

CURRICULUM VITAE

DAMIR D. DZHAFAROV

CONTACT

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PERSONAL

Date of birth: February 2, 1983.
Place of birth: Prague, Czech Republic.
Citizenships: Czech Republic, United States.

RESEARCH INTERESTS

Mathematical logic, specifically computability theory and reverse mathematics, and applications of logic to philosophy and cognitive science.

EMPLOYMENT

Assistant Professor of Mathematics, University of Connecticut, 2013–present.
NSF Postdoctoral Fellow, University of California, Berkeley, 2012–2013.
NSF Visiting Assistant Professor, University of Notre Dame, 2011–2012.
Visiting Postdoctoral Fellow, National University of Singapore, Summer 2011.

EDUCATION

Ph.D. in Mathematics, University of Chicago, June 2011.
(Advisors: Robert I. Soare, Denis R. Hirschfeldt, Antonio Montalbán.)
M.S. in Mathematics, University of Chicago, June 2006.
B.S. in Mathematics, Purdue University, May 2005.

AFFILIATIONS

1. American Mathematical Society.
2. Jednota českých matematiků a fyziků.
3. Association for Symbolic Logic.
4. Association for Computability in Europe.
5. University of Connecticut Logic Group.
6. Connecticut Institute for Brain and Cognitive Science.

GRANTS AND AWARDS

1. Simons Foundation Collaboration Grant for Mathematicians, (42 000 USD), 2017–2022.
2. Research in Pairs Grants, Mathematisches Forschungsinstitut Oberwolfach, 2016, 2018.
3. Connecticut Institute for Brain and Cognitive Science Seed Grants (16 650 USD), 2016, 2017, 2018.
4. NSF Grant DMS-1400267 (150 000 USD), 2014–2018.
5. NSF US Junior Oberwolfach Fellowship, 2012.
6. NSF Grant DMS-1101123 (95 883 USD; co-PI with W. Calvert, P. Cholak, R. Dimitrov, V. Harizanov, K. Lange, S. Lempp, C. McCoy, R. Miller, A. Montalbán, J. Miller, and J. Knight), 2011–2016.
7. NSF Mathematical Sciences Postdoctoral Research Fellowship, 2011–2014.
8. Lawrence and Josephine Graves Teaching Prize, University of Chicago, 2011.
9. Leonardo Melandri Fellowship, Bertinoro International Center for Informatics, 2011.
10. Air Force Office of Scientific Research Grant FA9550-09-1-0649 (44 000 USD; co-PI with D. Hirschfeldt), 2009.
11. Highbridge Research Award Runner Up, University of Chicago Department of Mathematics, 2009.
12. ASL Travel Grants, 2008, 2010.
13. McCormick Research Fellowship, University of Chicago, 2005.
14. NSF Graduate Research Fellowship, 2005–2010.
15. Michael Golomb Award, Purdue University Department of Mathematics, 2005.
16. Phi Beta Kappa, 2004.
17. Barry M. Goldwater Scholarship, 2003–2005.

POSTDOCTORAL FELLOWS MENTORED

1. Eric Astor, University of Connecticut, 2015–present.
2. Linda Brown Westrick, University of Connecticut, 2014–present.

STUDENTS ADVISED AND EXAMINED

Ph.D. advisor.

1. Noah Hughes, University of Connecticut, in progress.
2. David Nichols, University of Connecticut, in progress.

Associate Ph.D. advisor.

1. Rachel Stahl, University of Connecticut, 2017.
2. Marie Nicholson, University of Connecticut, 2017.
3. Caleb Martin, University of Connecticut, 2015.
4. Jacobb Suggs, University of Connecticut, 2015.

Ph.D. examiner.

1. Stephen Flood, University of Notre Dame, 2012.
2. Quinn Culver, University of Notre Dame, 2011.

Honors thesis advisor.

1. Neil Dokurno, University of Connecticut, 2017.

TEACHING

University of Connecticut.

