

Seth Shelley-Abrahamson

CONTACT INFORMATION	Email: <code>sethsa [at symbol] alum.mit.edu</code> Webpage: <code>math.mit.edu/~sethsa/</code>	
RESEARCH INTERESTS	Representation Theory, Rational Cherednik Algebras	
EDUCATION	Massachusetts Institute of Technology Ph.D., Mathematics Advisors: Pavel Etingof and Ivan Losev	09/2013 - 06/2018
	Stanford University B.S., Mathematics with Honors Computer Science Minor	09/2009 - 06/2013
HONORS AND AWARDS	Marc A. Kastner Fellowship (MIT) George Lusztig PRIMES Mentor (MIT) Hartley Rogers Jr. Family Prize (MIT) Firestone Medal for Excellence in Undergraduate Research (Stanford)	Spring 2018 2016 2015 2013
PUBLICATIONS AND PREPRINTS	8. <i>The Dunkl weight function for rational Cherednik algebras</i> . Preprint, arXiv:1803.00440 (2018). 7. <i>Parameters for generalized Hecke algebras in type B</i> (with M. Murin). To appear in the Journal of Algebra and Its Applications (2018). 6. <i>On refined filtration by supports for rational Cherednik categories \mathcal{O}</i> (with I. Losev). <i>Selecta Mathematica (N.S.)</i> 24 (2018), no. 2, 1729-1804. 5. <i>Towards a classification of finite-dimensional representations of rational Cherednik algebras in type D</i> (with A. Sun). To appear in the Journal of Algebra and Its Applications (2018). 4. <i>Hopf modules and representations of finite wreath products</i> . <i>Algebras and Representation Theory</i> 20 (2017), 123-145. 3. <i>A family of finite-dimensional representations of generalized double affine Hecke algebras of higher rank</i> (with Y. Fu). <i>SIGMA</i> 12 (2016), 055. 2. <i>The $\mathcal{B}(\infty)$ crystal for a family of generalized quantum groups</i> (with U. Roy). <i>Journal of Algebra</i> 465 (2016), 1-12. 1. <i>Higher Bruhat orders in type B</i> (with S. Vijaykumar). <i>Electronic Journal of Combinatorics</i> 23(3) (2016).	
PRESENTATIONS	18. <i>The Dunkl weight function for representations of rational Cherednik algebras</i> , February 8, 2018. Northeastern University Geometry, Physics, and Representation Theory Seminar. 17. <i>Counting irreducible representations of rational Cherednik algebras of given support</i> , December 15, 2017. Transformation Groups 2017 Conference, Skolkovo Institute of	

Science and Technology.

16. *The Dunkl weight function for representations of rational Cherednik algebras*, November 13, 2017. Yale Geometry, Symmetry, and Physics Seminar.
15. *The Dunkl weight function for representations of rational Cherednik algebras*, November 7, 2017. University of Oregon Algebra Seminar.
14. *Counting irreducible representations of rational Cherednik algebras of given support*, November 5, 2017. AMS Western Section, University of California, Riverside.
13. *Counting irreducible representations of rational Cherednik algebras of given support*, May 12, 2017. MIT Pure Mathematics Graduate Student Seminar.
12. *Counting irreducible representations of rational Cherednik algebras of given support*, May 5, 2017. UCLA Algebra Seminar.
11. *Counting irreducible representations of rational Cherednik algebras of given support*, March 1, 2017. MIT Lie Groups Seminar.
10. *Reminder on affine Hecke algebras*, February 7 and 14, 2017. MIT-Northeastern Graduate Student Seminar on Double Affine Hecke Algebras and Elliptic Hall Algebras.
9. *Coxeter, Hecke, and Cherednik*, April 15, 2016. MIT Pure Mathematics Graduate Student Seminar.
8. *Sheaves on the étale site, direct and inverse image*, February 9 and 16, 2016. MIT Graduate Seminar on Etale Cohomology.
7. *Riemann-Hilbert correspondence in dimension 1*, October 27, 2015. MIT Graduate Seminar on D -Modules and Perverse Sheaves.
6. *Crash course on D -modules*, October 6 and 13, 2015. MIT Graduate Seminar on D -Modules and Perverse Sheaves.
5. Three 3-hour lectures at the MIT Graduate Student D -Modules Seminar, Spring 2015.
4. *Baby Verma modules for rational Cherednik algebras* (after I. Gordon's paper), February 13, 2015. MIT-Northeastern Graduate Seminar on Quiver Varieties.
3. *Dimensions of unipotent principal series representations*, October 7, 2014. MIT-Northeastern Graduate Seminar on Hecke Algebras and Affine Hecke Algebras.
2. *Motivation and first results for Hecke algebras of finite Coxeter groups*, September 9, 2014. MIT-Northeastern Graduate Student Seminar on Hecke Algebras and Affine Hecke Algebras.
1. *Positive self-adjoint Hopf modules and representations of finite wreath products*, April 4, 2014. MIT Pure Mathematics Graduate Student Seminar.

TEACHING
EXPERIENCE

Course Administrator and Recitation Instructor for MIT Course 18.06, Linear Algebra, Fall 2017
Recitation Instructor for MIT Course 18.02, Multivariable Calculus, Fall 2016

Organizer and Head Tutor, MIT Math Learning Center	2015-2016
Teaching Assistant for MIT Course 18.745, Introduction to Lie Algebras	Spring 2015
Teaching Assistant for MIT Course 18.702, Algebra II	Spring 2015
Teaching Assistant for MIT Course 18.905, Algebraic Topology I	Fall 2014

MATHEMATICS
MENTORING
EXPERIENCE

Graduate Student Mentor in MIT Programs:	
• Summer Program in Undergraduate Research	2014, 2015, 2017
• Program for Research in Mathematics, Engineering and Science	2015, 2016
• Directed Reading Program	2014, 2016
• Research Science Institute	2015
• Undergraduate Research Opportunities Program	2015
Resident Tutor, Roble Hall, Stanford University	2011-2013
50-series Math Tutor, Mathematics Department, Stanford University	2010-2013

PROFESSIONAL
ACTIVITIES

Referee for *Transformation Groups*, *International Mathematics Research Notices*, and *Journal of Combinatorial Algebra*

Co-organizer of the MIT *Pure Mathematics Graduate Student Seminar*, 2014-2015