Curriculum Vitae of *VALENTINA HARIZANOV*
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Research Papers in Peer Reviewed Journals/Volumes

51. "Turing degrees of the isomorphism types of geometric objects," with W. Calvert and A. Shlapentokh, in preparation, 31 pages.

50. "Computable embedding problem," with J. Carson, E. Fokina, J. Knight, C. Safranski, S. Quinn, and J. Wallbaum, submitted, 18 pages.

49. "Describing free groups," with J. Carson, J. Knight, K. Lange, C. Maher, C. McCoy, A. Morozov, S. Quinn, and J. Wallbaum, accepted for publication in the *Transactions of the American Mathematical Society,* 17 pages.

48. "Isomorphism relations on computable structures," with E. Fokina, Sy-D. Friedman, J. Knight, C. McCoy, and A. Montalbán, accepted for publication in the *Journal of Symbolic Logic*, 13 pages.

47. "Spectra of high$_n$ and non-low$_n$ degrees," with A. Frolov, I. Kalimullin, O. Kudinov and R. Miller, accepted for publication in the *Journal of Logic and Computation*, 35 pages.

46. "Effective categoricity of injection structures," with D. Cenzer and J. Remmel, *Models of Computation in Context,* Lecture Notes of Computer Science 6735 (2011), pp. 51–60.

45. "Σ^0_1 and Π^0_1 equivalence structures," with D. Cenzer and J. Remmel, *Annals of Pure and Applied Logic* 162 (2011), pp. 490–503.

44. "Computability of Fraïssé limits," with B. Csima, R. Miller, and A. Montalbán, *Journal of Symbolic Logic* 76 (2011), pp. 66–93.

43. "Spaces of orders and their Turing degree spectra," with M. Dabkowska, M. Dabkowski, and A. Togha, *Annals of Pure and Applied Logic* 161 (2010), pp. 1134–1143.

42. "Simple structures with complex symmetry," with R. Miller and A. Morozov, *Algebra and Logic* 49 (2010), pp. 98–134.

41. "Intrinsic bounds on complexity and definability at limit levels," with J. Chisholm, E. Fokina, S. Goncharov, J. Knight, and S. Quinn, *Journal of Symbolic Logic* 74 (2009), pp. 1047–1060.

40. "Effective categoricity of Abelian p-groups," with W. Calvert, D. Cenzer, and A. Morozov, *Annals of Pure and Applied Logic* 159 (2009), pp. 187–197.

39. "Degree spectra of the successor relation on computable linear orderings," with J. Chubb and A. Frolov, *Archive for Mathematical Logic* 48 (2009), pp. 7–13.

38. "Σ_1^0 and Π_1^0 equivalence structures," with D. Cenzer and J. Remmel, in the volume: *Mathematical Theory and Computational Practice*, K. Ambos-Spies, B. Löwe, and W. Merkle, editors (Springer-Verlag, Berlin, 2009), pp. 99–108.

37. "Chains and antichains in computable partial orderings," with C. Jockusch and J. Knight, *Archive for Mathematical Logic* 48 (2009), pp. 39–53.

36. Partial automorphism semigroups," with J. Chubb, A. Morozov, S. Pingrey, and E. Ufferman, *Annals of Pure and Applied Logic* 156 (2008), pp. 245–258.

35. "Π_1^0 classes and strong degree spectra of relations," with J. Chisholm, J. Chubb, D. Hirschfeldt, C. Jockusch, T. McNicholl, and S. Pingrey, *Journal of Symbolic Logic* 72 (2007), pp. 1003–1018.

34. "Introduction to the philosophy and mathematics of inductive inference," with N. Goethe, and M. Friend, in the volume: *Induction, Algorithmic Learning Theory, and Philosophy*, M. Friend, N. B. Goethe, and V. S. Harizanov, editors (Springer, Dordrecht, 2007), pp. 1–24.

33. "Inductive inference systems for learning classes of algorithmically generated sets and structures," in the volume: *Induction, Algorithmic Learning Theory, and Philosophy*, M. Friend, N. B. Goethe, and V. S. Harizanov, editors (Springer, Dordrecht, 2007), pp. 27–54.

32. "Turing degrees of nonabelian groups," with M. Dabkowska, M. Dabkowski, and A. Sikora, *Proceedings of the American Mathematical Society* 135 (2007), pp. 3383–3391.

31. "Turing degrees of the isomorphism types of algebraic objects," with W. Calvert and A. Shlapentokh, *Journal of the London Mathematical Society* 73 (2007), pp. 273–286.

30. "Spectra of structures and relations," with R. Miller, *Journal of Symbolic Logic* 72 (2007), pp. 324–348.

29. "Compactness of the space of left orders," with M. Dabkowska, M. Dabkowski, J. Przytycki, and M. Veve, *Journal of Knot Theory and Its Ramifications* 16 (2007), pp. 257–366.

28. "On the learnability of vector spaces," with F. Stephan, *Journal of Computer and System Sciences* 73 (2007), pp. 109–122, expanded version of paper in 15.

27. Bounding homogeneous models," with B. Csima, D. Hirschfeldt, and R. Soare, *Journal of Symbolic Logic* 72 (2007), pp. 305–323.

26. "Index sets of computable structures," with W. Calvert, J. Knight, and S. Miller, *Algebra and Logic* 45 (2006), pp. 306–325.

25. "Effective categoricity of equivalence structures," with W. Calvert, D. Cenzer, and A. Morozov, *Annals of Pure and Applied Logic* 141 (2006), pp. 61–78.

24. "Formal approaches to modality," with S. Kaufmann and C. Condoravdi, in the volume: *The Expression of Modality*, W. Frawley, editor (Mouton de Gruyter, Berlin, 2006), pp. 71–106.

23. "Enumerations in computable structure theory," with S. Goncharov, J. Knight, C. McCoy, R. Miller, and R. Solomon, *Annals of Pure and Applied Logic* 136 (2005), pp. 219–246.

22. "On automorphic tuples of elements in computable models," with S.S. Goncharov, J.F. Knight, A.S. Morozov, and A.V. Romina, *Siberian Mathematical Journal* 46 (2005), pp. 523–532 (Russian); pp. 405–412 (English translation).

21. "Dependence relations in computably rigid computable vector spaces," with R. Dimitrov and A.S. Morozov, *Annals of Pure and Applied Logic* 132 (2005), pp. 97–108.

20. "Π^1_1 relations and paths through O," with S.S. Goncharov, J.F. Knight, and R.A. Shore, *Journal of Symbolic Logic* 69 (2004), pp. 585–611.

19. "Relatively hyperimmune relations on structures," with S.S. Goncharov, J.F. Knight, and C.F. McCoy, *Algebra and Logic* 43 (2004), pp. 94–101.

18. "Trivial, strongly minimal theories are model complete after naming constants," with S.S. Goncharov, M.C. Laskowski, S. Lempp, and C.F.D. McCoy, *Proceedings of the American Mathematical Society* 131 (2003), pp. 3901–3912.

