Curriculum Vitae
Peter Cholak

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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 advisors: Professor Terry Millar and Professor Steffen Lempp.

Current and Previous Positions

Fall 2004-Present	Professor University of Notre Dame
Fall 2022-Present	Associate Chair, Mathematics University of Notre Dame

Fall 2014-Spring 2019	Director of Graduate Studies, Mathematics 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 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

Visiting Positions

February–March 2020	Visiting Researcher Research In Paris Program, Henri Poincare Institute
January–February 2020	Visiting Researcher University of Wisconsin–Madison
October–November 2019	Visiting Researcher Victora University of Wellington
January–April 2013	Visiting Researcher University of Buenos Aires, Computer Science Department, Buenos Aires Semester in Computability Complexity and Randomness
Fall 97–Summer 98	Visiting Scholar in Mathematics University of California at Berkeley
Fall 93–Summer 94	Visiting Scholar in Mathematics Cornell University

Papers in a Journal

[1] 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.

[2] Paul-Elliot Anglès d'Auriac, Peter A Cholak, Damir D Dzhafarov, Benoit Monin, and Ludovic Patey. Milliken's tree theorem and its applications: a computability-theoretic perspective. *Memoirs of the American Mathematical Society*, 293(1457), 2024. doi: https://doi-org.proxy.library.nd.edu/10.1090/memo/1457. Pdf.

[3] Peter A. Cholak, Damir D. Dzhafarov, Denis R. Hirschfeldt, and Ludovic Patey. Some results concerning the SRT^2_2 vs. COH problem. *Computability*, 9(3-4):193–217, 2020. ISSN 2211-3568. doi: 10.3233/COM-190251. Pdf. MR 4133713.

[4] Peter A. Cholak and Peter M. Gerdes. Extending properly n-REA sets. *Computability*, 11:241–267, 2022. doi: 10.3233/COM-210362. URL https://arxiv.org/abs/2107.01299.

[5] Peter Cholak and Ludovic Patey. Thin set theorems and cone avoidance. *Trans. Amer. Math. Soc.*, 373(4): 2743–2773, 2020. ISSN 0002-9947. doi: 10.1090/tran/7987. URL https://doi-org.proxy.library.nd.edu/10.1090/tran/7987. Pdf. MR 4069232.

[6] Peter A. Cholak, Gregory Igusa, Ludovic Patey, Mariya I. Soskova, and Dan Turetsky. The Rado path decomposition theorem. *Israel J. Math.*, 234(1):179–208, 2019. ISSN 0021-2172. doi: 10.1007/s11856-019-1916-0. URL https://doi.org/10.1007/s11856-019-1916-0. MR 4040825.

[7] Peter Cholak and Charlie McCoy. Effective prime uniqueness. *Proc. Amer. Math. Soc.*, 145(12):5363–5379, 2017. ISSN 0002-9939. URL https://doi.org/10.1090/proc/13675. Pdf. MR 3717963.

[8] Peter Cholak and Gregory Igusa. Density-1-bounding and quasiminimality in the generic degrees. *J. Symb. Log.*, 82(3):931–957, 2017. ISSN 0022-4812. doi: 10.1017/jsl.2016.50. URL http://dx.doi.org/10.1017/jsl.2016.50. Pdf. MR 3694335.

[9] Peter Cholak, Rodney G. Downey, and Greg Igusa. Any FIP real computes a 1-generic. *Trans. Amer. Math. Soc.*, 369(8):5855–5869, 2017. ISSN 0002-9947. doi: 10.1090/tran/6997. URL http://dx.doi.org/10.1090/tran/6997. Pdf. MR 3646781.

[10] Peter Cholak and Rachel Epstein. Computably enumerable sets that are automorphic to low sets. *Computability*, 6(1):23–45, 2017. ISSN 2211-3568. doi: 10.3233/COM-160053. URL http://dx.doi.org/10.3233/COM-160053. Pdf. MR 3609716.

[11] Peter A. Cholak, Peter Gerdes, and Karen Lange. $\mathcal{D}$-maximal sets. *J. Symb. Log.*, 80(4):1182–1210, 2015. ISSN 0022-4812. doi: 10.1017/jsl.2015.3. URL http://dx.doi.org/10.1017/jsl.2015.3. Pdf. MR 3436364.

