

ZORAN ŠUNIĆ

CURRICULUM VITÆ

Department of Mathematics
Hofstra University
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ACADEMIC POSITIONS

Hofstra University, Hempstead, NY

since 2022, Professor (Mathematics; Data Science)
since 2017, Professor (Mathematics)

Texas A&M University, College Station, TX

2014–2018, Professor (Mathematics)
2009–2014, Associate Professor (Mathematics)
2003–2009, Assistant Professor (Mathematics)

University of Nebraska, Lincoln, NE

2001–2003, Research Assistant Professor (Mathematics)

Cornell University, Ithaca, NY

2000–2001, Visiting Assistant Professor (Mathematics)

State University of New York, Binghamton, NY

1996–2000, Teaching Assistant (Mathematics)

Ss. Cyril and Methodius University, Skopje, Macedonia

1992–1996, Teaching Assistant (Computer Science)

EDUCATION

Mathematics

Ph.D. 2000, State University of New York, Binghamton NY
M.Sc. 1995, Ss. Cyril and Methodius University, Skopje, Macedonia
B.Sc. 1991, Ss. Cyril and Methodius University, Skopje, Macedonia

PHD STUDENTS

Texas A&M University, College Station, TX

- David Carroll, 2016, Mathematics
- Andrew Penland, 2015, Mathematics

TEACHING / ADVISING

Hofstra University, Hempstead, NY

- **Graduate Courses:** Probability and Statistical Inference
- **Courses:** Real Analysis I, Real Analysis II; Complex Analysis; Introduction to Topology; Introduction to Statistics; Differential Equations, Linear Algebra, Engineering Mathematics I, Engineering Mathematics II, Logic, Sets, and Probability;
- **Individual courses:** Cryptography; Dynamical Systems
- **Honors options:** 8 individual honors options

Texas A&M University, College Station,

- **Courses:** Algebra I, II; Topology; Probability; Linear Algebra, Advanced Linear Algebra; Applied Algebra; Modern Geometry; Applied Mathematics I; Differential Equations; Foundations of Mathematics; Engineering Mathematics I, II, III; Communications and Cryptography,
- **Honors courses:** Algebra I, II; Topology; Linear Algebra; Analytic Geometry and Calculus I; Foundations of Mathematics; Modern Geometry
- **Graduate courses:** Topology I; Topology II; Algebra I; Groups, Graphs, and Spaces; Group Theory; Groups, Graphs, and Matrices; Methods of Applied Mathematics; Directed Studies (39 times, 7 different students)
- **Online graduate courses:** Linear Algebra for Applications
- **Committee member:** 11 Ph.D. (Mathematics) and 9 M.Sc. Committees (1 Math, 5 Statistics, 2 Mechanical Engineering, 1 Petro Engineering)
- **Postdoc supervision:** Russ Thompson (Simons grant)

University of Nebraska, Lincoln, NE

- **Courses:** Linear Algebra; Multivariable Calculus (honors); Contemporary Math.
- **Graduate Courses:** Representation Theory of Groups; Groups and Amalgamation
- **Student advising:** undergraduate research project UCARE (Undergraduate Creative Activities & Research Endeavors); committee member for one senior thesis

Cornell University Ithaca, NY

- **Courses:** Math and Politics; Linear Algebra with Calculus; Multivariable Calculus

State University of New York, Binghamton, NY

- **Courses:** Calculus I; Calculus II; Multivariable Calculus; Linear Algebra; Discrete Mathematics; Differential Equations
- **Recitation and grading:** Calculus I; Mathematical Logic
- participated in the PFF (Preparing Future Faculty) Project

Ss. Cyril and Methodius University, Skopje, Macedonia

- **Recitation and grading:** Algorithms and Automata; Introduction to Computer Science; Discrete Algebraic Structures; Sets and Logic; Algebra I; Algebra II; Algebra III; mathematics and computer science courses for the School of Agriculture and Teachers College
- **Student advising:** committee member for three senior theses

WRITTEN/PUBLISHED

Research

- **Published (Interdisciplinary)**

- *Reliability of judgments of stuttering-related variables: The effect of language familiarity*, Journal of Fluency Disorders **69** (2021) 105851. (with R.E. Sepulveda, J.H. Davidow, E.P. Altenberg)
- *Tracking of Endothelial Cell Migration and Stiffness Measurements Reveal the Role of Cytoskeletal Dynamics*, Int. J. Molecular Sci. **2022**, 23(1), 568. (with D.J. Romano, J.M. Gomez-Salinerro, A. Checco, S.Y. Rabbany)

