Alexei Oblomkov

Professor of Mathematics

Department of Mathematics and Statistics, University of Massachusetts Amherst

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Citizenship: Russia; US Permanent Resident since 2010; US citizen since 2014.

Research Interests

Representation theory: double affine Hecke algebras, symplectic reflection algebras, Cherednik algebras, special functions and orthogonal polynomials. **Algebraic geometry:** Hilbert schemes, Gromov–Witten and Donaldson–Thomas invariants, affine Springer fibers, noncommutative and projective geometry. **Low-dimensional topology:** knot homology, HOMFLYPT homology, categorification. **Mathematical physics:** integrable systems, inverse scattering, topological quantum field theory.

Education

2005	**Ph.D. in Mathematics** Massachusetts Institute of Technology. Advisor: Pavel Etingof.
1999–2001	**Graduate study** Independent University of Moscow; Moscow State University.
1998	**M.A. in Pure Mathematics** Independent University of Moscow; Moscow State University.

Employment

2020–	**Professor** University of Massachusetts, Amherst.
2018 (Spring)	**Research Professor** Mathematical Sciences Research Institute (MSRI), Berkeley.
2015–2019	**Associate Professor** University of Massachusetts, Amherst.
2009–2015	**Assistant Professor** University of Massachusetts, Amherst.
2008–2009	**Visiting Assistant Professor** Princeton University.
2006–2008	**Instructor** Princeton University.
2005–2006	**Postdoctoral Fellow** Institute for Advanced Study, Princeton.

Grants

2022–2025	NSF DMS-2200798, $217,038, sole PI.
2018–2021	NSF FRG DMS-1760373, $300,000 for UMass.
2015–2016	NSF DMS-1546311, workshop funding, $25,000, sole co-PI.

2014–2019	NSF CAREER DMS-1352398, $420,000, sole PI.
2010–2013	NSF DMS-1001609, $123,910, sole PI.
2007–2010	NSF DMS-0701367, $111,300, sole PI.

Awards and Honors

2018	Simons Fellow in Mathematics, Fall 2018.
2014–2019	NSF CAREER Award.
2010–2012	Alfred P. Sloan Research Fellowship.
2004	Charles and Jennifer Johnson Prize, MIT departmental award for the best paper submitted by a graduate student.
2003, 2004	Rogers Family Prize, MIT departmental award for the best mentor–mentee team in the Summer Program for Undergraduate Research.

Publications

Preprints and submitted work

12. (with I. Cavey, E. Gorsky, J. Turner) *Wall-crossing for Hilbert schemes*, arXiv:2607.05624.
11. (with L. Rozansky) *A categorification of representations of* $U_q(\mathfrak{gl}_{1|1})$, arXiv:2510.13039.
10. (with I. Cavey, E. Gorsky, J. Turner) *Newton–Okounkov bodies for nested Hilbert schemes*, arXiv:2510.07420.
9. (with O. Kivinen, G. Wyss) *Discriminants and motivic integration*, arXiv:2503.18449.
8. (with L. Kamenova, G. Mongardi) *Fixed loci of symplectic automorphisms of* $K3^{[n]}$ *and n-Kummer type manifolds*, arXiv:2308.14692.
7. (with L. Rozansky) *Matrix factorizations and* $gl(m|k)$*-quantum invariants*, arXiv:2212.02665.
6. (with N. Bottman) *A compactification of the moduli space of marked vertical lines in* $\mathbb{C}^2$, arXiv:1910.02037.
5. (with L. Rozansky) *Dualizable link homology*, arXiv:1905.06511.
4. *EGL formula for DT/PT theory of local curves*, arXiv:1901.03014.
3. (with E. Carlsson) *Affine Schubert calculus and double coinvariants*, arXiv:1801.09033.
2. (with L. Rozansky) *A categorification of a cyclotomic Hecke algebra*, arXiv:1801.06201.
1. (with Z. Yun) *The cohomology ring of certain compactified Jacobians*, arXiv:1710.05391.