1. Mathematical Logic I, Spring 2018.
2. Transition to Advanced Mathematics, Fall 2017.
3. Calculus II, Fall 2017.
4. Transition to Advanced Mathematics, Spring 2017.
5. Algorithmic Randomness, Fall 2016.
6. Transition to Advanced Mathematics, Spring 2016.
7. Model Theory, Fall 2015.
8. Transition to Advanced Mathematics, Fall 2015.
9. Introduction to Mathematical Logic, Spring 2015.
10. Calculus I, Fall 2014.
11. Calculus II, Fall 2014.
12. Reverse Mathematics, Spring 2014.
13. Honors Calculus II, Fall 2013.

University of Notre Dame.

1. Calculus B for Life Sciences, Spring 2012.
2. Calculus A for Life Sciences, Fall 2011.

University of Chicago.

1. Number Theory for College Students, Spring 2011.
2. Geometry for College Students, Winter 2011.
3. Number Theory for College Students, Fall 2010.
4. Number Theory for College Students, Spring 2009.
5. Calculus 3, Winter 2009.
6. Calculus 2, Fall 2008.
7. Teaching assistant: Model Theory I, Winter 2011; Computability Theory II, Spring 2010; Set Theory and Mathematical Logic II, Winter 2008; Mathematical Logic I, Fall 2007.
8. College fellow: Multivariate Differentiation, Spring 2007; Set Theory and Mathematical Logic II, Winter 2007; Mathematical Logic I, Fall 2006.
9. Mentor in Directed Reading Program (topics: Gödel's incompleteness theorems, axiomatic set theory, reverse mathematics), 2007–2011.
10. Mentor in Research Experience for Undergraduates Program (topics: axiomatic set theory, combinatorics, computability theory, model theory, reverse mathematics), Summers 2007, 2008, and 2010.

PUBLICATIONS

Journal articles submitted.

1. D. D. Dzhafarov, J. L. Goh, D. R. Hirschfeldt, L. Patey, and A. Pauly, "Ramsey's theorem and products in the Weihrauch degrees," submitted.

2. D. D. Dzhafarov, S. Flood, R. Solomon, and L. B. Westrick, “Effectiveness for the dual Ramsey theorem,” submitted.
3. D. D. Dzhafarov, “Joins in the strong Weihrauch degrees,” submitted.
4. D. D. Dzhafarov, “A note on the reverse mathematics of the sorites,” submitted.

Journal articles published or accepted.

