Benjamin Morris

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Employment

2026 – Present **EPSRC Postdoctoral Pathway Fellowship**, Newcastle University, Newcastle, UK.
Line Manager: Dr Thorsten Heidersdorf

Education

2022 – 2026[1] **Ph.D. in Mathematics**, University of Leeds, Leeds, United Kingdom.
Supervisor: Professor Paul Martin

2018 – 2021 **Ph.B. with First Class Honours in Mathematics**, Australian National University (ANU), Canberra, Australia. (View Certificate)

Research Publications

1. **B. Morris** and P. P. Martin, *On semisimplicity criteria and non-semisimple representation theory for the kadar-yu algebras*, Dec. 2025. arXiv: 2512.24535 [math.RT].
2. D. Ibarra, G. Montoya-Vega, and **B. Morris**, *Temperley-Lieb categories on non-orientable surfaces*, Jun. 2025. arXiv: 2506.14319 [math.CT].

Research Talks/Presentations

Invited Talks

1. **Morris, B**, *TBC*, Algebra and Representation Theory Seminar, (Cambridge, UK), [upcoming], Nov. 2026.
2. **Morris, B**, *TBC*, Algebra and Geometry Seminar, (Newcastle, UK), [upcoming], Oct. 2026.
3. **Morris, B**, *Interpolating between Temperley-Lieb and Brauer representation theory: generalised roots of unity*, North British Mathematical Physics Seminar, (York, UK), Jul. 2026.
4. **Morris, B**, *Temperley-Lieb Categories on Non-Orientable Surfaces*, Categorical Structures, Groupoids, and the Yang-Baxter Equation: A Mini-Workshop in Torino, (Turin, Italy), Jun. 2026.
5. **Morris, B**, *Interpolating between Temperley-Lieb and Brauer representation theory: generalised roots of unity*, Research Seminar on Quantum Topology and Categorification (QTCat), (Hamburg, Germany), Jun. 2026.
6. **Morris, B**, *Semi simplicity criteria for the Kadar-Yu algebras*, York Algebra Seminar, (York, UK), Nov. 2025.
7. **Morris, B**, *Semi simplicity criteria for the Kadar-Yu algebras*, Algebra Seminar, (Leeds, UK), Nov. 2025.
8. **Morris, B**, *Algebra from statistical mechanics*, STAMP, (Edinburgh, UK), Apr. 2024.
9. **Morris, B**, *An unorientable extension of the Temperley-Lieb category*, JLAC, (London, UK), Mar. 2024.

Selected Contributed

10. **Morris, B**, *Interpolating between Temperley-Lieb and Brauer representation theory: generalised roots of unity*, ARTIN, (Newcastle, UK), Sep. 2026.

[1] Thesis submitted, to be defended in December 2026.

11 **Morris, B**, *Temperley-Lieb categories on non-orientable surfaces*, The Yang-Baxter equation and all that, (Bedlewo, Poland), Jun. 2025.

12 **Morris, B**, *An unorientable extension of the Temperley-Lieb category*, Topological aspects of low-dimensional quantum physics, (Maynooth, Ireland), [Poster], Apr. 2024.

13 **Morris, B**, *Towards a factorised solution of the Yang-Baxter equation with $U_q(sl_n)$ symmetry*, Applications of Hecke and related algebras, (Les Houches, France), Feb. 2023.

14 **Morris, B**, *Towards a factorised solution of the Yang-Baxter equation with $U_q(sl_n)$ symmetry*, 65th Annual Meeting of the Australian Mathematical Society, (Newcastle, Australia), Dec. 2021.

Outreach & Expository

15 **Morris, B** and H. Duncan, Unapologetic Mathematicians, [Podcast hosted by Hope Duncan. Recorded, not yet available.], Aug. 2026.

16 **Morris, B**, *How to make lasagna (skein lasagna modules)*, Pure PGR Seminar, (Leeds, UK), Feb. 2026.

17 **Morris, B**, *The Yang-Baxter equation and quantum group symmetry*, MaPLe, (Leeds, UK), Nov. 2024.

18 **Morris, B**, *What's the deal with cellular algebras*, Pure PGR Seminar, (Leeds, UK), Oct. 2024.

19 **Morris, B**, *Lattice statistical mechanics is algebra*, Pure PGR Seminar, (Leeds, UK), Mar. 2024.

20 **Morris, B**, *Hopf Algebras and Representation Theory*, Pure PGR Seminar, (Leeds, UK), Jan. 2023.

Conference Organisation

15/04–17/04/2026 — *Introduction to Modern Advances in Algebra III*, Leeds (organisers: O. McGrath, B. Mills, **B. Morris**)

26/03–27/03/2026 — *Dijkgraaf-Witten Theory, Tensor Categories, and Applications*, Leeds, (organisers: P. Huston, P.P. Martin, J.F. Martin, **B. Morris**)

17/02/2026 — *Mathematical and Physical underpinnings of Topological Quantum Computation*, Leeds, (organisers: P.P. Martin, E. Rowell, **B. Morris**)

Research Visits

14/06 – 24/06/2026 — Universität Hamburg, Germany. Supported by Leeds-Hamburg joint project MIQC. Hosted by Prof. P. Wedrich.

Grants

2026 — Conference grants. "Introduction to Modern Advances in Algebra".
Organisers: O. McGrath, B. Mills, **B. Morris**.
Funding bodies: Heilbronn Institute , MAGIC Maths , LMS (London Mathematical Society), EPSRC "RepNet grant", University of Leeds. £ 8700

2025–2026 — Joint project: "Mathematics and Implementation of Quantum Computing" (MIQC).
Grant Holders: Prof. P. P. Martin, Prof. C. Schweigert
Funding bodies: University of Leeds, Universität Hamburg. £ 7600

2025 — ECR Travel Grant to attend "Yang-Baxter Equation and all that" (Bedlewo, Poland).
Grant Holder: **B. Morris**. Funding body: London Mathematical Society. £ 500

Teaching experience

University of Leeds, Leeds (UK)

Supervision	**MATH5000M MSc summer dissertation** (with Dr Ilaria Colazzo)	AY 2025 – 26
Demonstrator	**MATH1110 Real Analysis**	AYs 2023 – 24, 2024 – 25, 2025 – 26
	MATH1120 Introduction to Group Theory	AY 2024 – 25
	MATH1050 Calculus and Mathematical Analysis	AY 2023 – 24
	MATH1055 Numbers and Vectors	AY 2023 – 24

Australian National University (ANU), Canberra (Australia)

	ODEs (SDU-ANU Joint Science College)	AY 2022
	Mathematical Abstraction I (SDU-ANU Joint Science College)	AY 2022
	MATH2301 Applied Mathematics I	AY 2022

Academic Service

Other organisational experience

2025 –	Co-organising a PhD student reading group in quantum topology
2025	Co-wrote successful application for Leeds-Hamburg joint funding partnership, *"Mathematics and Implementation of Quantum Computing (MIQC)"*.
2024 – 2025	Co-organised the Pure Maths PhD Student Seminar @ University of Leeds (UK).
2022 – 2023	Co-organised a PhD student reading group in quantum groups and integrable systems

Student Mentoring

2024-2025	**Buddy** for first year PhD Students in Mathematics @ the University of Leeds
2019	**Peer assisted learning (PAL) mentor** for first year chemistry students @ ANU
	Academic mentor for for first year students in science @ Ursula Hall, ANU

Other

Programming Languages

- Mathematica, Python, MatLab.

References

Available on Request