

Curriculum Vitae Peter Cholak

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Address

University of Notre Dame
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Higher Education

B.A. in Mathematics
Union College, Schenectady, New York, 1984.

M.S. in Computer Science
University of Wisconsin–Madison, 1988.

M.A. in Mathematics
University of Wisconsin–Madison, 1988.

Ph.D. in Mathematics
University of Wisconsin–Madison, 1991.
Thesis title: “Automorphisms of the Lattice of Recursively Enumerable Sets”
Thesis advisor: Professor Terry Millar.

Previous Positions

Fall 2004-Present	Professor University of Notre Dame
Fall 2000–04	Associate Professor University of Notre Dame
1994–2000	John and Margaret McAndrews Assistant Professor University of Notre Dame
Fall 97–Summer 98	Visiting Scholar in Mathematics University of California at Berkeley

Fall 93–Summer 94	Visiting Scholar in Mathematics Cornell University
Fall 92–Summer 93	Assistant Professor University of Michigan
Fall 84–Spring 91	Teaching Assistant University of Wisconsin

Scholarships and Fellowships

1992–1996	National Science Foundation Postdoctoral Research Fellowship
1991–1992	Victoria University of Wellington (New Zealand) Postdoctoral Fellowship
1989–1990	U.S. Department of Education Fellowship

Professional Memberships

1. American Mathematical Society
2. Association for Symbolic Logic

Papers in a Journal

- [1] Peter Cholak. Boolean algebras and orbits of the lattice of r.e. sets modulo the finite sets. *J. Symbolic Logic*, 55(2):744–760, 1990. ISSN 0022-4812. [MR 91j:03055](#).
- [2] Peter Cholak, Rod Downey, and Micheal Stob. Automorphisms of the lattice of recursively enumerable sets: promptly simple sets. *Trans. Amer. Math. Soc.*, 332(2):555–570, 1992. ISSN 0002-9947. [MR 92j:03039](#).
- [3] Peter Cholak and Rod Downey. On the Cantor-Bendixon rank of recursively enumerable sets. *J. Symbolic Logic*, 58(2):629–640, 1993. ISSN 0022-4812. [MR 94h:03081](#).
- [4] Peter Cholak and Rod Downey. Lattice nonembeddings and intervals of the recursively enumerable degrees. *Ann. Pure Appl. Logic*, 61(3):195–221, 1993. ISSN 0168-0072. [MR 94h:03080](#).
- [5] Peter Cholak and Rod Downey. Recursively enumerable m- and tt-degrees. III. Realizing all finite distributive lattices. *J. London Math. Soc. (2)*, 50(3):440–453, 1994. ISSN 0024-6107. [Pdf](#). [MR 95m:03089](#).
- [6] Peter Cholak and Rod Downey. Permutations and presentations. *Proc. Amer. Math. Soc.*, 122(4):1237–1249, 1994. ISSN 0002-9939. [MR 95b:03046](#).
- [7] Peter Cholak. The translation theorem. *Arch. Math. Logic*, 33(2):87–108, 1994. ISSN 0933-5846. [MR 95d:03074](#).
- [8] Peter Cholak and Peter G. Hinman. Iterated relative recursive enumerability. *Arch. Math. Logic*, 33(5):321–346, 1994. ISSN 0933-5846. [Pdf](#). [MR 96a:03056](#).
- [9] Peter Cholak and Howard A. Blair. The complexity of local stratification. *Fund. Inform.*, 21(4):333–344, 1994. ISSN 0169-2968. [Pdf](#). [MR 96b:68027](#).

