# **Christopher Menzel**

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#### Education

Ph.D., philosophy, University of Notre Dame, May 1984

B.A. magna cum laude, philosophy, Pacific Lutheran University, May 1979

## **Employment History**

Texas A&M University: Professor of philosophy; associate professor (1991-2014); assistant professor (1986-1991)

Stanford University: Acting assistant professor of philosophy and postdoctoral fellow, Center for the Study of Language and Information (1984-1986)

## Areas of Specialization

Metaphysics, logic, philosophy of logic and mathematics

Other Areas of Interest and Research

Philosophy of religion, history of modern logic, knowledge representation

# Grants/Fellowships/Awards/Visiting Appointments

Residential Fellow, Glasscock Humanities Center, Texas A&M University, Fall 2022.

2016-17 Alvin Plantinga Fellowship, Center for Philosophy of Religion, University of Notre Dame

Faculty Development Grant, TAMU, 2011-12

Visiting Research Fellow, Munich Center for Mathematical Philosophy, Ludwig-Maximilians-Universität, Munich, Germany, 2011-12

TAMU Association of Former Students Distinguished Achievement Award for Teaching, June 2011

Faculty Development Grant, TAMU, fall 2004

Visiting Research Scientist, Institute for Formal Ontology and Medical Information Science (IFOMIS), Universität Saarlandes, Saarbrücken, Germany, 1 Aug – 31 Dec 2004

Computerized Logic Instruction Center at Texas A&M University, TAMU, 2001

Faculty Development Grant, TAMU, fall 1996

Visiting Research Scientist, CSIRO, Melbourne, Australia, 1 July - 31 Dec 1996

National Endowment for the Humanities Fellowship for College Teachers, 1991-92

Summer Research Grant, College of Liberal Arts, TAMU, summer 1988

Research Fellow, Center for Philosophy of Religion, University of Notre Dame, spring 1988

National Endowment for the Humanities Summer Stipend, summer 1987

Postdoctoral Fellow, CSLI, Stanford University, 1984-86

## **Publications**

- 60. "Pure Logic and Higher-order Metaphysics," forthcoming in P. Fritz and N. Jones, *Higher-Order Metaphysics*, Oxford: Oxford University Press. (~13,500 words)
- 59. "The Possibilism-Actualism Debate," *The Stanford Encyclopedia of Philosophy* (Winter 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = https://plato.stanford.edu/archives/win2022/entries/possibilism-actualism. (~42,500 words)
- 58. "Modal Set Theory," in O. Bueno and S. Sturgeon (eds.), *The Routledge Handbook of Modality*, New York: Routledge, 2021, 292-307.
- 57. "In Defense of the Possibilism-Actualism Distinction," *Philosophical Studies* **177**(7) (2020), 1971-1997.
- 56. "The Argument from Collections," in T. Dougherty and J. Walls (eds.), *Two Dozen (or so) Arguments for God: The Plantinga Project*, New York: Oxford University Press, 2018, 29-58.
- 55. "Haecceities and Mathematical Structuralism," *Philosophia Mathematica* **26**(1) (2018), 84-111.
- 54. "Problems with the Bootstrapping Objection to Theistic Activism," *American Philosophical Quarterly* **53**(1) (2016), 55-68.
- 53. "Logic, Essence, and Modality" (a critical review of Bob Hale's *Necessary Beings: An Essay on Ontology, Modality, and the Relations Between Them*), *Philosophia Mathematica* **23**(3) (2015), 407-440.
- 52. "The Logic Daemon: Colin Allen's Computer-based Contributions to Logic Pedagogy," *Philosophy and Computers* **15**(1) (2015), 41-45.
- 51. "Worlds and Propositions Set Free" (with O. Bueno and E. N. Zalta), *Erkenntnis* **79**(4) (2014), 797-820. DOI: 10.1007/s10670-013-9565-x.
- 50. "Wide Sets, ZFCU, and the Iterative Conception," *Journal of Philosophy* **111**(2) (2014), 57-83. Selected by *The Philosopher's Annual* as one of the ten best philosophy papers of 2014; see http://www.pgrim.org/philosophersannual/past.html#v34.
- 49. "The Fundamental Theorem of World Theory" (with E. Zalta), *Journal of Philosophical Logic* **43**(2) (2014) 333-363. DOI: 10.1007/s10992-012-9265-z.
- 48. "Possible Worlds," *The Stanford Encyclopedia of Philosophy* (Winter 2013 Edition), Edward N. Zalta (ed.), URL = http://plato.stanford.edu/archives/win2013/entries/possible-worlds. Latest version is always online at http://plato.stanford.edu/entries/possible-worlds. (~30,000 words)
- 47. "Sets and Worlds Again," Analysis 72(2) (2012), 304-309.