17. "Turing degrees of hypersimple relations on computable structures," *Annals of Pure and Applied Logic* 121 (2003), pp. 209–226.

16. "Simple and immune relations on countable structures," with S.S. Goncharov, J.F. Knight, and C.F.D. McCoy, *Archive for Mathematical Logic* 42 (2003), pp. 279–291.

15. "On the learnability of vector spaces," with F. Stephan, in the volume: *Algorithmic Learning Theory*, N. Cesa-Bianchi, M. Numao, and R. Reischuk, editors (Springer-Verlag, Berlin, 2002), pp. 233–247.

14. "Computability-theoretic complexity of countable structures," *Bulletin of Symbolic Logic* 8 (2002), pp. 457–477.

13. "Sequences of n-diagrams," with J.F. Knight and A.S. Morozov, *Journal of Symbolic Logic* 67 (2002), pp. 1227–1247.

12. "Relations on computable structures," in the volume: *Contemporary Mathematics*, N. Bokan, editor (University of Belgrade, 2000), pp. 65–81.

11. "Effectively nowhere simple relations on computable structures," in the volume: *Recursion Theory and Complexity*, M.M. Arslanov and S. Lempp, editors, (Walter de Gruyter, Berlin, 1999), pp. 59–70.

10. "Turing degrees of certain isomorphic images of recursive relations," *Annals of Pure and Applied Logic* 93 (1998), pp. 103–113.

9. "Pure computable model theory," in the volume: *Handbook of Recursive Mathematics*, vol. 1, Yu.L. Ershov, S.S. Goncharov, A. Nerode, and J.B. Remmel, editors (North-Holland, Amsterdam, 1998), pp. 3–114.

8. "Effectively and noneffectively nowhere simple sets," *Mathematical Logic Quarterly* 42 (1996), pp. 241–248.

7. "The possible Turing degree of the nonzero member in a two element degree spectrum," *Annals of Pure and Applied Logic* 60 (1993), pp. 1–30.

6. "Frequency computations and the cardinality theorem," with M. Kummer and J. Owings. *Journal of Symbolic Logic* 57 (1992), pp. 682–687.

5. "Some effects of Ash-Nerode and other decidability conditions on degree spectra," *Annals of Pure and Applied Logic* 55 (1991), pp. 51–65.

4. "Uncountable degree spectra," *Annals of Pure and Applied Logic* 54 (1991), pp. 255–263.

3. "Regular relations and the quantifier 'there exists uncountably many'," with Z. Mijajlović, *Zeitschrift für Mathematische Logik und Grundlagen der Mathematik* 29 (1983), pp. 151–161.

2. "On some finite groupoids whose equational theories are not finitely based," in the volume: *Algebraic Conference*, K. Gilezan, editor (Mathematical Institute, Novi Sad, 1982), pp. 35–38.

1. "On the functional equation $f\varphi f=f$," *Publications de l'Institut Mathématique,* Nouvelle Série 29 (1981), pp. 61–64.

Edited Volumes

4. *The Workshop on Knots and Quantum Computing*, vol. II, University of Texas at Dallas and follow up conferences, special issue of the *Journal of Knot Theory and Its Ramifications*, vol. 20, no. 1, co-edited with M. Dabkowski, L. Kauffman, J. Przytycki and V. Ramakrishna, World Scientific, Singapore, 2011, 335 pages.

3. *The Workshop on Knots and Quantum Computing*, vol. I, University of Texas at Dallas and follow up conferences, special issue of the *Journal of Knot Theory and Its Ramifications*, vol. 19, no. 6, co-edited with M. Dabkowski, L. Kauffman, J. Przytycki and V. Ramakrishna, World Scientific, Singapore, 2010, 127 pages.

2. *The Workshop on Model Theory and Computable Model Theory*, University of Florida, Gainesville, special issue of *Archive for Mathematical Logic*, vol. 48, no. 1, co-edited with D. Cenzer, D. Marker and C. Wood, Springer, Berlin, 2009, 140 pages.

1. *Induction, Algorithmic Learning Theory, and Philosophy*, co-edited with M. Friend and N.B. Goethe, Series: Logic, Epistemology, and the Unity of Science, vol. 9, Springer, Dordrecht, 2007, 304 pages.

Invited Book Reviews

4. "C. Ash and J. Knight, Computable Structures and Hyperarithmetical Hierarchy," *Bulletin of Symbolic Logic* 3 (2001), pp. 383–385.

3. "S.S. Goncharov, Countable Boolean Algebras and Decidability," *Journal of Symbolic Logic* 63 (1998), pp. 1188–1190.

2. "Yuri V. Matiyasevich, Hilbert's Tenth Problem," International Journal for the History of Mathematical Logic, Set Theory, and Foundations of Mathematics *Modern Logic* 5 (1995), pp. 345–355.

1. ***"***Douglas Hofstadter, Gödel, Escher, Bach," *GWU Forum* (1988), pp. 46–48.

V. Harizanov's English Translations in Research Journals of Russian Papers

9. M.V. Zakhar'yashchev, "Modal companions of superintuitionistic logics: syntax, semantics, and preservation theorems,' *Mathematics of the USSR Sbornik* 68 (1991), pp. 277–289.

8. A.I. Tsitkin, 'Towards the question of an error in a well-known paper by M. Wajsberg," *Selecta Mathematica Sovietica* 7 (1988), pp. 23–36.

7. V.P. Orevkov, "Theorems with very short proofs can be strengthened," *Selecta Mathematica Sovietica* 7 (1988), pp. 37–38.

6. I.D. Zaslavsky, "The realization of three-valued logical functions through recursive and Turing operators," *Selecta Mathematica Sovietica* 7 (1988), pp. 15–22.

5. K.Zh. Kudaibergenov, "On questions of Keisler and Morley," *Doklady Mathematics* 34, (1987), pp. 482–483.

4. N.V. Petri, "Unsolvability of the recognition problem for annihilating iterative networks," *Selecta Mathematica Sovietica* 6 (1987), pp. 355–363.

3. N.K. Zamov, "The resolution method without skolemization," *Doklady Mathematics* 35 (1987), pp. 399–401.

2. D.P. Skvortsov, "Some propositional logics connected with Yu. T. Medvedev's concept of types of information," *Selecta Mathematica Sovietica* 5 (1986), pp. 371–377.

1. L.L. Esakia, "On the variety of Grzegorczyk algebras," *Selecta Mathematica Sovietica* 3, (1983/84), pp. 343–366.

Presentations by V. Harizanov of Research Papers at Conferences

41. Invited paper at the Isaac Newton Institute *Workshop on the Incomputable*, Kavli Royal Society International Centre, Chichley Hall, United Kingdom, June 12–15, 2012. Invitation accepted.

41. Invited paper "Computability theoretic complexity of isomorphism of countable structures," Special Session Category Theory in Graphs, Geometry and Inverse Problems, *Meeting of the American Mathematical Society*, University of Utah, Salt Lake City, October 2011.

