

Kyle Larson

Appointments

- 2019–Present **University of Georgia**, *Postdoctoral Research and Teaching Associate*.
Athens, Georgia
- 2017–2019 **Rényi Institute of Mathematics**, *Postdoctoral Researcher*.
Spring 2016 Budapest, Hungary
- 2016–2017 **Michigan State University**, *Visiting Assistant Professor*.
East Lansing, Michigan

Education

- Dec. 2015 **PhD in Mathematics**, *University of Texas at Austin*.
Advisor: Robert E. Gompf
Thesis: Some constructions involving surgery on surfaces in 4–manifolds.
- May 2009 **B.S. in Mathematics, Honors Degree**, *University of Utah*.
Graduated Summa Cum Laude

Research interests

Low-dimensional topology, including: 4–manifolds, 3–manifolds, knot concordance, homology cobordism groups, lattices, Heegaard Floer homology, and computational topology

Publications

1. **Generic fibrations around multiple fibers.**
New York J. of Math. 20 (2014) 1161–1173.
2. **Fibered ribbon disks**, with J. Meier.
J. Knot Theory Ramifications 24 (2015), no. 14, 1550066, 22 pp.
3. **Surgery on tori in the 4-sphere.**
Math. Proc. Cambridge Philos. Soc. 164 (2018), no. 1, 109–124.
4. **Knot concordance and homology sphere groups**, with P. Aceto.
Int. Math. Res. Not. IMRN (2018), no. 23, 7318–7334.
5. **Embedding 3-manifolds in spin 4-manifolds**, with P. Aceto and M. Golla.
J. Topol. 10 (2017), no. 2, 301–323.
6. **Brieskorn spheres bounding rational balls**, with S. Akbulut.
Proc. Amer. Math. Soc. 146 (2018), no. 4, 1817–1824.
7. **Linear independence in the rational homology cobordism group**, with M. Golla.
To appear in *J. Inst. Math. Jussieu*, Preprint at arxiv.org/abs/1803.07931, 2018.
8. **Lattices and correction terms.**
Preprint at arxiv.org/abs/1807.05098, 2018.
9. **Cabling, Dehn surgeries, and rational homology balls**, with P. Aceto, M. Golla, and A. Lecuona.
In preparation (65 page draft).

Invited talks

- University of Oxford, Topology Seminar (November 2018)
- Summer school on instanton gauge theory and applications to 3-manifold topology in Nantes, France (September 2018)
- Conference on Khovanov Homotopy Type in Budapest, Hungary (January 2018)
- Conference on 4-manifolds and knot concordance in Bonn, Contributed talk (October 2016)
- 4-manifolds conference in Dubrovnik, Croatia, Contributed talk (June 2016)
- University of Ljubljana, seminar (April 2016)
- Ludwig Maximilian University of Munich, seminar (January 2016)
- University of Minnesota, Symplectic Topology Seminar (December 2015)
- Michigan State University, Topology Seminar (November 2015)
- Rice University, Topology Seminar (November 2015)
- University of Pisa, Topology Seminar (July 2015)
- ECSTATIC conference at Imperial College, London (June 2015)
- IMBM in Istanbul, Geometry - Topology Workshop (June 2015)
- Indiana University, informal Topology Seminar (March 2015)
- AMS Sectional Meeting at Michigan State University (March 2015)

Local talks

- "Linear independence in the rational homology cobordism group," Rényi Institute Algebraic Geometry and Differential Topology Seminar (May 2018)
- "Brieskorn spheres bounding rational balls," Rényi Institute Algebraic Geometry and Differential Topology Seminar (November 2017)
- "Using Donaldson's theorem as an obstruction to bounding a rational ball," Rényi Institute Topology learning seminar (November 2017)
- "Knot concordance and homology sphere groups," MSU Topology Seminar (September 2016)
- "Knot concordance and homology sphere groups," Rényi Institute Algebraic Geometry and Differential Topology Seminar (May 2016)
- "The Gluck twist " Rényi Institute 4-manifolds seminar (February 2016)
- "Surgery on tori and embedding 3-manifolds," Rényi Institute Algebraic Geometry and Differential Topology Seminar (February 2016)
- "Applications of Heegaard Floer Homology," UT Austin Heegaard Floer Seminar (December 2015)
- "Surgery on tori and embedding 3-manifolds," UT Austin Dissertation Defense (November 2015)
- "Surgery on tori in the 4-sphere," UT Austin Junior Topology Seminar (April 2015)
- "Fibered disks and knots," UT Austin Junior Topology Seminar (October 2014)
- "Exotic spheres and 2-knots," UT Austin Undergraduate Math Club (October 2014)
- "Handle decompositions and surgery," UT Austin Chern-Simons Seminar (July 2014)
- "The annulus twist," UT Austin Junior Topology Seminar (November 2013)
- "Knot surgery and a window into the world of 4-manifolds," UT Austin Junior Topology Seminar (April 2013)
- "The Gluck twist operation on smooth 4-manifolds," UT Austin Candidacy Exam (November 2012)
- "The h-cobordism theorem," UT Austin Junior Topology Seminar (February 2012)