- 46. "Knowledge Representation, the World Wide Web, and the Evolution of Logic," *Synthese* **182**(2) (2011), 269–295.
- 45. "Good Actions in Tourism," (with T. Jamal), in J. Tribe (ed.), *Philosophical Issues in Tourism*, Clevedon, UK, Channel View Publications, 2009.
- 44. "Intention Is Commitment with Expectation" (with J. Creel and T. Ioerger), in *Proceedings of the Twentieth International FLAIRS Conference*, Menlo Park: AAAI Press (2008) 50-55.
- 43. "Actualism," *The Stanford Encyclopedia of Philosophy (Winter 2008 Edition)*, E. N. Zalta (ed.), URL = http://plato.stanford.edu/archives/win2008/entries/actualism. (This was a major update and revision of the Summer 2000 version of this article (#32 below). It has been supplanted by an entirely new entry: "The Possibilism-Actualism Debate" (#59 above).)
- 42. "Modal Rigidity in the OntoClean Methodology" (with W. Andersen), in A. C. Varzi and L. Vieu (eds.), *Formal Ontology in Information Systems*, Amsterdam, IOS Press (2004), 119-127.
- 41. "Basic Semantic Integration," in Y. Kalfoglou, M. Schorlemmer, A. Sheth, S. Staab, M. Uschold (eds.), *Semantic Interoperability and Integration, Proceedings of Dagstuhl Seminar 04391*, Dagstuhl, Germany (2004).
- 40. "Reference Ontologies / Application Ontologies: Either/Or or Both/And?" in P. Grenon, C. Menzel, and B. Smith (eds.), *Proceedings of the Workshop on Reference Ontologies and Application Ontologies*, KI 2003, September 16, 2003, Hamburg, Germany. CEUR Workshop Proceedings, vol. 94 (2004), ISSN 1613-0073.
- 39. "SCL: A Logic Standard for Semantic Integration" (with P. Hayes), in A. Doan, A. Halevey, and N. Noy (eds.), *Semantic Integration*, CEUR Workshop Proceedings, vol. 82 (2003).
- 38. "Ontology Theory," in J. Euzenat, A. Gomez-Perez, N. Guarino, and H. Stuckenschmidt (eds.), *Ontologies and Semantic Interoperability*, CEUR Workshop Proceedings, vol. 64 (2003).
- 37. "Process Specification Language: Principles and Applications" (with M. Grüninger), *AI Magazine* 24(3) (Fall 2003), 63-74.
- 36. "A Formal Foundation for Process Modeling" (with M. Grüninger), in C. Welty and B. Smith (eds.), *Formal Ontology and Information Systems*, New York: ACM Press, 2001, 256-269
- 35. "An Adaptive Process Management System (APMS)" (with P. C. Benjamin), in L. Nemes and J. Mo (eds.), *Global Engineering, Manufacturing and Enterprise Networks*, Boston: Kluwer Academic Publishers, 2001
- 34. "God and Mathematical Objects," in J. Bradley and R. Howell (eds.), *Mathematics in a Postmodern Age: A Christian Perspective*, Eerdmans Publishing Company, 2001. (This is a revised and expanded version of #6 below.)
- 33. "Review of J. Copeland (ed.), *Logic and Reality: Essays on the Legacy of Arthur Prior*," *Philosophical Review* 109(2) (April 2000), 281-286.
- 32. "Actualism," *Stanford Encyclopedia of Philosophy, (Summer 2000 Edition)*, E. N. Zalta (ed.), URL = http://plato.stanford.edu/archives/sum2000/entries/actualism.
- 31. "The Objective Conception of Context and Its Logic," Minds and Machines 9 (1999), 29-56.
- 30. "Logical Form," in W. Craig (ed.) *Routledge Encyclopedia of Philosophy*, Routledge and Kegan Paul, 1998.

