

Curriculum Vitae

Michael Detlefsen
Department of Philosophy
University of Notre Dame

Addresses and Numbers

University

Department of Philosophy
University of Notre Dame
Notre Dame, Indiana 46556
Phone: (574) 631-7399
Email: mdetlef1@nd.edu
Fax: (574) 631-8609

Home

15766 Hunting Ridge Trail
Granger, IN 46530
Phone: (574) 273 2744

Education

1976 Ph.D, Johns Hopkins
1971 A. B., Wheaton College

Faculty Positions

Current Positions:

McMahon-Hank Professor of Philosophy, University of Notre Dame
Senior chaire d'excellence, Agence Nationale de la Recherche, France
Distinguished Invited Professor, University of Paris-Diderot (2008-2009, 2009-2010)
Distinguished Invited Professor, University of Nancy 2 (2007-08, 2010-2011)
Member, Archives Poincaré (CNRS, UMR 7117) (2007-2011)
Member, Institut d'Histoire et Philosophie des Sciences et des Techniques, Paris (2007-2011)
Visiting Professor, University of Paris-Diderot (Spring 2007)
Visiting Professor, University of Konstanz, Germany (spring/summer 1994)

Visiting Professor, University of Konstanz, Germany (1987–1988)
Associate Professor, University of Notre Dame (1984–1989)
Visiting Associate Professor, University of Notre Dame (fall 1983)
Visiting Scholar, University of Split (Croatia) (1981–1982)
Associate Professor, University of Minnesota–Duluth (1981–1983)
Assistant Professor, University of Minnesota–Duluth (1975–1981)

Select Honors & Distinctions

Senior Chaire d'excellence, *Agence Nationale de la Recherche* (ANR), France, 2007–2011

Special Research Interests

History and Philosophy of Mathematics
Logic and its History
Gödel's Theorems and their implications

Publications

Books

Edited

Proof, Logic and Formalization, Routledge, London, 1992.
Proof and Mathematical Knowledge, Routledge, London, 1992

Authored

Published

Hilbert's Program: An Essay on Mathematical Instrumentalism, vol. 182 of the *Synthese Library*,
D. Reidel Publishing Co., 1986

(**Reviews:** *Journal of Symbolic Logic* 54 (1989), 620–622; *Canadian Philosophical Reviews* 9 (1989), 145–148; *Mathematical Reviews* July (1989), 03001; *Journal of Philosophy* 88 (1991), 331–36; *Nous* 26 (1992): 513–514)

In Progress

I. 'Where Concepts Fail': The Axiomatic Method in the Development of Arithmetic

Description:

This book argues for the existence of historically significant and philosophically plausible formalist elements in mathematics (in particular, in the broadly arithmetic side of mathematics). Specifically, it argues for a *creativist* view of arithmetic—that the development of the number-concept is marked by an important element of freedom and that the most plausible understanding of this freedom is that it is a freedom to create instruments of a broadly formalist character.

Historically, this creativism had two sources. One was the ancient ideal of solving problems, a source that was given renewed emphasis in the development of algebra (perhaps most strongly in the work of Viète and Wallis) where it presented the solvability of problems as the (or at least a) prime motive of algebra.

The other source was a methodological principle generally known as the *Principle of Permanence*. This principle constrained the freedom of the algebraist by requiring that her creations preserve certain laws of arithmetic (or arithmetic algebra, as it was sometimes called). It came to prominence in the thought of the so-called ‘Cambridge Algebraists,’ most particularly, in the writings of George Peacock. Eventually, it came to exert an influence on the thought of Hilbert and other foundational thinkers of his and later times.

An underlying theme of the book is that none of the usual monolithic philosophies or ‘isms’ (e.g. platonism, logicism, neo-logicism, intuitionism, formalism, structuralism (in any of its forms), etc.) are adequate to the subtleties of mathematical history. A plausible philosophy of mathematics must recognize the importance of both formalist and non-formalist elements in mathematics.

II. Gödel’s Theorems: A Philosophical Reflection, with Timothy McCarthy (Department of Philosophy, University of Illinois–Urbana/Champaign)

Description:

This book is a study of Gödel’s incompleteness theorems. It presents and discusses technical details and pertinent historical matters, but its focus is philosophical questions. It discusses the philosophical questions usually associated with Gödel’s theorems as well as a number not commonly discussed.

Articles and Critical Essays

“Purity as an Ideal of Proof”, *The Philosophy of Mathematical Practice*, Paolo Mancosu (ed.), 179–197, Oxford University Press, 2008

“Proof: Its Nature and Significance”, *Proof and Other Dilemmas: Mathematics and Philosophy*, Bonnie Gold and Roger Simons (eds.), 3–32, Mathematical Association of America, 2008

Interview, in *Philosophy of Mathematics: 5 Questions*, H. Leitgeb and V. Hendricks (eds.), 87–99, Automatic Press/VIP, 2007

“Formalism”, *Oxford Handbook of the Philosophy of Mathematics and Logic*, in *The Oxford Handbook of Philosophy of Mathematics and Logic*, 236–317, Oxford University Press, 2005. (Errata: p. 297, n. 98: line 3, ‘refer’ should be ‘refers’; p. 297, n. 98, line -1 of quote from Frege: ‘whose square is 1’ should be ‘whose square is -1 ’.)

“Creation and Completeness”, *Proceedings of the First Seminar on Philosophy of Mathematics in Iran*, Shahid Beheshti University, Faculty of Mathematics, vol. 340, 31–62, 2003

“Löb’s Theorem as a Limitation on Mechanism”, *Minds and Machines* 12 (2002): 353–381. (Errata: p. 370, line 14, ‘unjustified’ should be ‘justified’; p. 375, line -7, ‘is are’ should be ‘are’.)

