

## Robert Saxon Milnikel, Jr.

Department of Mathematics

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### Education

Ph.D. in Mathematics, Cornell University, May 1999.

M.S. in Computer Science, Cornell University, August 1996.

B.A. in Mathematics *Magna Cum Laude* with distinction in major field, Phi Beta Kappa, Carleton College, June 1992.

### Positions Held

Associate Professor, Kenyon College, July 2006-present.

Mathematics Dept. Chair, Kenyon College, July 2006-June 2008, July 2011-June 2012.

Assistant Professor, Kenyon College, July 2002-June 2006.

Visiting Assistant Professor, Wellesley College, July 1999-June 2002.

Instructor, Teaching Assistant, Cornell University, August 1992 – December 1998.

Research Assistant, Cornell University, four semesters between 1994 and 1999.

### Publications and Works in Progress

As-yet-untitled textbook for *Surprises at Infinity*, roughly 450 pages, under revision before initial submission.

An Old Construction and a New Twist: Approximating inscribed  $n$ -gons. Submitted, *Mathematics Magazine*, January 2014.

The Logic of Uncertain Justifications. *Annals of Pure and Applied Logic*, 165(1), January 2014, pages 305–315.

The Logic of Uncertain Justifications (Preliminary Summary Report). *Proceedings of the 2013 Symposium on the Logical Foundations of Computer Science*, Springer-Verlag (series *Lecture Notes in Computer Science*), Berlin, 2013, pages 296–306.

Conservativity in Logics of Justified Belief: Two Approaches. *Annals of Pure and Applied Logic*, 163(7), July 2012, pages 809–819.

Conservativity in Logics of Justified Belief. *Proceedings of the 2009 Symposium on the Logical Foundations of Computer Science*, Springer-Verlag (series *Lecture Notes in Computer Science*), Berlin, 2009, pages 354–364.

Deducibility in the Logic of Proofs is  $\Pi_2^p$ -complete. *Annals of Pure and Applied Logic*, 145(3), March 2007, pages 223–239.

Sequent Calculi for Skeptical Reasoning in Predicate Default Logic and Other Nonmonotonic Logics. *Annals of Mathematics and Artificial Intelligence*, 44(1), May 2005, pages 1-34.

A Sequent Calculus for Skeptical Reasoning in Autoepistemic Logic. *Proceedings of the 10<sup>th</sup> International Symposium on Nonmonotonic Reasoning*, July 2004.

Embedding Nonmonotonic Modal Logics into Default Logic. *Studia Logica*, 75(3), December 2003, pages 377–382.

A Sequent Calculus for Skeptical Reasoning in Default Logic. *Proceedings of the 7<sup>th</sup> European Conference for Symbolic and Quantitative Approaches to Reasoning with Uncertainty*, Springer-Verlag (series *Lecture Notes in Computer Science*), Berlin, 2003, pages 564–575.

The Complexity of Predicate Default Logic over a Countable Domain. *Annals of Pure and Applied Logic*, 120, April 2003, pages 151–163.

Skeptical Reasoning for FC-normal Logic Programs is  $\Pi_1^1$ -complete. *Fundamenta Informaticae*, 45(3), February 2001, pages 237–252.

Tableau Proofs for Skeptical Consequence. Proceedings of the FLoC '99 Workshop on Complexity-Theoretic and Recursion-Theoretic methods.

Report on the Fourth International Workshop on Logic Programming and Nonmonotonic Reasoning. *AI Communications* v.10 (1997) no.3–4.

## Teaching Experience

Designed and taught introductory course for nonmathematicians *Surprises at Infinity*, 2006–present.

Designed and taught advanced courses bridging mathematics and computer science: Mathematical Logic, Theory of Computation, Artificial Intelligence; 2001–2011.

Taught advanced courses in mathematics: Set Theory and Abstract Algebra; 2002–2011.

Taught intermediate courses in mathematics: Multivariable Calculus, Linear Algebra, Foundations (Introduction to Proof); 1999–present.

Taught introductory-level courses in mathematics and computer science; 1999–present.

Instructor for first and second semester calculus over six semesters, 1993–1998. Various semesters included projects-based and calculator-based instruction.

Teaching Assistant for first and second semester liberal arts and engineering calculus courses, four semesters 1992–1997.

## Service Activities

Chair, Mathematics Department, Kenyon College, 2006–2008, 2011-2012.

Member, Tenure and Promotion Committee, Kenyon College, 2010–2013. (Chair 2012–2013.)

Secretary/Treasurer, Phi Beta Kappa, Kenyon College, 2011–2014. (Two semesters as acting president.)

Member, Ad-hoc Curricular Review Committee, Kenyon College, 2013.