40. Plenary paper "Δ^0_2 isomorphisms of effective equivalence structures," *Mal'cev Meeting* (international conference on algebra, mathematical logic, and applications), Novosibirsk, Russia, October 2011.

39. Invited paper "When Orders on a Group Form the Cantor Set," *Workshop on Computability Theory*, Centre de Recerca Matemàtica, Barcelona, Spain, July 2011.

38. Invited paper "Orders on Structures and Structure of Orders," *Computability in Europe*, Special Session Computability in Analysis, Algebra, and Geometry, Sofia, Bulgaria, June 2011.

37. Invited lecture series: "Introduction to Computable Model Theory," and "Computability Theoretic Complexity of Isomorphisms of Computable Structures, " *Ninth International Workshop on Category Theory and Graph Operad Logic*, University of Texas at San Antonio, March 2011.

36. Invited paper "Computably enumerable and co-computably enumerable equivalence structures," international *Workshop on Computability Theory*, Paris, France, July 2010.

35. Invited paper "Degree spectra and the jump hierarchy," SouthEastern Logic Symposium – SEALS (NSF-funded), University of Florida, Gainesville, February 2010.

34. Plenary paper "Four notions of degree spectra," *European Summer Meeting of the Association for Symbolic Logic*, Sofia, Bulgaria, August 2009.

33. Invited paper "Computability and orders on structures," *Workshop on Computability, Reverse Mathematics and Combinatorics*, Banff International Research Station, Alberta, Canada, December 2008.

32. Invited paper "Computable properties of abelian *p*-groups," *Meeting of the American Mathematical Society*, Special Session Computability Theory and Effective Algebra, Wesleyan University, October 2008.

31. Invited paper "Effective categoricity of equivalence structures and abelian *p*-groups," *Annual Meeting of the Association for Symbolic Logic*, University of California, Irvine, March 2008. Journal abstract in the *Bulletin of Symbolic Logic* 14 (2008), pp. 423.

30. Invited paper "Spaces of orders," *Workshop on Knots and Quantum Computing* (NSF-

funded), University of Texas at Dallas, December 2007.

29. Invited paper "Computable algebra," Special Session Advances in Algorithmic Methods for Algebraic Structures, *Meeting of the American Mathematical Society*, Murfreesboro, Tennessee, November 2007.

28. Plenary paper "Back and forth through computable model theory," *Winter Meeting of the Association for Symbolic Logic*, New Orleans, January 2007. Journal abstract in the *Bulletin of Symbolic Logic* 13 (2007), pp. 376.

27. Invited paper "Coding structures into structures," Special Session Computability Theory in Honor of Manuel Lerman's Retirement, *Meeting of the American Mathematical Society*, University of Connecticut, Storrs, October 2006.

26. Invited paper "Strong degree spectra of relations," *Meeting of the American Mathemaitcal Society*, Special Session Model Theory and Computability, University of Notre Dame, April 2006.

25. Invited paper "Orders on computable groups," 12th *SouthEastern Logic Symposium* – SEALS, University of Florida, Gainesville, March 2006.

24. Invited paper "Computable models, computability, and enumerations," *Workshop on Classification of Countable Models* (NSF-funded), University of Notre Dame, May 2005.

23. Invited paper "Degrees of structures," 11th *SouthEastern Logic Symposium* – SEALS (NSF-funded), University of Florida, Gainesville, April 2005.

22. Invited paper "Effectively and relatively effectively categorical structures," Special Session Computability Theory and Applications, *Meeting of the American Mathematical Society*, Northwestern University, Evanston, October 2004.

21. Plenary paper "Effectiveness in algebraic structures," *Annual Meeting of the Association for Symbolic Logic*, Carnegie-Mellon University, Pittsburgh, May 2004. Journal abstract in the *Bulletin of Symbolic Logic* 11 (2005), pp. 95–96.

20. Invited paper "Kleene's *O*, Harrison orderings, and Turing degree spectra," 10th *SouthEastern Logic Symposium* – SEALS (NSF-funded), University of Florida, Gainesville, March 2004.

19. Contributed paper "Inductive inference machines for mathematical structures," *12th International Congress of Logic, Methodology and Philosophy of Science*, Oviedo, Spain, August 2003.

18. Invited paper "Degrees of the isomorphism types of countable structures," Special Session Computability Theory and Effective Mathematics, *Annual Meeting of the Association for Symbolic Logic*, University of Illinois at Chicago, June 2003. Journal abstract, jointly with M. Dabkowski and M. Dabkowska, in the *Bulletin of Symbolic Logic* 10 (2004), p. 130.

17. Refereed paper "On the learnability of vector spaces," jointly with F. Stephan, *13th International Conference on Algorithmic Learning Theory*, Lübeck, Germany, November 2002.

16. Invited paper "Principal filters of the lattice of computably enumerable vector spaces," Special Session Effectiveness Questions in Model Theory, *Meeting of the American Mathematical Society*, University of Wisconsin, Madison, October 2002.

15. Invited paper "Complexity of diagrams of countable structures," Special Session Computability Theory with Applications, *Annual Meeting of the American Mathematical Society*, San Diego, January 2002.

14. Invited paper "Immune relations on computable structures," Special Session Computability Theory, *Millennium Annual Meeting of the Association for Symbolic Logic*, University of Illinois, Urbana-Champaign, June 2000. Journal abstract in the *Bulletin of Symbolic Logic* 6 (2000), pp. 370.

13. Invited paper "Definability and algorithmic properties of structures," *Mid-Atlantic Mathematical Logic Symposium*, University of Maryland, College Park, April 2000.

12. Invited paper "Computably enumerable relations on computable structures," Special Session Computability, *Meeting of the American Mathematical Society*, University of Florida, Gainesville, March 1999.

11. Invited paper "Nowhere simplicity, Turing degrees, and splittings," *Mid-Atlantic Mathematical Logic Symposium*, American University, Washington DC, April 1998.

10. Invited paper "Uncountably many isomorphic copies of a computable relation," *International Workshop on Recursion Theory and Complexity Theory* (NSF-supported), Kazan, Russia, July 1997.

9. Contributed paper "Intrinsically Δ^0_2 relations in computable structures," *European Summer Meeting of the Association for Symbolic Logic*, University of Leeds, England, July 1997. Journal abstract in the *Bulletin of Symbolic Logic* 4 (1998), pp. 89–90.

8. Invited paper "Nowhere simple sets," international *Oberwolfach Recursion Theory Meeting*, Mathematisches Forschungsinstitut Oberwolfach, Germany, February 1996.

7. Invited paper "Turing degrees of certain isomorphic images of recursive relations," Special Session Recursive and Feasible Mathematics, *Annual Meeting of the American Mathematical Society*, Orlando, January 1996.