“What Does Gödel’s Second Theorem Say?”, *Philosophia Mathematica* 9 (2001): 37–71

“Peace, Justice and Computation”, in *Logic, Language, and Computation: Essays in honor of Alonzo Church*, (C. Anthony Anderson and Michael Zelëny, eds.), 447–470. Kluwer Academic Publishers, 2001

Critical essay on John Burgess’ and Gideon Rosen’s *A Subject with no Object*, *Philosophical Books* 41 (2000): 153–163

“Mind in the Shadows.” Critical essay on Roger Penrose’s *The Emperor’s New Mind*, *Shadows of the Mind* and *The Large, the Small and the Human Mind*, *Studies in the History and Philosophy of Modern Physics* 29 (1998): 123–36

“Constructive Existence Claims”, *Philosophy of Mathematics Today* (M. Schirn, ed.), 307–335, OUP, 1998. Other authors include: P. Benacerraf, B. Hale, H. Field, S. Shapiro, C. Chihara, P. Maddy, J. Burgess, G. Hellman, M. Resnik, C. Parsons, K.-G. Niebergall, M. Schirn, C. Wright, M. Dummett, G. Boolos, R. Heck, W. Tait, P. Simons, K. Fine.

“Hilbert’s Programme and Formalism”, *Routledge Encyclopedia of Philosophy*, vol. 4, 422–29, 1997

“Gödel’s Theorems”, *Routledge Encyclopedia of Philosophy*, vol. 4, 107–119, 1997

“Mathematics, Foundations of”, *Routledge Encyclopedia of Philosophy*, vol. 6, 181–92, 1997

Critical essay on Walter van Stigt’s *Brouwer’s Intuitionism*, *Philosophia Mathematica* 3 (1996): 235–241

“Philosophy of Mathematics in the 20th Century”, in *Philosophy of Science, Logic and Mathematics in The Twentieth Century*, *Routledge History of Philosophy*, vol. IX, pp. 50-123, Routledge, 1996

Critical essay on Janet Folina’s *Poincaré and the Philosophy of Mathematics*, *Philosophia Mathematica* 3 (1995): 906-16

“Wright on the non-mechanizability of Intuitionist Reasoning”, *Philosophia Mathematica* 3 (1995): 103–119

“Gödel’s Incompleteness Theorems”, *Cambridge Dictionary of Philosophy*, 298–300, Cambridge University Press, 1995

“Hilbert, David”, *Cambridge Dictionary of Philosophy*, 327, Cambridge University Press, 1995

“Hilbert’s Program”, *Cambridge Dictionary of Philosophy*, 327–28, Cambridge University Press, 1995

“Brouwer, L. E. J.”, *Cambridge Dictionary of Philosophy*, 88–89, Cambridge University Press, 1995

“Metamathematics”, *Cambridge Dictionary of Philosophy*, 486–87, Cambridge University Press, 1995

“Hilbert’s Formalism”, *Revue internationale de philosophie* 47 (1993): 285–304. Special issue on Hilbert.

“Poincaré vs. Russell on the Role of Logic in Mathematics”, *Philosophia Mathematica*, new series, vol. 1 (1993): 1–25. Invited paper for inaugural issue of the new series of *Philosophia Mathematica*. Reprinted (under the title “Logicism and the Nature of Mathematical Reasoning”) in A. Irvine and G. Wedeking (eds.), *Russell and Analytic Philosophy*, U. of Toronto Press (Toronto Studies in Philosophy), 265–292, 1993

“The Kantian Character of Hilbert’s Formalism”, in J. Czermak (ed.), *Philosophy of Mathematics: Proceedings of the 15th International Wittgenstein Symposium*, 195–205, Verlag Hölder-Pichler-

Tempsky, Vienna, 1993

“Constructivism”, *Encyclopedia of the History and Philosophy of the Mathematical Sciences*, Routledge, ch. 5.6, 656–64, 1993

Critical essay on John Etchemendy’s *The Concept of Logical Consequence*, *Philosophical Books* 34 (1993): 1-10

“Hilbert’s Work on the Foundations of Geometry in Relation to his Work on the Foundations of Arithmetic”, *Acta Analytica* 11 (1993): 27–39. Special issue on the Philosophy of Mathematics.

“Poincaré Against the Logicians”, *Synthese* 90 (1992): 349–78

“On an Alleged Refutation of Hilbert’s Program Using Gödel’s First Incompleteness Theorem”, *Journal of Philosophical Logic* 19 (1990): 343–77

“Brouwerian Intuitionism”, *Mind* 99 (1990): 501–34. Japanese translation in *Sugaku no Tetsugaku: Gödel Igo (Readings in the Philosophy of Mathematics: After Gödel)*. Other authors include: P. Benacerraf, G. Boolos, C. Chihara, K. Gödel, C. Parsons, D. Prawitz and H. Putnam. Also reprinted in *Philosophy of Mathematics: An Anthology* (D. Jacquette, ed.), Blackwell’s, 2000. Other authors include: M. Dummett, M. Steiner, W.W. Tait, N. P. White, P. Benacerraf, M. Jubien, G. Priest, J. J. Katz, W. Demopoulos, P. Pagin, G.-C. Rota, W. Sieg, C. Parsons, A. W. Moore, M. Blais, P. Maddy, P. Yourgrau, J. Lake, H. Hodes, R. McNaughton, J. Mayberry.

“Fregean Hierarchies and Mathematical Explanation”, *International Studies in the Philosophy of Science* 3 (1988): 97–116

Critical essay on S. Shapiro’s *Intensional Mathematics (Studies in Logic and the Foundations of Mathematics*, vol. 113, North-Holland Publ. Co., Amsterdam, 1985), *History and Philosophy of Logic* 9 (1988): 93-105

Critical essay on W. P. Newton-Smith’s *The Rationality of Science* (Routledge, 1981), *Revue internationale de philosophie* 37 (1983): 364-71

Critical essay on J. C. Webb’s *Mechanism, Mentalism, and Metamathematics (Synthese Library*, D. Reidel Publishing Co., 1980), *Noûs* 15 (1981): 559-67

“Medical Paternalism Reconsidered”, *Pacific Philosophical Quarterly* 62 (1981): 95–98 (with L. E. Lomasky)

“On a Theorem of Feferman”, *Philosophical Studies* 38 (1980): 129–40

“The Four-Color Theorem and Mathematical Proof”, *The Journal of Philosophy* 77 (1980): 803–20. Co-authored with Prof. Mark Luker, Dept. of Mathematics, University of Minnesota–Duluth

“The Arithmetization of Metamathematics in a Philosophical Setting”, *Revue internationale de philosophie* 34 (1980): 268–292. Special issue on contemporary philosophy of science.

