Philosophy of Science Association Meeting, November 2004  
 ISHPSSB, Guelph, Ontario, July 2005  
 Sage School of Philosophy, Cornell University, March 2006
14. Comments on “Mereological and Modal Features of Substance Properties”  
 International Society for Philosophy of Chemistry, August 2005
15. “Idealization and the Ends of Science”  
 University of Pennsylvania, September 2005  
 Washington and Lee University, April 2006
16. “A Rift in Quantum Chemistry?”  
 Department of History and Sociology of Science, University of  
 Pennsylvania, October 2005
17. “Evolution, Intelligent Design, and Public Misconceptions about Science”  
 Program on Ethics and Public Life, Cornell University, March 2006  
 Washington and Lee University, April 2006  
 Penn School of Arts and Sciences Alumni event, May 2006  
 Pre-performance talk at “Great Tennessee Monkey Trial,” Annenberg  
 Center, April 2007  
 Free Thought Society, May 2007
18. “Tradeoffs and Idealization in Biological Model Building”  
 Instituto de Investigaciones Filosóficas, Universidad Nacional Autónoma de  
 México, June 2006
19. “Robust Properties of Chemical Bonds”  
 Stockholm University, May 2006  
 Philosophy of Science Association, November 2006
20. “Robustness Analysis and the Volterra Principle”  
 Australasian Association of Philosophy, Canberra, Australia, July 2006  
 London School of Economics, March 2007  
 University of Bristol, March 2007
21. “Are Chemical Bonds Real?”  
 Research School of Social Sciences, Australia National University, August  
 2006  
 Center for Philosophy of Science (Pittsburgh), February 2007  
 Duke University, January 2012

22. “Science, Faith, and Darwin” panel  
Co-panelists: The Honorable John E. Jones III, Michael Shermer, Eric Rothchild, Stephen Harvey  
The Franklin Institute, December 2006
23. Commentary on Philip Kitcher’s Prometheus Lecture “Darwin and Democracy”  
Eastern APA, December 2006
24. “Three Kinds of Idealization”  
University of Durham, February 2007  
Minnesota Center for Philosophy of Science, October 2007
25. “Simplicity and Generality in Biological Modeling”  
ISHPSSB, Exeter, UK, July 2007  
Models and Simulations 2, Tilburg University, October 2007
26. “Three Challenges to the Structural Conception of Bonding”  
International Society for the Philosophy of Chemistry, San Francisco, August 2007
27. “Distinctly Chemical Explanations”  
American Chemical Society Presidential Symposium  
Honoring Roald Hoffmann, August 2007
28. “Representational Ideals”  
Tilburg University, October 2007
29. “Models for Modeling Matter”  
Durham University, March 2008
30. “Epistemic Landscapes and the Division of Cognitive Labor”  
Tufts University, April 2008 Penn Workshop on Formal Methods in Philosophy, May 2008
31. “The Death of Similarity?” with Deena Skolnick Weisberg  
Society for Philosophy and Psychology, June 2008
32. “Deploying Highly Idealized Models”  
Universidad Autónoma Metropolitana–Iztapalapa, Mexico, July 2008  
University of Alabama at Huntsville, October 2008  
APA Central Division, February 2009  
Franklin and Marshall College, April 2009

33. “Value and Significance on Epistemic Landscapes”  
PSA 2008, Pittsburgh, PA, November 2008
34. “Explaining with (Possibly) Non-referring Bonds”  
EPSA 2009, Amsterdam, November 2009
35. “Maths and Fictions”  
University of London, Institute for Philosophy, March 2009
36. “Models for Modeling”  
London School of Economics, March 2008  
San Francisco State University, March 2009  
Australia National University, August 2009  
University of Missouri, February 2010
37. “Three Sex Biology and Other Models Without Targets”  
University of Helsinki, May 2009  
ISHPSSB, Brisbane Australia, July 2009  
Southern Methodist University, November 2009  
St. Louis University, March 2010  
University Paris 1 Pantheon-Sorbonne, March 2010
38. “Evolution at 150”  
Society for Philosophy and Psychology, June 2009
39. “Ecological Models of Cognitive Labor”  
University of Pennsylvania Biology Department, November 2009  
Society for Philosophy and Psychology, June 2010  
Sydney University, August 2010  
University of Nevada, Reno, April 2014
40. “Getting Serious about Similarity”  
Thought Experiments and Simulations Workshop, IHPST, Paris, March 2010  
Australia National University, August 2010  
University of California, San Diego, October 2010  
Philosophy of Science Association, November 2010  
Duke University, December 2010  
University of Utah, February 2011  
University of Chicago, June 2011  
CU Boulder, April 2014
41. “Prebiotic Epistemology”  
Philosophy of Biology at Dolphin Beach, August 2010