- [10] Peter Cholak. Automorphisms of the lattice of recursively enumerable sets. *Mem. Amer. Math. Soc.*, 113 (541):viii+151, 1995. ISSN 0065-9266. [MR 95f:03064](#).
- [11] C. J. Ash, P. Cholak, and J. F. Knight. Permitting, forcing, and copying of a given recursive relation. *Ann. Pure Appl. Logic*, 86(3):219–236, 1997. ISSN 0168-0072. [MR 98j:03062](#).
- [12] Peter Cholak. The dense simple sets are orbit complete with respect to the simple sets. *Ann. Pure Appl. Logic*, 94(1-3):37–44, 1998. ISSN 0168-0072. Conference on Computability Theory (Oberwolfach, 1996). [Pdf](#). [MR 99m:03081](#).
- [13] Peter Cholak, Sergey Goncharov, Bakhadyr Khossainov, and Richard A. Shore. Computably categorical structures and expansions by constants. *J. Symbolic Logic*, 64(1):13–37, 1999. ISSN 0022-4812. [Pdf](#). [MR 2001a:03079](#).
- [14] Peter Cholak and André Nies. Atomless r -maximal sets. *Israel J. Math.*, 113:305–322, 1999. ISSN 0021-2172. [Pdf](#). [MR 2001a:03087](#).
- [15] Peter Cholak and Leo A. Harrington. Definable encodings in the computably enumerable sets. *Bull. Symbolic Logic*, 6(2):185–196, 2000. ISSN 1079-8986. [Pdf](#). [MR 2001k:03085](#).
- [16] Peter Cholak, Rod Downey, and Eberhard Herrmann. Some orbits for \mathcal{E} . *Ann. Pure Appl. Logic*, 107(1-3):193–226, 2001. ISSN 0168-0072. [Pdf](#). [MR 2001k:03086](#).
- [17] Peter Cholak, Carl G. Jockusch, and Theodore A. Slaman. On the strength of Ramsey’s theorem for pairs. *J. Symbolic Logic*, 66(1):1–55, 2001. ISSN 0022-4812. [Errata](#). [Pdf](#). [MR 2002c:03094](#).
- [18] Peter Cholak, Marcia Groszek, and Theodore Slaman. An almost deep degree. *J. Symbolic Logic*, 66(2):881–901, 2001. ISSN 0022-4812. [Pdf](#). [MR 2002d:03070](#).
- [19] Peter Cholak, Richard Coles, Rod Downey, and Eberhard Herrmann. Automorphisms of the lattice of Π_0^1 classes: perfect thin classes and anc degrees. *Trans. Amer. Math. Soc.*, 353(12):4899–4924 (electronic), 2001. ISSN 0002-9947. [Pdf](#). [MR 2002f:03080](#).
- [20] Peter Cholak and Leo A. Harrington. On the definability of the double jump in the computably enumerable sets. *J. Math. Log.*, 2(2):261–296, 2002. ISSN 0219-0613. [Pdf](#). [MR 2003h:03063](#).
- [21] Peter Cholak, Rod Downey, and Stephen Walk. Maximal contiguous degrees. *J. Symbolic Logic*, 67(1):409–437, 2002. ISSN 0022-4812. [Pdf](#). [MR 2002m:03060](#).
- [22] Peter Cholak and Leo A. Harrington. Isomorphisms of splits of computably enumerable sets. *J. Symbolic Logic*, 68(3):1044–1064, 2003. ISSN 0022-4812. [Pdf](#). [MR 2004f:03077](#).
- [23] Peter Cholak, Alberto Marcone, and Reed Solomon. Reverse mathematics and the equivalence of definitions for well and better quasi-orders. *J. Symbolic Logic*, 69(3):683–712, 2004. ISSN 0022-4812. [Pdf](#). [MR 2005e:03020](#).
- [24] Peter Cholak and Rod Downey. Invariance and noninvariance in the lattice of Π_1^0 classes. *J. London Math. Soc. (2)*, 70(3):735–749, 2004. ISSN 0024-6107. [Pdf](#). [MR 2005e:03092](#).
- [25] Peter Cholak, Richard A. Shore, and Reed Solomon. A computably stable structure with no Scott family of finitary formulas. *Arch. Math. Logic*, 45(5):519–538, 2006. ISSN 0933-5846. [MR MR2231788 \(2007b:03068\)](#).

- [26] Peter Cholak, Noam Greenberg, and Joseph S. Miller. Uniform almost everywhere domination. *J. Symbolic Logic*, 71(3):1057–1072, 2006. ISSN 0022-4812. math.LO/0506019. Pdf. MR MR2251556.
- [27] Peter Cholak, Rodney Downey, and Leo A. Harrington. On the orbits of computably enumerable sets. *J. Amer. Math. Soc.*, 21(4):1105–1135, 2008. ISSN 0894-0347. Pdf. MR MR2425182.
- [28] Peter Cholak, Rod Downey, and Leo A. Harrington. The complexity of orbits of computably enumerable sets. *Bull. Symbolic Logic*, 14(1):69–87, 2008. ISSN 1079-8986. Pdf. MR MR2395047.
- [29] Peter Cholak and Leo A. Harrington. Extension theorems, orbits, and automorphisms of the computably enumerable sets. *Trans. Amer. Math. Soc.*, 360(4):1759–1791, 2008. ISSN 0002-9947. math.LO/0408279. Pdf. MR MR2366962.
- [30] Peter Cholak, Rod Downey, and Noam Greenberg. Strong jump-traceability. I. The computably enumerable case. *Adv. Math.*, 217(5):2045–2074, 2008. ISSN 0001-8708. Pdf. MR 2388085 (2008k:03087).
- [31] Peter Cholak, David Galvin, and Reed Solomon. Reverse mathematics and infinite traceable graphs. *Archive for Mathematical Logic*, 2010. Accepted. Pdf.