“On Interpreting Gödel’s Second Theorem”, *Journal of Philosophical Logic* 8 (1979): 297–313. Reprinted in *Gödel’s Theorem In Focus*, S. G. Shanker (ed.), Croom Helm, London and New York, 1988. Other authors include: J. Dawson, S. C. Kleene, S. Feferman, M. Resnik and S. Shanker.

“Computation with Roman Numerals”, *Archive for the History of the Exact Sciences* 15 (1976): 141–48. (With C. Young, J. Heston, and D. Erlandson)

Reviews

Denis Miéville (ed.), *Kurt Gödel: Actes du Colloque, Neuchâtel 13-14 juin 1991*, Centre de Recherches Semiologiques, Travaux de logique, Juin 1992, *History and Philosophy of Logic* 15 (1994): 135-36

Aleksandar Pavković (ed.), *Contemporary Yugoslav Philosophy: The Analytic Approach*, Nijhoff International Philosophy Series, Kluwer, 1988, *Canadian Philosophical Review*, December 1989

William Rowe's *The Cosmological Argument*, Princeton U. Press, 1975, *The Christian Scholar's Review* 7 (1977): 281-283

Editorial Positions

Editor-in-chief, *Notre Dame Journal of Formal Logic*, 1984–present

Editor, *Philosophia Mathematica*, New Series, 1993–present

Editor, *Journal of Universal Computer Science*, 1994–present

Subject Editor (logic and philosophy of mathematics), *Routledge Encyclopedia of Philosophy*, 1992–1997

Editor, Proceedings of the conference *Logicism and the Paradoxes Revisited*, two special issues of the *Notre Dame Journal of Formal Logic* 41(3), 41(4) (2000)

Editor, Proceedings of the *George S. Boolos Memorial Symposium*, vol. I, *Philosophia Mathematica* 8 (2000)

Editor, Proceedings of the *George S. Boolos Memorial Symposium*, vol. II, *Notre Dame Journal of Formal Logic* 40 (2000)

Editor, Proceedings of the *George S. Boolos Memorial Symposium*, vol. III, *Philosophia Mathematica* 9 (2001)

Editor, special issue on *The Mechanization of Reason*, *Philosophia Mathematica* 3 (1995)

Editor, special issue on *Logical Constants*, *Notre Dame Journal of Formal Logic* 29 (1989)

Editor, special issue on *Church's Thesis*, *Notre Dame Journal of Formal Logic* 28 (1988)

Editor, special issue on *Frege*, *Notre Dame Journal of Formal Logic* 26 (1987)

Awards, Grants & Fellowships

Chaire d'excellence, Agence Nationale de la Recherche, France, \$1.2 million (800,000 euros). Additional matching support from the U of Paris, U of Nancy and the Collège de France (2007–2011). Total support of 1.6 million euros (\$2.4 million). [Note: The chaires d'excellence program was initiated in 2003 as part of a larger recruiting effort to attract top scholars to France. It is by verified nomination only, and not by application. The verification requires certification of matching support from the nominating institutions. These institutions, in my case, were the University of Paris–Diderot, the University of Nancy and the Collège de France. In 2007, the year my award was announced, there were two other senior awardees. They were Patrick Cavanagh (Psychology, Harvard) for work on visual perception and Michel Devoret (Physics, Yale) for work on quantum electronics.]

Alexander von Humboldt Stiftung TransCoop Program & the University of Notre Dame, 2006–2009, \$120,000

University of Notre Dame, Institute for Scholarship in the Liberal Arts (ISLA), research grant,

2004, \$5500

University of Notre Dame, Provost's Office, Midwest PhilMath Workshop, 2004, \$5000

University of Notre Dame, Provost's Office, Focus Seminar in Logic/Philosophy of Mathematics, 2004-2005, \$5000

University of Notre Dame, Provost's Office, Midwest PhilMath Workshop, 2003, \$5000

University of Notre Dame, Provost's Office, Focus Seminar in Logic/Philosophy of Mathematics, 2002-2003, \$5000

University of Notre Dame, Provost's Office, Midwest PhilMath Workshop, 2002, \$5000

University of Notre Dame, Provost's Office, Midwest PhilMath Workshop, 2001, \$5000

University of Notre Dame, Institute for Scholarship in the Liberal Arts (ISLA), conference grant, 2000-01, \$10,000

University of Notre Dame Graduate School, conference grant, 2001, \$5000

University of Notre Dame Graduate School, conference grant, 1998, \$7500

Henkels Distinguished Lecture Series Grant, ISLA, University of Notre Dame, 1998, \$10,000

National Endowment for the Humanities Fellowship for University Teachers, 1995-96, \$30,000

Alexander von Humboldt Research Fellowship, summer, 1994, \$10,000

University of Notre Dame, Summer Research Fellowship for Senior Faculty, 1989, \$3500

Alexander von Humboldt Research Fellowship, 1987-88, \$30,000

University of Notre Dame Summer Research Stipend, 1986, \$3000

IREX Grant for Collaborative Activities and New Exchanges (to bring Dr. Kosta Došen of the Mathematics Institute of the University of Belgrade to Notre Dame for one semester), spring 1985, \$2500

University of Notre Dame Summer Research Stipend, 1985, \$3000

University of Minnesota Graduate Faculty Research Stipend, summer 1983, \$2500

Fulbright Senior Research Professorship to the University of Split, Yugoslavia, 1981-82, \$20,000

University of Minnesota Graduate Faculty Research Supplement, 1981, \$5000

National Endowment for the Humanities Summer Seminar Stipend, 1980, \$3000

University of Minnesota Summer Curriculum Development Grant, 1979, \$2500

University of Minnesota Graduate Faculty Summer Research Stipend, 1978, \$2500

National Endowment for the Humanities Summer Research Stipend, 1977, \$2500

Professional Activities

Invited Lectures

“Proof and Construction” (provisional title), series of five lectures, Collège de France, May-June, 2009. Subject to publication in the *Collège de France Collection*.