[12] Peter A. Cholak, Damir D. Dzhafarov, and Mariya I. Soskova. Genericity for Mathias forcing over general Turing ideals. *Israel J. Math.*, 216(2):583–604, 2016. ISSN 0021-2172. doi: 10.1007/s11856-016-1420-8. URL http://dx.doi.org/10.1007/s11856-016-1420-8. Pdf. MR 3557458.

[13] 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.

[14] 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.

[15] 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.

[16] 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.

[17] 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.

[18] Peter Cholak and Rod Downey. Permutations and presentations. *Proc. Amer. Math. Soc.*, 122(4):1237–1249, 1994. ISSN 0002-9939. MR 95b:03046.

[19] Peter Cholak. The translation theorem. *Arch. Math. Logic*, 33(2):87–108, 1994. ISSN 0933-5846. MR 95d:03074.

[20] 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.

[21] 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.

[22] 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.

[23] 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.

[24] Peter Cholak, Sergey Goncharov, Bakhadyr Khoussainov, 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.

[25] Peter Cholak and André Nies. Atomless r-maximal sets. *Israel J. Math.*, 113:305–322, 1999. ISSN 0021-2172. Pdf. MR 2001a:03087.

[26] 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.

[27] 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.

[28] 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.

[29] 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.

[30] Peter Cholak, Richard Coles, Rod Downey, and Eberhard Herrmann. Automorphisms of the lattice of Π^1_0 classes: perfect thin classes and anc degrees. *Trans. Amer. Math. Soc.*, 353(12):4899–4924 (electronic), 2001. ISSN 0002-9947. Pdf. MR 2002f:03080.

[31] 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.

[32] 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.

[33] 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.

[34] 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.

[35] Peter Cholak and Rod Downey. Invariance and noninvariance in the lattice of Π^0_1 classes. *J. London Math. Soc. (2)*, 70(3):735–749, 2004. ISSN 0024-6107. Pdf. MR 2005e:03092.

[36] 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).

[37] 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.

[38] 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.

[39] 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.

[40] 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.

[41] Peter Cholak, Rod Downey, and Noam Greenberg. Strong jump-traceabilty. I. The computably enumerable case. *Adv. Math.*, 217(5):2045–2074, 2008. ISSN 0001-8708. Pdf. MR 2388085 (2008k:03087).

[42] Peter A. Cholak, Damir D. Dzhafarov, Noah Schweber, and Richard A. Shore. Computably enumerable partial orders. *Computability*, 1(2):99–107, 2012. ISSN 2211-3568. Pdf. MR 3064224.

[43] Peter Cholak, David Galvin, and Reed Solomon. Reverse mathematics and infinite traceable graphs. *MLQ Math. Log. Q.*, 58(1-2):18–28, 2012. ISSN 0942-5616. doi: 10.1002/malq.201020066. URL http://dx.doi.org/10.1002/malq.201020066. MR 2896819.

[44] Peter Cholak, Peter M. Gerdes, and Karen Lange. On n-tardy sets. *Ann. Pure Appl. Logic*, 163(9):1252–1270, 2012. ISSN 0168-0072. doi: 10.1016/j.apal.2012.02.001. URL http://dx.doi.org/10.1016/j.apal.2012.02.001. MR 2926283.

[45] Peter A. Cholak, Damir D. Dzhafarov, Jeffry L. Hirst, and Theodore A. Slaman. Generics for computable Mathias forcing. *Ann. Pure Appl. Logic*, 165(9):1418–1428, 2014. ISSN 0168-0072. doi: 10.1016/j.apal.2014.04.011. URL http://dx.doi.org/10.1016/j.apal.2014.04.011. MR 3210076.

Papers in a Collection

[1] Peter Cholak, Rod Downey, Noam Greenberg, and Daniel Turetsky. Realizing computably enumerable degrees in separating classes. In *Higher Recursion Theory and Set Theory*, volume 44 of *Lecture Notes Series, Institute for Mathematical Sciences, National University of Singapore.*, pages 19–35. World Scientific Publishing Co. Pte. Ltd, 2025. URL https://arxiv.org/abs/2008.10127. Pdf.

[2] Peter A. Cholak. Some recent research directions in the computably enumerable sets. In *The incomputable*, Theory Appl. Comput., pages 83–93. Springer, Cham, 2017. Pdf. MR 3644779.

[3] Peter A. Cholak. On splits of computably enumerable sets. In *Computability and complexity*, volume 10010 of *Lecture Notes in Comput. Sci.*, pages 521–535. Springer, Cham, 2017. Pdf. MR 3629739.

[4] 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.

[5] 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.

[6] 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.

[7] 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] 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.

