Tamara Hogan

Postdoctoral Fellow

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Positions

2024–Present   **Postdoctoral Fellow**, *Mathematics Department*
University of Toronto

Education

2021–2024   **Doctor of Philosophy**, *University of Melbourne & University of Sydney*
Joint PhD program.

> *Thesis title:* Topological approaches to Kashiwara-Vergne theory.
> *Supervisor(s):* Marcy Robertson and Zsuzsanna Dancso.
> *Description:* Two projects which use various topological equivalences to explore Kashiwara-Vergne theory.

2018–2020   **M.Sc. (Mathematics and Statistics)**, *University of Melbourne*
Masters by coursework. Graduated with distinction.

> *Thesis title:* Symmetries of trivalent tangles: Approaching the link between Drinfeld associators and Kashiwara-Vergne solutions.
> *Supervisor(s):* Marcy Robertson.
> *Description:* Constructed a novel sub-set of 4D-knotted objects to explore the relationship between two sets of objects in quantum algebra.

2015–2018   **B.Sc. (Mathematics and Statistics)**, *University of Melbourne*
Pure mathematics specialisation. Graduated with distinction.

Publications and pre-prints

2025   D. Bar-Natan, Z. Dancso, **T. Hogan**, J. Liu, and N. Scherich. *Goldman-Turaev formality from the Kontsevich integral.* arXiv:2509.20983

2024   T. Hogan. (2024). *Topological Perspectives on Kashiwara-Vergne Theory.* PhD thesis, University of Melbourne & University of Sydney. URL.

2022   Z. Dancso, **T. Hogan**, and M. Robertson. *A knot-theoretic approach to comparing the Grothendieck-Teichmüller and Kashiwara-Vergne groups.* arXiv:2211.11370. To appear in Contemporary Mathematics.

2021   **T. Hogan**. *The link between Drinfel'd associators and Kashiwara-Vergne solutions.* MATRIX-MFO Tandem Workshop: Invariants and Structures in Low-Dimensional Topology (hybrid meeting), Oberwolfach Reports **42** (2021) pp 2354-2356.

Awards and scholarships

2025   **F. V. Atkinson Teaching Award for Postdoctoral Fellows**, *University of Toronto*
Recognizing excellence in teaching by postdoctoral fellows and other non–tenure track junior faculty.

2023   **WIMSIG Cheryl E. Praeger Travel Awards**, *AustMS*, $2,500 AUD
Awarded to female and gender diverse mathematicians based in Australia for the purpose of domestic and international travel.

2023   **Science Abroad Travelling Scholarships**, *University of Melbourne*, $2,000 AUD
Awarded to PhD students at the University of Melbourne for the purpose of travelling abroad for research purposes.

2022   **John & Allan Gilmour Research Award**, *University of Melbourne*, $4,158.80 AUD
Awarded to two outstanding graduate research students in the Science Faculty biennially.

2018,   **Master of Science (Mathematics and Statistics) Scholarship**, *University of*
2019×2   *Melbourne*, $2,000 AUD
Merit-based award at University of Melbourne. Received a maximum of 3 times.

Talks

January 2026   *Non-unique Seifert smoothings of tangles and oriented Temperley-Lieb*, invited ECR talk, presented at SwissMAP Research Station (Homological, quantum, and computational methods in low-dimensional topology), January 2026. In-person (20 minutes).

July 2025   *Kashiwara-Vergne as a lesson in patience*, presented at Sydney Mathematical Research Institute, July 2025. In-person (50 minutes).

Dec 2024   *Topological Perspectives on Kashiwara-Vergne Theory*, presented at the McMaster University Topology Seminar, December 2024. In-person (50 minutes).

July 2024   *Topological Perspectives on Kashiwara-Vergne Theory*, completion seminar, presented at the University of Melbourne, July 2024. In-person (50 minutes).

Sept 2023   *A knot-theoretic interpretation of the Goldman-Turaev Lie bialgebra*, presented at the University of Melbourne Topology Seminar, in-person (50 minutes).

May 2023   *On a lift of the Goldman-Turaev Lie bialgebra in genus zero*, presented at the University of Sydney Mathematical Postgradute Society seminar, in-person (50 minutes).

Dec 2022   *A knot-theoretic approach to comparing the Grothendieck-Teichmuller and Kashiwara-Vergne groups*, presented at the Topology Special Session of the AustMS Meeting 2022, in-person (20 minutes).

Sept 2022   *A knot-theoretic approach to comparing the Grothendieck-Teichmuller and Kashiwara-Vergne groups*, presented at the University of Melbourne Topology Seminar, in-person (50 minutes).

Dec 2021   *Symmetries of 3D and 4D expansions*, presented at the Topology Special Session of the AustMS Meeting 2021, Online (20 minutes).

Sept 2021	*The link between Drinfel'd associators and Kashiwara-Vergne solutions*, presented at MATRIX-MFO Tandem Workshop: Invariants and Structures in Low-Dimensional Topology, Online (10 minutes).
Apr 2021	*A basic introduction to planar algebras*, presented at the (GT)^2 PhD Student Symposium, Online (20 minutes).
Dec 2020	*Symmetries of trivalent tangles: approaching the link between Drinfeld associators and Kashiwara-Vergne solutions*, presented at the Topology Special Session of the AustMS Meeting 2020, Online (20 minutes).

Teaching

Fall 2025	*MAT246H1 Concepts in Abstract Mathematics*, University of Toronto, **course instructor**.
Fall 2024	*MAT246H1 Concepts in Abstract Mathematics*, University of Toronto, **course instructor**.
Sem 1, 2024	*MAST10007 Linear Algebra*, University of Melbourne, **tutor**.

Service

- Participated in AustMS Student Body Working Group (2023) to help develop a new student organisation inside AustMS.
- Co-organised the Australian Postgraduate Algebra Colloquium (2022), a fortnightly online student seminar for graduate students in algebra.
- Various informal experience leading student reading groups.