Papers in a Collection

- [1] Peter Cholak and Rod Downey. Undecidability and definability for parametrized polynomial time m-reducibilities. In *Logical methods (Ithaca, NY, 1992)*, volume 12 of *Progr. Comput. Sci. Appl. Logic*, pages 194–221. Birkhäuser Boston, Boston, MA, 1993. Pdf. MR 95e:03124.
- [2] Peter Cholak, Rod Downey, and Richard Shore. Intervals without critical triples. In *Logic Colloquium '95 (Haifa)*, volume 11 of *Lecture Notes Logic*, pages 17–43. Springer, Berlin, 1998. Pdf. MR 2000e:03121.
- [3] Peter A. Cholak. The global structure of computably enumerable sets. In *Computability theory and its applications (Boulder, CO, 1999)*, volume 257 of *Contemp. Math.*, pages 61–72. Amer. Math. Soc., Providence, RI, 2000. Pdf. MR 2001d:03099.
- [4] Peter A. Cholak, Mariagnese Giusto, Jeffry L. Hirst, and Carl G. Jockusch, Jr. Free sets and reverse mathematics. In *Reverse mathematics 2001*, volume 21 of *Lect. Notes Log.*, pages 104–119. Assoc. Symbol. Logic, La Jolla, CA, 2005. Pdf. MR 2006g:03101.

Papers in a Proceedings

- [1] Peter Cholak, Rod Downey, W. Gasarch, E. Kinber, M. Kummer, S. Kurtz, and T. Slaman. Degrees of inferability. In *Proceedings of the Fifth Annual Conference on Computational Learning Theory*, pages 180–192. ACM, 1992.
- [2] P. Cholak. The computably enumerable sets: Recent results and future directions. In Petr Hájek, Luis Valdés-Villanueva, and Dag Westerståhl, editors, *Logic, Methodology and Philosophy of Science: Proceedings of the 12th International Congress of Logic, Methodology and Philosophy of Science*, pages 91–105. King's College Publications, 2005. Pdf.

Edited Work

- [1] Peter A. Cholak, Steffen Lempp, and Manuel Lerman, editors. *Computability theory and its applications*, volume 257 of *Contemporary Mathematics*, Providence, RI, 2000. American Mathematical Society. ISBN 0-8218-1922-4. Current trends and open problems. [MR 2001a:03004](#).
- [2] Peter Cholak, editor. *The Notre Dame lectures*, volume 18 of *Lecture Notes in Logic*. Association for Symbolic Logic, Urbana, IL, 2005. ISBN 1-56881-249-3; 1-56881-250-7. [MR 2005m:03006](#).
- [3] Peter Cholak, editor. *Special Issue on Vaught's Conjecture*, volume 48 of *Notre Dame Journal of Formal Logic*, 2007. Proceeding of the Notre Dame Workshop; Classification of Countable Models: Work growing out of Vaught's Conjecture.

Lecture Notes

- [1] Peter Cholak. Lectures on effective randomness. Notes for a mathematical logic topics class, 2006. [Pdf](#).

Unpublished Papers

- [1] Peter Cholak, Peter Gerdes, and Karen Lange. On n -tardy sets. 2011. [Pdf](#).
- [2] Peter Cholak and Rebecca Weber. On sets automorphic to low sets. 2011.
- [3] Peter Cholak, Damir Dzhafarov, Noah Schweber, and Richard Shore. Computably enumerable partial orders. submitted, 2011. [Pdf](#).
- [4] Peter Cholak, Damir Dzhafarov, and Jeff Hirst. On Mathias generic sets. Submitted, 2012. [Pdf](#).