1. B. F. Csima, D. D. Dzhafarov, D. R. Hirschfeldt, C. G. Jockusch, Jr., R. Solomon, and L. B. Westrick, “The reverse mathematics of ht for sums of exactly two elements,” *Computability*, to appear.
2. D. D. Dzhafarov and J. R. Mileti, “The complexity of primes in computable unique factorization domains,” *Notre Dame J. Form. Log.*, vol. 59, no. 2, pp. 139–156, 2018.
3. D. D. Dzhafarov and L. Patey, “Coloring trees in reverse mathematics,” *Adv. Math.*, vol. 318, pp. 497–514, 2017.
4. D. D. Dzhafarov, C. G. Jockusch, R. Solomon, and L. B. Westrick, “Effectiveness of Hindman’s theorem for bounded sums,” in *Computability and Complexity: Essays Dedicated to Rodney G. Downey on the Occasion of His 60th Birthday* (A. Day, M. Fellows, N. Greenberg, B. Khossainov, A. Melnikov, and F. Rosamond, eds.), pp. 134–142, Springer-Verlag, 2017.
5. E. P. Astor, D. D. Dzhafarov, R. Solomon, and J. Suggs, “The uniform content of partial and linear orders,” *Ann. Pure Appl. Logic*, vol. 168, no. 6, pp. 1153–1171, 2017.
6. D. D. Dzhafarov, L. Patey, R. Solomon, and L. B. Westrick, “Ramsey’s theorem for singletons and strong computable reducibility,” *Proc. Amer. Math. Soc.*, vol. 145, no. 3, pp. 1343–1355, 2017.
7. D. D. Dzhafarov and G. Igusa, “Notions of robust information coding,” *Computability*, vol. 6, no. 2, pp. 105–124, 2017.
8. D. D. Dzhafarov, “Strong reductions between combinatorial principles,” *J. Symbolic Logic*, vol. 81, no. 4, pp. 1405–1431, 2016.
9. P. A. Cholak, D. D. Dzhafarov, and M. I. Soskova, “Genericity for Mathias forcing over general Turing ideals,” *Israel J. Math.*, vol. 216, no. 2, pp. 583–604, 2016.
10. F. G. Dorais, D. D. Dzhafarov, J. L. Hirst, J. R. Mileti, and P. Shafer, “On uniform relationships between combinatorial problems,” *Trans. Amer. Math. Soc.*, vol. 368, no. 2, pp. 1321–1359, 2016.
11. D. D. Dzhafarov, “Cohesive avoidance and strong reductions,” *Proc. Amer. Math. Soc.*, vol. 143, no. 2, pp. 869–876, 2015.
12. P. A. Cholak, D. D. Dzhafarov, J. L. Hirst, and T. A. Slaman, “Generics for computable Mathias forcing,” *Ann. Pure Appl. Logic*, vol. 165, no. 9, pp. 1418–1428, 2014.
13. A. R. Day and D. D. Dzhafarov, “Limits to joining with generics and randoms,” in *Proceedings of the 12th Asian Logic Conference* (R. Downey, J. Brendle, R. Goldblatt, and B. Kim, eds.), pp. 76–88, World Sci. Publ., Hackensack, NJ, 2013.
14. D. D. Dzhafarov and C. Mummert, “On the strength of the finite intersection principle,” *Israel J. Math.*, vol. 196, no. 1, pp. 345–361, 2013.
15. P. A. Cholak, D. D. Dzhafarov, N. Schweber, and R. A. Shore, “Computably enumerable partial orders,” *Computability*, vol. 1, no. 2, pp. 99–107, 2012.

16. D. D. Dzhafarov and C. Mummert, “Reverse mathematics and properties of finite character,” *Ann. Pure Appl. Logic*, vol. 163, no. 9, pp. 1243–1251, 2012.
17. D. D. Dzhafarov and E. N. Dzhafarov, “The equivalence of two ways of computing distances from dissimilarities for arbitrary sets of stimuli,” *J. Math. Psychol.*, vol. 55, no. 6, pp. 469–472, 2011.
18. D. D. Dzhafarov, “Infinite saturated orders,” *Order*, vol. 28, no. 2, pp. 163–172, 2011.
19. D. D. Dzhafarov, “Stable Ramsey’s theorem and measure,” *Notre Dame J. Form. Log.*, vol. 52, no. 1, pp. 95–112, 2011.
20. D. E. Diamondstone, D. D. Dzhafarov, and R. I. Soare, “ Π_1^0 classes, Peano arithmetic, randomness, and computable domination,” *Notre Dame J. Form. Log.*, vol. 51, no. 1, pp. 127–159, 2010.
21. D. D. Dzhafarov, J. L. Hirst, and T. J. Lakins, “Ramsey’s theorem for trees: the polarized tree theorem and notions of stability,” *Arch. Math. Logic*, vol. 49, no. 3, pp. 399–415, 2010.
22. E. N. Dzhafarov and D. D. Dzhafarov, “Sorites without vagueness I: Classificatory sorites,” *Theoria*, vol. 76, no. 1, pp. 4–24, 2010.
23. E. N. Dzhafarov and D. D. Dzhafarov, “Sorites without vagueness II: Comparative sorites,” *Theoria*, vol. 76, no. 1, pp. 25–53, 2010.
24. D. D. Dzhafarov and C. G. Jockusch, Jr., “Ramsey’s theorem and cone avoidance,” *J. Symbolic Logic*, vol. 74, no. 2, pp. 557–578, 2009.
25. D. D. Dzhafarov and J. L. Hirst, “The polarized Ramsey’s theorem,” *Arch. Math. Logic*, vol. 48, no. 2, pp. 141–157, 2009.
26. O. De la Cruz, D. D. Dzhafarov, and E. J. Hall, “Definitions of finiteness based on order properties,” *Fund. Math.*, vol. 189, no. 2, pp. 155–172, 2006.

