

Jesse Wolfson
Curriculum Vitae
7/2018

wolfson@uci.edu
<http://jpwolfson.com>

Department of Mathematics
University of California, Irvine
340 Rowland Hall
Irvine, CA 92697

EMPLOYMENT AND VISITING POSITIONS

- 2017-present Assistant Professor, University of California – Irvine, USA
- 2014-2017 L.E. Dickson Instructor, University of Chicago, USA
- 2013-2014 Visitor, IPMU, Japan

EDUCATION

- 2014 Ph.D. in Mathematics, Northwestern University
Thesis: “Descent for n-Bundles, Tate Objects in Exact Categories, and the Index Map and Reciprocity Laws”.
Advisor: Ezra Getzler
- 2009 M.A.St. in Mathematics (Part III), University of Cambridge, with distinction
- 2008 M.S. in Mathematics, Yale University
- 2008 B.S. in Mathematics and Literature, Yale University

FELLOWSHIPS AND AWARDS

- 2018 NSF Grant DMS-1811846 - Euler Products and Homological Densities via Factorization Homology, \$153,000
- 2015 MacArthur Award for Creative and Effective Institutions: Roosevelt Institute Campus Network, MacArthur Foundation, \$750,000.
- 2014 NSF Mathematical Sciences Post-Doctoral Research Fellow, sponsoring scientist: Alexander Beilinson, University of Chicago.
- 2008 NSF Graduate Research Fellow, Northwestern University.
- 2007 Keasbey Scholar, St. John’s College, University of Cambridge.

PUBLICATIONS

- 2018 “On the A-infinity structure of the index map,” with Oliver Braunling and Michael Groechenig. *Annals of K-Theory*, to appear.

“Etale homological stability and arithmetic statistics,” with Benson Farb. *Quarterly Journal of Mathematics*, to appear.

“On the normally ordered tensor product and duality for Tate objects,” with Oliver Braunling, Michael Groechenig and Aron Heleodoro. *Theory and Applications of Categories*, vol. 33, 2018, pp. 296-349.

“The Index Map in Algebraic K-Theory,” with Oliver Braunling and Michael Groechenig. *Selecta Mathematica*, vol. 24, no. 2, 2018, pp. 1039-1091.

2017 “Topology and Arithmetic of Resultants II: the resultant=1 hypersurface,” with Benson Farb (with an appendix by C. Cazanave). *Algebraic Geometry*, vol. 4, no. 1, 2017, pp. 337-352.

“Relative Tate Objects and Boundary Maps in the K-Theory of Coherent Sheaves,” with Oliver Braunling and Michael Groechenig. *Homology, Homotopy and Applications*, vol. 19, no. 1, 2017, pp. 341-369.

“Modular Operads of Embedded Curves,” with Satoshi Kondo and Charles Siegel. *Geometry & Topology*, vol. 21, no. 2, 2017, pp. 903-922.

2016 “Operator Ideals in Tate Objects,” with Oliver Braunling and Michael Groechenig. *Mathematical Research Letters*, vol. 23, no. 6 (2016), pp. 1565-1631.

“Geometric and Analytic Structures on the Higher Adeles,” with Oliver Braunling and Michael Groechenig, *Research in the Mathematical Sciences, Special Collection in Celebration of the Research of Fedor Bogomolov on the Occasion of his 70th Birthday*, vol. 3, no. 1 (2016), article 22.

“Topology and Arithmetic of Resultants, I” with Benson Farb, *New York Journal of Mathematics*, vol. 22 (2016), pp. 801-821.

“Tate Objects in Exact Categories,” with Oliver Braunling and Michael Groechenig (with an appendix by J. Stovicek and J. Trlifaj), *Moscow Mathematical Journal*, vol. 16, no. 3 (2016), pp. 433-504.

“Descent for n-Bundles,” *Advances in Mathematics*, vol. 288 (2016), pp. 527-575.

PREPRINTS

2018 “Resolvent degree, Hilbert’s 13th problem, and geometry,” with Benson Farb. Preprint: arXiv:1803.04063. Submitted for publication.

2017 “Derived ℓ -adic zeta functions,” with Jonathan Campbell and Inna Zakharevich. Preprint: arXiv:1703.09855. Submitted for publication.

- 2016 “Coincidences of homological densities, predicted by arithmetic,” with Benson Farb and Melanie Wood. Preprint: arXiv:1611.04563
- “Hochschild coniveau spectral sequence and the Beilinson residue,” with Oliver Braunling. Preprint: arXiv:1607.07756. Submitted for publication.
- 2014 “A Generalized Contou-Carrere Symbol and its Reciprocity Laws in Higher Dimensions,” with Oliver Braunling and Michael Groechenig. Pre-print: arXiv:1410.3451. Submitted for publication.