“In Search of Formalism”, series of four lectures at the *École normale supérieure*, October 10th, 17th, 24th, 31st, 2008. Lecture I: Background & Basic Distinctions; Lecture 2: Formal Thinking, Abstraction & the Axiomatic Method; Lecture III: Forms and their Value: Economy of Thought; Lecture IV: Conductive Use of Formulae: Efficiency, Rigor & Reliability

“The Creative Ideal in Mathematics”, invited lecture for the workshop *Mathematics Between Natural Sciences & the Humanities* at the *Lichtenberg Colleg*, Georg-August Universität, Göttingen, Oct 5–8, 2008

“Discovery, Invention and Realism”, paper for the second meeting of the *Mathematics and Its Significance* group, Queens College, Cambridge University, Sep 15–16, 2008. Other members of this group: Marcus du Sautoy (Mathematics, U. of Oxford), Timothy Gowers (Mathematics, U. of Cambridge), Mary Leng (Philosophy, U. of Manchester), Peter Lipton (deceased) (History & Philosophy of Science, U. of Cambridge), Sir Roger Penrose (Physics, U. of Oxford), Sir John Polkinghorne (Physics, U. of Cambridge), Gideon Rosen (Philosophy, Princeton U.), Stewart Shapiro (Philosophy, Ohio State U.), Mark Steiner (Philosophy, Hebrew U.)

“The Ideal of Creativity in Mathematics”, plenary lecture, *Congres du Société Française d’Histoire des Sciences et des Techniques*, Paris, Sep 4–6, 2008

“Purity of Proof & Understanding”, international workshop on *Mathematical Understanding*, Département Histoire et Philosophie des Sciences, Université Denis Diderot–Paris 7, with Andrew Arana, June 9–13, 2008

“On the Nature and Value of Construction”, Institut d’histoire et de philosophie des sciences et des techniques (IHPST), Paris, April 24, 2008

“Discovermental Complexity & the Evaluation of Hilbert’s Program”, IP Seminar, U of Nancy, March 7, 2008

“Varieties of Completeness”, inaugural lecture, *ANR senior chaire d’excellence*, University of Paris–Diderot, February 8, 2008

“Ideals of Proof”, inaugural lecture, *ANR senior chaire d’excellence*, University of Nancy 2, January 30, 2008

“Ideals of Proof: An Overview”, MSH (Maison des Sciences de l’Homme), Lorraine, Dec 7, 2007

“Ideals of Proof: An Overview”, Département Histoire et Philosophie des Sciences, REHSEIS, Université Paris-Diderot, Dec 4, 2007

“Discovery vs. Invention in the History of Mathematics”, invited paper, *Mathematics & Its Significance*, Templeton Foundation Symposium, Castel Gandolfo, Italy, June 21–23, 2007. Conference by invitation. Other participants were Mary Leng, Peter Lipton, Roger Penrose, John Polkinghorn, Gideon Rosen, Stewart Shapiro and Mark Steiner.

“Arithmetization and the Ideals of Proof”, invited lecture, *The Philosophy of Mathematics as an Interpretive Enterprise*, University of Paris 7 & REHSEIS (Recherches Epistémologiques et Historiques sur les Sciences Exactes et les Institutions Scientifiques), June 18–19, 2007

“Some Questions Concerning Proof”, invited discussant in *Workshop in the History and Philosophy of Mathematics*, University of Paris 7 & REHSEIS, June 13–14, 2007

“Construction and Exhibition”, invited lecture to the Indiana University-Bloomington Logic Colloquium, Bloomington, IN, April 25, 2007

“Construction, Computation & Exhibition”, invited lecture, joint session of the *Congrès de l’Union Internationale d’Histoire et de Philosophie des Sciences* (Division of Logic, Methodology and Philosophy of Science) on *Calculabilité et Constructivité: Perspectives Historiques et Philosophiques*, November 17–19, 2006. Also sponsored by the University of Paris 1 and the École Normale Supérieure.

“Ideals of Proof and the Arithmetization of Analysis”, the featured speaker at the inaugural meeting of the annual *Thoughts & Things* conference, hosted by the mathematics and philosophy departments of Bogazici University and Bilkent University, Istanbul, Turkey, October 20, 2006

“The Virtues of Hilbert’s Program”, joint colloquium of the philosophy and mathematics departments, Bogazici University, October 18, 2006

“Reflections on Proof”, 4th Bucharest Colloquium in Analytic Philosophy, University of Bucharest & New Europe College, May 19th–May 21st, 2006

“The Consequences of Gödel’s Theorems for Hilbert’s Program”, plenary talk, *A Celebration of Kurt Gödel*, Third Interdisciplinary Conference, sponsored by the Mathematics and Philosophy Departments and the Office of the Provost, Westmont College, February 3–4, 2006

‘Purity of Proof’, *International Symposium LOGICA 2005*, Academy of Sciences of the Czech Republic, Hejnice, Czech Republic, June 20–24, 2005

‘Purity as an Ideal of Proof’, international conference, *Proof in Mathematics: Logical, Historical and Philosophical Approaches*, University of Lille III (Lille, France), May 24–28, 2005

‘Traces of Formalism’, Philosophy Department Colloquium, University of Illinois–Urbana/Champaign, October 1, 2004

‘Solvability, Permanence and the Development of the Number-concept’, Plenary lecture, *Mathematical Knowledge: An International Conference on the Philosophy of Mathematics*, Fitzwilliam College, University of Cambridge, June 30–July 2, 2004. For personal reasons, I had to cancel this invitation after I had accepted it. The organizers have asked to include my paper in the proceedings of the conference, however. The other speakers were: Alan Baker (Philosophy, Swarthmore College), Brian Butterworth (Psychology, University College London), Susan Carey (Psychology, Harvard University), Mark Colyvan (Philosophy, University of Queensland), Timothy Gowers (Mathematics, University of Cambridge), Akihiro Kanamori (Mathematics, Boston University), Mary Leng (Philosophy, University of Cambridge), Charles Parsons (Philosophy, Harvard University), Alexander Paseau (Philosophy, University of Cambridge), Gideon Rosen (Philosophy, Princeton University), Crispin Wright (Philosophy, University of St Andrews and Columbia University).

Invited Session, Association of Symbolic Logic, Chicago (joint meeting with the American Philosophical Association), April 22–23, 2004. [My lecture was entitled “Proof: Discovery vs. Verification”. For personal reasons, I had to cancel this invitation after I had accepted it. The organizers of the session then asked my former PhD student, Andrew Arana (Department of Philosophy, Stanford University), to give a paper from joint work of ours. In the end, I was able to attend the session and participate in the discussion of the paper. The other invited presenter was Professor Jeremy Avigad, Department of Philosophy, Carnegie Mellon University. The commentator was Professor William Tait, Department of Philosophy, University of Chicago.]