Published and accepted papers

41. (with E. Gorsky, M. Mazin) *Generic curves and non-coprime Catalans*, Algebraic Geometry (2026), arXiv:2210.12569.
40. (with E. Gorsky, O. Kivinen) *The affine Springer fiber – sheaf correspondence*, Advances in Mathematics **464** (2025), arXiv:2204.00303.
39. (with L. Rozansky) *Categorical Chern character and braid groups*, Adv. Math. **437** (2024), 66 pp., arXiv:1811.03257.
38. (with L. Rozansky) *3D TQFT and HOMFLYPT homology*, Lett. Math. Phys. **113** (2023), no. 3, Paper No. 71, 62 pp., arXiv:1812.06340.
37. (with L. Rozansky) *HOMFLYPT homology of Coxeter links*, Transform. Groups **28** (2023), no. 3,

1245–1275, arXiv:1706.00124.

36. (with M. Moreira, A. Okounkov, R. Pandharipande) *Stationary Virasoro constraints for stable pairs on toric varieties*, Forum Math. Pi **10** (2022), 62 pp.
35. (with L. Kamenova, G. Mongardi) *Symplectic involutions of $K3^{[n]}$ type and Kummer n type manifolds*, Bull. Lond. Math. Soc. **54** (2022), no. 3, 894–909, arXiv:1809.02810.
34. (with A. Okounkov, R. Pandharipande) *GW/PT descendent correspondence via vertex operators*, Comm. Math. Phys. **374** (2020), no. 3, 1321–1359, arXiv:1806.00714.
33. (with L. Rozansky) *Affine braid group, JM elements and knot homology*, Transform. Groups **24** (2019), no. 2, 531–544, arXiv:1702.03569.
32. *Notes on matrix factorizations and knot homology*, Lecture Notes in Math. **2248**, Fond. CIME/CIME Found. Subser., Springer, Cham, 2019, 83–127, arXiv:1901.04052.
31. (with L. Rozansky) *Knot homology and sheaves on the Hilbert scheme of points on the plane*, Selecta Math. (N.S.) **24** (2018), no. 3, 2351–2454, arXiv:1608.03227.
30. (with V. Shende, J. Rasmussen) *The Hilbert scheme of a plane curve singularity and HOMFLY homology of its link*, Geom. Topol. **22** (2018), no. 2, 645–691, arXiv:1201.2115.
29. (with Z. Yun) *Geometric representations of graded and rational Cherednik algebras*, Adv. Math. **292** (2016), 601–706, arXiv:1407.5685.
28. (with S. Nawata) *Lectures on knot homology*, Proceedings of the Workshop on Physics and Mathematics of Link Homology, Centre de Recherches Mathématiques, Université de Montréal, 137–177, Contemp. Math. **680**, Amer. Math. Soc., Providence, RI, 2016, arXiv:1510.01795.
27. (with E. Gorsky, V. Shende, J. Rasmussen) *Torus knots and rational DAHA*, Duke Math. J. **163** (2014), no. 15, 325–401, arXiv:1207.4523.
26. (with E. Gorsky, J. Rasmussen) *On stable Khovanov homology of torus knots*, Exp. Math. **22** (2013), no. 3, 265–281, arXiv:1206.2226.
25. (with V. Shende) *The Hilbert scheme of a plane curve singularity and the HOMFLY polynomial of its link*, Duke Math. J. **161** (2012), no. 7, 1271–1303, arXiv:1003.1568.
24. (with D. Maulik, A. Okounkov, R. Pandharipande) *The Gromov–Witten/Donaldson–Thomas correspondence for toric 3-folds*, Invent. Math. **186** (2011), no. 2, 435–479, arXiv:0809.3976.
23. (with E. Stoica) *Finite dimensional representations of the double affine Hecke algebra of rank* 1, J. Pure Appl. Algebra **213** (2009), no. 5, 766–771, arXiv:math.RT/0409256.
22. (with D. Maulik) *Quantum cohomology of* $\mathrm{Hilb}_m(A_n)$, J. Amer. Math. Soc. **22** (2009), 1055–1091, arXiv:0802.2737.
21. (with D. Maulik) *Donaldson–Thomas theory of $A_n \times \mathbb{P}^1$*, Compos. Math. **145** (2009), no. 5, 1249–1276, arXiv:0802.2739.
20. (with P. Etingof, S. Loktev, L. Rybnikov) *A Lie-theoretic construction of spherical symplectic reflection algebras*, Transform. Groups **13** (2008), no. 3–4, 541–556, arXiv:0801.2339.
19. (with P. Etingof, W. L. Gan, V. Ginzburg) *Harish-Chandra homomorphisms and symplectic reflection algebras for wreath-products*, Publ. Math. IHÉS **105** (2007), 91–155, arXiv:math.RT/0511489.
18. *Deformed Harish-Chandra homomorphism for the cyclic quiver*, Math. Res. Lett. **33** (2007), no. 3, 359–372, arXiv:math.RT/0504395.
17. (with P. Etingof, E. Rains) *Generalized double affine Hecke algebras of rank* 1 *and quantized Del Pezzo surfaces*, Adv. Math. **212** (2007), no. 10, 749–796, arXiv:math.QA/0406480.