[2] David Chiang, Peter Cholak, and Anand Pillay. Tighter bounds on the expressivity of transformer encoders. In *Proceedings of the 40th International Conference on Machine Learning*, ICML'23. JMLR.org, 2023.

[3] David Chiang and Peter Cholak. Overcoming a theoretical limitation of self-attention. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 7654–7664, Dublin, Ireland, 2022. Association for Computational Linguistics. doi: 10.18653/v1/2022.acl-long.527. URL https://aclanthology.org/2022.acl-long.527. ArXiv:https://arxiv.org/abs/2107.01299.

[4] 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.

[5] Peter Cholak, Damir Dzhafarov, Jeff Hirst, and Theodore A. Slaman. Generics for computable Mathias forcing. In S. Barry Cooper, Anuj Dawar, and Benedikt Löwe, editors, *How the World Computes - Turing Centenary Conference and 8th Conference on Computability in Europe, CiE 2012, Cambridge, UK, June 18-23, 2012. Proceedings.*, volume 7318 of *Lecture Notes in Computer Science*, pages 129–138. Springer, 2012. ISBN 978-3-642-30869-7. This is an extended version of the prepublication "On Mathias generic sets". 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, Rodney Downey, and Noam Greenberg. Low_2 computably enumerable sets have hyperhypersimple supersets. URL https://arxiv.org/abs/2412.01939. 2024.

[2] Peter Cholak, Marianna Csornyei, Neil Lutz, Patrick Lutz, Elvira Mayordomo, and D. M. Stull. Bounding the dimension of exceptional sets for orthogonal projections. URL https://arxiv.org/abs/2411.04959. 2024.

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 Victora, 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^0_3 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, Altanta, 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 Computably Enumerable Sets: the Past, the Present and the Future. 2006 Greater Boston Logic Conference, 2006.

[57] The Computably Enumerable Sets: the Past, the Present and the Future. Theory and Applications of Models of Computation, 2006, Beijing China, 2006.

[58] The Computably 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 Computably 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 Computably Enumerable Sets: the Past, the Present and the Future. Computer Science Department, University of Auckland, New Zealand, 2007.

[64] The Computably 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. 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.

[81] $\mathcal{D}$-maximal sets. Computability, Oberwolfach, Germany, 2012. Pdf.

[82] Computably enumerable partial orderings. AMS Special Session on Computable Mathematics (in honor of Alan Turing), Washington, DC, 2012. Pdf.

[83] The computably enumerable sets: a partial survey with questions. The Incomputable, Kavli Royal Society International Centre Chicheley Hall, Isaac Newton Institute Programme - "Semantics and Syntax: A Legacy of Alan Turing" (SAS), 2012. Pdf.

[84] Computable mathias genericity. Turing Centenary Conference and 8th Conference on Computability in Europe CiE 2012, Cambridge, UK, 2012. Pdf.

[85] $\mathrm{B}\Sigma^0_2$ and reverse mathematics of ramsey's theorem for pairs with 2 colors. URL http://web.mat.bham.ac.uk/R.W.Kaye/midlandslogic/. Midlands Logic Seminar, University of Birmingham, UK, 2012.

[86] Computably enumerable partial orderings. Seventh International Conference on Computability, Complexity and Randomness (CCR 2012), Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, 2012. Pdf.

[87] The computably enumerable sets: the tardy sets, the $\mathcal{D}$-maximal sets and the low sets. Harvard/MIT Logic Seminar, Cambridge, MA, 2012. Pdf.

[88] The c.e. sets disjoint from a c.e. set A. Buenos Aires Semester in Computability, Complexity and Randomness, 2013. Pdf.

[89] Splits of c.e. sets. Midwest Computability Seminar, 2013.

[90] Mathias genericity. UW–Madison Logic Seminar, 2014.

[91] Mathias forcing. Ninth International Conference on Computability, Complexity and Randomness (CCR 2014), Institute for Mathematical Sciences, Singapore, 2014.

[92] Every FIP degree computes a 1-generic. SIDIM XXX, University of Puerto Rico - Mayagüez, 2015. Pdf.

[93] Effective Prime Uniquess. Varieties of Algorithmic Information, 2015. Pdf.

[94] On Friedberg Splits. Technical University of Darmstadt, 2015. Pdf.

[95] On Friedberg Splits. Tenth International Conference on Computability, Complexity and Randomness (CCR 2015), 2015. Pdf.

[96] Effective Prime Uniquess. Special Session on Computability Theory and Applications, AMS Sectional Meeting, Chicago, 2015. Pdf.