6. Invited paper "Frequency computable sets, their classes, and generalizations," Special Session Computability Theory, *European Summer Meeting of the Association for Symbolic Logic*, Haifa, Israel, August 1995. Journal abstract in the *Bulletin of Symbolic Logic* 3 (1997), pp. 99–100.

5. Plenary paper "Recursive model theory: Examining computability in the theory of theories,"

Winter Meeting of the Association for Symbolic Logic, San Francisco, January 1995.

4. Contributed paper "Frequency computations," jointly with M. Kummer, J. Owings, and F. Stephan, *Annual Meeting of the Association for Symbolic Logic*, Duke University, Durham, March 1992. Journal abstract in the *Journal of Symbolic Logic* 58 (1993), pp. 373–374.

3. Contributed paper "Two-element Turing degree spectrum," *European Summer Meeting of the Association for Symbolic Logic*, West Berlin, Germany, July 1989. Journal abstract in the *Journal of Symbolic Logic* 57 (1992), pp. 300.

2. Contributed paper "Some cardinality and complexity properties of a Turing degree spectrum," *Annual Meeting of the American Mathematical Society*, Atlanta, January 1988.

1. Contributed paper "£oš's theorem for ultraproducts of models with monotone quantifiers," *European Summer Meeting of the Association for Symbolic Logic*, Marseille, France, August 1981. Journal abstract in the *Journal of Symbolic Logic* 48 (1983), pp. 1212.

Invited Presentations by V. Harizanov at Other Universities

51. "Groups, orders, trees, and paths," *Logic Seminar*, University of Maryland, College Park, April 2011.

50. "Orders on structures," *Mathematics Colloquium*, George Mason University, April 2011.

49. "Effective equivalence structures and their isomorphisms," *Connecticut Logic Seminar*, Wesleyan University, November 2010.

48. "Orders on groups," *Logic Seminar*, University of Maryland, College Park, April 2010.

47. "Constructions of modern computability theory," *Mathematics Colloquium*, University of Texas at Dallas, March 2010.

46. "Computable structures, effective categoricity, and Scott families," *Logic Seminar*, MIT, October 2009.

45. "Priority Methods," *MIT Women in Mathematics Lecture Series*, Department of Mathematics, MIT, October 2009.

44. "Orderable groups," *Logic Workshop*, CUNY Graduate Center, New York, May 2009.

43. "Effective Scott families of Abelian *p*-groups," *Logic Seminar*, University of Maryland, College Park, November 2008.

42. "Effective categoricity of structures," *Logic Seminar*, University of Florida, Gainesville, November 2008.

41. "Orderable groups and their spaces of orders" *Mathematics Colloquium*, University of Florida, Gainesville, November 2008.

40. “From algorisms to computability theory,” *Mathematics Colloquium*, University of Texas at Dallas, September 2008.

39. “Turing, Gödel, and the algorithmic method,” *Mathematics Colloquium*, East Carolina University, April 2008.

38. “Effectve categoricity of equivalence structures,” *Logic Seminar*, University of Maryland, College Park, April 2008.

37. “Algorithms, undecidability, and incompleteness,” *Mathematics Colloquium*, Howard University, November 2007.

36. “Turing computability in theories and structures,” *Mathematics Colloquium*, Department of Pure Mathematics, University of Waterloo, Canada, November 2006.

35. “Embedding fields into nilpotent groups,” *Logic Workshop*, CUNY Graduate Center, New York, October 2006.

34. “Inductive inference of classes of computably enumerable vector spaces,” *Logic Seminar*, Cornell University, December 2004.

33. “Intrinsically Σ^0_α relations on computable structures,” *Logic Seminar*, Cornell University, November 2004.

32. “Scott families and complexity of isomorphisms,” *Logic Seminar*, Western Illinois University, October 2004.

31. “Systems that learn algorithmically generated languages and structures,” *Mathematics Colloquium*, Western Illinois University, October 2004.

30. “Computable model theory,” *Logic Seminar*, University of Chicago, May 2004.

29. “Using computable algebra in theoretical computer science,” *Logic Seminar*, University of Notre Dame, April 2004.

28. “Computable algebra and algorithmic learning theory,” *Mathematics Colloquium*, East Carolina University, March 2004.

27. “Isomorphic images of relations on countable structures,” *Logic Seminar*, University of Maryland, College Park, March 2004.

26. “Learning classes of algebraic structures from positive and negative information,” *Computer Science Colloquium*, University of Delaware, May 2003.

25. “Algorithmic complexity of countable models,” *Mathematical Logic and Theoretical Computer Science Seminar*, Heidelberg University, Germany, November 2002.

24. “Computability-theoretic complexity of theories, structures, and relations,” *Mathematics*

Colloquium, Western Illinois University, October 2002.

23. "Post-type properties of relations on structures," *Logic Seminar,* Western Illinois University, October 2002.

22. "Turing degrees of structures," *Logic Seminar*, Sobolev Institute of Mathematics and Novosibirsk State University, Russia, July 2002.

21. "Hyperarithmetical and nonhyperarithmetical relations on structures," *Logic Seminar*, University of Chicago, May 2002.

20. "Intrinsic complexity of relations on structures," *Southern Wisconsin Logic Colloquium*, University of Wisconsin, Madison, March 2002.

19. "Turing complexity of mathematical structures and their relations," *Complexity Theory Seminar*, Computer Science Department, University of Maryland, College Park, May 2001.

18. "Turing degrees of hypersimple relations on computable structures," *Southern Wisconsin Logic Colloquium*, University of Wisconsin, Madison, November 2000.

17. "Simplicity and nowhere simplicity of relations on structures," *Logic Seminar*, University of Notre Dame, April 2000.

16. "Computably enumerable relations on computable models," *Southern Wisconsin Logic Colloquium*, University of Wisconsin, Madison, October 1999.

15. "Computability-theoretic properties of relations on computable models," *Logic Seminar*, Cornell University, April 1998.

14. "Algorithmic properties of models," *Mathematics Colloquium*, East Carolina University, December 1997.

13. "Computability in mathematical structures," *Logic Seminar*, Institut für Logik, Komplexität und Deduktionssysteme, Karlsruhe University, Germany, January 1996.

12. "Algorithmic properties of mathematical structures," *Mathematics and Statistics Colloquium*, University of Maryland Baltimore County, September 1996.

11. "Hilbert's tenth problem," *Mathematics Faculty/Student Colloquium*, University of Maryland, College Park, January 1995.

10. "Recursive homogeneous structures," *Logic Seminar*, University of Maryland, College Park, April 1991.

9. "Turing degrees of computational difficulty," *Mathematics Colloquium*, George Mason University, March 1990.

8. "Effective mathematics," *Mathematics Colloquium*, University of Maryland, College Park, January 1990.

7. "An introduction to recursive model theory," *Logic Seminar*, University of Maryland, College Park, April 1988.

6. "Algorithms on mathematical structures," *Mathematics and Computer Science Colloquium*, DePaul University, Chicago, 1987.

5. "Degree spectra of relations," *Mathematics Colloquium*, San Jose State University, 1987.