- **Published (Mathematics and Theoretical Computer Science)**

- *On one-counter positive cones of free groups*, in Developments in language theory, 299–311, Lecture Notes in Comput. Sci., **13257** (2022).
- *Portrait growth in contracting, regular branch groups*, Algebra and its Applications (2022), doi.org/10.1142/S0219498823501803. (with J. Uria-Albizuri)
- *Laconic varieties and the membership problem*, Pril. Odd. Prir.-Mat. Biotekhnichki Nauki **41** (2020), no. 2, 115–120.
- *Orders on trees and free products of left-ordered groups*, Canad. Math. Bull. **63** (2020), no. 2, 335–347. (with W.Dicks)
- *Autostackability of Thompson's group F* , J. Algebra **545** (2020), 111–134. (with N. Corwin, G. Golan, S. Hermiller, A. Johnson)
- *A language hierarchy and Kitchens-type theorem for self-similar groups*, J. Algebra **537** (2019), 173–196. (with A. Penland)
- *Left relatively convex groups*, in N. Broaddus, M. Davis, J. Lafont, I. Ortiz (Eds.), Topological Methods in Group Theory, London Mathematical Society Lecture Note Series **451** (2018), 1-18. (with Y. Antolin, W. Dicks)
- *Quadratic time algorithm for inversion of binary permutation polynomials*, in Mathematical Software – ICMS 2018, Lecture notes in Computer Science **10931** (2018). (with L. Barthelmy, D. Kahrobaei, G. Renault)
- *No positive cone in a free product is regular*, Internat. J. Algebra Comput. **27** (2017), no. 8, 1113–1120. (with S. Hermiller)
- *Finitely constrained groups of maximal Hausdorff dimension*, Journal of the Australian Mathematical Society **100** (2016), no.1, 108 – 123. (with A. Penland)
- *From self-similar groups to self-similar sets and spectra*, Fractal Geometry and Stochastics V, Progress in Probability **70**, Springer, 2015, 175–207. (with R. Grigorchuk, V. Nekrashevych)

- *Cellular automata between sofic tree shifts*, Theoretical Computer Science **506** (2013), 79–101. (with T. Ceccherini-Silberstein, M. Coornaert, F. Fiorenzi)
- *Explicit left orders on free groups extending the lexicographic order on free monoids*, Comptes Rendus Mathématique. Académie des Sciences **351** (2013), no.13-14, 507–511.
- *Free subgroups acting properly discontinuously*, Topology and its Applications **160** (2013), no.10, 1108–1114.
- *Normal art galleries: wall in - all in*, Computational Geometry: Theory and Applications **46** (2013), no.1, 7–16.
- *Twin Towers of Hanoi*, European Journal of Combinatorics **33** (2012), no.7, 1691–1707.
- *The conjugacy problem in automaton groups is not solvable*, Journal of Algebra **364** (2012), 148–154. (with E. Ventura)
- *On groups whose geodesic growth is polynomial*, International Journal of Algebra and Computation **22** (2012), no.5, 1250048, 13pp. (with M. Bridson, J. Burillo, M. Elder)
- *Cellular automata on regular rooted trees*, in Implementation and Application of Automata, Lecture Notes in Computer Science **7381** (2012), 101–112. (with T. Ceccherini-Silberstein, M. Coornaert, F. Fiorenzi)
- *Cayley graph automatic groups are not necessarily Cayley graph biautomatic*, in Language and Automata Theory and Applications, Lecture Notes in Computer Science **7183** (2012), 401–407. (with A. Miasnikov)
- *Pattern closure of groups of tree automorphisms*, Bulletin of Mathematical Sciences **1** (2011) no.1, 115–127.
- *Finite self-similar p -groups with abelian first level stabilizers*, International Journal of Algebra and Computation **21** (2011) no.1-2, 355-364.
- *Polynomial functions on the units of \mathbb{Z}_{2^n}* , Quasigroups and Related Systems **18** (2010) no.1, 59–82. (with D. Gligoroski and S. Markovski)
- *On capability of finite abelian groups*, Archiv der Mathematik, **93** (2009) 1, 23–28.
- *A pastiche on embeddings into simple groups (following P. E. Schupp)*, In “Limits of graphs in group theory and computer science”, EPFL Press, 2009, 183–189.
- *Groups generated by 3-state automata over a 2-letter alphabet, II*, Functional analysis. Journal of Mathematical Sciences (N.Y.) **156** (2009) no.1, 187–208. (with I. Bondarenko, R. Grigorchuk, R. Kravchenko, Y. Muntyan, V. Nekrashevych, D. Savchuk)
- *Encouraging the grand coalition in convex cooperative games*, Studia Universitatis Babeş-Bolyai Mathematica **54** (2009) no.1, 3–19. (with T. Andreescu)
- *Frobenius Problem and dead ends in integers*, Journal of Number Theory **128** (2008) 5, 1211–1223.
- *Schreier spectrum of the Hanoi Towers group on three pegs*, Proceedings of Symposia in Pure Mathematics **77** (2008) 183–198. (with R. Grigorchuk)
- *On classification of groups generated by 3-state automata over a 2-letter alphabet*, Algebra and Discrete Mathematics (2008), no.1, 1–163. (with I. Bondarenko, R. Grigorchuk, R. Kravchenko, Y. Muntyan, V. Nekrashevych, D. Savchuk)
- *Hausdorff dimension in a family of self-similar groups*, Geometriae Dedicata **124** (2007), 213-236.