Preliminary reports.

1. P. A. Cholak, D. D. Dzhafarov, and J. L. Hirst, “On Mathias generic sets,” in *How the world computes* (B. S. Cooper, A. Dawar, and B. Löwe, eds.), vol. 7318 of *Lecture Notes in Comput. Sci.*, pp. 129–138, Springer, Heidelberg, 2012.

Reviews.

1. D. D. Dzhafarov, “Robert I. Soare, *Turing Computability, Theory and Applications of Computability*, Springer-Verlag, Berlin, Heidelberg, 2016,” *Bull. Symbolic Logic*, vol. 23, no. 1, pp. 113–115, 2017.
2. D. D. Dzhafarov, “Dov M. Gabbay, Akihiro Kanamori, and John Woods (editors), *Handbook of the History of Logic, Volume 6: Sets and Extensions in the Twentieth Century*, North-Holland, Amsterdam, 2012,” *MAA Reviews*, 2013.

Book and book chapters.

1. D. D. Dzhafarov and C. Mummert, *Reverse Mathematics. Theory and Applications of Computability*, New York: Springer-Verlag, in preparation.
2. D. D. Dzhafarov and E. N. Dzhafarov, “Classificatory sorites, probabilistic supervenience, and rule-making,” in *On the Sorites Paradox* (A. Abasnezhad and O. Bueno, eds.), Springer, to appear.

3. E. N. Dzhafarov and D. D. Dzhafarov, “The sorites paradox: a behavioral approach,” in *Qualitative Mathematics for the Social Sciences: Mathematical Models for Research on Cultural Dynamics* (L. Rudolph, ed.), Cultural dynamics of social representation, Routledge, 2013.

TALKS AND RESEARCH VISITS

Invited talks at conferences and workshops.

1. Workshop on Ramsey Theory in Logic, Combinatorics, and Complexity, Bertinoro International Center for Informatics, July 2018.
2. Plenary speaker, Computability Theory and Applications, University of Waterloo, June 2018.
3. ASL Annual North American Meeting, Special Session on Computability Theory, Western Illinois University, May 2018.
4. Computability Theory Meeting, Mathematisches Forschungsinstitut Oberwolfach, January 2018.
5. 11th Panhellenic Logic Symposium, Special Session on Computability Theory, Delphi, Greece, July 2017.
6. Plenary speaker, Seventeenth Latin American Symposium on Mathematical Logic, Puebla, Mexico, June 2017.
7. AMS Spring Eastern Sectional Meeting, Special Session on Computability Theory: Pushing the Boundaries, Hunter College, New York, May 2017.
8. UConn Logic Group/Munich Center for Mathematical Philosophy Joint Conference, University of Connecticut, April 2017.
9. Midwest Computability Workshop: Special Meeting in Honor of Carl Jockusch’s 75th Birthday, University of Chicago, October 2016.
10. New Challenges in Reverse Mathematics, Institute for Mathematical Sciences, National University of Singapore, January 2016.
11. AMS Fall Central Sectional Meeting, Special Session on Computability Theory and Applications, Loyola University Chicago, October 2015.
12. Measuring the Complexity of Computational Content: Weihrauch Reducibility and Reverse Analysis, Schloss Dagstuhl Research Center for Computer Science, September 2015.
13. ASL Annual European Meeting, Special Session on Computability Theory, University of Helsinki, August 2015.
14. AMS Spring Eastern Sectional Meeting, Special Session on Computable Structure Theory, Georgetown University, March 2015.
15. SouthEAsTern Logic Symposium, University of Florida, February 2015.
16. Canadian Mathematical Society Winter Meeting, Special Session on Computability Theory, Hamilton, Canada, December 2014.
17. New England Recursion and Definability Seminar, Olin College, March 2014.
18. Computability Theory and Foundations of Mathematics, Tokyo Institute of Technology, February 2014.
19. ASL Plenary Address, Joint Mathematics Meetings, Baltimore, January 2014.
20. New England Recursion and Definability Seminar, Dartmouth College, October 2013.