[97] Rado path decomposition. New Challenges in Reverse Mathematics, Institute for Mathematical Sciences, National University of Singapore, Singapore, 2016.

[98] Rado path decomposition. Logic Seminar, Univeristy of Michigan, 2016. Pdf.

[99] Rado path decomposition. Session in Coputability Theory, Association for Symbolic Logic, 2016 Annual North American Meeting, Storrs, Connecticut, 2016. Pdf.

[100] Density-1-bounding and quasiminimality in the generic and coarse degrees. Computability, Randomness and Applications, CIRM, France, 2016.

[101] (Some) lowness notions in the c.e. sets. Computability and Complexity Symposium, New Zealand, 2017. Pdf.

[102] Lowness notions in the c.e. sets. Workshop on Classic Computability Theory, Singapore, 2017. Pdf.

[103] Rado path decomposition. Logic Seminar, IU–Bloomington, 2017. Pdf.

[104] Encodable by thin sets. South Eastern Logic Symposium, 2018. Pdf.

[105] Encodable by thin sets. Midwest Computability Seminar, 2018. Pdf.

[106] Encodable by thin sets. RaTLoCC 2018: Ramsey Theory in Logic, Combinatorics and Complexity, Bertinoro, Italy, 2018. Pdf.

[107] Encodable by thin sets. Logic Seminar, UW–Madison, 2018. Pdf.

[108] Is COH computably reducible to SRT^2_2? SIDIM, Humacao, Puerto Rico, 2019. Pdf.

[109] Computability-theoretic aspects of Ramsey's Theorem. Logic Workshop, CUNY, NYC, 2019.

[110] Is COH computably reducible to SRT^2_2? AMS Sectional Meeting, Hartford, CT, Special Session on Computability Theory, 2019. Pdf.

[111] Encodable by thin sets. Connecticut Logic Semianr, 2019. Pdf.

[112] Thin sets and the preservation of hyperimmunities. Special Session on Computability Theory in Honor of Steffen Lempp's 60th Birthday, AMS Sectional Meeting, Madison, WI, 2019. Pdf.

[113] Thin sets. Logic Seminar, Victoria Univeristy of Wellington, New Zealand, 2019. Pdf.

[114] What can we compute from solutions to combinatorial problems? Math Colloquium, Massey Univeristy, Auckland, New Zealand, 2019. Pdf.

[115] What can we compute from solutions to combinatorial problems? Colloquium, University of Wisconsin–Madison, 2020. Pdf.

[116] On recent work by Monin and Patey. Logic Seminar, University of Wisconsin–Madison, 2020.

[117] Lowness in c.e. sets and degrees. French Computabilty Day, Henri Poincare Institute, Paris, France, 2020.

[118] What can we compute from solutions to combinatorial problems? Colloquium, Institute for the History and Philosophy of Science and Technology (IHPST), 2020. Pdf.

[119] Big ramsey degrees of the rationals and the rado graph and computability theory. MSRI Computability Seminar, 2020. Pdf.

[120] The collapse of an REA hierarchy. JMM, AMS Special Session on Computability Theory and Effective Mathematics, 2021. Pdf.

[121] Old and new results on the computably enumerable sets. Online Logic Seminar, http://lagrange.math.siu.edu/calvert/OnlineLogicSeminar.html, 2021. Pdf.

[122] Notre Dame Lighting Talk, 2021.

[123] Two vignettes. Oberwolfach, Hybrid Meeting, 2021. Pdf.

[124] Old and new results on the computably enumerable sets. Computability Theory and Applications Online Seminar, 2022. Pdf.

[125] On Ramsey-like theorems on the rationals and the Rado graph. UM Logic Seminar, 2022.

[126] On Ramsey-like theorems on the rationals and the rado graph. International conference on computability, complexity and randomness, Cambridge, UK, 2022. Pdf.

[127] On Ramsey-like theorems on the rationals and the rado graph. WRMP 2022 : Workshop on Reverse Mathematics and its Philosophy, Paris, France), 2022. Pdf.

[128] Ramsey like theorems on the rationals and some other structures. Invited Lecture, Association for Symbolic Logic Winter Meeting, Joint Math Meetings, Boston, 2023. Pdf.

[129] Ramsey like theorems on the rationals and some other structures. SIDIM 38, University of Puerto Rico - Mayagüez, 2023. Pdf.