‘Mathematical Sources of Formalism’, Department of Philosophy, Stanford University, March 12, 2004

‘Proof: Confirmation and Discovery’, Logic Group, Stanford University, March 11, 2004

‘Traces of Formalism’, History and Philosophy of Logic, Mathematics and Science Group, University of California–Berkeley, March 10, 2004

‘Creation and Completeness’, Department of Logic & Philosophy of Science, University of California-Irvine, June 7, 2002. Inaugural lecture of the Graduate Speakers Series

Series of three lectures sponsored by the departments of philosophy and mathematics at the University of Helsinki, May 15-24, 2002. Lecture titles: ‘Classical Intuitionism’, ‘The Retreat from Intuition’, ‘Creation, Completeness and the Axiomatic Method’

‘Creation, Necessity and the Axiomatic Method’, a series of five lectures sponsored by Senshu University, Keio University, Tokyo Metropolitan University, and the Japanese Association for the Philosophy of Science, January 5–15th, 2002, Tokyo, Japan

‘Hilbert’s Justification of the Completeness Requirement’, *Hilbert Workshop*, Keio University, January 2002

‘The Axiomatic Method and the Ideal of Completeness’, invited lecture to the First Seminar in the Philosophy of Mathematics, Shahid Beheshti University (formerly the Iranian National University), October 2001, Tehran, Iran

‘Axiomatization, creative freedom and the ideal of completeness’, invited talk at conference on the history of logic and mathematics, June 10–13, 2000. Sponsored by the departments of mathematics and philosophy of the University of Helsinki, the Academy of Finland and the Association for Symbolic Logic

‘Creative freedom and the axiomatic method’, Colloquium of the history and philosophy of science program, Northwestern University, October 29, 1999

‘Dedekind and Hilbert on the axiomatic method’, Colloquium of the philosophy department and logic research group, U. of Konstanz, June 17, 1999

‘Free creation and the axiomatic method’, invited talk for *The Use of Axiomatics in the Exact Sciences: A Workshop on the Occasion of the 100th anniversary of the publication of Hilbert’s Grundlagen der Geometrie*, U. of Göttingen, June 9–13, 1999

‘What does Gödel’s Second Incompleteness Theorem Say?’, joint colloquium of the philosophy and mathematics departments, University of Illinois-Urbana/Champaign, November 6, 1998

‘What does Gödel’s Second Incompleteness Theorem Say?’, *George S. Boolos Memorial Symposium*, University of Notre Dame, April 18, 1998

‘Löb’s Theorem as a Limitation on Mechanism’, combined logic discussion group of the philosophy, mathematics and computer science departments, Indiana University-Bloomington, March 26, 1998

‘What does Gödel’s Second Incompleteness Theorem Say?’, Logic Colloquium, Indiana University-Bloomington, March 25, 1998

‘Löb’s Theorem as a Limitation on Mechanism’, *Language, Minds and Machines* conference, University of Palermo, August 24-28, 1997

‘Löb’s Theorem as a Limitation on Mechanism’, Dept. of Philosophy, McGill University, March 15, 1996

‘Peace, Justice and Computation: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Dept. of Philosophy, U. of Montreal, March 14, 1996

‘Powers of Reflection, Frames of Mind: Löb’s Theorem and the Mechanization of Human Reasoning’, Dept. of Philosophy/Logic Group, University of Adelaide, July 28, 1995

‘Constructive Existence Claims’, Dept. of Philosophy, University of Melbourne, July 21, 1995

‘Peace, Justice and Computation: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Dept. of Philosophy, Monash University, July 21, 1995

‘Peace, Justice and Computation: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Dept. of Philosophy, La Trobe University, July 19, 1995

‘Peace, Justice and Computation: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Dept. of Traditional and Modern Philosophy, University of Sydney, July 10, 1995

‘Powers of Reflection, Frames of Mind: Löb’s Theorem and the Mechanization of Human Reasoning’, *Association of Symbolic Logic*, one hour invited lecture for the 30th anniversary meeting of the *Australasian Association for Logic*, jointly with the *Australasian Association of Philosophy*, University of New England, July 1–6, 1995

‘Constructive Existence Claims’, Dept. of Philosophy/Logic Group, University of Queensland, June 28, 1995

‘Peace, Justice and Computation: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Dept. of Philosophy/Logic Group, University of Queensland, June 27, 1995

‘Constructive Existence Claims’, Colloquium, Dept. of Philosophy, University of Konstanz, July 14, 1994

‘Two Conceptions of Constructive Existence Proofs’, Dept. of Philosophy and the Institut für Logik and the Philosophy of Science, University of Salzburg, June 30, 1994

‘Constructive Existence Claims’, joint meeting of the International Kurt Gödel Society and the Collegium Logicum of the Technical University of Vienna, May 30, 1994

‘Poincaré and the Rigor of Mathematical Induction’, plenary lecture at the *First International Henri Poincaré Congress*, University of Nancy, Nancy, France, May 14–18, 1994

‘Constructive Existence Proofs’, Colloquium, Dept. of Philosophy and the Logic Group, Indiana University–Bloomington, February 9, 1994

‘Finitism vs. Intuitionism: Two Conceptions of Existence in Constructive Mathematics’, *Boston Colloquium for the Philosophy of Science*, November 8–9, 1993

‘Hilbert’s Formalism’, Dept. of Philosophy, Bowling Green State University, October 15, 1993

‘Synthetic Proof’, *XIXth International Congress for the History and Philosophy of Science*, Zaragoza, Spain, August 22–29, 1993

‘Constructive Thinking’, *Philosophy of Mathematics Today* conference, Munich, June 27–July 4, 1993. Attendance and participation by invitation only. Other participants: P. Benacerraf, G. Boolos, J. Burgess, C. Chihara, P. Clarke, H. Field, K. Fine, B. Hale, R. Heck, G. Hellman, D. Isaacson, P. Maddy, C. Parsons, M. Resnik, S. Shapiro, W. Tait and C. Wright.