Talks

- [1] Automorphisms of the lattice of recursively enumerable sets: a survey. Colloquium, Humboldt University, Berlin, Germany, 1990.
- [2] Automorphisms of the lattice of recursively enumerable sets: the promptly simple sets. Midwest Model Theory Conference, Madison, WI, 1991.
- [3] The interaction of structural properties of the recursively enumerable sets with the recursively enumerable degrees. Logic Colloquium, George Washington University, Washington D.C., 1991.
- [4] Some thoughts on constructing automorphisms of \mathcal{E}^* . Logic Seminar, Cornell University, Ithaca, NY, 1992.
- [5] The r.e. degrees and the lattice 1-3-1. Connecticut Logic Seminar, Wesleyan University, 1993.
- [6] And yet another proof of ramsey's theorem. Undergraduate Mathematics Colloquium, Kalamazoo College, Kalamazoo, MI, 1993.
- [7] On the cantor-bendixon rank of recursively enumerable sets. Special Session in Recursion Theory, American Mathematical Society Meeting, Washington D.C., 1993.
- [8] Isomorphism, orbits and degrees. Invited Address, Annual Meeting of the Association for Symbolic Logic, Notre Dame, 1993.

- [9] Lattice nonembeddings and intervals of the recursively enumerable degrees. Logic Seminar, University of Wisconsin–Madison, 1993.
- [10] Incompleteness in arithmetic. Undergraduate Mathematics Colloquium, Calvin College, Grand Rapids, MI, 1994.
- [11] Intervals without any critical triples. Logic Seminar, University of Wisconsin–Madison, 1994.
- [12] Automorphic recursively enumerable sets. Special Session in Recursion Theory at the Logic Colloquium, Haifa, Israel, 1995.
- [13] The recursively enumerable sets. Greater Boston Logic Conference, Recursion Theory Workshop, MA, 1995.
- [14] Intervals without any critical triples. Logic Seminar, University of Michigan, 1995.
- [15] Computably categorical structures. Logic Seminar, University of Illinois at Urbana-Champaign, 1996.
- [16] Automorphisms of the computably enumerable sets. Mathematisches Forschungsinstitut Oberwolfach, Germany, 1996.
- [17] Definability, automorphisms and the computably enumerable sets. Invited Address, Winter Meeting of the Association for Symbolic Logic, Orlando, FL, 1996.
- [18] Permitting, forcing and copies of recursive structures. Special Session in Recursive and Feasible Mathematics, American Mathematical Society Meeting, Orlando, FL, 1996.
- [19] Automorphisms of computably enumerable sets. Logic Seminar, University of Chicago, IL, 1997.
- [20] More on the strength of Ramsey’s Theorem for pairs. Mini-symposium in Logic at the PhD Centennial Conference, Department of Mathematics, University of Wisconsin–Madison, 1997.
- [21] On Ramsey’s Theorem for pairs, part II. Special Session in Computability Theory at the Logic Colloquium, Leeds, England, 1997.
- [22] Automorphic computably enumerable sets. Plenary Address, Workshop on Recursion Theory and Complexity, Kazan, Russia, 1997.
- [23] Automorphisms of the recursively enumerable sets. A series of 3 2-hours talks, Recursion Theory Seminar, Department of Mathematics, University of California at Berkeley, 1997.
- [24] The strength of Ramsey’s Theorem. Logic Colloquium, Group in Logic and Methodology of Science, University of California at Berkeley, 1997.
- [25] The strength of Ramsey’s theorem. Mathematics Colloquium, University of Victoria, Wellington, New Zealand, 1997.
- [26] The strength of Ramsey’s Theorem. VIG’98 (Very Informal Gathering—Logic, UCLA, LA, CA, 1998.
- [27] Automorphisms of computably enumerable sets. Logic Seminar, UC—Irvine, Irvine, CA, 1998.
- [28] Some recent results on the computably enumerable sets. Logic Colloquium ’99, Utrecht, Netherlands, 1999.
- [29] The global structure of computably enumerable sets. AMS Summer Research Conference on Computability Theory and Applications, Boulder, CO, 1999.