Reviewer for conferences and journals including Computer Science in Russia, *Journal of Logic and Computation*, and *The College Mathematics Journal*. Ongoing.

Outside reader on two dissertations at CUNY, 2008 and 2010.

Member, KCCDF Award Committee, 2010–present.

Member, Quantitative Reasoning Committee, Kenyon College, 2012.

Kenyon College delegate, GLCA Academic Council, 2003–2007.

Chair, Tenure-Track Search Committee, Mathematics Department, Kenyon College, 2005–2006, 2008.

KAP Program Computer Science coordinator, 2004–2007.

HHMI Science/Math Summer Program workshop leader, 2004–2006, Kenyon College.

Summer Science Visit Day Mathematics representative, tour guide, 2004, 2005, 2007, 2013.

Major Advisor to several students, 2003–, Kenyon College.

First-year student academic advisor, Kenyon College, 2003, 2005–07, 2010–.

Member, Placement Exam Redesign Committee, Mathematics Department, Kenyon College, 2002–06.

Organizer, annual advising gathering, Mathematics Department, Kenyon College, 2003–present

Coordinator, Math Lunch, Kenyon College, 2002–2008.

Co-Chair, Student Activities and Colloquium Series Committee, Mathematics Department, Wellesley College, 2000–2002.

Member of graduate student committee for design of project-based calculus syllabus, Cornell University 1993–95; implementation of this curriculum, 1997–98.

TA Training instructor, Mathematics Department, Cornell University, 1997–1998.

## Lectures

### *Invited and Refereed Talks*

- “The Logic of Uncertain Justifications,” Symposium on the Logical Foundations of Computer Science, January 2013, San Diego, CA.
- “The Logic of Uncertain Justifications,” The Constructive in Logic: A Conference in Honor of Sergei Artemov’s 60<sup>th</sup> Birthday, May 2012.
- “Embedding Logic Programs in Justification Logic,” Computational Logic Seminar, CUNY Graduate Center, November 2011.
- “An Introduction to Justification Logics,” Joint Math/Computer Science/Philosophy Logic Seminar, University of Connecticut, April 2009, Storrs CT.

- “Conservativity in Logics of Justified Belief, a Syntactic Approach” Computational Logic Seminar, CUNY Graduate Center, March 2009, New York NY.
- “Conservativity in Logics of Justified Belief,” Symposium on the Logical Foundations of Computer Science, January 2009, Deerfield FL.
- “Introduction to the Logic of Proofs” and “The Complexity of Decidability in the Logic of Proofs,” Cornell University Logic Seminar, April 2005.
- “The Complexity of Decidability in the Logic of Proofs,” CUNY Graduate School Computational Logic Seminar, March 2005.
- “A Sequent Calculus for Skeptical Reasoning in Autoepistemic Logic”, International Symposium for Nonmonotonic Reasoning, July 2004, Whistler, B.C. Canada.
- “A Sequent Calculus for Skeptical Reasoning in Predicate Default Logic”, European Conference for Symbolic and Quantitative Approaches to Reasoning under Uncertainty, July 2003, Aalborg, Denmark.
- “Tableau Proofs for Skeptical Consequence”, FLoC Workshop on Complexity-theoretic and Recursion-theoretic methods in Databases, Artificial Intelligence and Finite Model Theory, July 1999, Università degli Studi di Trento, Italy.

*Expository Talks and Panel Discussions*

- “An Introduction to Justification Logic,” Kenyon College Philosophy Colloquium, March 2014.
- “An Old Construction and a New Twist,” Kenyon College, February 2014. “The Philosophy of Mathematics,” Kenyon College Philosophy Symposium, November 2013. (Joint presentation with P. Reeder)
- “The Life and Work of Alan Turing,” Oberlin College, April 2012; Kenyon College, April 2012.
- “Reverse Mathematics,” Kenyon College, September 2011.
- “What Gödel Really Said,” Cleveland State University Pi Mu Epsilon initiation, April 2011.
- “Still Incomplete After All These Years: Gödel and the Intrinsic Incompleteness of Mathematics,” Kenyon College, September 2006, Ohio Wesleyan University, October 2007.
- “The Senior Seminar or ‘Capstone’ Experience for Undergraduate Mathematics Majors,” panel at AMS/MAA joint meetings, Atlanta GA, January 2005.
- “From Philosophical Crisis to Computer Mathematics”, Denison University, October 2002, Kenyon College, March 2003, and College of Wooster, November 2003.
- “The Real World as a Model of a Mathematical Theory,” Series on Mathematics and Philosophy, Wellesley College, November 2000. (Joint presentation with M.K. McGowan.)
- “Nonmonotonic Logic with Recursive Sets of Premises and Restraints,” MIT/Harvard Logic Seminar, October 2000.