

Kalina Mincheva

Curriculum Vitae

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Employment

July 2016 - Present **Gibbs Assistant Professor**, *Yale University*.

Education

- May 2016 **Ph.D. in Mathematics**, *Johns Hopkins University*, Baltimore, MD, USA.
Thesis title: Tropical geometry and idempotent semirings.
Thesis Advisor: Caterina Consani
- June 2010 **M.Sc. in Mathematics**, *Central European University*, Budapest, Hungary.
Thesis title: Automorphisms of non-abelian p-groups.
Thesis Advisor: Pál Hegedűs
- May 2008 **B.A. Summa Cum Laude**, *American University in Bulgaria*, Blagoevgrad, Bulgaria.
Computer Science (major), Mathematics (major)
Senior project title: Gröbner Basis Cryptosystems

Research interests

My research is in algebraic geometry, in particular tropical geometry and semiring algebra. I am interested in studying the geometry of tropical schemes and varieties in terms of the congruences on the polynomial and Laurent polynomial semiring with coefficients in the tropical semifield or other idempotent semifields.

Publications

- 2017 Bossinger L., Lamboglia S., Mincheva K. and Mohammadi F. Computing toric degenerations of flag varieties, eprint arXiv:1702.05480
- 2016 Mincheva, K. Prime congruences and tropical geometry, eprint, JHU Electronic Theses and Dissertations Collection.
- 2015 Joó, D. and Mincheva, K. On the dimensions of polynomial semirings, eprint arXiv:1510.02493
- 2014 Joó, D. and Mincheva, K. Prime congruences of idempotent semirings and a Nullstellensatz for tropical polynomials, eprint arXiv:1408.3817
- 2010 Mincheva K., Automorphisms of non-Abelian p-groups, eprint, CEU Electronic Theses and Dissertations Collection.

Invited Talks and Posters

- April 2017 Noncommutative Geometry: Number Theory (part of Alain Connes' 70th birthday celebration) - talk
- March 2016 AMS Sectional Meetings, AMS Special Session on Interactions Between Algebraic and Tropical Geometry - talk
- January 2016 Joint Math Meetings, AMS Session on Algebraic Geometry - talk
- Nov 2015 George Mason University - Combinatorics, Algebra and Geometry Seminar - talk
- October 2015 University of Pennsylvania - Algebra seminar - talk
- October 2015 Binghamton University, SUNY - Algebra seminar - talk
- May 2015 Aspects of Algebraic Geometry - Program for Women and Mathematics, IAS - talk
- April 2015 Student Tropical Algebraic Geometry Symposium 2015 - talk
- March 2015 Number Theory Seminar at Johns Hopkins University - talk
- Nov 2014 AGNES - poster

Programs Attended

- April 2017 AIM Workshop - Foundations of tropical schemes
- August 2016 Apprenticeship weeks, Fields Institute
- May 2015 Aspects of Algebraic Geometry - Program for Women and Mathematics, IAS
- June 2012 MSRI Summer School - Non-commutative algebraic geometry

Awards, Honors and Fellowships

- 2017 Institute Mittag-Leffler semester fellowship to attend the program on Tropical Geometry, Amoebas and Polytopes
- 2016 Clay Mathematics Institute scholarship to attend the Apprenticeship weeks at the Fields Institute
- 2016 William Kelso Morrill Award for Excellence in Mathematics
- 2016 Member of the Phi Beta Kappa Society
- 2010 Pro-Rector Award for highest GPA in the department
- 2010 Outstanding Academic Achievement Award
- 2008 Award for special achievements in Computer Science
- 2008 Award for special achievements in Mathematics
- 2007 10th AUBG Programming competition – 3rd place
- 2007 American Foundation for Bulgaria essay scholarship
- 2005-2008 President's list for high GPA
- 2004-2008 Dean's list for high GPA

Teaching

Instructor

- Fall 2016 Single Variable Calculus II

- Fall 2014 Introduction to Calculus
- Summer 2013 On-line Linear Algebra - co-instructor
Head Graduate Teaching Assistant
- 2010 - 2016 Linear Algebra, Calculus III, Calculus I
Graduate Teaching Assistant
- 2010 - 2016 Linear Algebra, Calculus I, Calculus II, Calculus III, Honors Linear Algebra, Abstract Algebra I
Exam preparation
- Fall 2015 Preparing problem sets for the PILOT learning - a peer-led-team learning program
- Spring 2012 Created and graded the JHU Future scholars exam
Undergraduate Teaching Assistant
- 2005 - 2006 Introductory Mathematics, Linear Algebra, Calculus I
Undergraduate Tutor
- 2006 Mathematics tutor at the math center
Undergraduate Grader
- 2006 - 2008 Differential Equations, Introductory Mathematics, Calculus II, Calculus III, Linear Algebra

Teacher Training

Johns Hopkins Teaching Academy - One year program (3 phases) designed to provide an overview and foundation for the teaching and give the opportunity for a hands-on introduction to college level teaching before graduation.

Extracurricular activities

- Fall 2013 Organizing the JHU Math TA lunches - a place where math TAs can share and discuss their experience in the classroom

Memberships

- AMS American Mathematical Society
- AWM Association for Women in Mathematics
- ACM Association for Computing and Machinery (SIGSAM)
- CIRTL The Center for the Integration of Research, Teaching, and Learning

Languages

- Bulgarian Native
- English Fluent
- French Advanced
- German Beginner