- [30] The strength of Ramsey's Theorem for pairs. Logic Seminar, University of Illinois at Chicago, 1999.
- [31] Definable coding in the computable enumerable sets. Logic Seminar, University of Chicago, 2000.
- [32] Ramsey's theorem for pairs. Mathematics Colloquium, University of Michigan, 2000.
- [33] Maximal contiguous degrees. Special Session in Computability Theory at the ASL Annual Meeting, University of Illinois at Urbana-Champaign, 2000.
- [34] The latest (exciting) news about the computably enumerable sets. Invited Address, Winter Meeting of the Association for Symbolic Logic, New Orleans, LA, 2001.
- [35] The latest (exciting) news about the computably enumerable sets. Logic Colloquium, Indiana University—Bloomington, IN, 2001.
- [36] Extension theorems and automorphisms of the computably enumerable sets. Mathematisches Forschungsinstitut Oberwolfach, Germany, 2001.
- [37] On the definability of the double jump in c.e. sets. The CUNY Logic Workshop, NYC, NY, 2001.
- [38] On the definability of the double jump in c.e. sets. Logic Colloquium, UCLA, LA, CA, 2001.
- [39] Extensions theorems and automorphisms of the computably enumerable sets. Special Session in Computability and its applications, American Mathematical Society Meeting, San Diego, CA, 2002.
- [40] Extensions theorems and automorphisms of the computably enumerable sets. Logic Colloquium, University of Wisconsin—Madison, 2002.
- [41] Orbits of the computably enumerable sets. Logic Colloquium, Cornell University, 2002.
- [42] A definable yet non- Δ_3^0 orbit in the computably enumerable sets. Special Session on Computability and Models, American Mathematical Society Meeting, Baltimore, Maryland, 2003.
- [43] On the complexity of orbits in \mathcal{E}^* . Computability and Logic Workshop, Heidelberg, Germany, 2003.
- [44] On the complexity of orbits in \mathcal{E}^* . Special Session in Computability Theory and Effective Mathematics at the ASL Annual Meeting, University of Illinois-Chicago, 2003.
- [45] The computably enumerable sets: Recent results and future directions. Invited Lecture, 12th International Congress of Logic, Methodology, and Philosophy of Science, Oviedo, Spain, 2003.
- [46] The computably enumerable sets: Recent results and future directions. Keynote Address, 5th Annual Graduate Student Conference in Logic, 2004.
- [47] Improving and proving the Slaman-Woodin conjecture. North Texas Logic Conference, Denton, Texas, 2004.
- [48] Improving and proving the Slaman-Woodin conjecture. Special Session on Computability and Applications, AMS Sectional Meeting, Evanston, IL., 2004.
- [49] Well quasi-orders; reverse mathematics and the equivalence of definitions for well and better quasi-orders. ASL-AMS Special Session on Reverse Math, AMS National Meeting, Atlanta, GA., 2005.
- [50] Academic publishing. Response and comments on Peter Suber's lecture "What is Open Access to Science and Scholarship?" at Notre Dame., 2005. [Pdf](#).

- [51] Progress on the c.e. sets: Improving and proving the Slaman-Woodin conjecture. Computational Prospects of Infinity, Institute for Mathematical Sciences, National University of Singapore, Singapore, 2005. [Pdf](#).
- [52] Uniform almost everywhere domination. Computational Prospects of Infinity, Institute for Mathematical Sciences, National University of Singapore, Singapore, 2005. [Pdf](#).
- [53] Progress on the c.e. sets: Improving and proving the Slaman-Woodin conjecture. The CUNY Logic Workshop, NYC, 2005. [Pdf](#).
- [54] Computability theory: Domination, Measure, Randomness, and Reverse Mathematics. New York Logic Colloquium, 2005. [Pdf](#).
- [55] Computability theory: Domination, Measure, Randomness, and Reverse Mathematics. Southern Wisconsin Logic Colloquium, UW–Madison, 2006. [Pdf](#).
- [56] The Computationally Enumerable Sets: the Past, the Present and the Future. 2006 Greater Boston Logic Conference, 2006.
- [57] The Computationally Enumerable Sets: the Past, the Present and the Future. Theory and Applications of Models of Computation, 2006, Beijing China, 2006.
- [58] The Computationally Enumerable Sets: the Past, the Present and the Future. Nanjing University, China, 2006. [Pdf](#).
- [59] Ramsey’s theorem for pairs. Nanjing University, China, 2006. [Pdf](#).
- [60] The Computationally Enumerable Sets: Open Questions. Special Session on Computability Theory in Honor of Manuel Lerman’s Retirement, American Mathematical Society Meeting, Storrs, CT, 2006. [Pdf](#).
- [61] Computability theory: Domination, Measure, Randomness, and Reverse Mathematics. Logic Colloquium, University of Florida, 2007. [Pdf](#).
- [62] Computability theory: Domination, Measure, Randomness, and Reverse Mathematics. Computer Science Department, University of Auckland, New Zealand, 2007. [Pdf](#).
- [63] The Computationally Enumerable Sets: the Past, the Present and the Future. Computer Science Department, University of Auckland, New Zealand, 2007.
- [64] The Computationally Enumerable Sets: the Past, the Present and the Future. Logic Seminar, Victoria University of Wellington, Wellington, New Zealand, 2007.
- [65] On Ramsey’s theorem for pairs. Seminar, Research Group on Mathematical Linguistics, Universitat Rovira i Virgili, Tarragona, Spain, 2007. [Pdf](#).
- [66] Computability theory: Domination, Measure, Randomness, and Reverse Mathematics. Seminario Rubio de Francia, University of Zaragoza, Spain, 2007. [Pdf](#).
- [67] Strong jump-traceability: the computably enumerable case. Contributed Talk, Logic Colloquium 2007, Wrocław, Poland, 2007. [Pdf](#).
- [68] Coding, orbits and computably enumerable sets. Harvard Mathematical Logic Seminar, 2007.
- [69] Coding, orbits and computably enumerable sets. UCONN Logic Seminar, 2007.
- [70] On liminfs. Penn State Mass Seminar, 2007.

