

Cameron Ruether, Ph.D.

Postdoctoral Fellow Department of Mathematics and Statistics
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Education

Doctorate in Philosophy, Mathematics and Statistics.

University of Ottawa, March 2022.

Dissertation: “Tensor Maps of Twisted Group Schemes and Cohomological Invariants.”

Supervisor: Dr. Kirill Zainoulline

Committee: Dr. Eva Hemmer (Chairperson)
 Dr. Erhard Neher (University of Ottawa)
 Dr. Alistair Savage (University of Ottawa)
 Dr. Yuly Billig (Carleton University)
 Dr. Stefan Gille (University of Alberta).

Master of Science, Mathematics.

University of Ottawa, October 2017.

Dissertation: “Killing Forms, W-Invariants, and the Tensor Product Map.”

Supervisor: Dr. Kirill Zainoulline

Committee: Dr. Aaron Smith (Chairperson)
 Dr. Monica Nevins (University of Ottawa)
 Dr. Yuly Billig (Carleton University).

Bachelor of Science, with Honours in Mathematics.

University of Alberta, June 2015.

Academic Employment

Memorial University of Newfoundland, Postdoctoral Fellow.

January 2023 - December 2023.

University of Ottawa, Postdoctoral Researcher.

January 2022 - December 2022.

St. Petersburg Euler International Mathematical Institute, Postdoctoral Researcher.

Two year position to start September 2022. Accepted February 3, 2022, but later declined due to the invasion of Ukraine.

Publications and Preprints

Cameron Ruether. “The Canonical Quadratic Pair on Clifford Algebras over Schemes”

Preprint: <https://arxiv.org/abs/2309.03077>, 2023.

Philippe Gille, Erhard Neher, and Cameron Ruether. “Azumaya Algebras and Obstructions to Quadratic Pairs over a Scheme”

Preprint: <https://arxiv.org/abs/2209.07107>, 2023.

Cameron Ruether. “Rost Multipliers of Lifted Kronecker Tensor Products”
Documenta Mathematica 25:1997-2022, 2020.

Conference Presentations and Invited Talks

“The Norm Functor over Schemes.”

Groups, Rings, Lie and Hopf Algebras V.

Memorial University of Newfoundland Harlow Campus, Harlow, UK, August 2023.

“Cohomological Obstructions to Quadratic Pairs over Schemes.”

2023 CMS Summer Meeting, Session: Quadratic Forms and Linear Algebraic Groups.

University of Ottawa, Ottawa, ON, June 2023.

“Cohomological Obstructions to Quadratic Pairs over Schemes.”

Arithmetic Geometry & Algebraic Groups at UVA

University of Virginia, Charlottesville, VA, May 2023.

“Chevalley Generators in Étale Stalks.”

2022 CMS Summer Meeting, Session: Geometry of Homogeneous Spaces and Beyond.

Memorial University of Newfoundland, St. John’s, NL, June 2022.

“Twisting Linear Algebraic Groups and Hopf Algebras.”

Groups, Rings, Lie and Hopf Algebras IV.

Memorial University of Newfoundland, St. John’s, NL, May 2022.

“Extending Tensor Product Maps to Non-split Linear Algebraic Groups.”

Algebra and Geometry of Homogeneous Spaces.

Online Mini-Workshop, June 2021.

“Injections from Kronecker Products and the Cohomological Invariants of Half-Spin.”

Quadratic Forms, Linear Algebraic Groups, and Beyond.

Online Seminar, October 2020.

“Rost Multipliers of Lifted Kronecker Tensor Products.”

Nonassociative Algebras and Geometry.

Bonne Bay Marine Station, Norris Point, NL, August 2019.

“Killing Forms, W-Invariants, and the Tensor Product Map.”

Combinatorics of Group Actions and its Applications Workshop.

Memorial University of Newfoundland, St. John’s, NL, August 2017.

Invited Talks:

“Obstructions to Quadratic Pairs over a Scheme.”

University of Ottawa and Carleton University Algebra Day.

Carleton University, Ottawa, ON, October 2022.

“Cohomological Invariants of Half-Spin Groups.”

St. Petersburg Algebraic Groups Seminar.

Online Seminar, January 2022.

“Twisting Spin, Half-spin, and Hopf Algebras.”

Seminar Talk.

Memorial University of Newfoundland, St. John’s, NL, September 2021.

“Rost Multipliers of Kronecker Tensor Products.”

Ottawa Algebra Seminar.

University of Ottawa, Ottawa, ON, February 2019.

Other Conferences and Workshops Attended

Forms, Flags, Graphs and Beyond.

Co-organizer.

University of Ottawa, Ottawa, ON, May 9 - May 12, 2019.

ABC Algebra Workshop.

University of Washington, Seattle, WA, November 10 - November 11, 2018.

Hopf Algebras, Algebraic Groups and Related Structures.

Memorial University of Newfoundland, St. John’s, NL, June 13 - June 17, 2016.

Teaching Experience

Professor, University of Ottawa.

- MAT 1302 Mathematical Methods II (Linear Algebra). *Fall 2022.*
- MAT 1330 Calculus for Life Sciences. *Fall 2022.*
- MAT 1341 Introduction to Linear Algebra. *Spring/Summer 2021.*

Graduate Teaching Assistant, University of Ottawa. 2015 - 2021.

Discussion Groups and Grading.

- MAT 1300 Mathematical Methods I (Calculus)
- MAT 1302 Mathematical Methods II (Linear Algebra)
- MAT 1320 Calculus I
- MAT 1322 Calculus II
- MAT 1327 Intensive Calculus for Life Sciences
- MAT 1341 Introduction to Linear Algebra
- MAT 1348 Discrete Mathematics for Computing
- MAT 1362 Mathematical Reasoning and Proofs

Scholarships and Awards

Admission Scholarship - Doctorate, University of Ottawa. *2017-2021.*

Teaching Assistant of the Year, University of Ottawa. *November 2018.*

Academic Services

Reviewer for zbMATH, *2019 - Present.*

- **Bendel, C. P.; Nakano, D. K.; Pillen, C.; Sobaje, P.** “On tensoring with the Steinberg representation.”
- **Bhunja, Sushil; Bose, Anirban.** “Twisted conjugacy in linear algebraic groups II.”
- **Malle, Gunter; Testerman, Donna M.** “Overgroups of regular unipotent elements in simple algebraic groups.”
- **Ofek, Danny.** “Reduction of structure to parabolic subgroups.”
- **Sercombe, Damian.** “Maximal connected k -subgroups of maximal rank in connected reductive algebraic k -groups.”
- **Sobaje, Paul.** “Unipotent elements and generalized exponential maps.”
- **Solleveld, Maarten.** “Conjugacy of Levi subgroups of reductive groups and a generalization to linear algebraic groups.”