

Evgeny Shinder  
CURRICULUM VITAE

## Contact information

Evgeny SHINDER

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## Research interests

Algebraic Geometry, in particular derived categories of coherent sheaves and the Grothendieck ring of varieties and their application to birational geometry.

## Positions held

From 2014: Lecturer<sup>1</sup> at the University of Sheffield

2013/14: Whittaker Postdoc at the University of Edinburgh

2012/13: Postdoc at the University of Bonn, the Hausdorff Research Institute for Mathematics, and the University of Mainz

2011/12: Postdoc at the Max Planck Institute for Mathematics

Since 2017 I am also an associated member of the International Laboratory for Mirror Symmetry and Automorphic Forms at the Higher School of Economics in Moscow.

## Education

2005: BSc, MSc at the Saint-Petersburg State University. MSc thesis: “Mischenko and Quillen formulas for oriented cohomology pretheories”. Advisor Ivan Panin.

2011: PhD at Northwestern University. PhD thesis: “On motives of algebraic groups associated to division algebras”. Advisor Andrei Suslin.

2017: Fellow of the Higher Education Academy, after completion of the Certificate of Learning and Teaching two-year part-time program at the University of Sheffield.

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<sup>1</sup>Lecturer post is that of a tenured junior faculty member in the UK.

## Publications

1. *Grothendieck ring of varieties, L- and D-equivalence, and families of quadrics* (with A. Kuznetsov), *Selecta Math. (N.S.)* 24 (2018), no. 4, 3475–3500.
2. *Group actions on categories and Elagin's theorem revisited*, *Eur. J. Math.* 4 (2018), no. 1, 413–422.
3. *The Bogomolov-Prokhorov invariant of surfaces as equivariant cohomology*, *Bull. Korean Math. Soc.* 54 (2017), no. 5, 1725–1741.
4. *On the geometry of the LLSvS eightfold* (with A. Soldatenkov), *Kyoto J. Math.* 57 (2017), no. 4, 789–806.
5. *Derived categories of Keum's fake projective planes* (with S. Galkin, L. Katzarkov, A. Mellit), *Adv. Math.* 278 (2015), 238–253.
6. *Linear Mahler Measures and Double L-values of Modular Forms* (with M. Vlasenko), *J. Number Theory* 142 (2014), 149–182.
7. *On the motive of the group of units of a division algebra*, *J. K-Theory* 13 (2014), no. 3, 533–561.
8. *Exceptional collections of line bundles on the Beauville surface* (with S. Galkin) [arXiv:1210.3339 \[math.AG\]](https://arxiv.org/abs/1210.3339), *Adv. in Mathematics*, Vol. 244, 2013, Pages 1033–1050
9. *Mischenko and Quillen Formulas for oriented cohomology pretheories*, *St. Petersburg Math J.*, 18:4, 2007.
10. *On the Riemann–Roch theorem without denominators* (with O. Podkopaev), *St. Petersburg Math J.*, 18:6, 2006.

## Preprints

1. *K-theory and the singularity category of quotient singularities* (with N. Pavic), [arXiv:1809.10919](https://arxiv.org/abs/1809.10919).
2. *Derived categories of singular surfaces* (with J. Karmazyn, A. Kuznetsov), [arXiv:1809.10628](https://arxiv.org/abs/1809.10628).
3. *The motivic nearby fiber and degeneration of stable rationality* (with J. Nicaise), [arXiv:1708.02790](https://arxiv.org/abs/1708.02790), submitted to *Inventiones Math.* on 21.09.2017.
4. *On a zeta-function of a dg-category* (with S. Galkin), [arXiv:1506.05831](https://arxiv.org/abs/1506.05831).
5. *The Fano variety of lines and rationality problem for a cubic hypersurface* (with S. Galkin), [arXiv:1405.5154](https://arxiv.org/abs/1405.5154), submitted to the *Journal of Alg. Geom.* on 29.07.2018.
6. *Minifolds and Phantoms* (with S. Galkin, L. Katzarkov, A. Mellit), [arXiv:1305.4549](https://arxiv.org/abs/1305.4549).