- 29. "The IDEF Family of Languages" (principal author, with R. J. Mayer), in P. Bernus, K. Mertins, and G. Schmidt (eds.), *Handbook on Architectures for Information Systems*, Springer-Verlag, 1998, 209-241.
- 28. "An Integrated Process Model Driven Knowledge Based System for Remote Customer Support (with J. Mo)," *Computers in Industry* (1998), 171-183.
- 27. "Applying the Process Interchange Format (PIF) to a Supply Chain Process Interoperability Scenario" (with S. Polyak, J. Lee, and M. Gruninger). In A. Gomez-Perez and R. Benjamins (eds.), *Proceedings of the Workshop on Applications of Ontologies and Problem Solving Methods*, ECAI'98, Brighton, England, August 1998.
- 26. "Modeling Method Ontologies: A Foundation for Enterprise Model Integration," in M. Gruninger and Farquhar, A. (eds.), *Ontological Engineering: Papers from the 1997 AAAI Spring Symposium*, Menlo Park, AAAI Press, Technical Report SS-97-06, pp. 73-83.
- 25. "Situations and Processes" (principal author, with R. J. Mayer), *Concurrent Engineering:* Research and Applications 4(3) (1996).
- 24. "A Situation Theoretic Approach to the Representation of Processes" (principal author, with R. J. Mayer), in P. Bernus and L. Nemes (eds.), *Modeling and Methodologies for Enterprise Integration*, London, Chapman and Hall, 1996, 201-217.
- 23. Entries on "Alethic Modalities" and "Type Theory," R. Audi (ed.), *The Cambridge Dictionary of Philosophy*, Cambridge, Cambridge University Press, 1995.
- 22. "Toward a Method for Acquiring CIM Ontologies" (with P. Benjamin, R. Mayer, and N. Padmanaban), *International Journal of Computer Integrated Manufacturing* 8(3) (1995), 225-234.
- 21. "An Ontology and Process Description Method for Design and Implementation of Information-Integrated Enterprises" (with R. Mayer and J. Hwang), *International Journal of Flexible Automation and Integrated Manufacturing* 1 (1994), 207-227.
- 20. "IDEF3 Process Descriptions and Their Semantics" (principal author, with R. Mayer and D. Edwards), in A. Kusiak and C. H. Dagli (eds.), *Intelligent Systems in Design and Manufacturing*, ASME Press, 1994.
- 19. "A Formal Model of Single Agent Planning Situations" (with R. Mayer, M. Erraguntla, and J. Hwang), *Journal of Systems Integration* 4(3) (1994), 219-241.
- 18. "Singular Propositions and Modal Logic," Philosophical Topics 21 (1993), 113-148.
- 17. "The Proper Treatment of Predication in Fine-grained Intensional Logic," in J. Tomberlin (ed.), *Philosophical Perspectives, vol. 7: Language and Logic*, 1993, Ridgeview Publishing Co., 1993, 61-87.
- 16. "Possibilism and Object Theory," *Philosophical Studies* 69 (1993), 195-208.
- 15. "Critical Review of E. Zalta, Intensional Logic and the Metaphysics of Intentionality," *Journal of Symbolic Logic* 57 (3) (1992), 1146-1150.
- 14. "Representation, Information Flow, and Model Integration" (principal author, with R. Mayer and L. Sanders), in C. Petrie (ed.), *Enterprise Model Integration: Proceedings of the First International Conference*, Cambridge, MIT Press, 1992, 131-141.
- 13. "The True Modal Logic," Journal of Philosophical Logic 20 (1991), 331-374.

