Lauren DeDieu

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Citizenship: Canadian

Education

- **Ph.D. Mathematics (2016)**
  McMaster University
  Title: Newton-Okounkov Bodies of Bott-Samelson & Peterson Varieties
  Advisor: Dr. Megumi Harada
- **M.Sc. Mathematics (2012)**
  McMaster University
  Title: The k-Harmonious Chromatic Number of Simple Graphs
  Advisor: Dr. Alex Rosa
- **B.Sc. Honours Mathematics (2011)**
  Cape Breton University
  Title: The Evolution of Grötzsch's Three Colour Theorem
  Advisor: Dr. James Preen
- **B.A. Psychology (2011)**
  Cape Breton University

Teaching

- **University of Toronto Mississauga**

  Instructional Assistant, Winter 2016
  - Mat 202 (Introduction to Discrete Mathematics)
    62 students, led and designed two weekly tutorials
  - Mat 392 (Ideas of Mathematics)
    11 students, guided students as they gained extensive practice in writing mathematics, marked essays and drafts
- **McMaster University**

  Instructor, Summer 2015
  - Math 2C03 (Differential Equations)
    48 students, designed course material/ assessments, delivered lectures

  Teaching Assistant, 2011-2015
  - Math 2Z03 (Engineering III)
    688 students (~200 per tutorial), led and designed tutorials
  - Math 2XX3 (Advanced Calculus II)

83 students, led and designed three weekly tutorials

- Math 2X03 (Advanced Calculus I, 128 students)
  128 students, led and designed three weekly tutorials
- Math 1B03/1ZC3 (Linear Algebra)
  Led and designed weekly tutorials for three semesters, (603, 70, and 623 students, respectively)
- Math 2A03 (Calculus III)
  66 students, led and designed one weekly tutorial

- **Cape Breton University**

  Teaching Assistant, 2009-2011
  - Math 189 (Introduction to Computing Applications with C++)

  Math Help Centre Tutor, 2010-2011
  - Drop-in centre for undergrad students, one-on-one tutoring

  Tutor (Jennifer Keeping Accessibility Centre), 2009-2011
  - Tutored math and programming to students with disabilities

Professional Development

- **Teaching and Learning Scholar Certificate,** 08/2015, (90 hours)
  McMaster Institute for Innovation & Excellence in Teaching & Learning
  - Edu700: Essential Skills in Teaching and Learning
  - Edu750: Principles and Practices of University Teaching
  - Edu760: Self-Directed Study (*Writing to Learn Mathematics*)
- **Teaching and Learning Foundations Certificate,** 04/2015, (30 hours)
  McMaster Institute for Innovation & Excellence in Teaching & Learning
  - Edu600: Essential Skills in Teaching and Learning
  - Edu650: Peer-Evaluated Teaching Experience

Awards

- **2013** - NSERC Alexander Graham Bell Canada Graduate Scholarship (Doctorate)
- **2012** - Milnos Novotny Fellowship, McMaster University
  - McMaster Graduate Scholarship
  - McMaster Research Scholarship
- **2011** - McMaster Graduate Scholarship
  - Governor General's Academic Medal, Cape Breton University, (for highest academic standing in a bachelor degree program)
  - 2nd Place Oral Presentation, Cape Breton University Student Undergraduate Research Forum
- **2010** - NSERC Undergraduate Student Research Award
  - 1st Place History Essay Prize, Cape Breton University

- Philosophy Essay Prize, Cape Breton University

- **2007** - Cape Breton University President's Scholarship, (2007-2011)
  - Nova Scotia Queen Elizabeth II Medal
  - Excellence in Math Scholarship
  - Wendie Muise Foundation Scholarship
  - King Edward VIII Chapter IODE Scholarship
  - Brian White Scholarship

Publications

- L. DeDieu, Improving the Learning of Autonomous Differential Equations Through Writing, *in preparation*.
- L. DeDieu, M. Lovric, Student Perceptions of the Use of Writing in a Differential Equations Course, *submitted*.
- L. DeDieu, M. Harada, Newton-Okounkov Bodies of Peterson Varieties, *in preparation*.
- L. DeDieu, Newton-Okounkov Bodies of Bott-Samelson & Peterson Varieties, Ph.D. thesis.
- S. Chen and L. DeDieu, A Simple Moving Mesh Method for Blowup Problems, *Numerical Algorithms*, Vol. 69 (2), (2015), 343-356.