16. (with P. Etingof, W. L. Gan) *Generalized double affine Hecke algebras of higher rank*, J. Reine Angew. Math. (Crelle) **600** (2006), 177–201, arXiv:math.QA/0504089.
15. (with P. Etingof) *Quantization and orbifold cohomology*, Proceedings of the JHLM Workshop, Contemp. Math. **417** (2006), 171–182, arXiv:math.QA/0311005.
14. (with A. Penskoi) *Laplace transformations and spectral theory of two-dimensional semi-discrete and discrete hyperbolic Schrödinger operators*, IMRN (2005), no. 18, 1089–1126, arXiv:math-ph/0311036.
13. (with J. V. Stokman) *Vector valued spherical functions and Macdonald–Koornwinder polynomials*, Compositio Math. **141** (2005), no. 5, 1310–1350, arXiv:math.QA/0311512.
12. *Heckman–Opdam's Jacobi polynomials for the BC_n root system and generalized spherical functions*, Adv. Math. **186** (2004), no. 1, 153–180, arXiv:math.RT/0202076.
11. *The double affine Hecke algebras and Calogero–Moser spaces*, Represent. Theory **8** (2004), 243–266, arXiv:math.RT/0303190.
10. *Double affine Hecke algebras of rank 1 and affine cubic surfaces*, IMRN (2004), no. 18, 877–912, arXiv:math.RT/0306393.
9. (with O. Chalykh, P. Etingof) *Generalized Lamé operators*, Comm. Math. Phys. **239** (2003), no. 1–2, 115–153, arXiv:math.QA/0212029.
8. *The isoenergy spectral problem for multidimensional difference operators*, (Russian) Funktsional. Anal. i Prilozhen. **36** (2002), no. 2, 45–61; translation in Funct. Anal. Appl. **36** (2002), no. 2, 120–133.
7. *On the spectral properties of two classes of difference periodic operators*, (Russian) Mat. Sb. **193** (2002), no. 4, 87–112; translation in Sb. Math. **193** (2002), no. 3–4, 559–584.
6. *Difference operators on two-dimensional regular lattices*, (Russian) Teoret. Mat. Fiz. **127** (2001), no. 1, 34–46; translation in Theoret. and Math. Phys. **127** (2001), no. 1, 435–445.
5. (with A. Penskoi) *Two-dimensional algebro-geometric difference operators*, J. Phys. A **33** (2000), no. 50, 9255–9264.
4. (with O. Chalykh) *Harmonic oscillator and Darboux transformations in many dimensions*, Phys. Lett. A **267** (2000), no. 4, 256–264.
3. (with F. L. Zak, A. V. Inshakov, S. M. L'vovski) *On congruences of lines of order one in $\mathbb{P}^3$*, preprint (1999), available at `http://www.mccme.ru/ium/postscript/s99/notes`.
2. *Monodromy-free Schrödinger operators with quadratically increasing potential*, (Russian) Teoret. Mat. Fiz. **121** (1999), no. 3, 374–386; translation in Theoret. and Math. Phys. **121** (1999), no. 3, 1574–1584.
1. *Integrability of some quantum systems associated with the root system B_2*, (Russian) Vestnik Moskov. Univ. Ser. I Mat. Mekh. **72** (1999), no. 2, 6–9; translation in Moscow Univ. Math. Bull. **54** (1999), no. 2, 5–8.

