

## CONTACT INFORMATION

Department of Mathematics and Statistics  
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## RESEARCH INTERESTS

Algebraic topology, homotopy theory, and related fields.

## EMPLOYMENT

- Associate Professor, University of Regina, 2022–present.
- Assistant Professor, University of Regina, 2018–2022.
- Research Fellow, Universität Osnabrück, 2016–2018.
- Postdoctoral Fellow, University of Western Ontario, 2013–2015.
- Visiting Assistant Professor, University of Illinois at Urbana-Champaign, 2010–2013.

## GUEST POSITIONS

Max-Planck-Institut für Mathematik Bonn, June–Aug. 2012, Sep.–Dec. 2015, Jan.–April 2026.

## EDUCATION

- PhD Pure Mathematics, Massachusetts Institute of Technology, 2006–2010. Advisor: Haynes R. Miller.
- MSc Mathematics, Université de Montréal, 2003–2005.
- BSc Mathematics, Université de Montréal, 2000–2003.

## SELECTED PUBLICATIONS

Papers in refereed journals

- M. Frankland and M. Spitzweck. Towards the dual motivic Steenrod algebra in positive characteristic. To appear in *Math. Z.*
- I. Dokas, M. Frankland, and S. Ikonicoff. Quillen (co)homology of divided power algebras over an operad. To appear in the *Annales de l'Institut Fourier*.
- J.D. Christensen and M. Frankland. On good morphisms of exact triangles. *J. Pure Appl. Algebra* 226 (2022), no. 3, Paper no. 106846.
- H.J. Baues and M. Frankland. The DG-category of secondary cohomology operations. *Appl. Categ. Structures* 28 (2020), no. 6, 877–905.
- H.J. Baues and M. Frankland. Eilenberg–MacLane mapping algebras and higher distributivity up to homotopy. *New York J. Math.* 23 (2017), 1539–1580.
- J.D. Christensen and M. Frankland. Higher Toda brackets and the Adams spectral sequence in triangulated categories. *Algebr. Geom. Topol.* 17-5 (2017), 2687–2735.
- H.J. Baues and M. Frankland. 2-track algebras and the Adams spectral sequence. *J. Homotopy Relat. Struct.* 11 (2016), no. 4, 679–713.
- T. Barthel and M. Frankland. Completed power operations for Morava  $E$ -theory. *Algebr. Geom. Topol.* 15-4 (2015), 2065–2131.

- M. Frankland. Behavior of Quillen (co)homology with respect to adjunctions. *Homology Homotopy Appl.* 17 (2015), no. 1, 67–109.
- H.J. Baues and M. Frankland. The realizability of operations on homotopy groups concentrated in two degrees. *J. Homotopy Relat. Struct.* 10 (2015), no. 4, 843–873.
- M. Frankland. Moduli spaces of 2-stage Postnikov systems. *Topology Appl.* 158 (2011), 1296–1306.
- M. Frankland. Théorème de Künneth en homologie de Morse. *Ann. Sci. Math. Québec* 31 (2007), no. 1, 31–39.

#### Submitted papers

- M. Frankland and A. Ngopnang Ngompé. Enriched model categories and the Dold-Kan correspondence.
- M. Frankland, S. Martensen, and M. Thaule. Toda brackets in  $n$ -angulated categories.
- M. Frankland and D. Stanley. Multiparameter persistence modules in the large scale.

#### TEACHING EXPERIENCE

##### Regina

- Homological Algebra (graduate).
- Abstract Linear Algebra (graduate).
- Commutative Algebra (graduate) ( $\times 2$ ).
- Linear Algebra I ( $\times 2$ ).
- Algebraic Topology (graduate) ( $\times 3$ ).
- Matrix Theory.
- Topics in Topology (reading course) ( $\times 2$ ).
- General Topology (graduate) ( $\times 3$ ).
- Calculus II ( $\times 3$ ).
- Euclidean Geometry ( $\times 2$ ).
- Vector Calculus ( $\times 2$ ).

##### Osnabrück

- Algebraische Topologie (graduate, in German).

