

Andrew Lobb

Employment

- Fall 2022 MSRI/SLMATH, Research Professor
- 2019- Durham University, Professor
- 2019-2020 Okinawa Institute of Science and Technology, Excellence Chair
- 2015-2019 Durham University, Associate Professor (Reader)
- 2011-2015 Durham University, Assistant Professor (Lecturer)
- 2009-2011 SUNY Stony Brook, Postdoc
- Spring 2010 MSRI, Postdoc
- 2007-2009 Imperial College London, Chapman Fellow (postdoc)

Education

- 2002-2007 **PhD**, *Harvard*, (Kennedy Scholar 2002-2003).
- 1998-2002 **MMath**, *Oxford*.

Prizes and honors

- 2022 LMS Shephard Prize.
- 2021 Work presented in Current Events Bulletin of the AMS.

Papers

- Polynomial Incriptions (with Greene).
- Square pegs between two graphs (with Greene).
- Floer homology and square pegs (with Greene).
- A feeling for Khovanov homology,
Notices Amer. Math. Soc. May 2024 621-631.
- Squeezed knots, (with Feller and Lewark), to appear in
Quantum Topol.
- On values taken by slice-torus invariants, (with Feller and Lewark),
Math. Proc. Cambridge Philos. Soc. 176(1) (2024) 55-63.
- Cyclic quadrilaterals and smooth Jordan curves, (with Greene),
Invent. Math. 234(3) (2023) 931-935
- The rectangular peg problem, (with Greene),
Ann. of Math. 194 (2021) 509-517.
- A refinement of Khovanov homology, (with Watson),
Geom. Topol. 25 (2021) 1861-1917.

- Almost positive links are strongly quasipositive, (with Feller and Lewark), **Math. Ann.** 385, 481–510 (2023).
- A calculus for flow categories, (with Orson and Schuetz), **Adv. Math.** 409 (2022), Paper No. 108665, 58 pp..
- A counterexample to Batson’s conjecture, **Math. Res. Lett.** 26(6) (2019) 1789-1789.
- An \mathfrak{sl}_n stable homotopy type for matched diagrams (with Jones and Schuetz), **Adv. Math.** 356 (2019), 106816.
- On spectral sequences from Khovanov homology (with Zentner), **Algebr. Geom. Topol.** 20 (2020) 531–564.
- On the functoriality of Khovanov-Floer theories (with Baldwin and Hedden), **Adv. Math.** (2019) 345: 1162-1205
- Upsilon-like concordance invariants from $\mathfrak{sl}(n)$ knot cohomology, (with Lewark), **Geom. Topol.** 23 (2019) 745-780.
- Khovanov homotopy calculations using flow category calculus, (with Orson and Schuetz), **Experiment. Math.** 29(4) (2020) 465-500.
- Framed cobordism and flow category moves, (with Orson and Schuetz), **Algebr. Geom. Topol.** 18 (2018), 2821-2858.
- A Khovanov stable homotopy type for colored links (with Orson and Schuetz), **Algebr. Geom. Topol.** 17 (2017) 1261-1281.
- Morse moves in flow categories (with Jones and Schuetz), **Indiana Univ. Math. J.** 2017 66(5): 1603-1657
- New quantum obstructions to sliceness (with Lewark), **Proc. Lond. Math. Soc.** 112 (2016), No. 1, 81-114
- 2-strand twisting and knots with isomorphic quantum knot homologies, **Geom. Topol.** 18 (2014), 873-895.
- The quantum \mathfrak{sl}_n graph polynomial and a moduli space (with Zentner), **Int. Math. Res. Not. IMRN** 2014, Vol. 2014, No. 7: 1956-1972.
- The Kanenobu knots and Khovanov-Rozansky homology, **Proc. Amer. Math. Soc.** 142 (2014), Number 4, 1447-1455
- A note on Gornik’s perturbation of Khovanov-Rozansky homology, **Algebr. Geom. Topol.** 12 (2012), 293-305.
- Computable bounds for Rasmussen’s concordance invariant, **Compos. Math.** 2011, Vol 147, Issue 02, 661-668.
- On Casson-type instanton moduli spaces over definite 4-manifolds (with Zentner), **Q. J. Math.**, 2011, Vol 62, Issue 2, 433-450.
- A slice genus lower bound from $\mathfrak{sl}(n)$ Khovanov-Rozansky homology, **Adv. Math.**, 2009, Vol 222, Issue 4, 1220-1276.