INVITED TALKS AND LECTURES

2024

– *CalTech*, Algebraic Geometry Seminar, 10/2024.
– *EPFL, Switzerland*, week-long lecture course on TQFT, 10/2024.
– *UC Davis*, Geometry Seminar, 06/2024.
– *Les Diablerets, Switzerland*, workshop on categorical topological invariants, 01/2024.

2023

– *MIT*, Representation Theory Seminar, 11/2023.
– *Johns Hopkins University*, Topology Seminar, 10/2023.
– *University of Notre Dame*, workshop on matrix factorizations, 10/2023.
– *Simons Center for Geometry and Physics*, lectures on the GW/PT correspondence, 09/2023.
– *American Institute of Mathematics*, workshop on knot homology, 08/2023.
– *UC Davis*, Algebraic Geometry Seminar, 06/2023.

2022

– *Stony Brook University*, Algebraic Geometry Seminar, 12/2022.
– *Yale University*, Representation Theory Seminar, 11/2022.
– *Harvard University*, Mathematical Physics Seminar, 10/2022.
– *Washington University*, Geometry Seminar, 05/2022.

2021

– *University of Hamburg*, Mathematical Physics Colloquium, 10/2021.

2019

– *University of Edinburgh, UK*, Geometric Representation Theory and Low-Dimensional Topology, 06/2019.
– *Schloss Hünigen, Switzerland*, Helvetic Algebraic Geometry Seminar, 06/2019.
– *ETH Zürich, Switzerland*, Algebraic Geometry Seminar, 06/2019.
– *CalTech*, Hidden Algebraic Structures in Topology, 04/2019.

2018

– *Columbia University*, Informal Mathematical Physics Seminar, 10/2018.
– *ETH Zürich, Switzerland*, Algebraic Geometry Seminar, 10/2018.
– *MSRI*, Enumerative Geometry Seminar, 04/2018.
– *UC Davis*, Geometry and Topology Seminar, 04/2018.
– *CIME, Cetraro, Italy*, three lectures at the Summer School on Geometric Representation Theory and Gauge Theory, 2018.

2017

– *Perimeter Institute, Canada*, Mathematical Physics Seminar, 10/2017.
– *University of Waterloo, Canada*, Colloquium, 10/2017.
– *University of Hamburg, Germany*, String Math, invited speaker, 07/2017.
– *CalTech*, Mathematical Physics Seminar, 05/2017.
– *MIT*, Representation Theory Seminar, 03/2017.

2016

– *Fields Institute, Canada*, one-week workshop on Hall algebras, enumerative invariants and gauge theory, invited speaker, 11/2016.
– *ICTP, Trieste, Italy*, one-week workshop on gauge theory and related fields, invited speaker, 09/2016.
– *CRM, Montreal, Canada*, one-week workshop on algebraic cycles, invited speaker, 06/2016.
– *Northeastern University*, Algebraic Geometry Seminar, 03/2016.

2015

– *Texas A&M University*, Geometry and Combinatorics Seminar, 10/2015.
– *IAS/Park City Mathematics Institute*, Summer School on Geometric Representation Theory, invited speaker, 06/2015.
– *Stony Brook University*, one-week workshop on knot homology at SCGP, invited speaker, 05/2015.