42. "Homochirality Before the Origin of Life"  
International Society for the History, Philosophy, and Social Studies of  
Biology, July 2011
43. "Why is There So Little Chemistry in Our Culture?"  
Presidential Symposium, International Union for Pure and Applied  
Chemistry, July 2011
44. "Understanding Population Behavior in Individual-Based Models"  
Van Leer Jerusalem Institute, March 2012  
Philosophy of Science Association, November 2012
45. "Empirical and Theoretical Conceptions of the Covalent Bond"  
Durham University, Institute of Advanced Study, July 2012
46. "Without Water There is No Life"  
History of Science Society, November 2012 Stanford University, March 2014
47. "Remeasuring Man"  
Philosophy of Biology at Dolphin Beach 6, July 2012  
Department of Biology, University of Pennsylvania, September 2012
48. "The Stanford School"  
Stanford University, October 2013
49. "Abstraction and Imagination in Computational Modeling"  
Van Leer Jerusalem Institute, June 2014
50. "Evolution, Darwin, and the Galàpagos"  
MS National Geographic Endeavour
51. "Modeling in the Life Sciences"  
Tsinghua University, Beijing, October 2014
52. "Structure, Functional Groups, and Idealization"  
Philosophy of Science Association 2014, Chicago
53. "Confirmation Theory for Agent Based Models"  
Center for Advanced Study, Ludwig-Maximilians-Universität, München

## SERVICE AND PROFESSIONAL ACTIVITIES \_\_\_\_\_

Service to the University and the School of Arts and Sciences

1. Chair, Social Responsibility Advisory Committee (AY14 - )
2. SAS Strategic Planning Working Group (AY14)
3. Ad hoc Committee on Tobacco Investment (AY13 - AY14)
4. Committee on Undergraduate and Academic Standing (AY14)
5. Senate Committee on Students and the Educational Policy (AY 13 - AY 14)
6. Penn Social Responsibility Advisory Committee (AY 12 - AY 13)
7. Faculty Grievance Commission (AY 10 - 12)
8. Member, Integrated Studies Planning Committee (AY10 - )
9. Member, SP2 Dean Re-appointment Committee (AY09)
10. Faculty Fellow, Fisher-Hassenfeld College House (2005 - 2009 )
11. Co-chair, Penn's Year of Evolution (2005 - 2009)
12. Chair, The Evolution Project at Penn Museum (2005 - 2009 )
13. Pre-major advisor, College of Arts and Sciences (AY05 - )
14. Member, Penn Reading Project selection committee (AY07) and committee chair (AY08)
15. Member, SP2 Dean Re-appointment Committee (AY09)

**Service to the Department of Philosophy**

1. Search Committee Chair (AY12, AY13)
2. Search Committee (AY05, AY06, AY14)
3. Admissions Committee (AY04, AY05, AY08, AY14)
4. Library Committee (AY08, AY09)
5. Colloquium Committee (AY05, AY06, AY10)

**Service to the Profession**

1. Associate editor, *Episteme* (2010 - ).

2. Member of the Editorial Board, *Philosophy and Theory in Biology* (2012 - ).
3. Member of the advisory Committee, *Understanding Science*, UC Museum of Paleontology (2006 - ).
4. Member of the editorial board, *Foundations of Chemistry* (2005 - )
5. Member of the executive committee, International Society for the Philosophy of Chemistry (2005 - 2008)
6. Member of the program committee, *Philosophy of Science Association Meeting 2006*
7. Organizer, “New Models of the Social Structure of Science,” PSA 2008
8. Co-organizer “Strategies of Modeling in Biology and Chemistry,” PSA 2004
9. Co-organizer “Causation and Explanation in Chemistry,” PSA 2002
10. Organizer, “The Strategy of Model Building: 1966-2005,” Greater Philadelphia Philosophy Consortium, April 2005.
11. Member of American Philosophical Association, International Society for History, Philosophy, and Social Study of Biology, International Society for the Philosophy of Chemistry, and the Society for Philosophy and Psychology.
12. Ad hoc referee for *Philosophy of Science*, *British Journal for the Philosophy of Science*, *Biology and Philosophy*, *International Studies in the Philosophy of Science*, *Foundations of Chemistry*, *Annals of the New York Academy of Sciences*, *Philosophy of the Social Sciences*, *Critica*, *Synthese*, Acumen Press, Princeton University Press, Oxford University Press, and the National Science Foundation.