

ILIA D. MISHEV

Honors Residential Academic Program
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Academic Employment

- Instructor, Honors Residential Academic Program and Honors Program, University of Colorado Boulder, August 2020–Present.
- Lecturer, Department of Mathematics, University of Colorado Boulder, January 2013–August 2020.
- Visiting Assistant Professor, Fariborz Maseeh Department of Mathematics and Statistics, Portland State University, September 2011–June 2012.
- Lecturer, Department of Mathematics, University of Colorado Boulder, August 2009–August 2011.
- Teaching Assistant, Department of Mathematics, University of Colorado Boulder, August 2003–May 2009.
- Teaching Assistant, Department of Mathematics, Southern Illinois University at Carbondale, August 2001–May 2003.

Education

- Ph.D., Mathematics, University of Colorado Boulder, 2009.
Dissertation title: “Coxeter Group Actions on Supplementary Pairs of Saalschützian ${}_4F_3(1)$ Hypergeometric Series”.
Advisor: Prof. Eric Stade.
- M.A., Mathematics, University of Colorado Boulder, 2005.
- B.A., Mathematics, Pomona College, 2001.

Research Interests

- General area: Analysis.
- Current research area: Special functions (MSC2020 #33).
- Current research projects: Relations among hypergeometric series of type ${}_pF_p(1)$, terminating hypergeometric series, inverse transformations, orthogonal polynomials.

Publications

1. Relations for a class of terminating ${}_4F_3(4)$ hypergeometric series. Submitted. arXiv:2012.13822.
2. Extensions of classical hypergeometric identities of Bailey and Whipple. Submitted. arXiv:2006.15616.
3. Investigating the recovery of sparse signals by the Gerchberg–Saxton algorithm, with O. Castanos and C. de Souza. Submitted.
4. Coxeter group actions and limits of hypergeometric series, with R.M. Green and E. Stade, Ramanujan J. **53** (2020), no. 3, 607–651.
5. On a class of transformations of sequences of complex numbers, Houston J. Math. **44** (2018), no. 1, 97–119.
6. Relations among complementary and supplementary pairings of Saalschützian ${}_4F_3(1)$ series, with R.M. Green and E. Stade, Ramanujan J. **39** (2016), no. 3, 647–679.
7. Coxeter group actions on Saalschützian ${}_4F_3(1)$ series and very-well-poised ${}_7F_6(1)$ series, J. Math. Anal. Appl. **385** (2012), no. 2, 1119–1133.

Talks

1. Coxeter group actions on linear combinations of Saalschützian ${}_4F_3(1)$ hypergeometric series, Algebraic Lie Theory Seminar, University of Colorado Boulder, March 2009.
2. Coxeter groups and hypergeometric series, Slow Pitch Colloquium, University of Colorado Boulder, October 2008.
3. The Fourier transform and wavelets, Slow Pitch Colloquium, University of Colorado Boulder, October 2007.
4. An introduction to the Poincaré upper half-plane, Slow Pitch Colloquium, University of Colorado Boulder, September 2007.

Teaching Experience

Courses taught at the University of Colorado Boulder:

- MATH 4510 – Introduction to Probability Theory, Summer 2010, Summer 2011.
- MATH 4430 – Ordinary Differential Equations, Spring 2011, Summer 2014.
- MATH 3510 – Introduction to Probability and Statistics, Spring 2018, Summer 2018, Fall 2018, Summer 2019, Fall 2019, Spring 2020, Summer 2020.
- MATH 3130 – Introduction to Linear Algebra, Fall 2008, Fall 2009, Fall 2015.
- MATH 3001 – Analysis 1, Summer 2015.