2014

– *CRM, Montreal, Canada*, two-week workshop, four lectures on knot homology, DAHA and singular curves, 07/2014.
– *Banff International Research Station*, one-week workshop on topological recursion, quantum curves and quantum invariants, invited speaker, 06/2014.
– *Northwestern University*, conference on QFT and representation theory, invited speaker, 05/2014.
– *University of Geneva, Switzerland*, conference on quantum invariants and geometry, invited speaker, 04/2014.
– *EPFL, Switzerland*, three lectures, Geometry Seminar, 04/2014.
– *University of Maryland*, Colloquium, 04/2014.
– *Northwestern University*, Topology Seminar, 03/2014.
– *UC Davis*, three lectures on knot invariants and algebraic geometry, 02/2014.

2013

– *Stanford University*, Algebraic Geometry Seminar, 09/2013.
– *Banff International Research Station*, one-week workshop on motivic DT invariants, invited speaker, 06/2013.
– *MSRI*, conference on noncommutative geometry, invited speaker, 05/2013.
– *University of Michigan, Ann Arbor*, Lie Theory Seminar, 04/2013.

2011

– *Rutgers University*, Mathematical Physics Seminar, 12/2011.
– *University of North Carolina, Chapel Hill*, Geometry and Mathematical Physics Seminar, 12/2011.
– *University of North Carolina, Chapel Hill*, Colloquium, 12/2011.
– *Oxford University, UK*, series of lectures on knot invariants, the Hilbert scheme of points on curves and DAHAs, 11/2011.
– *Simons Center for Geometry and Physics*, conference on homological invariants in low-dimensional topology, 06/2011.
– *Simons Center for Geometry and Physics*, conference on mirror symmetry and equivariant cohomology, 05/2011.
– *University of Texas, Austin*, Geometry Seminar, 03/2011.
– *University of Michigan, Ann Arbor*, Mathematical Physics Seminar, 02/2011.

2010

– *University of Illinois at Urbana–Champaign*, Wall-Crossing in Mathematics and Physics, 05/2010.
– *University of Illinois, Chicago*, Algebraic Geometry Seminar, 03/2010.

2009

– *University of Wisconsin, Madison*, Geometry Seminar, 11/2009.
– *University of Chicago*, Representation Theory Seminar, 11/2009.

– *University of Michigan, Ann Arbor*, Mathematical Physics Seminar, 10/2009.
– *Boston University*, Geometry Seminar, 10/2009.
– *MIT*, Noncommutative Algebra Seminar, 05/2009.
– *University of Illinois at Urbana–Champaign*, AMS Special Session on TQFT, 04/2009.
– *Cornell University*, Representation Theory Seminar, 04/2009.
– *Stony Brook University*, Colloquium, 01/2009.

2008

– *University of Massachusetts, Amherst*, special seminar, 12/2008.
– *University of Texas, Austin*, special seminar, 12/2008.
– *University of Illinois at Urbana–Champaign*, Algebraic Geometry Seminar, 12/2008.
– *University of Michigan*, special seminar, 11/2008.

2002–2007

– *Northwestern University*, Mathematical Physics Seminar, 10/2007.
– *University of California, Riverside*, Lie Theory Seminar, 12/2006.
– *University of Virginia, Charlottesville*, Colloquium, 11/2006.
– *University of Virginia, Charlottesville*, Algebra Seminar, 11/2006.
– *University of Massachusetts, Amherst*, Representation Theory Seminar, 12/2005.
– *University of Oregon*, AMS Special Session on Noncommutative Algebra and Noncommutative Birational Geometry, 11/2005.
– *University of Washington*, Algebra Seminar, 11/2005.
– *Rutgers University*, Lie Group Seminar, 10/2005.
– *UC Santa Barbara*, AMS Special Session on Algebraic Geometry and Combinatorics, 04/2005.
– *University of Michigan*, Algebra Seminar, 12/2004.
– *MIT*, Infinite-Dimensional Algebra Seminar, 04/2004.
– *Yale University*, Geometry, Symmetry and Physics, 12/2003.
– *University of Massachusetts, Amherst*, Representation Theory Seminar, 12/2003.
– *Cornell University*, Lie Groups Seminar, 01/2003.
– *MIT*, Infinite-Dimensional Algebra Seminar, 11/2002.
– *University of Amsterdam*, lectures on special functions, 07/2002.