Non-pure papers

- Threaded rings that swim in excitable media (with Elizabeth Bromley, Brette Chapin, Antonio Cincotti, David Evans, Kate Horner, Fabian Maucher, Jonathan Steed, and Paul Sutcliffe),
Phys. Rev. Lett., 2019, Vol. 123.
- Social learning errors and the evolution of material culture, (with Lauren Scanlon, Jeremy Kendal, and Jamie Tehrani),
Evolutionary Human Sci., 2019, Vol. 1.

Grants

- LMS grant and various smaller sums to support the British Mathematical Colloquium 2017.
- **Principal Investigator** EPSRC EP/M000389/1, New homotopy-type invariants of knots, 2015-2017 £201000.
- **Co-Investigator** Leverhulme Programme Grant 2014-2020 £1700000.
- LMS/EPSRC Grant to host a Summer School at Durham, 2013
- **Principal Investigator** EPSRC EP/K00591X/1 *Knot homology: Theory and Computation*, 2013-2014. £89000.

PhD students and postdocs

- 2024- Adam Barber, EPSRC funded graduate student.
- 2022- Michael Kohn, EPSRC funded graduate student.
- 2018-2019 Carlo Collari, Accademia dei Lincei funded postdoc.
- 2017-2021 Oliver Singh, EPSRC funded graduate student.
- 2015-2017 Patrick Orson, postdoc hired on EPSRC grant EP/M000389/1
- 2014-2018 Will Rushworth, EPSRC funded graduate student.
- 2014-2019 Lauren Scanlon, Leverhulme funded graduate student, joint supervision with Dr Jeremy Kendal (Anthropology)
- 2012-2016 Jonathan Grant, EPSRC funded graduate student
- 2011-2105 Daniel Jones, EPSRC funded graduate student, joint supervision with Dirk Schütz
- 2013-2014 Lukas Lewark, postdoc hired on EPSRC grant EP/K00591X/1.

Selected recent talks

- Dec 2024 ETH Zurich, Switzerland
- Oct 2024 Bochum, Germany
- Jul 2024 Banff, Canada
- Jul 2024 Budapest, Hungary
- Aug 2023 Okinawa, Japan
- Jun 2023 Pisa, Italy
- Apr 2023 Budapest, Hungary
- Feb 2023 Cambridge, UK

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Dec 2022 MSRI, USA
Oct 2022 Berkeley, USA
May 2022 Georgia, USA
Jan 2022 Les Diablerets, Switzerland
Nov 2021 St Louis, USA
Aug 2021 Regensburg, Germany
Apr 2021 Knot Online Seminar
Nov 2020 Lisbon, Portugal
Oct 2020 Tel Aviv, Israel
Oct 2020 Imperial College, UK
Sep 2020 BC, Canada
Sep 2020 Stanford, USA
Sep 2020 Montreal, Canada
Jun 2020 Galway, Ireland
Mar 2020 Tokushima, Japan

Selected Service

- *Editor* Mathematical Proceedings of the Cambridge Philosophical Society.
- *Organizer* Week-long conference, BIRS Banff, August 2024.
- *Organizer* Week-long conference, CMI Oxford, July 2023.
- *Organizer* Week-long conference, Oberwolfach, January 2023.
- *Organizer* Week-long conference, CMO Oaxaca, Oct 2022.
- *Organizer* Week-long conference, OIST, Okinawa, March 2020
- *Organizer* Six week programme at Kavli Institute, UCSB, Nov-Dec 2018
- *Organizer* Week-long workshop at the Aspen Center for Physics, Mar 2018
- *Chairman* British Mathematical Colloquium 2017
- *Principal Organizer* Six month programme at Newton Institute, 2017
- *Organizer* Prospects in Mathematics, Durham, 2013
- *Organizer* LMS-EP SRC Low-dim geometry summer school, Durham, 2013
- *Organizer* Knot homologies conference, Stony Brook, 2010
- *PhD committee member* For Laura Marino (Paris), Michael Snape (Glasgow), Benjamin Bode (Bristol), Carlo Collari (Pisa), Paul Wedrich (Cambridge), Lukas Lewark (Paris).

Academic References

Reference	University	email
Mikhail Khovanov	Johns Hopkins	khovanov@jhu.edu
Peter Kronheimer	Harvard	kronheim@math.harvard.edu
András Stipsicz	Renyi Institute	stipsicz.andras@renyi.mta.hu

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