‘The Meaning of the Incompleteness Theorems’, six hours of lectures to the Logic Seminar at the

Ruhr-Universität, Bochum, Germany, August 1992

‘Logicism and the Nature of Mathematical Reasoning’, *Russell and the Rise of Analytic Philosophy* conference, University of British Columbia, June 1991

‘Logic and The Technology of the Mind’, Forever Learning Institute, South Bend, Indiana, May 1991

‘Poincaré Against the Logicians’, Philosophy Dept. Colloquium, University of Nebraska–Lincoln, December 1990

‘Frege’s conception of Number’, Central States Philosophy Conference, November 1990

‘The Current Situation in the Philosophy of Mathematics’, Trinity School Summer Faculty Institute, July 1990

‘Brouwer’s Second Critique of Classical Logic’, Philosophy Colloquium, University of Konstanz, Konstanz, Germany, May 1988

‘Brouwer’s Second Critique of Classical Logic’, Philosophy/Mathematics Colloquium, Oxford University, Oxford, England, May 1988

‘Fregean Hierarchies’, Philosophy of Science Seminar, IntraUniversity Centre for postgraduate Studies, Dubrovnik, Yugoslavia, April 1988

‘Intuitionism as a Philosophy of Mathematics’, joint Philosophy and Mathematics Colloquium, Calvin College, May 1987

‘The Philosophical Significance of Gödel’s Theorems’, Philosophy Dept., University of Wisconsin/Madison, April 1987

‘Proof and Intuition’, Philosophy Dept., University of Wisconsin/Madison, April 1987

‘Hilbert’s Program’, joint colloquium of the Notre Dame and Calvin College Philosophy Depts., Spring 1985

Invited participant in conference in *Ethics, Philosophy of Economics and Sociobiology* sponsored by the Center for Public Choice (George Mason University), July 1984

‘Hilbert’s Instrumentalism’, Philosophy Dept. Colloquium, University of Illinois at Urbana–Champaign, December 1983

‘A Closer Look at Hilbert’s Program’, Philosophy Department Colloquium, University of Minnesota–Minneapolis, May 1983

‘Hilbert’s Program and Gödel’s Second Theorem’, Notre Dame Philosophy Dept. Colloquium, January 1983

‘Saving Hilbert’s Program’, two talks to the logic section of the University of Ljubljana, Ljubljana, Yugoslavia, May 17–18, 1982

‘Hilbert’s Program’, the Philosophy of Science Section at the annual meetings of the Inter-University Conference for Postgraduate Studies in Dubrovnik, Yugoslavia, April 21, 1982

‘Why Gödel’s Second Theorem Doesn’t Refute Hilbert’s Program’, three talks given in the Logic Colloquium of the University of Belgrade, Yugoslavia, April 5–9, 1982

‘Some False Ideas Concerning Hilbert’s Program’, two talks given in the Logic Colloquium of the University of Zagreb, Zagreb, Yugoslavia, March 29–30, 1982

‘Reassessing Hilbert’s Program’, three talks given to the logic group of the University of Rijeka, Yugoslavia, November 17–19, 1981

‘Hilbert’s Wake’, Philosophy Dept. Colloquium, Illinois State University, May 1981

‘Mathematical Proof and the Four-Color Theorem’, Spring 1980 Regional Meetings of the Mathematics Association of America, St. Olaf College (delivered by junior author, Prof. Mark Luker, Dept. of Mathematics, University of Minnesota–Duluth)

‘Current Work on the Problem of Mathematical Truth’, Wheaton College Conference on the Foundations of Mathematics, May 1979

‘An Introduction to Gödel’s Theorems’, 1977 Wheaton College Conference on the Foundations of Mathematics, May 1977

Contributed Talks, Intra-University Colloquia, and Comments

‘Traces of Formalism’, Philosophy Department Colloquium, University of Notre Dame, February 13, 2004

‘Creative Freedom and the Axiomatic Method’, Logic Seminar, Dept. of Mathematics, University of Notre Dame, December 2, 1999

‘Creative Freedom and the Axiomatic Method’, Dept. of Philosophy, University of Notre Dame, November 11, 1999

Chair and organizer of Special Invited Session on the Philosophy of Mathematics, Central Division Meeting, American Philosophical Association. (Speakers: W. W. Tait, University of Chicago; Kenneth Manders, University of Pittsburgh. Commentators: Colin McClarty, Case Western Reserve University, Patricia Blanchette, University of Notre Dame), May 1998

‘Understanding Gödel’s second incompleteness theorem’, joint Logic Seminar, University of Notre Dame, February 1998

Comment on Michael Hand’s ‘Radical Anti-realism and Neutral States of Information’, American Philosophical Association Symposium on the Philosophy of Mathematics, April 1996

‘Peace, Justice and Computability: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Logic Seminar, Dept. of Mathematics, University of Notre Dame, October 1995

‘Löb’s Theorem as a Limitation on Mechanism’, Dept. of Philosophy, University of Notre Dame, September 1995

Chair, American Philosophical Association Central Division session for Leon Horsten’s ‘The Church-Turing Thesis and Effective Mundane Procedures: Can Turing Machines Bake Cakes?’, April 1995

‘Powers of Reflection, Frames of Mind: Löb’s Theorem and the Mechanization of Human Reason’, Logic Colloquium, Dept. of Mathematics, University of Notre Dame, March 1995

‘Computability and Equality: Leibniz’ Program and the Moral and Political Significance of Church’s Theorem’, Philosophy Department Colloquium, University of Notre Dame, December 1994 (Alasdair MacIntyre, commentator)

Comment on Patricia Blanchette’s ‘Frege, Hilbert and Ordinary Consistency’, Philosophy Depart-

ment Colloquium, University of Notre Dame, November 1994

Chair of Session for S. Stenlund (University of Uppsala), ‘Poincaré and the Limits of Formalization’; R. Tieszen (San Jose State University), ‘Logicism, Impredicativity and Formalism’; and C. Chihara (University of California-Berkeley), ‘Poincaré and Logicism’, *International Congress on the Work of Henri Poincaré*, University of Nancy, Nancy, France, May 14–18, 1994

‘Two Conceptions of Existence in Constructive Mathematics’, Philosophy Department Colloquium, University of Notre Dame, October 1993 (Patricia Blanchette, commentator)

‘The Kantian Character of Hilbert’s Program’, *15th International Wittgenstein Symposium*, Kirchberg, Austria, August 1992

Chair of session for C. Parsons’ (Harvard University), ‘Platonism and Mathematical Intuition in the Thought of Kurt Gödel’, *15th International Wittgenstein Symposium*, Kirchberg, Austria, August 1992