4. "Relations on recursive structures," *Mathematics and Statistics Colloquium*, Loyola University, Chicago, 1987.

3. "Effective mathematics," *Mathematics Colloquium*, Oberlin College, 1987.

2. "Degree spectra of relations," *Mathematics Colloquium*, Florida International University, 1987.

1. "Degree spectrum of a recursive relation on a recursive structure," *Logic Seminar*, University of Illinois, Urbana-Champaign, February 1987.

Education

Doctor of Philosophy in Mathematics, University of Wisconsin, Madison, 1987.
Dissertation advisor: Terrence Millar.
Dissertation: *Degree Spectrum of a Recursive Relation on a Recursive Structure,* 95 pp.
Master of Arts in Mathematics, University of Wisconsin, Madison, 1984.
Master of Science in Mathematics, University of Belgrade, 1981.
Thesis: *Generalized Quantifiers,* 69 pp. (in Serbian).
Bachelor of Science in Mathematics, University of Belgrade, 1978.
Award: *Best Student in the College of Sciences* in the class of '78.

Professional Experience

Professor of Mathematics, George Washington University, 2003–present.
Quantum Computation, Complexity, and Information Group leader, July 2009–December 2010.
Center for Quantum Computing, Information, Logic and Topology co-director, January 2011–present.
Associate Professor of Mathematics, George Washington University, 1994–2002.
Visiting Associate Professor of Mathematics, University of Maryland, College Park, 1994.
Assistant Professor of Mathematics, George Washington University, 1987–93.

External Research Support

9. Co-PI (with PI: J. Przytycki, and co-PIs: A. Shumakovitch and Hao Wu) for the NSF conference grant DMS-1137422: "Knots in Washington – Conferences on Knot Theory and its Ramifications, including Quantum Computing", 2011–2014.

8. PI for the individual NSF research grant DMS-0904101: "Topics in computable mathematics," 2009–2012.

7. Co-PI (with PI: J. Knight, University of Notre Dame, and co-PIs: D. Cenzer, R. Miller, A. Montalbán, and S. Lempp) for the binational with Russia/Kazakhstan research NSF grant DMS-1101123: "Collaboration in computability," 2011–2014.

6. PI for the individual NSF research grant DMS-0704256: "Computability theory and algebraic structures," 2007–2010.

5. Co-PI (with PI: J. Knight, University of Notre Dame, and co-PI: W. Calvert, Southern Illinois University) for the binational with Russia/Kazakhstan research NSF grant DMS-0554841: "Collaboration in computability," 2006–2011.

4. PI for the individual NSF research grant DMS-0502499: "Computability theory and algebraic structures," 2005–2007.

3. Member of senior personnel for the binational with Russia/Kazakhstan research NSF grant DMS-0075899: "Computability and effective constructions in mathematics," Steffen Lempp, University of Wisconsin, PI, 2000–2005.

2. PI for the individual NSF Research Planning Grant: "Frequency approach to approximating algorithms," 1992–1994.

1. Numerous research conference participation grants including:

   - Supported participant at the international Oberwolfach Computability Theory Meeting, Mathematisches Forschungsinstitut Oberwolfach, Germany, January 2001 (participation by invitation only).
   - Supported participant at the Summer Research Conference on Computability Theory and Applications, Boulder, Colorado, June 1999 (participation by invitation only).

George Washington University Research Support

12. GWU Research Enchancement Fund award for Quantum Computation, Complexity, and Information group, with J. Przytycki (Mathematics), Ali Eskandarian (Physics) and Bill Parke (Physics), 2009–11.

11. "Theory of mathematical orders at the frontier of logic and topology," with J. Przytycki, Columbian College Research Award, summer 2008.

10. "A new application of computability theory to topology," University Facilitating Fund Research Award, summer 2005.

9. "The mathematics and philosophy of induction," with M. Friend (Philosophy Department), Dilthey Faculty Award for Interdisciplinary Research, summer 2003.

8. “Application of computability theory to language learning,” University Facilitating Fund Research Award, summer 2002.

7. “Forcing and computable models,” University Facilitating Fund Research Award, summer 1996.

6. “Recursive model theory,” University Facilitating Fund Research Award, summer 1994.

5. “Frequency computation theory,” University Facilitating Fund Research Award, summer 1992.

4. “Degrees of learnability,” Junior Scholar Incentive Award, summer 1991.

3. “Interactive language learning by inductive inference machines,” University Facilitating Fund Research Award, summer 1990.

2. “The effect of isomorphic transformations on computable sets,” University Facilitating Fund Research Award, summer 1988.

1. “Finitely many Turing degrees of infinitely many isomorphic transformations,” Junior Scholar Incentive Award, summer 1989.

Awards and Honors

7. Nominated for Oscar and Shoshana Trachtenberg Prize for Faculty Scholarship, George Washington University, 2011.
6. *Faculty Authors Book Signing Reception*, Gelman Library, GWU, February 2008.
5. *Columbian Research Fellowship*, Columbian College of Arts and Sciences, GWU, 2004–05.
4. The 1995–96 *Award for the Exemplary Paper in Natural, Mathematical and Biological Sciences*, Columbian College of Arts and Sciences, GWU.
3. *Pedagogical Research and Innovative Developments in Education (PRIDE) Award*, University Teaching Center, GWU, 1992.
2. *Marie Christine Kohler Fellowship*, University of Wisconsin, Madison, 1983–87.
1. *P.E.O. International Peace Scholarship*, 1983–85.

Short-Term Research Visits

University of Notre Dame, regular visitor 2000–present.
University of Florida, Gainesville, regular visitor 2004–present.
University of Texas at Dallas, regular visitor 2008–present.
City University of New York Graduate Center, 2009, 2010.
MIT, 2009.
Kurt Gödel Research Center for Mathematical Logic, Vienna, Austria, 2009.
East Carolina University, 2008.
University of Waterloo, Canada, 2006.

University of Chicago, 2004.
Cornell University, 2004.
Sobolev Institute of Mathematics, Russian Academy of Sciences, Novosibirsk, 2002.
Heidelberg University, Germany, 2002.
University of Wisconsin, Madison, 2000 and 2002.

PhD Dissertation Advisor at GWU

9. Leah Marshall, Department of Mathematics, in progress.
8. Kai Maeda, Department of Mathematics, in progress.
7. Jennifer Chubb, Department of Mathematics, *Ordered Structures and Computability*, 2009. (Assistant professor at the University of San Francisco.)
6. Sarah Pingrey, Department of Mathematics, *Strong Degree Spectra of Relations*, 2008. (Assistant professor at the American University in Cairo, Egypt.)
5. Eric Ufferman, Department of Mathematics, *Structures and Partial Computable Automorphisms*, 2006. (Visiting assistant professor at St. Olaf College, Minnesota.)
4. Malgorzata Dabkowska, Department of Mathematics, *Turing Degree Spectra of Groups and Their Spaces of Orders*, 2006. (Senior lecturer at the University of Texas at Dallas.)
3. Amir Togha, Department of Mathematics, *On Automorphisms of Structures in Logic and Orderability of Groups in Topology* (co-advised with Ali Enayat, American University), 2004. (Associate professor at BCC, City University of New York.)
2. Rumen Dimitrov, *Computably Enumerable Vector Spaces, Dependence Relations, and Turing Degrees,* Department of Mathematics, 2002. (Associate professor at the Western Illinois University.)
1. Timothy McNicholl, *The Inclusion Problem for Generalized Frequency Classes*, Department of Mathematics, GWU, 1995 (Associate professor at Lamar University, Texas).