- 12. "Temporal Actualism and Singular Foreknowledge," J. Tomberlin (ed.) *Philosophical Perspectives, vol. 5: Philosophy of Religion, Ridgeview Publishing Co.,* 1991, 475-507.
- 11. "Actualism, Ontological Commitment, and Possible World Semantics," *Synthese* 85 (1990), 355-389.
- 10. "Structuralism and Conceptual Change in Mathematics," PSA 1990 2 (1990), 397-401.
- 9. "The Basic Notion of Justification" (with Jonathan L. Kvanvig), *Philosophical Studies* 59 (1990), 193-219.
- 8. "On an Unsound Proof of the Existence of Possible Worlds," *Notre Dame Journal of Formal Logic* 30 (1989), 598-603.
- 7. "Frege Numbers and the Relativity Argument," *Canadian Journal of Philosophy* 18 (1988), 87-98.
- 6. "Theism, Platonism, and the Metaphysics of Mathematics," *Faith and Philosophy* 4 (1987), 365-382; reprinted in *The Philosopher's Annual* 10 (1987), 91-112 (selected by the editors as one of the ten best philosophy papers of 1987), and in M. Beaty (ed.), *Christian Theism and the Problems of Philosophy*, University of Notre Dame Press, 1990.
- 5. "A Complete, Type-free 'Second-order' Logic and Its Philosophical Foundations," Report No. CSLI-86-40, Center for the Study of Language and Information, Stanford University, 1986.
- 4. "On Set Theoretic Possible Worlds," Analysis 46 (March 1986), 68-72.
- 3. "On the Iterative Explanation of the Paradoxes," *Philosophical Studies* 49 (1986), 37-61.
- 2. "Absolute Creation" (with Thomas V. Morris), *American Philosophical Quarterly* 23 (1986), 353-362.
- 1. "Cantor and the Burali-Forti Paradox," The Monist 67 (1984), 92-107.

### **Presentations**

"The Persistence of Possibilism," Queensland University, Brisbane, Australia, February 2021.

"Modal Set Theory and Potential Hierarchies," Symposium on Modal Paradox, Pacific Division Meetings of the American Philosophical Association, Vancouver, April 2019; Munich Center for Mathematical Philosophy, Ludwig-Maximilians-Universität, Munich, July 2019; Conference on Set Theory: Bridging Mathematics and Philosophy, University of Konstanz, July 2019.

"Classical Logic without (Fregean) Metaphysics," Kurt Gödel Research Center for Mathematical Logic, Vienna, Austria, June 2018.

"In Defense of the Possibilism-Actualism Distinction," University of Vienna, Austria, June 2018; University of Oslo and University of Bergen, Norway, September 2017.

"The Development of Edward Zalta's Metaphysics," American Philosophical Association, Savannah, January 2018.

"Problems and Prospects for Possible World Semantics," Symposium on Possible Worlds: Problems and Prospects, 9th European Congress on Analytic Philosophy, Munich, August 2017

"Comments on Schumener's 'A Minimal Account of Governance'," Syracuse Philosophy Annual Workshop and Network (SPAWN), invited commentator, University of Syracuse, June 2017.