SUMMER SCHOOLS

- 2018 NSF RTG/PIMS Summer School on Geometry and Topology – “The Roots of Topology - The roots of topology: miracles of algebraic geometry, braids, and Hilbert’s (still open) 13th problem” co-organized with Benson Farb. 70+ participants, June 11-14, University of Chicago.

LECTURE SERIES

- 2018 Graduate Lectures on Algebraic Geometry, Oaxaca, Mexico, Sept. 17-19.

WORKSHOPS

- 2019 “Braids, Resolvent Degree and Hilbert’s 13th Problem,” co-organizer with Benson Farb, Eriko Hironaka, Mark Kisin and Zinovy Reichstein. IPAM, Feb. 19-21.

RESEARCH TALKS

- 2018 Michigan Representation Stability Conference – The Resolvent Degree of a Finite Group, Aug. 17.
- Stanford Topology Seminar – The Theory of Resolvent Degree, after Hamilton, Klein, Sylvester, Hilbert and Brauer, May 22.
- UCLA Algebra Seminar – The Theory of Resolvent Degree, after Hamilton, Klein, Sylvester, Hilbert and Brauer, May 18.
- Caltech Algebra & Geometry Seminar – The Theory of Resolvent Degree, after Hamilton, Klein, Sylvester, Hilbert and Brauer, May 14.
- Center for Communications Research – The Theory of Resolvent Degree, after Hamilton, Klein, Sylvester, Hilbert and Brauer, Apr. 26.
- USC Tuesday Seminar – The Geometry of Hilbert’s 13th Problem, Apr. 24.
- USC Algebra Seminar – The Theory of Resolvent Degree, after Hamilton, Klein, Sylvester, Hilbert and Brauer, Apr. 23.

University of Chicago Colloquium – Braids, Polynomials and Hilbert’s 13th Problem, Apr. 11.

Harvard Number Theory Seminar – The Theory of Resolvent Degree, after Hamilton, Klein, Hilbert and Brauer, Mar. 7.

Harvard Informal Geometry and Dynamics Seminar – The Geometry of Hilbert’s 13th Problem, Mar, 7.

Kempner Colloquium – Algebraic Topology and Hilbert’s 13th Problem(s), Boulder, CO, Jan. 30.

Boulder Topology Seminar – Coincidences of homological densities, predicted by arithmetic, Boulder, CO, Jan. 30.

Oberwolfach Workshop “Topology of Arrangements and Representation Stability” – The theory of resolvent degree, after Hamilton, Sylvester, Hilbert, Segre and Brauer, Oberwolfach, Germany, Jan. 14-20.

2017 UMN Topology Seminar -The theory of resolvent degree, after Hamilton, Sylvester, Hilbert, Segre and Brauer – Twin Cities, MN, Dec. 8.

UCSD Number Theory Seminar – The theory of resolvent degree, after Hamilton, Sylvester, Hilbert, Segre and Brauer – San Diego, USA, Nov. 30.

UBC Topology Seminar – Coincidences of homological densities, predicted by arithmetic – Vancouver, Canada, Nov. 8.

UBC Algebraic Geometry Seminar – The theory of resolvent degree, after Hamilton, Sylvester, Hilbert, Segre and Brauer – Vancouver, Canada, Nov. 6.

No Boundaries – Groups in Algebra, Geometry and Topology – The theory of resolvent degree, after Hamilton, Sylvester, Hilbert, Segre and Brauer – Chicago, USA, Oct. 26-29.

Manifolds and Groups – Coincidences of homological densities, predicted by arithmetic – Regensburg, Germany, Sept. 25-29.

UCLA Number Theory Seminar, “Coincidences of homological densities, predicted by arithmetic,” Los Angeles, CA, Jan. 25.

UC Irvine Number Theory Seminar, “Coincidences of homological densities, predicted by arithmetic,” Irvine, CA, Jan. 23.

2016 Notre Dame Topology Seminar, “Coincidences of homological densities, predicted by arithmetic,” South Bend, IN, Dec. 8.

Chicago Geometry & Topology Seminar, “Coincidences of homological densities, predicted by arithmetic,” Chicago, IL, Sept. 29.

Oberwolfach Topology Meeting 2016, “Coincidences of homological densities, predicted by arithmetic,” Oberwolfach, Germany, July 21.

27th Nordic Congress of Mathematicians, Geometry and Topology Session, “Counting Problems and Homological Stability,” Stockholm, Sweden, Mar. 17.

Purdue Topology Seminar, “Counting Problems and Homological Stability,” West Lafayette, IN, Mar. 2.