- *Tamari lattices, forests and Thompson monoids*, European Journal of Combinatorics **28** (2007), no.4, 1216–1238.
- *Poly-free constructions for right-angled Artin groups*, Journal of Group Theory **10** (2007), no.1, 117–138. (with S. Hermiller)
- *Rational tree morphisms and transducer integer sequences: definition and examples*, Journal of Integer Sequences **10** (2007), no.4, Article 07.4.3, 26pp.
- *The true prosoluble completion of a group: examples and open problems*, Geometriae Dedicata **124** (2007), 5–26. (with G. Arzhantseva, P. de la Harpe, D. Kahrobaei)
- *Self-similarity and branching in group theory*, London Mathematical Society Lecture Note Series **339** (2007), 36–95. (with R. Grigorchuk)
- *The spectral problem, substitutions and iterated monodromy*, CRM Proceedings and Lecture Notes **42** (2007), 225–248. (with R. Grigorchuk and D. Savchuk)
- *Bandwidth reduction in rectangular grids*, Algebra and Discrete Mathematics (2007) **2**, 1–15. (with T. Andreescu, W. Stromquist)
- *Groups generated by 3-state automata over a 2-letter alphabet, I*, São Paulo Journal of Mathematical Sciences **1** (2007), no.1, 1–40. (with I. Bondarenko, R. Grigorchuk, R. Kravchenko, Y. Muntyan, V. Nekrashevych, D. Savchuk)
- *Asymptotic aspects of Schreier graphs and Hanoi Towers groups*, Comptes Rendus Mathématique. Académie des Sciences **346** (2006), no.8, 545–550. (with R. Grigorchuk)
- *Some solvable automaton groups*, Contemporary Mathematics **394** (2006), 11–29. (with L. Bartholdi)
- *Distortion functions and the membership problem for submonoids of groups and monoids*, Contemporary Mathematics **372** (2005), 109–129. (with J. Meakin, S. Margolis)
- *Branch groups*, Handbook of Algebra, Vol. 3, edited by M. Hazewinkel, North-Holland, Amsterdam, 2003, 989–1112. (with L. Bartholdi and R. Grigorchuk)
- *Self-describing sequences and the Catalan family tree*, The Electronic Journal of Combinatorics **10** (2003), no.1, Note 5, 9pp.
- *Young tableaux and other mutually describing sequences*, Journal of Integer Sequences **5** (2002), no.1, Article 02.1.5, 7pp.
- *On the word and period growth of some groups of tree automorphisms*, Communications in Algebra **29** (2001), no.11, 4923–4964. (with L. Bartholdi)

Other Scholarly Work

- Book Review: Cellular automata and groups by Tullio Ceccherini-Silberstein and Michel Coornaert, Bull. Amer. Math. Soc. (N.S.) **51** (2014), no. 2, 361–366.
- *Bernoulli shifts over free groups of finite rank and the f -invariant*, Oberwolfach Reports **50** (2013), 22–25.
- *Hanoi Towers groups*, Oberwolfach Reports **19** (2006), 11–14. (with R. Grigorchuk, V. Nekrashevych)
- *Hanoi Towers group on 3 pegs and its pro-finite closure*, Oberwolfach Reports **25** (2006), 15–17. (with R. Grigorchuk, V. Nekrashevych)