- [71] Strong jump-traceability: the computably enumerable case. Penn State Logic Seminar, 2007.
- [72] On liminfs in cantor space. University of Chicago, 2008.
- [73] On liminfs in cantor space. Computability, Complexity and Randomness, 08, Nanjing University, China, 2008.
- [74] The computably enumerable sets. Tutorial. Asian Logic Conference 10, Kobe, Hyogo, Japan, 2008. [Pdf](#).
- [75] The computably enumerable sets, Σ_1^1 -completeness and tardy sets. Berkeley Recursion Theory Seminar, 2009.
- [76] Algebra and logic. Nanjing University of Science and Technology, 2010.
- [77] Definability in the computably enumerable sets, What I learned from Leo Harrington. ASL Meeting, Definability throughout Mathematical Logic – in honor of Leo Harrington, Berkeley, 2011. [Pdf](#).
- [78] Ramsey theory and reverse mathematics. Ramsey Theory in Logic, Combinatorics and Complexity, Bertinoro (Forlì-Cesena), Italy, 2011. [Pdf](#).
- [79] Some projects in reverse mathematics. Reverse Mathematics Workshop, Chicago, 2011. [Pdf](#).
- [80] Mathematical publishing. Open Access Week Presentations, Hesburgh Libraries, Notre Dame, 2011. [Pdf](#).

Grants

1. PI, National Science Foundation, Mathematical Sciences: Postdoctoral Research Fellowship, Total Cost: \$75,000; Dates: 08/01/92 through 07/31/96.
2. PI, National Science Foundation, NSF DMS 96-34565, Computability in Mathematics, Total cost: \$64,500; Dates: 08/01/96 through 07/31/00.
3. Co-PI, National Science Foundation, Binational Research Grant, U.S.-New Zealand Cooperative Research Program, INT-96-02579, Computability, Logic and Complexity, Total Cost: \$27,630; Dates: 04/01/97 through 03/31/02.(This grant was administered at Cornell University.)
4. PI, National Science Foundation, NSF DMS 99-88716, Computability and Definability in Mathematical Logic, Total Cost: \$85,197; Dates: 07/15/00 through 06/30/03.
5. PI, National Science Foundation, NSF DMS 02-45167, Definability and Automorphisms in Computability Theory, Total Cost: \$447,732; Dates: 07/01/03 through 06/30/08.
6. Co-PI with S. Buechler, J. Knight, and S. Starchenko, National Science Foundation, NSF-EMSW21-RTG-03-53748: Research Training in Logic at Notre Dame, Total Cost: \$449,000; Dates: 08/01/04 through 07/31/07.
7. Co-Pi with S. Buechler, J. Knight, and S. Starchenko, National Science Foundation, DMS-0516576, Two Conferences in Logic at Notre Dame, Total Cost: \$22,000; Dates: 4/1/05 through 3/31/06.