- "Comments on Jason Turner's *The Facts in Logical Space*," Pacific Division Meetings of the American Philosophical Association, Seattle, April 2017.
- "A Pretty Good Theistic Argument from the Iterative Conception of Set," 2017 meetings of the Society for Exact Philosophy, Calgary, May 2017.
- "In Defense of the Possibilism-Actualism Distinction," Alvin Plantinga Lecture, University of Notre Dame, 28 October 2016; 2016 meetings of the Society for Exact Philosophy, Coral Gables, May 2016; University of Utah Philosophy Colloquium, 30 October 2015.
- "Set Theory with Wide Sets," Buenos Aires Logic Group colloquium, Buenos Aires, August 2015.
- "A Structuralist Conception of Possible Worlds," Ninth *Principia* International Symposium, Florianópolis, Brazil, August 2015.
- "Logic with a Single Type," 2015 meetings of the Society for Exact Philosophy, Hamilton, Ontario, May 2015.
- "Haecceities and Mathematical Structuralism," Colloquium in Logic, Philosophy of Science and Philosophy, Munich Center for Mathematical Philosophy, 18 June 2014;
- "Actualism: Some Logic, Some Philosophy," Colloquium in Mathematical Philosophy, Munich Center for Mathematical Philosophy, Ludwig-Maximilian-Universität, Munich, Germany, 26 June 2014.
- "Problems with the Bootstrapping Objection," Central Division Meetings of the American Philosophical Association, Philosophy of Religion Group, Chicago, February 2014.
- "Modal Realism and the Absolute Infinite," History and Philosophy of Infinity conference, Cambridge University, UK, September 2013.
- "Logic with a Single Type: Motivations and Metatheory," invited lecture, UNILOG 2013 workshop, *Between First and Second Order Logic*, Rio de Janeiro, April 2013.
- "Wide Sets, ZFCU, and the Iterative Conception," Midwest Philosophy of Mathematics Workshop (MWPMW) 13, University of Notre Dame, October 2012; Munich Center for Mathematical Philosophy, Ludwig-Maximilian-Universität, Munich, Germany, February 2012.
- "The Logic of Strict Actualism," Workshop on Modal Logic, Munich Center for Mathematical Philosophy, Ludwig-Maximilian-Universität, Munich, Germany, 27 June 2012.
- "Common Logic: Evolution and Metatheory," invited lecture, Université Paris-Sorbonne, Seminar on Philosophy of the Web, Paris, France, April 2012.
- "Common Logic and the Semantic Web," keynote speaker, PhiloWeb 2012, Workshop at the 21st World Wide Web Conference, Lyon, France, April 2012.
- Common Logic: Evolution and Metatheory," Munich Center for Mathematical Philosophy, Ludwig-Maximilian-Universität, Munich, Germany, December 2011.
- "Haecceities and Mathematical Structuralism," Society for Exact Philosophy, Winnipeg, May 2011.
- "Strict Actualism and the Logic of the Possible," Oberseminar Logik und Sprachtheorie, Wilhelm-Schickard Institut für Informatik, Tübingen University, Tübingen, Germany, July 2010.
- "Common Upper Ontologies and Common Logic," The Logic and Cognitive Science Initiative (LACSI) Conference, North Carolina State University, September 2009.

- "Two Arguments against Modal Existentialism," IU Logic Group, Indiana University, October 2008.
- "Common Logic: Motivations and Some Simple Theory," IU Informatics Group, Indiana University, October 2008.
- "Tutorial on Common Logic" (with Patrick Hayes and John Sowa), Semantic Technologies 2008, San Jose, CA, May 2008.
- "Comments on 'Truth at a World for Modal Propositions'," American Philosophical Association, Pacific Division Meetings, Los Angeles, March 2008
- "Possible World Semantics for the Strict Actualist: Response to Nelson," Symposium on Possible Worlds, American Philosophical Association, Pacific Division Meetings, San Francisco, March 2007
- "Weblogic: Open Networks and the (Proposed) Common Logic Standard" (with Patrick Hayes), Semantic Technologies 2006, San Jose, CA, March 2006.
- "A New Axiomatic Semantics for RDF, RDFS, and OWL," The Boeing Company, Seattle, WA, December 2005
- "A New Axiomatic Semantics for RDF, RDFS, and OWL," National Institute for Science and Technology, December 2005
- "Extensionalism for Strict Actualists," Department of Philosophy, University of Washington, Seattle, November 2005; Philosophisches Seminar, Saarland University, Saarbrücken, Germany, December 2004
- "Modal Rigidity in the OntoClean Methodology," Fifth International Conference on Formal Ontology and Information Systems, Torino, Italy, November 2004 (co-authored with, and presented by, William Andersen.)
- "SCL: A Logic Standard for Semantic Integration," Semantic Integration Workshop, Second International Semantic Web Conference (ISWC 2003), Sanibel Island, Florida, October 2003.
- "Application Ontologies / Reference Ontologies Either / Or or Both / And?", Workshop on Application Ontlogies vs. Reference Ontologies, 2003 German Conference on Artificial Intelligence, Hamburg, September 2003.
- "Formal Ontology and Philosophical Content on the Semantic Web," Symposium on Formal Ontology and Philosophical Content on the Semantic Web (invited panelist), APA Pacific Meetings, San Francisco, March 2003.
- "The Common Logic Standard," Open Forum 2003 International Conference on Metadata Registries, Santa Fe, New Mexico, January 2003 (invited talk).
- "Ontology Theory," Workshop on Ontologies and Semantic Interoperability, European Conference on Artificial Intelligence (ECAI 2002), Lyon, July 2002.
- "Modal Particularism," Department of Philosophy, University of Texas, Austin, November 2001
- "A Formal Foundation for Process Modeling" (with Michael Gruninger), International Conference on Formal Ontology and Information Systems (FOIS-01), Ogunquit, Maine 2001 (delivered by Michael Gruninger)
- "A Formal Semantics for the Knowledge Interchange Format," Workshop on the IEEE Standard Upper Ontology, International Joint Conference on Artificial Intelligence (IJCAI), Seattle, August 2001.