Other PhD Dissertation Committees

10. Frederick Nelson, *A Geometric Approach to Rations of π/3-Congruent Numbers*, Department of Mathematics, Howard University, 2011.
9. Sara Quinn, *Algorithmic Complexity of Algebraic Structures*, Department of Mathematics, University of Notre Dame, 2008.
8. Tetyana Andress, *The Spectrum and the First Čech Cohomology of a One Dimensional Tiling Dynamical System*, Department of Mathematics, GWU, 2007.
7. Maciej Niebrzydowski, *Some Applications of Quandles and Their Homology to the Geometry of Knots,* Department of Mathematics, GWU, 2007.
6. Wesley Calvert, *Algebraic Structure and Computable Structure*, Department of Mathematics, University of Notre Dame, 2005.
5. Ahmed Al-Hosni, *Using the Lebesgue Space Filling Curve for Manipulation of Two-Dimensional Arrays,* Department of Computer Science, GWU, 2004.

4. Mietek Dabkowski, *Cubic Skein Modules and Burnside Groups,* Department of Mathematics, GWU, 2003.
3. Charles McCoy, *Relativization, Categoricity, and Dimension,* Department of Mathematics, University of Notre Dame, 2000.
2. Georgia Martin, *Cantor Singletons, Rank-Faithful Trees, and Other Topics in Recursion Theory,* Department of Mathematics, University of Maryland, College Park, 1993.
1. Mathematical advisor for the interdisciplinary PhD. dissertation of Massoud Moussavi, *A Six-Valued Logic for Modeling Incomplete Knowledge,* Electrical Engineering and Computer Science, GWU, 1991.

Mentoring Undergraduate Research

GW George Gamow Undergraduate Research Fellowship to Clarke Smith for the project "Categorical semantics of quantum protocols," 2011–12.

Sponsoring Research Visitors

19. Bob Coecke, University of Oxford, December 2010 and May 2011.
18. Samson Abramsky, University of Oxford, May 2011.
17. Zbigniew Oziewicz, National Autonomous University of Mexico, Mexico City, April/May 2011.
16. Peter Selinger, Dalhousie University, Canada, March 2011.
15. Dmitry Trushin, Moscow State University, Russia, March 2011.
14. Peter Shor, MIT, March 2010.
13. Vadim Puzarenko, Sobolev Institute of Mathematics and Novosibirsk State University, Russia, March 2010.
12. Russell Miller, Queens College and Graduate Center, CUNY, regular short-term visitor, 2004–present.
11. Andrei Morozov, Sobolev Institute of Mathematics and Novosibirsk State University, Russia, December 2000, Spring Semester 2005, March 2008.
10. Sara Quinn, University of Notre Dame, March 2008.
9. Wesley Calvert, University of Notre Dame, April 2005, March 2010, May 2011.
8. Andrei Frolov, Kazan State University, Russia, February 2007.
7. John Chisholm, Western Illinois University, 2005–06.
6. Timothy McNicholl, University of Dallas, Fall Semester 2004.
5. Barbara Csima, Cornell University, June 2004.
4. Frank Stephan, Heidelberg University, Germany, January 2002.
3. Steffen Lempp, University of Wisconsin, Summer 2001.
2. Charlie McCoy, University of Wisconsin, Summer 2001.
1. Sergei Goncharov, Sobolev Institute of Mathematics and Novosibirsk State University, Russia, Summer 2001.

Regular Courses Developed and Taught at George Washington

(U=undergraduate; G=graduate; WID=writing in the discipline)

30. (G) Math 6720–Graduate topics: *Computable structure theory,* Spring 2011.
29. (G) Math 6720 – Graduate Topics in Logic: *Topics in computation theory*, Fall 2010.
28. (G) Math 271: *Mathematical logic,* Fall 1988–present.
27. (U) Math 104 and Math 104W (renumbered from Math 170): *Computational complexity*, Spring 1990–present.
26. (U) Math 103 and 103W: *Computability theory*, Spring 1992–present.
25. (U) Math 102: *Axiomatic set theory*, Spring 1990–present.
24. (U) Math 101: *Introduction to mathematical logic*, Spring 1988–present.
23. (G) Math 272–Graduate topics in logic: *Algorithms and mathematics*, Fall 2007**.**
22. (U) Dean's Seminar for Freshmen: *Turing machines, Chomsky languages, digital and quantum computing*, Spring 2007.
21. (G) Math 272–Graduate topics: *Algorithmic methods*, Spring 2007.
20. (U) Dean's Seminar for Freshmen: *Mathematics of the infinite*, Fall 2006.
19. (G) Math 272–Graduate topics: *Set theory*, Fall 2006.
18. (U) Dean's Seminar for Freshmen: *Is reasoning computable*?, Spring 2006.
17. (G) Math 272–Graduate topics: *Model theory and algorithmic model theory*, Fall 2005.
16. (U) Dean's Seminar for Freshmen: *Mathematical logic, languages, and learning*, Spring 2004.
15. (G) Math 272–Graduate topics: *Ordinals, definability, and computability*, Spring 2004.
14. (G) Math 272–Graduate topics: *Computability theory and applications to mathematical structures*, Fall 2003.
13. (G) Math 272–Graduate topics: *Algorithmic learning. Gödel incompleteness*, Fall 2002.
12. (G) Math 274: *Computational complexity* for the Computational Sciences Master's Program, Spring 2000.
11. (G) Math 272–Graduate topics: *Frequency computations. Computable algebra*, Spring 2001.
10. (G) Math 272–Graduate topics: *Computable model theory*, Spring 1999.
9. (G) Math 272–Graduate topics: *The forcing method*, Fall 1998.
8. (G) Math 272–Graduate topics: *Models, algorithms, and applications*, Fall 1997.
7. (G) Math 272–Graduate topics: *Recursion theory: hierarchies, oracles and degrees*, Spring 1996.
6. (G) Math 272–Graduate topics: *Independence results in set theory*, Spring 1995.
5. (G) Math 272–Graduate topics: *Effective model theory*, Fall 1994.
4. (G) Math 272–Graduate topics: *NP-completeness. Multi-valued logic*, Fall 1989.
3. (G) Math 272–Graduate topics: *Incompleteness of formal systems. Turing degrees*, Spring 1989.
2. (U) Honors 24: *Mathematical theory of languages* II, Spring 1991, Spring 1992.