8. Co-PI with Eric W. Allender, Douglas A. Cenzer, Lance Fortnow, Denis R. Hirschfeldt, John M. Hitchcock, Bjørn Kjos-Hanssen, Jack Lutz, R. Daniel Mauldin, Joseph S. Miller, Theodore A. Slaman, Stephen G. Simpson, and Rebecca Weber, NSF-DMS-0652669, FRG: Collaborative Research: Algorithmic Randomness, Total Cost: \$500,000 (\$90,000 at ND, \$26,600 managed for Bjørn Kjos-Hanssen, and \$40,000 supplemental support for U.S.–China collaboration awarded 9/2009); Dates: 07/01/07 through 06/30/10. Extended to 6/30/2011.
9. Co-PI with S. Buechler, J. Knight, and S. Starchenko, National Science Foundation, EMSW21-RTG-0739007: Research Training in Mathematical Logic at Notre Dame, Total Cost: \$151K; Dates: 08/01/08 through 07/31/10.
10. PI, National Science Foundation, NSF DMS-0800198, Topics in Computability Theory, Total Cost: \$123,885; Dates: 07/01/08 through 06/30/11.
11. Co-PI with S. Buechler, J. Knight, and S. Starchenko, National Science Foundation, EMSW21-RTG-0838506: Notre Dame’s Mathematical Logic Program, Total Cost: \$1,178K; Dates: 08/01/09 through 07/31/14.

Undergraduate Thesis Directed

1. Sami Assaf, 2001 B.S. from Notre Dame with honors, First runner-up for the Association Women in Mathematics, Alice T. Schafer Prize, National Science Foundation Graduate Fellowship, Senior Honors Thesis: The class number of algebraic number fields (codirected with Sam Evens). Became a student in mathematics at Berkeley.
2. William Michael Phillip Hudelson, 2008 B.S. from Notre Dame with honors. Senior Honors Thesis: Effectivized Version of Erdos-Sierpinski Duality Theorem. Became a student in mathematics at Penn State.

Doctoral Dissertations Directed

- [1] Stephen M. Walk. *Toward the definability of the array noncomputable degrees*. PhD thesis, University of Notre Dame, 1999. 1998 Graduate Student Union Teaching Award (Independent Instructor), 1999 Eli J. and Helen Shaheen Graduate Award in Science, currently an Assistant Professor at St. Cloud State in St. Cloud, MN. [Pdf](#).
- [2] Charles Frederick Dymphna McCoy. *Relativization, categoricity, and dimension*. PhD thesis, University of Notre Dame, 2000. co-directed with Julia Knight, 2000 Ph.D., 2000 Notre Dame Alumni Association Teaching Award, a Van Vleck/VIGRE visiting professor at the University of Wisconsin–Madison 2000–2, CSC Priest, currently at University of Portland. [Pdf](#).
- [3] Rebecca Weber. *A definable relation between c.e. sets and ideals*. PhD thesis, University of Notre Dame, 2004. Clare Boothe Luce fellowship, 1999–2003; Outstanding Graduate Student Teacher, 2003, 2004. First job was a lecturership at Penn State University. Second job is a tenure track position at Dartmouth. [Pdf](#).
- [4] Joshua A. Cole. *On the elementary theories of the Muchnik and Medvedev Lattices of Π_1^0 classes*. PhD thesis, University of Notre Dame, 2009. Decided to attend the seminary. [Pdf](#).

- [5] Logan M. Axon. *Algorithmically Random Closed Sets and Probability*. PhD thesis, University of Notre Dame, 2010. Tenure track at Gonzaga University. [Pdf](#).
- [6] Sean Walsh. *Arithmetical Knowledge and Arithmetical Definability: Four Studies*. PhD thesis, University of Notre Dame, 2010. Ph.D. from Program in Logic and the Foundations of Mathematics sponsored by the Department of Philosophy and the Department of Mathematics, 3 year Postdoc at Birkbeck, University of London, Kurt Gödel fellowship (pre-doctoral) EUR 100K. Tenure track at UC–Irvine, Department of Logic and Philosophy of Science. [Pdf](#).

Graduate Students

1. Stephen Flood.
2. Chris Porter¹.
3. Quinn Culver.

Postdoctoral Fellows

1. Mariagnese Giusto, 1999–2000, from and supported by the Università di Torino, 1998 Ph.D. at Università di Torino.
2. Reed Solomon, 2002–3, partially supported by a National Science Foundation Postdoctoral Research Fellowship, 1998 Ph.D. at Cornell, now Asst. Prof., Univ. of Connecticut.
3. Noam Greenberg, 2004–05, Notre Dame Instructorship in Mathematics, 2004 Ph.D. at Cornell, now Lecturer at Victoria University of Wellington, NZ.
4. Peter Gerdes, 2008–2011, Supported by EMSW21-RTG- 0739007, 2008 Ph.D. at UC Berkeley.
5. Karen Lange, 2008–11, Supported by an NSF Postdoctoral Research Fellowship
6. Damir Dzhafarov, 2011–12, Supported by an NSF Postdoctoral Research Fellowship

Senior Visitors

1. Jeff Hirst, Spring 2000, Associate Professor, Appalachian State University.
2. Alberto Marcone, January–April 2003, Università di Udine, supported by INdAM of Italy, 1993 Ph.D. at Penn State.
3. Mike Stob, Fall 05–Spring 06, Professor, Calvin College.