[130] Ramsey like theorems on the rationals and some other structures. IU Logic Seminar, IU Bloomington, IN, 2023. Pdf.

[131] Some computability theoretic aspects of Dobrinen's result that the universal triangle free graph has finite big ramsey degrees. Midwest Computability Seminar, Chicago, 2023.

[132] Some computability theoretic aspects of Dobrinen's result that the universal triangle free graph has finite big ramsey degrees. AMS Sectional Meeting, Milwaukee, WI, Special Session on Computability Theory, 2024.

[133] Coding in the universal n-clique free graph H_{n+1}. UW–Madison Logic Seminar, 2024.

[134] Coding in the universal n-clique free graph H_{n+1}. UC Logic Seminar, 2025.

[135] The Puerto Rico coastline is a rectifiable curve! SIDIM 40, University of Puerto Rico, Ponce, 2025. Pdf.

[136] The Puerto Rico coastline is a rectifiable curve! University of Puerto Rico at Río Piedras, 2025. 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 06/30/12.

11. Co-PI with W. Calvert, R. Dimitrov, V. Harizanov, K Lange, S. Lempp, C. McCoy, R. Miller, A. Montalban, J. Miller, D. Dzhafarov, and J. Knight, National Science Foundation, NSF DMS-1101123: Collaboration in Computability, Total Cost: $95,883; Dates: 05/01/11 through 05/30/16.

12. 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 07/31/16.

13. Simons Foundation Collaboration Grant for Mathematicians, Computability and Definability, Award Number: 315283, Total Cost: $35K; Dates 09/01/14 through 08/31/19.

14. PI, National Science Foundation, DMS-1640836, International Travel: New Zealand Logic Meetings, Total Cost: $34,320; Dates: 11/01/16 through 10/31/17.

15. PI, National Science Foundation, DMS-1822193, Ramsey Theory and Computability: The Rome Workshop, Total Cost: $25,000; Dates: 5/01/18 through 9/30/19.

16. PI with Damir D Dzhafarov, Denis R. Hirschfeldt, Antonio Montalban, Linda B Westrick, and Theodore A. Slaman, NSF-DMS-1854136, FRG: Collaborative Research: Computability-Theoretic Aspects of Combinatorics, Total Cost: $271,989; Dates: 07/01/19 through 06/30/22.

Other External Support

1. SQuaRE: Computability in Geometric Measure Theory, travel support to visit American Institute of Mathematics. With Marianna Csornyei, Neil Lutz, Patrick Lutz, Elvira Mayordomo, and Donald Stull. A research visit to AIM in once a year starting in 2023.

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 definablility 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 a 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 was a tenure track position at Dartmouth. Pdf.

[4] Joshua A. Cole. *On the elementary theories of the Muchnik and Medvedev Lattices of* Π^0_1 *classes*. PhD thesis, University of Notre Dame, 2009. Tenure track at St. Joseph's College, Indiana. 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. co-directed with Michael Detlefsen, 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, Departmant of Logic and Philosophy of Science. Pdf.

[7] Christopher Porter. *Mathematical and Philosophical Perspectives on Algorithmic Randomness*. PhD thesis, University of Notre Dame, 2012. co-directed with Michael Detlefsen and Curtis Franks, Ph.D. from Program in Logic and the Foundations of Mathematics sponsored by the Department of Philosophy and the Department of Mathematics. Got a 2 year NSF International Research Fellowship in Paris, a postdoc at University of Florida, and now tenure track at Drake University. Pdf.

[8] Stephen Flood. *Path, Trees, and the Computational Strength of Some Ramsey-type Theorems*. PhD thesis, University of Notre Dame, 2012. Instructor at Penn State, 2012-13, Visiting Assistant Professor, UCONN-Waterbury, 2013-16. Tenure Track at Bridgewater State University, Massachusetts. Pdf.

[9] Quinn Culver. *Topics in Algorithmic Randomness and Effective Probability*. PhD thesis, University of Notre Dame, 2015. Lecturer at Fordham. Pdf.

[10] Justin Miller. *Intrinsic density, asymptotic computability, and stochasticity*. PhD thesis, University of Notre Dame, 2021. Postdoc at Dartmouth. Pdf.

[11] Li Ling Ko. *Towards finding a lattice that characterozes the* $> \omega^2$ *recursively enumerable Turing degrees*. PhD thesis, University of Notre Dame, 2021. Postdoc at Ohio State. Pdf.