- "An Adaptive Process Management System (APMS)" (with P. C. Benjamin), 4th International Conference on Design of Information Infrastructure Systems for Manufacturing 2000, International Federation for Information Processing (IFIP), Melbourne, November 2000 (delivered by Benjamin)
- "Modal Particularism and the Ground of Modal Truth," Society for Exact Philosophy, Gainesville, March 2000.
- "Applying the Process Interchange Format (PIF) to a Supply Chain Process Interoperability Scenario" (with S. Polyak, M. Gruninger, and J. Lee), European Conference on Artificial Intelligence (ECAI 1998), Brighton, England, August 1998 (delivered by Polyak).
- "Propositions and Properties: Comments on Jubien," Symposium on Intensional Logic, Association for Symbolic Logic, Spring Meeting, Los Angeles, March 1998.
- "A Logic of Contexts," Department of Information Sciences, Griffith University, and Department of Philosophy, Queensland University, December 1996.
- "Philosophy, Logic, and Enterprise Modeling," Department of Mechanical and Manufacturing Engineering, Melbourne University, October 1996.
- "Toward a Science of Information Modeling," Department of Mechanical and Manufacturing Engineering, Melbourne University, October 1996.
- "Types, Instances, and Process Modeling," Joint Workshop on Standards for the use of Models that Define the Data and Processes of Information Systems (JTC1-96), The Boeing Company, Seattle, September 1996.
- "Contexts and Information," Common Sense 96: Third Symposium On Logical Formalizations of Commonsense Reasoning, Stanford University, January 1996.
- "A Situation Theoretic Approach to the Representation of Processes," International Federation for Information Processing Conference on Enterprise Integration, Heron Island, Australia, November 1995.
- "An Ontology-Based Environment for Enterprise Model Integration," Workshop on Basic Issues in Ontology, International Joint Conference on Artificial Intelligence (IJCAI), Montreal, August 1995.
- "In Defense of Fine-grained Intensions," Symposium on Property Theory, American Philosophical Association Pacific Division meeting, San Francisco, March 1995 (invited panelist).
- "Singular Propositions and Modal Logic," joint Association of Symbolic Logic / American Philosophical Association Central division meeting, Kansas City, May 1994.
- "Comments on 'Wittgenstein on the Infinite in Set Theory'," American Philosophical Association Pacific Division meeting, San Francisco, March 1993.
- "Possibilism and Object Theory," American Philosophical Association author-meets-critic symposium on Edward Zalta's Intensional Logic and the Metaphysics of Intentionality, Portland, March 1992 (invited panelist).
- "Representation, Information Flow, and Model Integration," International Conference on Engineering Integration and Modeling Technology, Workshop on Modeling Technology, Microelectronics and Computer Technology Corporation, Austin, February 1992.