Exposition for Undergraduates and High School Students

- *Discover disc covers!*, Mathematical Reflections **1** (2006), A3, 6pp

- *An ideal functional equation with a ring*, Mathematics Magazine **77** (2004), no.4, 310–313
- *Matrix inverses and the great injustice*, The College Mathematics Journal **33** (2002), no.5, 395–398
- *Several solutions to a Balkan Mathematical Olympiad problem*, Mathematics and Informatics Quarterly **7** (1997), no.1, 15–19
- *Competitions in Mathematics '94*, SDMIM (1994), 94pp (with D. Dimovski, R. Malčeski, K. Trenčevski)
- **Internal University Publications** (material for summer camps)
 - Topology of knots and surfaces, Texas A&M SMaRT Camp 2011, 30pp
 - Combinatorial Geometry, Texas A&M SMaRT Camp 2010, 32pp
 - Elementary Number Theory, Texas A&M SMaRT Camp 2009, 52pp (with P. Kuchment)
 - *Algorithms and Complexity*, Mathematics and Computer Science Summer Camp 1996, PMF-Skopje (1996), 29pp (with D. Bošnački, A. Sokolova)

TALKS

American Math Society and Canadian Math Society Special Sessions

- Groups and Topological Dynamics, AMS-SMF-EMS Meeting, Grenoble, France, Jul/2022
- Groups and Topological Dynamics, Denver, CO, Jan/2020
- Algorithmic Group Theory and Applications, Boston, MA, Apr/2018
- Comb./Geom./Prob. Methods in Group Theory, Denton, TX, Sep/2017
- Geom. Group Th. and Topology in Low Dimensions, Niagara Falls, Canada, Dec/2016
- New Trends in Automata Groups and Semigroups, Joint AMS-EMS-SPM meeting, Porto, Portugal, June/2015
- Groups, Algorithms, and Cryptography, San Antonio TX, Jan/2015
- Groups, Algorithms, Complexity, and Theory of Security, Boston MA, Jan/2012
- Geometric Invariants of Groups and Related Topics, Boston MA, Jan/2012
- Algorithmic and Geom. Properties of Groups and Semigroups, Lincoln NE, Oct/2011
- Mathematical aspects of spectral problems related to physics, Waco TX, Oct/2009
- Geometric Group Theory, Urbana IL, Mar/2009
- Geometric Group Theory, Ottawa, Canada, Dec/2008
- Group Theory, Joint AMS-SMB Meeting, IMPA, Rio de Janeiro, Brazil, June/2008
- Discrete Structures in Conformal Dynamics and Geometry, Bloomington IN, Apr/2008
- Languages and Groups, Hoboken NJ, Apr/2007
- Combinatorial and Geometric Group Theory, Oxford OH, Mar/2007
- Analysis and Probability on Fractals, Storrs CT, Oct/2006
- Lattice Th, the Th. of Ordered Sets, and Univ. Algebra, San Antonio TX, Jan/2006
- Geometric Methods in Group Theory and Semigroup Theory, Lincoln NE, Oct/2005
- Asymptotic and Probabilistic Aspects of Group Theory, Athens OH, Mar/2004
- Geometric Group Theory, Binghamton NY, Oct/2003
- Infinite Groups and Group Rings, Binghamton NY, Oct/2003