Wayne State Colloquium, “Polynomials, Counting Problems and Algebraic Topology,” Detroit, MI, Feb. 22.

IBS-CGP Conference on Homotopical Methods in Quantum Field Theory, “Higher Determinants and Double Loop Groups,” Pohang, Korea, Jan. 13.

2015 University of Minnesota Topology Seminar, “Counting Problems and Homological Stability,” Minneapolis – St. Paul, MN, Oct. 26.

Rice Topology Seminar, “Counting Problems and Homological Stability,” Houston, TX, Oct. 19.

Northwestern Topology Seminar, “Counting Problems and Homological Stability,” Evanston, IL, Oct. 12.

University of Wisconsin – Madison Geometry and Topology Seminar, “Counting Problems and Homological Stability,” Madison, WI, Sept. 24.

AMS Summer Institute in Algebraic Geometry, “Topology and Arithmetic of Resultants,” Salt Lake City, UT, July 27.

Midwest Topology Seminar, “Topology and Arithmetic of Spaces of Rational Maps,” Chicago, IL, May 10.

University of Wisconsin – Madison Number Theory Seminar, “Geometry and Arithmetic of Spaces of Rational Maps,” Madison, WI, May 7.

UIC Homotopy Algebras Seminar “Modular Operads of Embedded Curves,” Chicago, IL, Apr. 17.

Arkansas Spring Lecture Series, “Spaces of Rational Functions, Representation Stability, and Statistics over Finite Fields,” Fayetteville, AR, Mar. 5.

Rutgers Algebra Seminar, “The Index Map and Reciprocity Laws for Contou-Carrere Symbols,” New Brunswick, NJ, Feb. 4.

Yale Geometry, Symmetry and Physics Seminar, “The Index Map and Reciprocity Laws for Contou-Carrere Symbols,” New Haven, CT, Feb. 2.

2014 MIT Topology Seminar, “The Index Map and Reciprocity Laws,” Cambridge, MA, Nov. 17.

University of Tokyo Topology Seminar, “The Index Map and Reciprocity Laws for Contou-Carrere Symbols,” Tokyo, Japan, July 22.

PUBLIC TALKS

2015 Choreography & Fractal Symmetry: a conversation with choreographer Reggie Wilson & mathematics faculty member Jesse Wolfson, Gray Center Labs, University of Chicago, May 12.

TEACHING AND ADVISING **University of California, Irvine**

Graduate Teaching

2018 Honors Graduate Algebra Sequence, 230ABC (yearlong sequence)

Directed Reading – Algebraic Topology and Geometry (3 students, Winter/Spring)

University of Chicago

Undergraduate Teaching

2016 Inquiry Based Learning Honors Calculus III, Spring Quarter

Inquiry Based Learning Honors Calculus I, Fall Quarter

Algebraic Topology Summer School, July

Leadership Alliance/Mellon Mays REU (co-ran with Benson Farb), June-August

Topological Data Analysis, Chicago REU, June

2015 Algebraic Functions and Riemann Surfaces, Chicago REU, July

Undergraduate Advising

2015 - 2016 Advisor, University of Chicago Careers in STEM

Graduate Teaching

2016 Braids, algebraic functions and Hilbert’s (still open) 13th problem, co-taught with Benson Farb, Winter

2015 The Space of Rational Maps, Graduate Mini-Course, Jan.-Feb.

Graduate Advising

Member of thesis committee:

Victoria Akin, 2017, Thesis - “Uniqueness of the Point-Pushing Subgroup”

Nir Gadish, expected 2018, Thesis - Representation stability for families of linear subspace arrangements

Zana Tran, expected 2018, On elementary equivalence of fields

Topics examination committee member for 7 students

SERVICE

Department Service

2017-2018 Geometry and Topology Seminar – co-organizer

Colloquium Committee

Algebra Qualifying Exam Committee

Professional Service

Referee for *Geometry & Topology*; *Theory and Applications of Categories*, *Algebraic & Geometric Topology*, *Advances in Mathematics*, *Proceedings of the AMS*, *Mathematische Annalen*.

PROFESSIONAL MEMBERSHIPS

American Mathematical Society; Association for Women in Mathematics

OTHER EXPERIENCE

Fist and Heel Performance Group

2016-present Member, Advisory Council

2012-2014 Consultant – Moses(es)

Assisted choreographer Reggie Wilson and his dancers to understand and work with the formal structures they encounter as they engage with African and Africanist performance cultures.

Roosevelt Institute Campus Network

2015-present Member, Alumni Committee

2006 Executive Director

2005 Guest Editor, *Review of Policy Research*, Vol. 22, Issue 6

2004 Co-Founder