¹Porter is in the interdisciplinary Ph.D. Program in Logic and the Foundations of Mathematics sponsored by the Department of Philosophy and the Department of Mathematics.

4. Rebecca Weber, Fall 2009, Asst. Prof, Dartmouth College.
5. Reed Solomon, 2009-10, Assc. Prof., Univ. of Connecticut.

Editorships

1. Co-Editor-in-Chief, Notre Dame Journal of Formal Logic (NDJFL), ongoing since 2000. During this time we have embarked on the large project of taking this journal online and upgrading our production process (see <http://www.nd.edu/~ndjfl> or <http://projecteuclid.org/ndjfl>).
2. Journal of Symbolic Logic, 2004–2007.
3. Coordinating Editor, Journal of Symbolic Logic, 2008–2009.

Service to Department, Collage, and University

1. Dekoyejo Somefun, 2000 Ph.D. in Economics, an active member of his Ph.D. committee, used Computability and Automata theory in his thesis, initially at CWI (the National Research Institute for Mathematics and Computer Science in Netherlands).
2. Facilitator, Getting “Notre Dame Mathematical Lectures” available online at Project Eculid in perpetuated, see <http://projecteuclid.org/ndml>.
3. 3 years on Postdoctoral Hiring Committee, a few years on Graduate Admission Committee, 5 years on Departmental Honesty Committee. Regularly on Logic Ph.D. Committees.
4. Faculty Senate, 1996–1997.
5. University Honesty Committee, 2008–.
6. CAP, 2009-10.
7. Strategic Planning Committee, 2008-2010.
8. Hiring Commmitte, Search Committee in Model Theory and it’s applications, 2010-11.
9. Hiring Commmitte, 2011-12.

Service to Profession at Notre Dame

1. Co-organizer, Midwest Model Theory Meeting, Notre Dame, IN, 1995.
2. Co-organizer, Midwest Model Theory Meeting, Notre Dame, IN, 1998.
3. Co-organizer, Midwest Model Theory Meeting, Notre Dame, IN, 2002.

4. Co-organizer, Classification of Countable Models: Work growing out of Vaught's Conjecture, Workshop, Notre Dame, IN, 2005.
5. Organizer, Proof Theory Workshop, Notre Dame, IN, 2005.
6. Local Organizing Committee, Annual Meeting of the Association for Symbolic Logic, Notre Dame, May 2009.
7. Program Chair, Organizer, 5th Conference on Logic, Computability and Randomness (RTG Meeting), Notre Dame, May 2010.
8. Co-organizer, Computability and its Applications, Special Session, AMS Meeting, Notre Dame, 2010.

Service to Profession outside Notre Dame

1. Maintainer, Computability Home Page and Computability Theory E-mailing List (see <http://www.nd.edu/~cholak/computability/>).
<http://www.nd.edu/~cholak> for URL's), Active since 1995.
2. Program Committee, Annual Meeting of the Association for Symbolic Logic, 1996.
3. Program Committee, Annual Meeting of the Association for Symbolic Logic, 1997.
4. Program Chair, Winter Meeting of the Association for Symbolic Logic, 1999.
5. Co-organizer, Joint American Mathematical Society-Institute Mathematical Statistics-Society for Industrial and Applied Mathematics (AMS-IAS-SIAM) Summer Research Conference Summer Research Conference-Computability Theory and Applications, University of Colorado-Boulder, 1999.
6. Meeting Committee of the Association for Symbolic Logic, 2000 – 2002.
7. Chair of the Meeting Committee of the Association for Symbolic Logic, 2001-2005.
8. Organizer, Computability, Reverse Mathematics and Combinatorics, Banff International Research Station, 2009, http://www.birs.ca/birspages.php?task=displayevent&event_id=08w5019.
9. Organizer, Midwest Computability Seminar, 2008-. <http://www.math.uchicago.edu/~antonio/Jointseminar.html>.