Chair of session for C. Celluci’s (University of Rome), ‘From Closed to Open Systems’, *15th International Wittgenstein Symposium*, Kirchberg, Austria, August 1992

‘Powers of Reflection, Frames of Mind’, Philosophy Department Colloquium, University of Notre Dame, April 1992 (Alvin Plantinga, commentator)

‘Poincaré Against the Logicians’, Philosophy Dept. Colloquium, University of Notre Dame, April 1990 (Richard Foley, commentator)

Comment on W. Mendonça’s ‘Wittgenstein on Number’, Philosophy Dept. Colloquium, University of Notre Dame, March 1990

Chair of session at Central Division American Philosophical Association meetings. R. Tieszen (San Jose State University), ‘Frege and Husserl on Number’, April 1989 (W.W. Tait, commentator)

‘Brouwer’s Critique of Classical Mathematics’, Philosophy Dept. Colloquium, University of Notre Dame, March 1989 (Philip Quinn, commentator)

Comment on A. Edidin’s ‘Arithmetic without Numbers’, Philosophy Dept. Colloquium, University of Notre Dame, November 1988

Comment on T. J. Smiley’s ‘When Is an Argument Valid?’, Philosophy Dept. Colloquium, University of Notre Dame, December 1986

‘Formalization and Rigor’, Philosophy Dept. Colloquium, University of Notre Dame, April 1986 (Michael DePaul, commentator)

Comment on Michael Smith’s ‘In Virtuous Circles: Cartesian and Otherwise’, Central Division Meetings of the American Philosophical Association (St. Louis), April 1986

‘Is There a Philosophical Bias in the Logician’s Notion of Theory?’, Philosophy Dept. Colloquium, Notre Dame, April 1985 (Aron Edidin, commentator)

‘Hilbert’s Instrumentalism’, Mathematics Dept. Colloquium, University of Notre Dame, April 1985

Comment on Albert Casullo’s ‘Mathematical Necessity’, Western Division Meetings of the American Philosophical Association (Chicago), April 1984

‘On the Resolution of Some Intensional Problems Concerning Gödel’s Second Incompleteness Theorem’, Colloquium Paper, Western Division Meetings of the American Philosophical Association, Cincinnati, April 1978 (Prof. John Corcoran, SUNY-Buffalo, commentator)

Organization and Direction of Conferences

Planner and director of sixth annual *Midwest PhilMath Workshop*, October 8–9, 2005, University of Notre Dame

Planner and director of fifth annual *Midwest PhilMath Workshop*, November 6–7, 2004, University of Notre Dame

Planner and co-director (with Prof. Patricia Blanchette) fourth annual *Midwest PhilMath Workshop*, November 8–9, 2003, University of Notre Dame

Member, Program Committee, *Association for Symbolic Logic, European Summer Meetings*, August 2003

Planner and director of third annual *Midwest PhilMath Workshop*, November 9–10, 2002, University of Notre Dame

Association of Symbolic Logic, Journal Oversight Committee (with Anil Gupta, Pen Maddy, Terry Parsons and Vann McGee), 1995-2001

Planner and director of second annual *Midwest PhilMath Workshop*, November 10–11, 2001, University of Notre Dame

Chair, Program Committee, joint meeting of the *Association for Symbolic Logic* and the *American Philosophical Association*, Spring 2001

Planner and director of the conference *Logicism and the Paradoxes: A Reappraisal*, March 29–31, 2001. Speakers: A. Antonelli, University of California–Irvine; T. Bays, University of Notre Dame; P. Blanchette, University of Notre Dame; W. Demopoulos, University of Western Ontario; J. Floyd, Boston University; B. Hale, University of Glasgow; M. Hallett, McGill University; W. D. Hart, University of Illinois–Chicago; R. Heck, Harvard University; G. Landini, University of Iowa; Robert May, University of California–Irvine; D. McCarty, Indiana University–Bloomington; S. Shapiro, Ohio State University and University of St. Andrews; W. Tait, University of Chicago; J. Tappenden, University of Michigan; and C. Wright, St. Andrews University and Columbia University

Planner and director of the *George S. Boolos Memorial Symposium*, spring 1998. Speakers: J. Burgess, Princeton University; M. Detlefsen, University of Notre Dame; S. Feferman, Stanford University; W. Goldfarb, Harvard University; R. Heck, Harvard University; D. Jung, Florida State University; P. Maddy, University of California–Irvine; V. McGee, MIT; C. Parsons, Harvard University; S. Shapiro, Ohio State University and the University of St. Andrews U; W. Sieg, Carnegie–Mellon University; W. Tait, University of Chicago; A. Visser, University of Utrecht; M. Wilson, Ohio State University; C. Wright, University of St. Andrews and Columbia University

Member, Program Committee, American Philosophical Association, Central Division meeting, 1998

Member, Program Committee, Association of Symbolic Logic, winter 1998

Program/steering committee (with P. Gärdenfors, University of Lund and G. Sambin, University of Padua) for section on philosophical logic for the *VIIIth International Congress of Logic, Methodology and Philosophy of Science*, Florence, Italy, 1995

Organizing committee (with Anand Pillay and Julia Knight), Association of Symbolic Logic, winter, 1993

Planner and director of the department of philosophy's 1990–91 *Perspectives in Philosophy* series in philosophical logic (G. Boolos (MIT), C. Chihara (University of California-Berkeley), and H. Putnam (Harvard University), speakers.

Program Committee, Western Division Meetings, American Philosophical Association, 1984–85

Program committee of the 1979 Wheaton College Conference on the Foundations of Mathematics

Faculty Sponsor and/or Advisor for Visiting Scholars, Post-Doctoral Fellows and Visiting Graduate Students

Dr. Vitezslav Švejdar, Associate Professor, Department of Logic, Charles University, Prague, Czech Republic, Fulbright Scholar, 2007

Dr. Giuseppina Ronzitti, post-doctoral scholar, University of Genoa, fall 2002

Dr. Ron Rood, visiting doctoral student, the Free University of Amsterdam, fall 1999

Prof. Hiroshi Kaneko, Dept. of Philosophy, Faculty of Letters, Senshu University, Kawasaki, Japan, 1998-99.