"The Importance of Mathematical Formalization for the Advancement of Information Modeling Technology," IDEF Users Group, Fort Worth, September 1991.

"Randomness, Algorithmic Complexity, and Mathematical Truth," joint American Philosophical Association/Association for Symbolic Logic symposium on the philosophical implications of Gregory Chaitin's Algorithmic Information Theory, San Francisco, March 1991 (invited panelist).

"Temporal Actualism and Singular Foreknowledge," Pacific division meeting of the American Philosophical Association, San Francisco, March 1991.

"Comments on Grosholz's 'Formal Unities and Real Individuals'," Philosophy of Science Association symposium on mathematical and physical objects, Minneapolis, October 1990.

"Comments on Deutsch's 'Logic for Contingent Beings'," Pacific division meeting of the American Philosophical Association, Los Angeles, March 1990.

"Contingency, Q, and the True Modal Logic," Pacific division meeting of the Association for Symbolic Logic, Berkeley, January 1990.

"Contingency and Modal Logic," Arthur Prior Memorial Conference, University of Canterbury, Christchurch, New Zealand, August 1989.

"Qualitative and Quantitative Simulation Model Generation from Manufacturing System Descriptions," Engineering Society of Detroit Expert Systems Conference 1989, Detroit, April 1989 (with R. Mayer et al.; I was not present for the delivery of this paper).

"Platonism in Mathematics," Baylor University philosophy club, Waco, October 1988.

"Comments on Landini's 'Cantor's Power Class Theorem and the Historical Inseparability of the Simple and Ramified Theory of Logical Types'," Central division meeting of the American Philosophical Association, Cincinnati, April 1988.

"A Heretical Approach to Modal Actualism," Calvin College philosophy colloquium, March 1988.

"Absolute Creation and the Structure of Propositions," invited address, University of Notre Dame Conference on Christian and Theistic Philosophy, February 1988.

"The Nature of Ordinal Numbers," University of Oklahoma philosophy colloquium, Norman, September 1987.

"Formalizing Information Modeling Techniques," Stanford University database colloquium, Department of Computer Science, Palo Alto, July 1987.

"Structuralism and Ordinal Numbers," University of Texas philosophy colloquium, Austin, May 1987.

"Theism and the Subject Matter of Mathematics," invited address, the Association of Christians in the Mathematical Sciences, Calvin College, May 1987.

"Comments on Jubien's 'Models of Property Theory'," delivered at a symposium on property theory, Western division meeting of the American Philosophical Association, San Francisco, March 1987.

"Comments on Turner's 'Generalized Frege Structures'," also delivered at the above-mentioned symposium.

"Paradoxes, Large Sets, and Proper Classes," delivered at the Eastern division meeting of the American Philosophical Association, Washington D.C., December 1985.

"The Relational Theory of Meaning," delivered at the University of Notre Dame, December 1985.

"Property Theory and Second-order Logic," delivered at the Western regional meeting of the Association for Symbolic Logic, Stanford University, July 1985.

## **Courses Taught**

*Graduate*: Mathematical Logic, Metaphysics, Logic and Metaphysics of Modality, Computability Theory, History and Philosophy of Logic, Philosophy of Language, Philosophy of Mathematics

*Undergraduate*: Symbolic Logic I and II (includes at least first-order logic through completeness and (optionally) intensional logic and set theory), Contemporary British and American Philosophy, Metaphysics, Philosophy of Language, Philosophy of Religion, Introduction to Logic, Introduction to Philosophy, Contemporary Moral Issues

*Directed Studies*: Advanced Logic, Modal Logic, Metaphysics of Modality, Philosophy of Mathematics, Time and Modality, Set Theory, Model Theory, Computability Theory, Montague Grammar

## Dissertation

Title: "Mathematical Realism and the Theory of Sets"

Advisors: Penelope Maddy and Alvin Plantinga