## Undergraduate teaching experience

- 2014–2018: MAS330 Topics in Number Theory (level 3 module), MAS439 Commutative algebra (level 4 module), Engineering and Mathematics tutorials at the University of Sheffield.
- 2013/14: Tutoring a variety of classes at the University of Edinburgh.
- 2007–2010: Teaching assistant for 2 courses each quarter at Northwestern University. Teaching two courses in Calculus for the School of Continuing Studies at Northwestern University.
- MSc/MMath students dissertation supervision: Aaron Bird “Complex Algebraic Curves” (2015), Rachael Johnson “Mathematics of the Rubik’s cube” (2016), Maiko Serizawa “A survey on Belyi’s Theorem” (2016).

## Advanced teaching experience

- 2017, 2018: Lecture courses “McKay correspondence” and “Toric varieties” at the Summer school Contemporary Mathematics in Dubna, Russia (lecture notes in Russian available <https://e-shinder.staff.shef.ac.uk/mckay-lectures.htm>).
- 2015, 2016: PhD module Commutative Algebra MAGIC073 at the University of Sheffield.
- Summer 2013: Teaching a graduate student course “Derived categories of coherent sheaves and phantoms” at the University of Mainz (lecture notes available <https://e-shinder.staff.shef.ac.uk/mainz-lectures.htm>).

## PhD students

- Nebojsa Pavic (started in 2016), topic: Singularity category of quotient singularities.
- George Moulantzikos (started in 2018), topic: L-equivalence of algebraic curves.

## Outreach and recreational mathematics

- 2015-16: teaching mathematics in the Russian School in Sheffield on Saturdays.
- 2015-18: leading the “Numbers, Sequences and Series” session in the STEP examination preparation course for local high school students.
- 2015-18: co-organizing the Pizza Seminar for undergraduate students and giving the talks “Mathematics of the Rubik’s Cube” and “ $p$ -adic integers and the number ...918,212,890,625”.

## Teaching awards

- Commendation from the Director of Teaching at the School of Mathematics and Statistics at the University of Sheffield for the exceptional student feedback in MAS330 Topics in Number Theory in 2015 and 2017.

## Conferences, workshops and seminars organized

- November 5–9, 2018: *Constructions and Obstructions in Birational Geometry* at ICMS, Edinburgh (with A. Bayer, I. Cheltsov and L. Heuberger).
- February 8–9, 2018: *Sheffield GLEN 2018*, two day Algebraic Geometry workshop at the University of Sheffield (with A. Barbieri, B. Bolognese, J. Karmazyn).
- 2014–2017: Organizing or co-organizing Algebra / Algebraic Geometry Seminar at the University of Sheffield.
- Spring 2017: *Singularity category and MCM modules*, a weekly learning seminar at the University of Sheffield.
- June 9–10, 2016: *GLEN workshop “Homological Algebraic Geometry”*, two day international Algebraic Geometry workshop at the University of Sheffield (together with T. Bridgeland).
- November 28th 2014: *GLEN seminar*, one day international Algebraic Geometry workshop at the University of Sheffield.
- June 9–11, 2014: *Derived categories, Motives and Zeta-functions*, an international workshop at the University of Edinburgh (together with S. Galkin, M. Wemyss).
- 2013/14: *Stability conditions*, co-organizing weekly learning seminar at the University of Edinburgh.
- 2012/13: *Derived categories of coherent sheaves*, a weekly seminar at the Max-Planck-Institut für Mathematik.

## Small grants and awards

- ICMS funding and Clay Institute award to run a conference in November 2018 in Edinburgh (together with A. Bayer, I. Cheltsov, L. Heuberger).
- Edinburgh Mathematical Society and Glasgow Math Journal Small grants to organize the June 2014 workshop “Motives, Derived Categories and Zeta-functions” in Edinburgh (together with S. Galkin, M. Wemyss).
- Deutscher Akademischer Austausch Dienst DAAD research grant, Summer 2010.
- Northwestern University Mathematics Department award for best preliminary PhD examinations, Fall 2007.

## References

Alexander Kuznetsov, Steklov Institute of Mathematics  
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