21. Buenos Aires Semester in Computability, Complexity and Randomness, Universidad de Buenos Aires, March 2013.
22. ASL Annual North American Meeting, Special Session on Computability Theory, University of Wisconsin–Madison, April 2012.
23. Computability Theory Meeting, Mathematisches Forschungsinstitut Oberwolfach, February 2012.
24. Mid-Atlantic Mathematical Logic Seminar, Florida Atlantic University, February 2012.
25. Asian Logic Conference, Victoria University of Wellington, December 2011.
26. Formal Philosophy Workshop, University of Chicago, January 2011.
27. AMS Fall Central Sectional Meeting, Special Session on Computability and its Applications, University of Notre Dame, November 2010.
28. Midwest Computability Workshop, University of Chicago, September 2010.
29. Workshop on Computability Theory 2010, Universidade dos Açores, July 2010.
30. Eleventh Annual Graduate Student Conference in Logic, University of Wisconsin–Madison, April 2010.
31. SouthEAsTern Logic Symposium, University of Florida, February 2010.
32. Tenth Annual Graduate Student Conference in Logic, University of Illinois at Urbana–Champaign, April 2009.
33. Ninth Annual Graduate Student Conference in Logic, University of Notre Dame, April 2008.

Invited talks at other universities.

1. Advanced Research Initiative (ARI) Speaker, Marshall University, April 2017.
2. Logic Seminar, University of California, Irvine, October 2016.
3. Reading Seminar, Cornell University, September 2016.
4. Logic Seminar, Cornell University, September 2016.
5. Logic Seminar, Cornell University, November 2015.
6. Mathematics REU Seminar, Mount Holyoke College, July 2015.
7. Logic Seminar, University of Notre Dame, March 2014.
8. CUNY Logic Workshop, City University of New York, February 2014.
9. Logic Seminar, Cornell University, February 2014.
10. Logic Seminar, Pennsylvania State University, November 2013.
11. Logic Colloquium, University of California, Los Angeles, October 2013.
12. Southern Wisconsin Logic Colloquium, University of Wisconsin–Madison, May 2013.
13. Institute Colloquium, Institute for Logic, Language, and Computation, Universiteit van Amsterdam, February 2013.
14. Department of Mathematics Colloquium, University of Connecticut, February 2013.
15. Logic Seminar, The Ohio State University, April 2012.
16. Departmental Seminar, Grand Valley State University, March 2012.
17. Logic Seminar, Cornell University, February 2012.
18. Connecticut Logic Seminar, University of Connecticut and Wesleyan University, February 2011 (unable to deliver).
19. Logic Colloquium, University of Connecticut, February 2011.

20. Reading Seminar, University of Notre Dame, April 2010.
21. Department of Mathematics Colloquium, University of Hawai'i at Mānoa, August 2009.
22. Logic Seminar, University of Notre Dame, October 2008.
23. Chicago Joint Logic Seminar, University of Chicago and University of Illinois at Chicago, April 2008.
24. Logic Seminar, University of Illinois at Chicago, November 2007.

Invited meeting participation and research visits.

1. Computability and Complexity Symposium 2017 (in honour of Rod Downey's 60th birthday), Raunati, New Zealand, January 2017.
2. New Challenges in Reverse Mathematics, Institute for Mathematical Sciences, National University of Singapore, January 2016.
3. Measuring the Complexity of Computational Content: Weihrauch Reducibility and Reverse Analysis, Schloss Dagstuhl Research Center for Computer Science, September 2015.
4. University of Notre Dame, March 2014.
5. Sofia University, July 2013.
6. University of Wisconsin, May 2013.
7. Computability Theory Meeting, Mathematisches Forschungsinstitut Oberwolfach, February 2012.
8. Workshop on Ramsey Theory in Logic, Combinatorics, and Complexity, Bertinoro International Center for Informatics, May 2011.