Conferences/workshops

- Orderable Groups, Montreal, Canada, May/2023
- Groups of dynam. origin, automata, and spectra, Les Diablerets, Switzerland, Mar/2023
- Groups, topology, applications, Bilbao, Spain, Feb/2023
- Zassenhaus Group Theory Conference, Binghamton, NY, May/2019
- Elementary Theory of Groups and Group Rings, Fairfield, CT, Nov/2018
- International Congress on Mathematical Software, South Bend, IN, Jul/2018
- Trees, Dynamics, Locally Compact Groups (*3 lectures*), Düsseldorf, Germany, Jun/2018
- Zassenhaus Group Theory Conference, Tampa, FL, Apr/2018
- Binghamton Univ. Grad. Conf. in Algebra and Topology, Binghamton, NY, Oct/2017
- Groups of Intermediate Growth (*9 lectures*), Seville, Spain, Jul/2017
- Zassenhaus Group Theory Conference, Garden City NY, May/2016
- Groups and their actions, Bedlewo, Poland, June/2015
- Asymptotic properties of groups and dynamical systems, College Station TX, Aug/2015
- Zassenhaus Group Theory Conference, Binghamton NY, May/2015
- Orderable groups, Cajón del Maipo, Chile, September/2014
- Geometry of computation in groups, Erwin Schroeder Inst, Vienna, Austria, April/2014
- Groups acting on rooted trees, Institute Henry Poincaré, Paris, France, Mar/2014
- Arbeitsgemeinschaft: Sofic Entropy, Oberwolfach, Germany, October/2013
- Zassenhaus Group Theory Conference, Asheville NC, May/2013
- CombinaTexas, Georgetown TX, Apr/2012
- Laminations and symbolic dynamics, Luminy, France, Apr/2012
- Languages, Automata Theory, and Applications, A Coruña, Spain, Mar/2012
- Geometry, Topology, and Group Theory, Lewiston ME, Jan/2012
- Analysis, Probability, and Mathematical Physics on Fractals, Ithaca NY, Sep/2011
- Geometric and Asymptotic Group Theory with Applications, Manresa, Spain, July/2011
- Zassenhaus Group Theory Conference, Baltimore MD, May/2011
- Conference on Algebra and Applications, Caldas Novas GO, Brazil, May/2011
- CombinaTexas, Huntsville TX, April/2011
- Spring Topology and Dynamics Conference, Taylor TX, Mar/2011
- Workshop on Dynamics and group Actions, CRM Montreal, Canada, Oct/2010
- Mathematical Conference 2010 (dedicated to G. Cupona), Ohrid, Macedonia, Sep/2010
- Combinatorics, Groups, Algorithms, and Complexity, Columbus OH, Mar/2010
- MASSEE International Congress, Ohrid, Macedonia, Sep/2009
- Dynamical Numbers, Max-Planck Institute for Mathematics, Bon, Germany, June/2009
- Zassenhaus Group Theory Conference, Lancaster PA, May/2009
- Combinatorial Methods in Group Theory and Semigroup Theory, Lincoln NE, May/2009
- Self-similarity and branching in group theory (two talks), Banff, Canada, Oct/2008
- Conference honoring Blagoj Popov's 85th birthday, Ohrid, Macedonia, Sep/2008
- Algebra Mini-Conference, Huntsville TX, Apr/2008
- Groups Generated by Automata (two talks), Ascona, Switzerland, Feb/2008
- Trees, Non-Archimedean Words, and Asymptotic Cones, St. Sauveur, Canada, Dec/2007
- Asymptotic Group Theory and Cryptography, Ottawa, Canada, Dec/2007
- Workshop on Algorithms, Combinatorics, and Geometry, Denton TX, Nov/2007
- Algebra Day, Carleton University, Ottawa, Canada, Sep/2007

- Analysis on Graphs and Fractals, Cardiff, Wales, June/2007
- Limits of graphs in group th. and comp. sc. (two talks), Lausanne, Switz, May/2007
- Zassenhaus Group Theory Conference, St Louis MO, Mar/2007
- Geometric linearization of graphs and groups, Lausanne, Switzerland, Jan/2007
- Analysis on graphs and its applications, Cambridge, United Kingdom, Jan/2007
- P versus NP Workshop, Berkeley CA, June/2006
- Self-similar groups and conformal dynamics, AIM, Palo Alto CA, June/2006
- Combinatorial and geometric group theory, Nashville TN, May/2006
- Geometric Groups on the Gulf Coast Conference, Mobile AL, Mar/2006
- Lafayette/Lehigh Geometry and Topology Mini Conference, Easton PA, Mar/2006
- Groups St Andrews 2005, St Andrews, United Kingdom, Aug/2005
- Geometric and Asymptotic Methods in Group Theory, Banff, Canada, June/2005
- Zassenhaus Group Theory Conference, Montgomery AL, Mar/2005
- Asymptotic Group Invariants and their Applications, College Station TX, Nov/2004
- Advanced Course on Automata Groups (three talks), Barcelona, Spain, July/2004
- Geometric Group Th, Random Walks, and Harmonic Anal., Cortona, Italy, June/2004
- CombinaTexas: Combinatorics in South Central USA, College Station TX, Apr/2004
- Albany Group Theory Conference, Rensselaerville NY, Oct/2003
- Zassenhaus Group Theory Conference, Evansville IN, Mar/2003
- Geometric Groups on the Gulf Coast Conference, Pensacola FL, Nov/2002
- The 5th Regional Workshop in Mathematical Sciences, Lincoln NE, Oct/2002
- Semigroups, Automata, and Formal Languages, Crema, Italy, June/2002
- Summer Mathematics Workshop, Ohrid, Macedonia, June/2002
- The 4th Regional Workshop in Mathematical Sciences, Lincoln NE, Nov/2001
- Albany Group Theory Conference, Rensselaerville NY, Oct/2000
- Combinatorics, Group Theory and Ring Theory, Columbus OH, May/2000
- Zassenhaus Group Theory Conference, Binghamton NY, May/1999