##### Western Ontario

- Algebraic Topology (graduate).
- Advanced Calculus I.
- Methods of Finite Mathematics.
- Intermediate Calculus I.

##### Urbana-Champaign

- Homotopy Theory (graduate).
- General Topology (graduate).
- Calculus III.
- Abstract Linear Algebra.
- Intro Differential Equations ( $\times 2$ ).
- Applied Linear Algebra.
- Elementary Linear Algebra.

#### SUPERVISION

##### Postdoctoral Fellows

- Yang Hu (cosupervised), 2025–present.

##### PhD students

- Manak Singh, 2023–present.
- Matthew Alexander, 2020–2025.
- Arnaud Ngopnang Ngompé (cosup.), 2020–2024.

##### MSc students

- Luis Islas Vizcarra (cosup.), 2025–present.
- Nimanthi Yaseema, 2020–2023.
- Michael Opadotun, 2019–2021.

##### Undergraduate students

- Yuzhou He, Mitacs Globalink, Summer 2025.
- Luis Islas Vizcarra, Bachelor Thesis, 2024–2025.
- Aditya Dwarkesh, Mitacs Globalink, Summer 2023.
- Pranali Sohoni, Mitacs Globalink, Summer 2021; Honours Thesis, Fall 2021.
- Raveen Tehara, NSERC USRA, Summers 2021, 2022, and 2023.

## SELECTED TALKS

- Session on Topology, CMS Meeting, Toronto, December 2025.
- Workshop on Homotopy Theory, Fields Institute, July 2025.
- Foundational Methods in Computer Science Workshop, Ottawa, June 2025.
- Prairie Mathematics Colloquium, online, Nov. 2024.
- New Directions in Group Theory and Triangulated Categories online seminar, Oct. 2024.
- Foundational Methods in Computer Science Workshop, Kananaskis, July 2024.
- NTNU Topology Seminar, Trondheim, June 2024.
- Session on Applied Topology, CMS Meeting, Saskatoon, June 2024.
- Mini-course on Persistent Homology, Saskatoon, May 2024.
- Alberta Topology Seminar, July 2023.
- University of Haifa Topology and Geometry Seminar, Dec. 2022.
- Canadian Geometry-Topology Seminar, Montreal, Nov. 2022.
- NTNU Topology Seminar, Trondheim, Oct. 2022.
- Foundational Methods in Computer Science Workshop, Kananaskis, June 2022.
- Session on Relative Homology and Persistence Theory, CMS Meeting, St. John's, June 2022.
- Session on Descent Methods, CMS Meeting, St. John's, June 2022.
- New Directions in Group Theory and Triangulated Categories online seminar, May 2022.
- Session on Categories and Topology, Mathematical Congress of the Americas, July 2021.
- Princeton University Algebraic Topology Seminar, March 2021.
- University of Calgary Peripatetic Seminar, March 2021.
- University of Melbourne Topology Seminar, Oct. 2020.
- Fields Institute Toric Topology Seminar, May 2020.
- Ohio State University Homotopy Theory Seminar, Feb. 2020.
- NTNU Topology Seminar, Trondheim, Nov. 2019.
- Equivariant Topology and Derived Algebra, NTNU Trondheim, July 2019.
- Universität Osnabrück Oberseminar Topologie, July 2019.
- Electronic Computational Homotopy Theory Seminar, Feb. 2019.
- University of Western Ontario Geometry & Topology Seminar, Feb. 2019.
- Session on Topology, CMS Meeting, Vancouver, Dec. 2018.
- University of British Columbia Topology Seminar, Dec. 2018.
- University of Washington Topology Seminar, Nov. 2018.
- Adam Mickiewicz University in Poznań Geometry and Topology Seminar, July 2018.
- Topology Meeting, University of Oslo, May 2018.
- Workshop on Homotopy Theory, Universität Regensburg, May 2018.
- University of Louisiana at Lafayette Mathematics Colloquium, March 2018.