Teaching experience

University of Georgia, Instructor

- Calculus I (Fall 2019)

Central European University, Instructor

- Graduate student reading course (Spring 2018)
- Graduate topics course on 4-manifolds and Kirby Calculus (Fall 2017)

Michigan State University, Instructor

- Calculus I (Spring 2017, Fall 2016)

University of Texas at Austin, Assistant Instructor (instructor of record)

- Calculus I (Spring 2015)

University of Texas at Austin, Teaching Assistant

- From Numbers to Chaos, First-Year Signature Course (IBL based) (Fall 2015, Fall 2013)
- Modern Mathematics: Plan II Honors (Spring 2012)
- Introduction to Mathematics (Fall 2011)
- Calculus I (Fall 2014, Fall 2012, Fall 2010, Spring 2010)
- Calculus II (Summer 2014, Spring 2011, Fall 2009)

Teaching and curriculum related activities

- Teaching Certificate in First-Year Interdisciplinary Instruction (Fall 2013)
- Participant in weekly Signature Course cohort group (Fall 2013)
- Participant in the College of Natural Science's New Faculty Teaching Workshop (Spring 2013)
- Selected participant in the Supplemental Instruction Program (Fall 2012, Spring 2011, Fall 2010)

Selected service to the profession

- Organizer, Graduate Student Topology and Geometry Conference, UT Austin (May 2014)
- Organizer, UT Austin Junior Topology Seminar (Fall 2014)
- Invited speaker for UT Austin Undergraduate Math Club (October 2014)
- Mentor in the UT Math Department's Directed Reading Program (DRP) (Spring 2015, Fall 2014, Spring 2014)

Awards and honors

- RTG Graduate Fellowship: *Summer 2015, Spring 2014, Summer 2013, Summer 2012*
- J.L. Gibson Senior Award *Given to top graduating math major* (2009)
- President's Club Scholarship *Full-academic undergraduate scholarship* (2005-2009)
- CorpusBeat Scholars Award *Academic undergraduate scholarship* (2005-2009)

Conferences attended

- **Speaker** Instanton gauge theory and applications to 3-manifold topology in Nantes, France (September 2018)
- Gauge theory and applications in Regensburg, Germany (July 2018)
- A Celebration of the Mathematics of Bob Gompf in Austin, Texas (July 2018)
- Topology in dimensions 3, 3.5, and 4 in Berkeley, California (June 2018)
- **Speaker** Conference on Khovanov Homotopy Type in Budapest, Hungary (January 2018)
- **Speaker** 4-manifolds and knot concordance, Bonn, Germany (October 2016)
- Low-dimensional topology summer school, Budapest, Hungary (July 2016)
- **Speaker**, Perspectives in topology and geometry of 4-manifolds, Dubrovnik, Croatia (June 2016)
- Mapping class groups, 3- and 4-manifolds, Cluj-Napoca, Romania (July 2015)
- **Speaker**, ECSTATIC conference, Imperial College, London (June 2015)
- 22nd Gökova Geometry/Topology conference, Gökova, Turkey (May 2015)
- **Speaker**, AMS Sectional Meeting at Michigan State University (March 2015)
- 52nd Texas Geometry and Topology Conference, University of Texas at Austin (November 2014)
- Workshop and Conference on the Topology and Invariants of Smooth 4-Manifolds , University of Minnesota (July - August 2013)
- Toulouse topological and symplectic spring, Llagonne and Toulouse, France (June 2013)
- Geometry and topology of smooth 4-manifolds, Max Plank Institute, Bonn, Germany (June 2013)
- Tech Topology Conference, Georgia Tech University (December 2012)
- Workshop in Holomorphic Curves and Low Dimensional Topology, Stanford University (July - August 2012)
- CAST Summer School and Conference, Rényi Instituted of Mathematics, Budapest, Hungary (July 2012)
- Georgia Topology Conference, University of Georgia (May 2012)
- Graduate Student Topology Conference X, University of Indiana (March 2012)
- 46th Texas Geometry and Topology Conference, University of Texas at Austin (October 2011)