Colloquia

- St John's University, Queens NY, Oct/2018
- Western Carolina University, Cullowhee NC, Oct/2017
- DePaul University, Chicago IL, Nov/2015
- University of South Florida, Tampa FL, Oct/2014
- University of South Florida, Tampa FL, Sep/2012
- University of Navarra, Pamplona, Spain, Mar/2012
- Trinity University, San Antonio TX, Nov/2010
- University of Nebraska, Lincoln NE, Nov/2010
- University of South Florida, Tampa FL, Jan/2010
- University of South Florida, Tampa FL, Nov/2008
- University of California - Davis, Davis, May/2008
- Carleton University, Ottawa, Canada, Mar/2006
- Sam Houston University, Huntsville TX, Oct/2005
- University of Nebraska, Lincoln NE, Apr/2004
- Ss. Cyril and Methodius University, Skopje, Macedonia, May/2002
- University of South Florida, Tampa FL, Mar/2002

- University of Nebraska, Lincoln NE, Sep/2001

Seminars

- CUNY Graduate School, Group Theory, New York NY, Mar/2020
- University of South Florida, Discrete Mathematics, Tampa, FL, Apr/2018
- University of Nebraska, Groups, Semigroups and Topology, Lincoln NE, Feb/2018
- CUNY Graduate School, Group Theory, New York NY, Oct/2017
- CUNY Graduate School, Combinatorics, New York NY, Oct/2017
- University of Nebraska, Groups, Semigroups and Topology, Lincoln NE, Dec/2015
- U of Chicago, Combinatorics and Theoretical Computer Science, Chicago IL, Nov/2015
- Loyola University, Algebra and Combinatorics, Chicago IL, Nov/2015
- DePaul University, Algebra and Combinatorics, Chicago IL, Oct/2015
- Illinois Institute of Technology, Discrete Applied Mathematics, Chicago IL, Oct/2015
- University of Illinois, Geometry, Topology and Dynamical Systems, Chicago IL, Sep/2015
- University of Wisconsin, Topology, Milwaukee WI, Sep/2015
- Universitat Autònoma de Barcelona, Group Theory, Barcelona, Spain, Mar/2012
- University of Nebraska, Groups, Semigroups and Topology, Lincoln NE, Nov/2010
- CUNY Graduate School, Group Theory, New York NY, Oct/2010
- Cornell University, Topology and Geometric Group Th, Ithaca NY, Oct/2010
- State University of NY, Geometry and Topology, Binghamton NY, Oct/2010
- CUNY Graduate School, Group Theory, New York NY, Ap/2009
- University of Brasília, Algebra, Brasília, Brazil, June/2008
- University of California - Davis, Geometry / Topology, Davis CA, May/2008
- Georgia Institute of Technology, Algebra, Atlanta, GA, Feb/2007
- Rice University, Algebraic Geometry / Ergodic Theory, Houston, TX, Feb/2007
- Rutgers University, Group Theory, New Brunswick NJ, May/2006
- Massachusetts Institute of Technology, Boston MA, Combinatorics, Apr/2006
- State University of New York, Binghamton NY, Joint Algebra/Topology, Mar/2006
- CUNY Graduate School, Group Theory, New York NY, Mar/2006
- Cornell University, Topology and Geometric Group Theory, Ithaca NY, Mar/2006
- Institute for Advanced Study, School of Mathematics, Princeton NJ, Mar/2006
- University of Nebraska, Groups, Semigroups and Topology, Lincoln NE, May/2005
- University of Nebraska, Groups, Semigroups and Topology, Lincoln NE, Apr/2004
- University of Texas, Topology, Austin TX, Mar/2004
- Vanderbilt University, Group Theory, Nashville TN, Nov/2002
- University of California - Berkeley, Group Theory, Berkeley CA, Oct/2001
- CUNY Graduate School, Group Theory, New York NY, Jan/2001