Research Talks

- **University of Toronto**
  Symplectic Geometry Seminar, 02/2016, Toronto, ON
  Title: Newton-Okounkov Bodies of Peterson Varieties
- **Fields Institute**
  Math Education Forum, 01/2016, Toronto, ON
  Title: Writing to Learn Mathematics in a Differential Equations Course
- **Fields Institute**
  Workshop on Recent Developments in the Geometry and Combinatorics of Hessenberg Varieties, 07/2015, Toronto, ON
  Title: Newton-Okounkov Bodies of Bott-Samelson & Peterson Varieties
- **University of Prince Edward Island**
  Canadian Mathematical Society Summer Meeting, 06/2015, Charlottetown, PE
  Title: Newton-Okounkov Bodies of Peterson & Bott-Samelson Varieties
- **Cape Breton University**
  Math, Physics, Geology Seminar, 06/2015, Sydney, NS
  Title: Newton-Okounkov Bodies of Peterson & Bott-Samelson Varieties
- **University of Guelph**
  Southwestern Ontario Graduate Mathematics Conference, 05/2015, Guelph, ON
  Title: Newton-Okounkov Bodies of Peterson & Bott-Samelson Varieties

- **Banff International Research Station**
  Connecting Women in Math Across Canada Workshop, 10/2014, Banff, AB
  Title: Introduction of the Theory of Okounkov Bodies of Bott-Samelson Varieties
- **Osaka City University**
  Geometry Seminar, 07/04/2014, Osaka, Japan,
  Title: Explicit Construction of a Bott-Samelson Variety and its Okounkov Body
- **McMaster University**
  Basic Notions Seminar, 11/28/2013, Hamilton, ON,
  Title: A Gentle Introduction to Graph Colouring
- **University of Guelph**
  Southwestern Ontario Graduate Mathematics Conference, 06/2013, Guelph, ON,
  Title: t-Harmonious Graph Colouring
- **Cape Breton University**
  Student Undergraduate Research Forum, 04/2011, Sydney, NS,
  Title: The Evolution of Grötzsch's Theorem
- **Saint Mary's University**
  Atlantic Provinces Council of the Sciences (APICS) Mathematical, Statistics and Computer Science conference, 10/2010, Halifax, NS,
  Title: A Simple Moving Mesh Method for Blow-up Problems
- **Cape Breton University**
  Student Summer Lecture Series, 07/2010, Sydney, NS
  Title: A Simple Moving Mesh Method for Blow-up Problems

Math Education Conferences/ Workshops Attended

- **Workshop on Digital Open Mathematics Education,** 06/2016
  Fields Institute, Toronto, Ontario
- **MathEd Forum,** 01/2015 - 04/2016 (monthly)
  Fields Institute, Toronto, Ontario
- **Math + Coding Symposium,** 06/2015
  Western University, London, Ontario
- **CMS (Canadian Mathematical Society) Summer Meeting,** 06/2015
  Session: Reaching our Students: Increased Participation and Persistence in First-Year Math Courses, University of Prince Edward Island, Charlottetown, PE
- **Mathematics Department Teaching Seminar,** 09/2011-11/2011 (weekly)
  McMaster University, Hamilton, ON

Other Research Conferences/ Workshops Attended

- **CMS (Canadian Mathematical Society) Winter Meeting,** 12/2014
  Sheraton Hotel, Hamilton, Ontario
- **Georgia Algebraic Geometry Symposium,** 10/2014
  University of Georgia, Athens, Georgia
- **AGNES (Algebraic Geometry Northeastern Series)**, 04/2013
  Yale University, New Haven, Connecticut
- **Graduate Student Topology and Geometry Conference**, 04/2013
  University of Notre Dame, South Bend, Indiana
- **Fields-Mitacs Undergraduate Summer Research Program: Toric Varieties,**
  Summer 2012, Fields Institute, Toronto, Ontario
- **Fields Medal Symposium**, 10/2012
  Fields Institute, Toronto, Ontario
- **Joint Mathematics Meetings**, 01/2012
  Hynes Convention Center, Boston, Massachusetts
- **Atlantic Provinces Council of the Sciences (APICS) Conference**, 10/2009
  Dalhousie University, Halifax, Nova Scotia

Professional Service

- **Student Representative:** CBU Math, Physics, & Geology Department, 2009-2011
  CBU Mathematics Hiring Committee, 2010, 2011
  CBU Geology Hiring Committee 2010
- **Volunteer:** Cape Breton University Science Rendezvous, 2011

Extra-Curricular

- McMaster University Concert Band (trumpet)
- Ugly Mutts Dog Rescue (volunteer)
- Experienced baseball player
- Wildlife enthusiast

Reference Letters Available From

- Megumi Harada, McMaster University; Megumi.Harada@math.mcmaster.ca
- Miroslav Lovric, McMaster University; lovric@mcmaster.ca
- David Lozinski, McMaster University; lozinski@math.mcmaster.ca