

Tamara Hogan

Postdoctoral Fellow

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

Talks

- 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 Postgraduate Society seminar, in-person (50 minutes).
- Dec 2022 *A knot-theoretic approach to comparing the Grothendieck-Teichmüller 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-Teichmüller 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.