Talks for undergraduate/high school students

- China Girls Math Olympiad Preparation, Dallas TX, July 2007
- It's a Math Thing, Summer Workshop for High School Girls, Lincoln NE, July 2002
- Seaway Section of Mathematical Association of America, Oswego NY, Apr/2000
- Metroplex Math Circle, U. of Texas, Dallas TX: Feb/2007, Nov/2007, Mar/2010
- Awesome Math, U. of Texas, Dallas TX: July/2007, July/2008, July/2009, July/2010

- Math Club Talks: SUNY Oneonta, Oneonta NY, Mar/2000; Cornell U, Ithaca NY, Dec/2000; Gettysburg College, Gettysburg PA, Apr/2001; Bates College, Lewiston ME, Feb/2003; Texas A&M U, College Station TX, Nov/2008 and Apr/2015;
- Math Awareness Talks: U. of Scranton, Scranton PA, Apr/2000; Texas A&M U, College Station TX, Apr/2005 and Apr/2008
- Texas A&M Math Circle: at least one talk every semester since 2013.

ACADEMIC VISITS/LEAVES

- Centre de recherches mathématiques, Montreal, Canada, August-October 2010
- Max-Planck-Institute für Mathematik, Bonn, Germany, June 2009
- Centre Interfacultaire Bernoulli, Lausanne, Switzerland, May 2007
- Isaac Newton Institute for Math. Sciences, Cambridge, England, January 2007
- Max-Planck-Institute für Mathematik, Bonn, Germany, May 2006
- Rutgers University, New Brunswick NJ, February-April 2006

SELECTED PROFESSIONAL ACTIVITIES

Organizer

• Conferences / Workshops

- Zassenhaus Groups and Friends Conference, Hempstead, NY, May 27–29, 2022.
- AMS Special Session on Combinatorial/Geometric/Probabilistic Methods in Group Theory, Denton TX, September 9–10, 2017
- Conference on Geometric and Probabilistic Methods in Group Theory and Dynamical Systems, College Station TX, November 9–13, 2015.
- Workshop on Self-similarity and branching in group theory, Banff International Research Station, Banff, Canada, October 12–17, 2008.
- Joint American Mathematical Society / Sociedade Brasileira de Matematica Meeting, Special Session on Group Theory, Rio de Janeiro, Brazil, June 4–7, 2008.
- Group Theory: Generations, Conference in honor of W. Magnus, CUNY, New York, September 28–29, 2007.
- Conference on Geometric and Probabilistic Methods in Group Theory and Dynamical Systems, College Station TX, November 3–6, 2005.
- AMS Special Session on Geometric Methods in Group Theory and Semigroup Theory, Lincoln NE, October 21–23, 2005
- AMS Special Session on Probabilistic and Asymptotic Aspects of Group Theory, Athens OH, March 26–27, 2004

• Seminars and other one-day events

- Metropolitan New York Section of the Mathematical Association of America Annual Meeting, Hempstead NY, May 13, 2018
- Groups and Dynamics Seminar at Texas A&M U (over 100 talks)
- Two Mini Workshops in Geometric and Probabilistic Methods in Group Theory and Dynamical Systems, College Station TX, Mar/2015, Aug/2015

- Two Mini Workshops on Groups and Dynamics, College Station TX, Nov/2006, Dec/2007
- Three Mini Workshops in Asymptotic Group Invariants and their Applications, College Station TX, Nov/2004, Dec/2004, Feb/2005

Editor

- Managing Editor of *Groups, Geometry, and Dynamics*, European Mathematical Society, handled over 600 papers, 2006–2013
- Guest Editor of *Geometriae Dedicata* issue devoted to Geometric and Probabilistic Methods in Group Theory, 2007
- Editor of *Topological and Asymptotic Aspects of Group Theory*, American Mathematical Society, Contemporary Mathematics **394** (2006), ix+234pp.