[12] John V. Siratt. *Some applications of formal Mathematics*. PhD thesis, University of Notre Dame, 2024. Research Computer Scientist Rsch Aerospace Technology, Computer Rsch and Development, NASA. Pdf.

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, Google.
5. Karen Lange, 2008-11, Supported by an NSF Postdoctoral Research Fellowship, 2008 Ph.D. at Chicago, Assistant Professer at Wellesley College.
6. Damir Dzhafarov, 2011-12, Supported by an NSF Postdoctoral Research Fellowship, 2011 Ph.D. at Chicago, Assistant Professer at UCONN.
7. Greg Igusa, 2013 – fall 2015, Spring 2017, Supported by EMSW21-RTG- 0739007, 2013 Ph.D. at UC Berkeley.

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.
4. Rebecca Weber, Fall 2009, Asst. Prof, Dartmouth College.
5. Reed Solomon, 2009-10, Assc. Prof., Univ. of Connecticut.
6. Dan Turetsky, 2017-2018, Lecturer, Victora University of Wellington.

Editorships

1. Co-Editor-in-Chief, Notre Dame Journal of Formal Logic (NDJFL), 1999-2014.
2. Journal of Symbolic Logic, 2004–2007.
3. Coordinating Editor, Journal of Symbolic Logic, 2008–2009.
4. Associate Editor, Notre Dame Journal of Formal Logic, 2015-.
5. Managing Editor, Lecture Notes in Logic, 2015–2019.

Service to Department, Collage, and University

1. Dekoyejo Somefun, 2000 Ph.D. in Ecomomics, 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. Faculty Senate, 1996–1997.
4. University Honesty Committee, 2008-12.
5. CAP, 2009-10.
6. Strategic Planning Committee, 2008-2010.
7. Search Committee in Model Theory and it's applications, 2010-12.
8. Hiring Committee, 2010-12.
9. Search Committee, Logic, 2012-13.

10. Hiring Committee, 2013-14
11. CAP, 2014-15.
12. Director of Graduate Studies, 2014-19.
13. Hiring Committee, 2018-19
14. CAP, 2020-23.
15. Hiring Committee, 2021-22.
16. Undergraduate Committee, 2022-24.
17. Chair, Postdoc Selection Committee, 2023-4.

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 (FRG Meeting), Notre Dame, May 2010.
8. Co-organizer, Computability and its Applications, Special Session, AMS Meeting, Notre Dame, 2010.
9. Organizer, Workshop on Ramsey Theory and Computability, Notre Dame, Rome, Italy, July, 2018.
10. Local Organizing Committee, Annual Meeting of the Association for Symbolic Logic, Notre Dame, June 2021.
11. Chair, Organizing and Programming Committees, Models and Computability: The Mathematics of Julia Knight, Notre Dame, Fall 2022.

Service to Profession outside Notre Dame

1. Maintainer, Computability Home Page, 1995-2015.
2. Maintainer, Computability Theory E-mailing List, 1995-2017.
3. Program Committee, Annual Meeting of the Association for Symbolic Logic, 1996.
4. Program Committee, Annual Meeting of the Association for Symbolic Logic, 1997.
5. Program Chair, Winter Meeting of the Association for Symbolic Logic, 1999.
6. 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.
7. Meeting Committee of the Association for Symbolic Logic, 2000 – 2002.
8. Chair of the Meeting Committee of the Association for Symbolic Logic, 2001-2005.
9. Co-organizer, Computability, Reverse Mathematics and Combinatorics, Banff International Research Station, 2009, http://www.birs.ca/birspages.php?task=displayevent&event_id=08w5019.
10. Co-organizer, Midwest Computability Seminar, 2008–. http://www.math.uchicago.edu/~drh/mcs/Jointseminar.html.
11. Co-organizer, Computability Theory, Special Session, Canadian Math Meeting, Hamilton, Ontario, 2014.
12. Co-organizer, Computability and Complexity Symposium, hosted by Victoria University of Wellington, 2017.
13. Co-organizer, Computability Theory and Applications, Waterloo, Canada, June, 2018.
14. Co-Organizer, Reverse Mathematics of Combinatorial Principles, Casa Matematica Oaxaca (CMO), Mexico, September, 2019.
15. Chair of scientific committee, New directions in computability theory, CIRM, Luminy, March, 2022
16. Member of program committee, Computability and Combinatorics 2023, Summer School and Conference, Hartford CT, May 2023.

Awards

1. Director of Graduate Studies of the Year, 2017, Notre Dame.
2. Mentor Award, Graduate Student Union, 2021, Notre Dame.