Dr. Volker Halbach, Dept. of Philosophy, Ludwig-Maximilians University, Munich, Federal Republic of Germany, Feodor Lynen Post-doctoral Fellow of the Alexander von Humboldt Foundation, 1995-96

Dr. Bernd Buldt, Fachgruppe Philosophie, Ruhr-University, Bochum, Federal Republic of Germany, Feodor Lynen Post-doctoral Fellow of the Alexander von Humboldt Foundaton, 1994-95

Dr. Giorgi Dzhaparidze, Institute of Philosophy, University of Tbilisi, Tbilisi, Georgia, 1993-94

Ms. Anna Maria Bellarina, graduate student, University of Milan, 1990-91

Prof. Wilson Mendonça, Dept. of Philosophy, University of Rio De Janeiro, Rio De Janeiro, Brazil, Fulbright Scholar, spring and summer 1990

Dr. Eric James, visiting doctoral student, Oxford University, fall 1988

Dr. Kosta Došen, Mathematics Institute, University of Belgrade, IREX Scholar, spring 1985

PhD Supervision

Chris Porter, dissertation student in the joint PhD program

Iulian Toader, dissertation student in the philosophy department

Sean Walsh, dissertation student in the joint PhD program

Andrew Arana, PhD (Joint Program), *Arithmetical Investigations: A Study of Models of Arithmetic and Purity of Methods*, 2004. Assistant Professor of Philosophy, Kansas State University

Joongol Kim, PhD (Philosophy), *A Philosophical Inquiry into the Concept of Number*, 2004. Assistant Professor of Philosophy, Western Illinois University

Dennis Potter, ABD (Philosophy) (Assistant Professor of Philosophy, Utah Valley State College, Orem, Utah)

Brian Rosmaita, PhD (Philosophy), *The Mathematical Objection to Mechanism*, 1995. Assistant

Professor of Computer Science, Hamilton College, Clinton, New York

Teaching

Select Courses (*=multiple offerings)

Undergraduate

Introduction to Philosophy*

Ethics and Society*

Lower division logic*

Upper division logic*

Philosophy of language*

Upper division history and philosophy of science*

Majors' seminar on Private Property*

Core Course* (a 'Great Books', general humanities course required of all sophomores in the College of Arts and Letters at Notre Dame)

Graduate

Introduction to Mathematical Logic*

Graduate Seminar in the Philosophy of Mathematics*

Philosophy of Logic: Various Topics*

Gödel's Theorems*

Intuitionism

The Infinite

Philosophy in the history of mathematics and mathematics in the history of philosophy*

Educational Initiatives

Initiated, organized and designed (with Prof. Julia Knight, Dept. of Mathematics, University of Notre Dame) program for joint PhD (between the Departments of Mathematics and Philosophy) in Logic and Foundational Studies at Notre Dame, 1994–present.

Professional Service

External Evaluator for many tenure, promotion and chaired professor appointments

Referee for various professional journals (e.g. *Noûs*, *Synthese*, *Mind*, *Journal of Symbolic Logic*, *Journal of Philosophical Logic*, *Bulletin of Symbolic Logic*, *American Philosophical Quarterly*, *His-*

tory and Philosophy of Logic, Erkenntnis, British Journal for the Philosophy of Science, Philosophia Mathematica, Minds and Machines, et al.)

Referee for various presses (e.g. Oxford University Press, Cambridge University Press, Cornell University Press, Princeton University Press, Blackwell Publishers, North-Holland Publ. Co., Kluwer Academic Press, Routledge, Birkhäuser, Macmillan, McGraw-Hill, *et al.*)

Consultant to the National Science Foundation, National Endowment for the Humanities, American Council for Learned Societies and the Canadian Research Council

Consultant to Kluwer Academic Publishers concerning the establishment of new journals and new book series in logic and the foundations of mathematics

Consultant to Oxford University Press regarding new book series and new projects in logic and the philosophy of mathematics

Consultant to Oxford University Press regarding new journals

Consultant to the *Encyclopedia Britannica* on entries in logic and foundations of mathematics

Consultant and contributor to the *Cambridge Dictionary of Philosophy* (designed list of entries in logic and the philosophy of mathematics)

Internal evaluator for various renewal, tenure and promotion cases

Professional Memberships

American Philosophical Association

Association for Symbolic Logic

International Kurt Gödel Society

Mathematics Association of America

American Mathematical Society

Administrative Service

Director of Graduate Studies, Department of Philosophy, 1990–93

Institutional Service at Notre Dame

Elected member of search committee for the Dean of the College of Arts & Letters, summer/fall 2007, spring 2008

Provost's Advisory Committee, 2002–2005

College of Arts and Letters Screening Committee for non-obligatory promotion cases 2003–2004; 2004–2005

Executive Committee of the Faculty Senate, 1994–96, 1997–2000

Chair (= President), Faculty Senate, University of Notre Dame, 1997–99

Academic Council, University of Notre Dame, 1997–99

Academic Council Executive Committee, University of Notre Dame, 1997–99

Faculty representative to the Faculty Affairs Committee of the Board of Trustees, University of Notre Dame, 1997–99

Chair, Faculty Senate Committee on Foreign Visitors, University of Notre Dame, 1997-98

Chair, Faculty Senate Academic Affairs Committee, University of Notre Dame, 1994-96

Member, Faculty Senate, University of Notre Dame, 1988–2000

Graduate Council, University of Notre Dame, 1994-1997

University Benefits Committee, University of Notre Dame, 1993-94

Departmental Appointments and Promotions Committee, Department of Philosophy, University of Notre Dame, 1988–91, 1992-95, 1999–2002

Departmental Graduate Committee, Department of Philosophy, University of Notre Dame, 1985-87, 1990-93

Departmental Grievance and Honesty Committee, Department of Philosophy, University of Notre Dame, 1990-93

Departmental Hiring Committee for logic and related areas of philosophy, Department of Philosophy, University of Notre Dame, 1985-87, 1988-91, 1998–99, 1999–2000, 2003–present

Departmental Review Committee for graduate student papers, Department of Philosophy, University of Notre Dame, 1985-86, 1989-90

Departmental Committee on Governance, Department of Philosophy, University of Notre Dame, 1989-90

Departmental Student/Faculty Committee, Department of Philosophy, University of Notre Dame, 1984-85

Member of various Oral Exam, Dissertation Proposal, and Dissertation Defense Committees, Department of Philosophy and Department of Mathematics, University of Notre Dame