EDITORIAL SERVICE

2025– **Managing Editor, *Galileo***
Mathematical Sciences Publishers (MSP). *Galileo* publishes research and research-expository work across the mathematical sciences, with an emphasis on new phenomena and on conveying the discovery process; first issue 2027.

Refereeing for journals

Annals of Mathematics; Inventiones Mathematicae; Journal of the AMS; Communications in Mathematical Physics; Advances in Mathematics; Compositio Mathematica; Selecta Mathematica; IMRN; Transactions of the AMS; Transformation Groups; Journal of Algebra; Journal of Algebraic Combinatorics A; Contemporary Mathematics.

PROFESSIONAL SERVICE

Grant proposal review

NSERC (Canada); NSA; Swiss National Science Foundation; the Netherlands Organisation for Scientific Research (NWO); the Chilean National Science and Technology Commission; Newton Institute scientific proposals. Served on three NSF panels.

Conference organization

2025	Co-organizer, month-long program, Bernoulli Center, EPFL, Lausanne.
2023	Co-organizer, two-month program, Simons Center for Geometry and Physics.
2023	Co-organizer, AIM workshop.
2021–2022	Co-organizer, AIM research community.
2022	Co-organizer, one-week FRG workshop, University of Oregon.
2020	Co-organizer, one-week FRG workshop, UMass Amherst.
2019	Co-organizer, one-week FRG workshop, UC Davis.
2018	Co-organizer, one-week AIM workshop.
2017	Co-organizer, three-day workshop, Amherst.
2015	Co-organizer, three-day workshop, Amherst.
2014	Co-organizer, one-week workshop, Banff.

DEPARTMENTAL AND UNIVERSITY SERVICE

University of Massachusetts, Amherst

- Co-organizer, Valley Geometry Seminar and Representation Theory Seminar (2009–); Quantum Field Theory Seminar (Fall 2010).
- Lectures in the Algebraic Geometry Reading Seminar (Spring 2009, 5 lectures; Spring 2010, 2; Fall 2010, 2; Spring 2011, 2; Spring 2012, 2).
- Colloquium Committee (Fall 2010, Fall 2013, Spring 2014, 2016–2017).
- Advanced Graduate Algebra Exam Committee (Fall 2011–Spring 2013); Advanced Graduate Topology Exam Committee (Fall 2014–Spring 2023).
- Faculty Search Committee (Fall 2011, Spring 2012, Fall 2012, Spring 2013, Spring 2019); Chair, Search Committee for Visiting Assistant Professor (2018–).
- Undergraduate Advisor (2010–); Undergraduate Affairs Committee (Fall 2017); Climate Committee (2023).
- Trained the UMass Putnam team (2015, 2016, 2022).

Princeton University

- Co-organizer, Princeton Algebraic Geometry Seminar (Spring 2009).
- Served on six general exam committees; advised an undergraduate senior thesis.

PH.D. ADVISING

2024 **Arthur Wang**
Khovanov homology and matrix factorizations, UMass Amherst.

2016 **Thomas Shelly**
Skein theory and algebraic geometry for the two-variable Kauffman invariant of links, UMass Amherst. Subsequently Visiting Assistant Professor, Mount Holyoke College.

2015 **Tobias Wilson**
Topology of the affine Springer fiber in type A, UMass Amherst. Subsequently at Bloomberg.

Current students

- Pranav Kalkunte — motivic integration.
- Chuijiao Zhang — Springer theory for DAHAs.