PROFESSIONAL ACTIVITIES AND SERVICE

1. Associate Director, UConn Logic Group, 2014–present (Acting Director, Fall 2014, Spring 2018).
2. Co-organizer (with R. Solomon and L. B. Westrick), Special Session on Computability Theory, AMS Spring Eastern Sectional Meeting, University of Connecticut, April 2019.
3. Co-organizer (with P. Cholak and D. Hirschfeldt), Reverse Mathematics of Combinatorial Principles, Banff International Research Station/Casa Matematica Oaxaca, September 2019.
4. Co-organizer (with V. Brattka, A. Marcone, and A. Pauly), Measuring the Complexity of Computational Content: From Combinatorial Problems to Analysis, Schloss Dagstuhl Research Center for Computer Science, September 2018.
5. Member of program committee (with L. Carlucci, P. Cholak, D. Hirschfeldt, and L. Patey), Workshop on Ramsey Theory and Computability Theory, Rome, Italy, July 2018.
6. Co-organizer (with R. Solomon), Special Semester in Logic, University of Connecticut, Fall 2017.
7. Co-organizer (with P. Cholak, D. Hirschfeldt, and L. Patey), Meeting on SRT_2^2 and COH, University of Chicago, April 2017.
8. Member of program committee, 12th International Conference on Computability, Complexity, and Randomness, Infosys Mysore Campus, Mysuru, India, July 2017.

9. Member of program and organizing committees, 2016 ASL North American Annual Meeting, University of Connecticut, May 2016.
10. NSF Reviewer and Panel Member.
11. Member of program and organizing committees, Workshop on Computability Theory, Bucharest, July 2015.
12. Member of program committee, Computability in Europe 2015, Bucharest, June–July 2015.
13. Chair of program and organizing committees, Workshop on Computability Theory 2014, Prague, July 2014.
14. Co-organizer (with J. Hirst and C. Mummert), AMS/ASL Special Session “Life and Legacy of Alan Turing”, Joint Mathematics Meetings, Boston, January 2012.
15. Member of steering committee, Workshop on Computability Series, 2011–present.
16. Member of organizing committee, Computability in Europe 2011, Sofia University, June 2011.
17. Chair of organizing committee, Computability Theory and Applications: A Meeting in Honor of Robert I. Soare, University of Chicago, May 2011.
18. Member of organizing committee, Directed Reading Program in Mathematics, University of Chicago, 2008–2011.
19. Member of organizing committee, Research Experience for Undergraduates Program, University of Chicago, Summer 2010.
20. Co-organizer (with D. Hirschfeldt), Reverse Mathematics: Foundations and Applications Workshop, University of Chicago, November 2009.
21. Co-organizer (with D. Sahota), Eighth Annual Graduate Student Conference in Logic, Chicago, Illinois, April 2007.
22. Referee for publications and conferences in mathematics and computer science, including *Advances in Mathematics*, *Annals of Pure and Applied Logic*, *Archive for Mathematical Logic*, *Computability*, *Computability and Complexity in Analysis*, *Computability in Europe Proceedings (LNCS)*, *Journal of Algebra*, *Journal of Mathematical Logic*, *Journal of Mathematical Psychology*, *Journal of Symbolic Logic*, *Notre Dame Journal of Formal Logic*, *Order*, *Proceedings of the Conference in Honor of Harvey M. Friedman’s 60th Birthday*, *Proceedings of the International Symposium on Computability and Complexity (in honour of Rod Downey’s 60th birthday)*, *Theory of Computing Systems*, *Transactions of the American Mathematical Society*, *Transactions of the London Mathematical Society*.
23. Book reviewer for Mathematical Association of America and Bentham Science Publishers.
24. Reviewer for *Mathematical Reviews*.