1. (U) Honors 23: *Mathematical theory of languages* I, Fall 1990, Fall 1991.

Reading and Research Courses Taught at George Washington

54. (G) *Turing degrees of structures*, Spring 2011.
53. (G) *Orders on groups*, Fall 2010.
52. (G) *First-order structures*, Fall 2010.
51. (G) *Turing degree structure*, Spring 2010.
50. (G) *Topics in computability*, Fall 2009.
49. (G) *Advanced topics in logic*, Spring 2009.
48. (G) *Topics in set theory*, Spring 2008.
47. (UG) *P versus NP*, Spring 2008.
46. (G) *Algorithmic complexity theory*, Spring 2008.
45. (G) *Topics in model theory*, Fall 2007.
44. (G) *Computable linear orderings*, Fall 2007.

(UG) *Topics in computability*, Summer 2007.

43. (G) *Degree spectra of relations*, Spring 2007.
42. (UG) *Topics in logic and computing*, Spring 2007.
41. (G) *Complexity of orders on computable groups*, Fall 2006.
40. (G) Π^0_1 *classes*, Spring 2006.
39. (G) *Linear orders and interval trees*, Spring 2006.
38. (G) *Weak truth-table degree spectra*, Fall 2005
37. (G) *Many-one degrees and spectra*, Fall 2005.
36. (UG) *Math and philosophy of first-order logic*, Fall 2005.
35. (G) *Partial automorphism semigroups*, Spring 2005.
34. (G) *Computability and Boolean algebras*, Spring 2005.
33. (G) *Maximal relations*, Fall 2004.
32. (G) *Realizing and omitting types*, Fall 2004.
31. (G) *Truth-table degree spectra*, Fall 2004.
30. (G) *Deductive, inductive, and logical reasoning*, Spring 2004.
29. (G) *Analytical and hyperarithmetical hierarchies*, Spring 2004.
28. (G) *Uncountably categorical theories*, Fall 2003.
27. (G) *Automorphisms of computably enumerable vector spaces*, Fall 2003.
26. (G) *Large cardinals and model theory*, Spring 2003.
25. (G) *Prime, saturated, and homogeneous models*, Fall 2002.

24. (G) *Recursive groups and fields*, Spring 2002.
23. (G) *Advanced topics in logic,* Spring 2002.
22. (G) *Combinatorial group theory*, Fall 2001.
21. (G) *Topics in model theory*, Spring 2001.
20. (G) *Topics in computability theory*, Fall 2000.
19. (G) *Recursive vector spaces*, Spring 1998.
18. (G) *Ash's labeling systems*, Fall 1997.
17. (G) *Set-theoretic forcing*, Spring 1997.
16. (G) *Computable algebra*, Spring 1997.
15. (G) *Computable model theory*, Fall 1996.
14. (G) *Constructions by finitely and transfinitely many workers*, Fall 1994.
13. (G) *Generalized frequency classes*, Spring 1994.
12. (G) *Frequency computations and bounded queries*, Fall 1993.
11. (G) *Decidability of the inclusion problem*, Fall 1993.
10. (G) *Advanced topics on frequency classes*, Spring 1993.
9. (G) *Monster priority methods*, Fall 1992.
8. (G) *Recursive mathematics*, Summer 1992.
7. (G) *Frequency computations,* Spring 1992.
6. (G) *Semirecursive and selective sets*, Fall 1991.
5. (G) *Advanced recursion theory*, Summer 1991.
4. (G) *Cardinal and ordinal arithmetic*, Spring 1991.
3. (G) *Turing degrees of unsolvability*, Spring 1991.
2. (G) *Finite and infinite injury priority methods*, Fall 1990.
1. (G) *Set theory*, Fall 1990.

Professional Affiliations

American Mathematical Society
Association for Symbolic Logic
Association for Women in Mathematics
Mathematical Association of America
American Association for the Advancement of Science
Association Computability in Europe

Service to Research Community

36. Co-organizer (with D. Cenzer, U. of Florida, and R. Miller, CUNY) of the American Mathematical Society Special Session *Computable Mathematics* (in honor of Alan Turing),

GW, March 17–18, 2012.

35. Guest editor for the *Journal of Knot Theory and Its Ramifications*, 2007–present.
34. Co-organizer (with J. Przytycki, Y. Rong, R. Sazdanovic, A. Shumakovitch, and H. Wu) of the bi-annual NSF-funded GWU conference *Knots in Washington*, Spring 2010–present.
33. Referee for the CRM Proceedings & Lecture Notes, American Mathematical Society, 2011.
32. Organizer of the Annual Meeting of the Association for Symbolic Logic, GWU, Washington, DC, March 17–20, 2010.
31. Co-organizer (with J. Przytycki, GWU) of the American Mathematical Society Special Session *Orderings in Logic and Topology*, Annual Joint Mathematics Meetings, Washington, DC, January 5–8, 2009.
30. Association for Symbolic Logic representative to the American Association for the Advancement of Science, Section on Mathematics, 2008–present.
29. Reviewer and panel member for the National Science Foundation research grants, 1994–present.
28. Guest editor for the journal *Archive for Mathematical Logic* 2006–2009.
27. Reference writer for the National Science Foundation postdoctoral fellowships, 2004 and 2007.
26. Outside reviewer for tenure and promotion, graduate faculty appointments, and faculty scholarship awards.
25. Association for Women in Mathematics panel "Critical career decision stages: Research and funding opportunities," AWM events in conjunction with the Joint Mathematics Meetings, New Orleans, January 2007.
24. Referee for *Collected Works of Andrzej Mostowski*, North-Holland, 2007.
23. Reviewer for CUNY Research Foundation.
22. Organizing and Program Committee member for *Model Theory and Computable Model Theory Meeting*, University of Florida Special Year in Logic, 2006–07.
21. Chair of the Program Committee, Association for Symbolic Logic Winter Meeting, San Antonio, Texas, January 2006.
20. Referee for the Proceedings of the NSF-funded Vaught meeting *Classification of Countable Models*, Notre Dame Journal of Formal Logic, 2006.
19. Referee for a special issue *Advances in Logic* of the series *Contemporary Mathematics*, American Mathematical Society, 2006.
18. Association for Symbolic Logic Nominating Committee member for the Executive Committee positions and Council positions, 2005.
17. Reference writer for the *University Faculty Award*, Natural Sciences and Research Council of Canada, 2005.
16. Program Committee member for the Association for Symbolic Logic Winter Meeting, Phoenix, Arizona, January 2004.
15. Co-organizer (with D. Cenzer, Univ. of Florida) of the American Mathematical Society

Special Session *Computability and Models*, Annual Joint Mathematics Meetings, Baltimore, January 2003.