Undergraduate Research Mentoring

Summer 2025	REU program, UMass Amherst — mentored a team of four students.
Summer 2019	REU program, UMass Amherst — team of four students.
Summer 2018	REU program, UMass Amherst — team of four students.
Summer 2017	REU program, UMass Amherst — team of four students.
Summer 2016	REU program, UMass Amherst — team of four students.
Summer 2015	REU program, UMass Amherst — team of four students.
Summer 2013	REU program, UMass Amherst — one student.
Summer 2004	Summer Program in Undergraduate Research (SPUR), MIT.
Summer 2003	Summer Program in Undergraduate Research (SPUR), MIT.

Teaching

University of Massachusetts, Amherst

Spring 2025	Graduate Algebra (Math 613).
Fall 2024	Graduate Algebra (Math 612).
Spring 2024	Graduate Complex Analysis (Math 621).
Spring 2024	Introduction to Linear Algebra (Math 235).
Fall 2023	Introduction to Complex Analysis (Math 421).
Spring 2023	Introduction to Linear Algebra (Math 235).
Fall 2022	Representation Theory (Math 680).
Fall 2022	Putnam Seminar (Math 490).
Spring 2022	Introduction to Complex Analysis (Math 421).
Fall 2021	Multivariable Calculus (Math 233).
Spring 2021	Graduate Topology II (Math 672).
Fall 2020	Multivariable Calculus (Math 233).
Fall 2020	Graduate Topology I (Math 671).
Spring 2020	Introduction to Linear Algebra (Math 235).
Fall 2019	Introduction to Linear Algebra (Math 235).
Fall 2019	Graduate Topology I (Math 671).
Spring 2019	Graduate Topology II (Math 672).

Spring 2019	Advanced Multivariable Calculus (Math 425).
Fall 2017	Introduction to Linear Algebra (Math 235).
Fall 2016	Introduction to Topology (Math 671).
Fall 2016	Introduction to Linear Algebra (Math 235).
Fall 2015	Introduction to Linear Algebra (Math 235).
Fall 2015	Introduction to Representation Theory (Math 797).
Spring 2015	Introduction to Linear Algebra (Math 235) — course chair for five additional sections.
Fall 2014	Introduction to Topology (Math 671).
Fall 2014	Introduction to Linear Algebra, Honors (Math 235H).
Fall 2013	Knot Invariants (Math 797KI).
Fall 2013	Introduction to Linear Algebra (Math 235).
Fall 2012	Putnam Exam (Math 491A).
Fall 2012	Multivariable Calculus (Math 233).
Fall 2012	Introduction to Linear Algebra (Math 235).
Fall 2011	Introduction to Linear Algebra (Math 235).
Fall 2010	Graduate Algebra (Math 631).
Spring 2010	Calculus I (Math 131, 2 sections) — lectures and problem sessions.

Princeton University

Spring 2009	Multivariable Calculus (MAT 201) — review sessions.
Spring 2009	Junior Seminar: Representation Theory of Finite Groups — organized the seminar.
Fall 2008	Advanced Multivariable Calculus (MAT 203), course head — lectures and review sessions.
Spring 2008	Multivariable Calculus (MAT 201, 2 sections) — lectures and problem sessions.
Fall 2007	Advanced Multivariable Calculus (MAT 203, 2 sections) — lectures and problem sessions.
Spring 2007	Multivariable Calculus (MAT 201, 2 sections) — lectures and problem sessions.
Fall 2006	Advanced Multivariable Calculus (MAT 203, 2 sections) — lectures and problem sessions.

Massachusetts Institute of Technology

Spring 2004	Linear Algebra (18.06) — problem sessions.
Fall 2003	Advanced Calculus (18.01A) and Multivariable Calculus (18.02) — problem sessions.
Spring 2003	Differential Equations (18.03) — problem sessions and grading.
2001–2002	Grading for two graduate-level courses.

Independent University of Moscow

1999–2001	Advanced algebra courses — problem sessions.