## GRANTS AND FELLOWSHIPS

- PIMS Collaborative Research Group (co-organizer), 2025–present.
- PIMS Travel support for a visitor, Regina, 2022.
- PIMS Support for the University of Regina Topology Seminar, 2019–2020.
- NSERC Discovery Grant, 2019–present.
- NSERC Discovery Launch Supplement, 2019.
- PIMS Support for the Topology Mini-Conference, Regina, 2019.
- Grant from the DFG-SPP “Homotopy Theory and Algebraic Geometry” for the Workshop on Motivic and Equivariant Homotopy Theory, Osnabrück, 2017.
- FQRNT Postdoctoral Research Scholarship, 2011–2013.
- FQRNT Doctoral Research Scholarship, 2008–2009.
- NSERC Doctoral Postgraduate Scholarship, 2006–2008.
- NSERC Julie-Payette Master’s Scholarship, 2003–2005.
- NSERC Undergraduate Student Research Award, Summers 2001 and 2002.

## AWARDS AND PRIZES

- Merit Award for sustained performance, Regina, 2022.
- Faculty of Science Travel Award, Regina, 2019.
- Bank of Montreal Scholarship, 2004.
- Governor General's Academic Medal (best undergraduate student), 2003.
- Jean-Maranda Prize (best graduating math major), 2003.
- Department of Mathematics Study Abroad Scholarship, Fall 2002.

## SERVICE

### Event organization

- Co-organizer of the Summer School on Homotopy Colimits, Regina, 2026.
- Co-organizer of the online seminar “Diagram Categories in Homotopy Theory”, 2025–present.
- Co-organizer of the Electronic Computational Homotopy Theory Reading Seminar, Fall 2025.
- Co-organizer of the Category Theory Session at the CMS Summer Meeting, June 2025.
- Co-organizer of the Homotopy Theory Session at the CMS Winter Meeting, Dec. 2023.
- Co-organizer of the Conference on Algebraic Topology, MPIM Bonn, Oct. 2022.
- Co-organizer of the Homotopy Theory Session at the CMS Winter Meeting, Dec. 2020.
- Co-organizer of the Prairie Mathematics Colloquium, 2019–2023.
- Co-organizer of the Topology Mini-Conference, Regina, June 2019.
- Organizer of the University of Regina Math & Stats Colloquium, 2019–2023.
- Organizer of the University of Regina Topology Seminar, 2018–2023.

### Committee work and academic service

- Math & Stats Graduate Chair, 2023–2025.
- Mathematics Search Committee, 2022–2023, 2024.
- Ph.D. Committee of the Faculty of Graduate Studies and Research, 2022–2025.
- Co-instructor of the Putnam training sessions, Regina, Fall 2020–2025.
- External examiner for 4 graduate students, 2021–2025.
- NSERC Scholarships and Fellowships Selection Committee for Mathematical Sciences, 2019–2022, 2025.
- Member of the thesis committee for 7 graduate students, Regina, 2019–2025.

### Refereeing

- Program Committee for the conference Applied Category Theory, 2025.
- Referee for the NSERC Discovery Grant program, 2021–2024.
- Reviewer for MathSciNet, 2015–present.
- Reviewer for Zentralblatt MATH, 2011–2018.
- Referee for: Advances in Mathematics; Algebraic & Geometric Topology; Annales Mathématiques du Québec; Compositio Mathematica; Foundations of Computational Mathematics; Higher Structures; Homology, Homotopy and Applications; International Mathematics Research Notices; Journal of Homotopy and Related Structures; Journal of Pure and Applied Algebra; Proceedings A; Proceedings of the LMS; Tbilisi Mathematical Journal; Theory and Applications of Categories.

## MISCELLANEOUS

**Citizenship:** Canadian.

**Languages:** Fluent in French and English; fluent in German (Goethe-Zertifikat C2).

**Computer skills:** Proficient in L<sup>A</sup>T<sub>E</sub>X. Some experience with Mathematica, Matlab, Maple, SageMath, Java, C++, C, Visual Basic, and html.

**Memberships:** American Mathematical Society, Canadian Mathematical Society, Association Mathématique du Québec.

## REFERENCES

**Kristine Bauer**

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