- MATH 2510 – Introduction to Statistics, Fall 2014 (2 sections), Spring 2015, Fall 2015 (2 sections), Fall 2020 (2 Honors sections), Spring 2021 (2 Honors sections), Summer 2021 (Honors section).
- MATH 2400 – Calculus 3, Spring 2006, Fall 2006, Spring 2007, Summer 2013, Fall 2013, Spring 2014 (2 sections), Fall 2014, Spring 2015, Spring 2016, Summer 2016, Summer 2017.
- MATH 2300 – Calculus 2, Fall 2004, Spring 2005, Fall 2007, Spring 2014, Spring 2016 (2 sections including an Honors section), Fall 2016 (Honors section), Spring 2017 (3 sections including an Honors section), Spring 2018 (3 sections including an Honors section), Spring 2019 (3 sections including 2 Honors sections), Summer 2019, Spring 2020 (3 sections including an Honors Section), Spring 2021 (2 Honors sections).
- MATH 2130 – Introduction to Linear Algebra for Non-Mathematics Majors, Summer 2018, Fall 2018.
- MATH 1300 – Calculus 1, Fall 2005, Spring 2008, Fall 2009 (2 sections), Spring 2010 (2 sections), Fall 2013 (2 sections), Fall 2015 (Honors section), Spring 2016, Fall 2016 (Honors section), Fall 2017 (2 sections including an Honors section), Fall 2018 (2 sections including an Honors section), Spring 2019, Fall 2019 (3 sections including an Honors section), Summer 2020, Fall 2020 (2 Honors sections).
- MATH 1150 – Precalculus Mathematics, Fall 2016, Spring 2017, Fall 2017 (2 sections).
- MATH 1081 – Calculus for Social Science and Business, Spring 2011, Spring 2013 (2 sections).
- MATH 1071 – Finite Mathematics for Social Science and Business, Fall 2010.
- MATH 1021 – Numerical and Analytical College Trigonometry, Fall 2014, Spring 2015 (2 sections).
- MATH 1012 – Quantitative Reasoning and Mathematical Skills, Fall 2010.

Courses taught at Portland State University:

- MTH 413/513 – Introduction to Real Analysis III, Spring 2012. (Graduate course.)
- MTH 412/512 – Introduction to Real Analysis II, Winter 2012. (Graduate course.)
- MTH 411/511 – Introduction to Real Analysis I, Fall 2011. (Graduate course.)
- MTH 254 – Calculus IV, Spring 2012.
- MTH 253 – Calculus III, Winter 2012.
- MTH 252 – Calculus II, Fall 2011.

Courses taught at Southern Illinois University at Carbondale:

- MATH 140 – Short Course in Calculus, Fall 2002, Spring 2003.

Other Activities

- Faculty-in-Residence, Smith Hall, University of Colorado Boulder, August 2020–Present.
- Faculty supervisor for the Binomial Transforms of Sequences Project in the Faculty-in-Residence Math Lab, Honors Residential Academic Program, University of Colorado Boulder, Fall 2020, Spring 2021.
- Faculty supervisor for the Binomial Transforms of Sequences Project in the Experimental Mathematics Lab, University of Colorado Boulder, Fall 2018, Spring 2019.

Awards and Honors

- Named by at least one of 457 outstanding seniors and graduate students as the outstanding teacher that they had been associated with outside of their major, Portland State University, Spring 2012.
- University Summer Fellowship, University of Colorado Boulder, 2008.
- University Summer Fellowship, University of Colorado Boulder, 2007.
- Residence Life Academic Teaching Award, University of Colorado Boulder, Fall 2005.
- Pass with distinction on the Algebra Ph.D. Preliminary Examination, University of Colorado Boulder, August 2004.
- Honor Society of Phi Kappa Phi, SIUC chapter.

Service

- Teaching observations, Honors Residential Academic Program, University of Colorado Boulder, Fall 2020 (one teaching observation).
- Helped organize the Fall 2020 Honors Program Orientation and participated in a virtual breakout room discussion on Zoom with Honors students; September 2, 2020.
- Reviewer for Mathematical Reviews, August 2016–Present.
- Undergraduate Committee, University of Colorado Boulder, August 2008–May 2009.
- Slow Pitch Colloquium co-organizer, University of Colorado Boulder, August 2006–May 2008.

Personal

- U.S. citizen.

References

1. Prof. Eric Stade, University of Colorado Boulder, e-mail: stade@euclid.colorado.edu.

2. Prof. Richard Green, University of Colorado Boulder, e-mail: rmg@euclid.colorado.edu.
3. Prof. Robert S. Maier, University of Arizona, e-mail: rsm@math.arizona.edu.
4. Prof. Judith Packer, University of Colorado Boulder, e-mail: packer@euclid.colorado.edu.
5. Prof. Alexander Gorokhovskiy, University of Colorado Boulder, e-mail: Alexander.Gorokhovskiy@colorado.edu.
6. Prof. Robert Tubbs, University of Colorado Boulder, e-mail: tubbs@euclid.colorado.edu.
7. Prof. Larry Baggett, University of Colorado Boulder, e-mail: baggett@euclid.colorado.edu.
8. Prof. John Caughman, Portland State University, e-mail: caughman@pdx.edu.