Referee / Reviewer

- referee for: Annals of Mathematics; Advances in Mathematics; Annales de l'Institut Fourier; Transactions of American Mathematical Society; Israel Journal of Mathematics; Groups, Geometry, and Dynamics; Journal of Algebra; International Journal of Algebra and Computation; Mathematische Zeitschrift; Journal of Group Theory; Geometriae Dedicata; Linear Algebra and its Applications; Differential Geometry and its Applications; Topology and its Applications; Contemporary Mathematics; Communications in Algebra; Algebra Colloquium; Discrete Mathematics; Journal of Integer Sequences; Experimental Mathematics; Mathematica Moravica; Symmetry; Trends in Mathematics; Math Magazine; Acta Cybernetica; Information Processing Letters; Information Sciences;
- reviewer for Math Reviews (46 reviews, 1 featured)
- grant reviewer for US-Israel Binational Science Foundation
- grant reviewer for US Civilian Research and Development Foundation

National Committee work

- member of the MAA Subcommittee on USAMO (USA Mathematical Olympiad), invented problems for the competition and participated in the selection of the USA team for IMO (International Mathematics Olympiad), Boston MA 2002, Lincoln NE 2003, Lincoln NE 2004, Washington DC 2005, Boston MA 2006, Washington DC 2007, Washington DC 2008, Washington DC 2009, Boston MA 2013
- member of the Advisory Panel of the Committee on the American Mathematical Competitions, invented problems and participated in the selection for AMC-10, AMC-12, AIME (American Invitational Mathematics Examination), 2000-2009

Extracurricular work with talented students

- Taught 4 times at SMaRT Camp (NSF funded, 2-week summer camp for high school students), Texas A&M University, College Station TX, June 2010, June 2011, June 2012, June 2013
- Associate Director for Mathematical Olympiad Summer Program, organized by MAA, Lincoln NE, 2002, coached the team USA for the International Mathematical Olympiad, Glasgow, 2002

- deputy leader of the Macedonian team at the International Mathematical Olympiad 1993 (three bronze medals); leader of the Macedonian team at the Balkan Olympiad in Mathematics 1995 (one silver medal); deputy leader of the Macedonian team at the Balkan Olympiad in Computer Science 1995 (one bronze medal)
- preparation of students for the Putnam Exam: 2013, 2014 (Texas A&M), 1999 (SUNY Binghamton)
- Committee member for Texas A&M Talent Search, 2005-2007

Service within the University

- Graduate Academic Affairs Senate Committee, 2018-2020
- University Senate, 2019-2020

Service within the Department

- Chair, Department Personnel Committee, since 2022
- Curriculum Committee, since Fall 2018
- Subcommittee T (2012–2014), Graduate Committee (2009–11), Outreach Committee (2011–2014; 2015–2017), Honors Committee (2012–2015), Postdoc Committee (2014–2015)
- Invented problems and organized the Math Competition within the Math Awareness Month, Texas A&M, April/2011,2012,2013,2014
- Invented problems for the Power Team Exam (2010, 2011, 2013, 2014) and participated in the grading, Texas A&M High School Contest, November/2009,2010,2011,2012,2013,2014
- Advised students in the Honors Program, 2012.

AWARDS AND HONORS

- 2013 Departmental Service Award, Department of Mathematics, Texas A&M University, College Station TX
- 2001 Distinguished Dissertation Award, State University of New York, Binghamton NY
- 2001 Graduate Student Marshal, State University of New York, Binghamton NY
- 1999 Scholarship, academic year 1999-2000, Institute of International Education (sponsored by U.S. Department of State), New York NY

EXTERNAL FUNDING

Research grants, Principal Investigator (PI)

- 2011-14 NSF, DMS-1105520, *Self-similar groups of rooted tree automorphisms*, \$122,813
- 2008-11 NSF, DMS-0805932, *Finiteness properties of groups acting on rooted trees*, \$104,250

Research grants, Co-Principal Investigator (Co-PI)

- 2006-09 NSF, DMS-0600975, *Algebraic, combinatorial, algorithmic and spectral properties of groups generated by finite automata*, Principal Investigator R. Grigorchuk, \$192,390

Conference grants, Principal Investigator (PI)

- 2015 NSF, DMS-1555792, Conference on *Geometric and Probabilistic Methods in Group Theory and Dynamical Systems*, College Station TX, Co-PIs V. Nekrashevych, G. Pisier, Y. Vorobets, \$29,000
- 2015 NSA, Conference on *Geometric and Probabilistic Methods in Group Theory and Dynamical Systems*, College Station TX, Co-PI V. Nekrashevych, \$10,200
- 2005 NSF, DMS-0505808, Conference on *Geometric and Probabilistic Methods in Group Theory and Dynamical Systems*, College Station TX, Co-PIs R. Grigorchuk and G. Pisier, \$18,450
- 2005 Institute for Mathematics and its Applications (Minneapolis), Conference on *Geometric and Probabilistic Methods in Group Theory and Dynamical Systems*, College Station TX, \$5,000