14. Organizer of the Special Session *Computable Model Theory,* Association for Symbolic Logic Winter Meeting, Washington, DC, January 2000.
13. Program Committee member for the Association for Symbolic Logic Winter Meeting, Washington, DC, January 2000.
12. Committee on Local Arrangements for the Annual Joint Mathematics Meetings in Washington, DC, January 2000.
11. Taught course on *Set theory* for the GW Summer Program for Women in Mathematics, Summer 1998.
10. Organizer of the American Mathematical Society Special Session *Computable Mathematics and Its Applications*, Annual Joint Mathematics Meetings, Baltimore, January 1998.
9. Referee for the Association of Symbolic Logic European Summer Meeting volume *Logic Colloquium '97*.
8. Referee for the Proceedings of the 7th Annual Conference *Computational Learning Theory '94*.
7. Co-organizer (with J. Owings, Univ. of Maryland) of the Special Session *Pure and Applied Recursion Theory* at the Meeting of the American Mathematical Society, Washington, DC, April 1993.
6. Co-organizer of and speaker for the Washington Area Recursion Theory Seminar – WARTS, 1988–1996.
5. Translator of Russian research papers for the journal *Selecta Mathematica Sovietica.*
4. Translator of Russian research papers for the American Mathematical Society (published in *Soviet Mathematics Doklady* and *Math USSR Sbornik*).
3. Reviewer for the International Science Foundation long-term research grants.
2. Referee for the journals *Annals of Pure and Applied Logic, Information and Computation, Journal of Symbolic Logic, Bulletin of Symbolic Logic, Notre Dame Journal of Formal Logic, Archive for Mathematical Logic, American Mathematical Monthly, Theoretical Computer Science,* and *SIAM Journal of Computing.*
1. Evaluator of the Candidate of Science Dissertation (Moscow) by Anatoliy Gordonov.

Service to George Washington

63. Mathematics Department undergraduate teaching assistant program director, 2011–present.
62. University Research and Instructional Technology Committee, 2009–present.
61. Organizer of the Quantum Computing Seminar, Mathematics Department and Physics Department, 2009–present.
60. University Committee on Research, 2008–11.
59. University Faculty Senate Committee on Libraries, 1991–95, 1998–99, 2001–present.

58. Organizer of and speaker for the Mathematics Department Logic Seminar, 1996–present.
57. Departmental undergraduate mathematics major advisor, 2009–11.
56. Coordinator for mathematics credit transfers to GWU, 2009–11.
55. Mathematics department library representative, 2009–11.
54. Mathematics Department Undergraduate Committee, 2007–08.
53. Columbian College of Arts and Sciences Dean's Council, 2005–08.
52. Faculty coordinator for Mathematics Graduate Student Seminar, 2006–08.
51. Presented research poster "Computable Mathematics," Research Gallery: President Knapp Inauguration Week Research Day, November 14, 2007.
50. Mathematics Department Colloquium Committee, 2006–07.
49. Mathematics Department Graduate Committee, Spring 2001, 2002–04, 2006–07.
48. Honors Quantitative Seminar Development Team, University Honors Program, 2006–07.
47. Mathematics Department Tenure-Track Faculty Position Search Committee, 2006–07.
46. Lecture "Quantum Computing," Mathematics Initiative Spring Symposium, Columbian College of Arts and Sciences, January 26, 2007.
45. Organizer of the Mathematics Department Interdisciplinary Lecture Series, 2005–06.
44. Speaker at the GWU Mathematics Colloquium launching Columbian College initiative "Mathematics across Disciplines," May 4, 2006.
43. Chair of Academic Program Review Committee for the English Department, 2005–06.
42. Mathematics Department Outside Chair Search Committee, 2005–06.
41. University Faculty Senate Dispute Resolution Committee, 1997–2006.
40. Columbian Research Fellows Lecture "Algorithms and oracles in mathematical theories and models," Columbian College of Arts and Sciences, April 2005.
39. Columbian College Committee on Bylaws, 2004–05.
38. Member of the Columbian Research Fellowship Selection Committee, Columbian College of Arts and Sciences, 2005.
37. Coordinator for the Mathematics Department graduate student admissions, 2003–04.
36. Luther Rice Fellowship Panel, Columbian College of Arts and Sciences, Spring 2004.
35. Summer Program for Women in Mathematics speaker "Hilbert's Tenth Problem: from Diophantus to Matiyasevich," July 2002.
34. Mathematics Department Search Committee, Spring 2002.
33. Coordinator for the Mathematics Department transfer credit and exams for credit/waiver, 1998–00, 2001–02.
32. Summer Program for Women in Mathematics speaker "Quantum computing," July 2000.
31. Chair of the Mathematics Department Undergraduate Committee, Spring 2000.
30. Mathematics Department Undergraduate Committee, 1998–00.

29. Director of the Math Lab, Spring 2000.
28. Coordinator of the GW mathematics placement exams, Summer 2000.
27. Columbian College Committee for Academic Review of the Department of Economics, 1999–00.
26. Faculty Senate Committee on Faculty Development and Support, 1998–00.
25. Faculty Senate Committee on Athletics and Recreation, 1997–99.
24. Senate liaison to the University Committee on the Status of Women Faculty and Librarians, 1998–99.
23. Organizer of the Mathematics Department Colloquium, 1996–98.
22. Co-organizer of the Mathematics Department Graduate Student Seminar, 1989–95, 1996–98.
21. Mathematics Department Personnel and Administration Committee, 1997–98.
20. Columbian College Committee for Academic Reviews of the 700 Series, 1997–98.
19. Summer Program for Women in Mathematics (national program for undergraduate seniors at GWU) speaker "Effectiveness in mathematical structures," July 1997.
18. Exhibitor at the GWU Scholars Expo, March 1997.
17. GWU academic mentor and logic instructor for Jacob Lurie, Montgomery Blair High School student and the first prize winner of the 1996 Westinghouse Science Talent Search.
16. Coordinator for the Mathematics Department graduate admissions, 1996.
15. Mathematics Department Graduate Program Committee member, 1994–95.
14. Graduate student advising coordinator, 1994–95.
13. Mathematics Department Search Committee for a tenure-track faculty position in topology, 1994–95.
12. Representative of the Mathematics Department for the Howard Hughes Proposal of the Columbian College, 1993.
11. Representative of the Mathematics Department for the Gelman Library, 1993.
10. GWU Cybernetics Committee, 1993–94.
9. Admissions Program Faculty Network member, 1992–93.
8. GWU Teaching Network member, 1992–93.
7. Reviewer of the applications for the admissions to the University Honors Program, 1991–93.
6. Faculty Committee for the University Honors Program, 1991–92.
5. Columbian College Student/Faculty Advisory Council, 1991–92.
4. Search Committee for the University Honors Program Director, 1992.
3. Demonstrator of mathematical software for GWU Mathematics Awareness Week in 1990, and at the Himmelfarb Library Fair *InfoOptions for the* 1990*'s.*
2. Speaker for and member of the Mathematics Department Colloquium Committee, 1988–91.
1. Mathematics Department committees on discrete math, library, graduate program, textbooks,

curriculum, self-study, and faculty search, 1987–92.