

Brandon Fodden

Citizen of Canada

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EDUCATION

Ph.D. (Mathematics) - Queen's University - September 2003 to May 2007

Thesis Advisor: Dr. Ram Murty

M.Sc. (Mathematics) - University of Toronto - September 2002 to July 2003

Thesis Advisor: Dr. William Weiss

B.Sc. Honours (Mathematics) - Queen's University - September 1998 to May 2002

RESEARCH INTERESTS

Analytic Number Theory

L-functions

Hilbert's Tenth Problem

Mathematical Logic

PROFESSIONAL EXPERIENCE

Assistant Professor, Teaching Stream: Carleton University, Ottawa, Ontario - July 2024 to date

Instructor III: Carleton University, Ottawa, Ontario - July 2020 to June 2024

Instructor II: Carleton University, Ottawa, Ontario - July 2016 to June 2020 (confirmed July 2018)

Instructor I: Carleton University, Ottawa, Ontario - September 2013 to June 2016

Academic Assistant (Instructor): University of Lethbridge, Lethbridge, Alberta - July 2010 to August 2013

Assistant Professor: University of Lethbridge, Lethbridge, Alberta - January 2010 to June 2010

Teaching Fellow: University of Lethbridge, Lethbridge, Alberta - May 2008 to December 2009

Teaching Fellow: Queen's University, Kingston, Ontario - September 2004 to December 2006

Teaching Assistant: Queen's University, Kingston, Ontario - September 2003 to April 2004

Teaching Assistant: University of Toronto, Toronto, Ontario - September 2002 to April 2003

Teaching Assistant: Queen's University, Kingston, Ontario - September 2000 to December 2001

AWARDS AND FELLOWSHIPS

Carleton Professional Achievement Award - Carleton University - February 2020

Faculty of Science Teaching Award - Carleton University - December 2017

Postdoctoral Fellowship - University of Lethbridge - July 2009 to December 2009

PIMS Postdoctoral Fellowship - University of Lethbridge - July 2007 to June 2009

NSERC PGS D2 - Queen's University - September 2005 to April 2007

E.G. Bauman Fellowship - Queen's University - September 2004 to August 2005

NSERC PGS A - Queen's University - September 2003 to August 2004

NSERC PGS A - University of Toronto - September 2002 to August 2003

NSERC USRA - Queen's University - Summer 2001 and 2002

Nellie and Ralph Jeffery Award in Mathematics - Queen's University - September 2000 to August 2002

PUBLICATIONS

- (with M. Ram Murty) Hilbert's Tenth Problem: An Introduction to Logic, Number Theory, and Computability (book), Student Mathematical Library 88. Published by the American Mathematical Society in 2019.
- (with Amir Akbary) Lower bounds for power moments of L -functions,

- Acta Arithmetica, vol. 151, no. 1 (2012) 11-38.
3. Diophantine Equations and the Generalized Riemann Hypothesis, Journal of Number Theory, vol. 131, no. 9 (2011) 1672-1690.
 4. Thesis: *Diophantine Equations and the Generalized Riemann Hypothesis*.
 5. (with H.E.A. Campbell and D. Wehlau) Invariants of the diagonal C_p -action on V_3 , Journal of Algebra, 303 (2006) 501-513.
 6. An Explicit Inequality Equivalence of the Generalized Riemann Hypothesis for a Member of the Selberg Class (in preparation).

COURSES TAUGHT

Carleton University

Calculus and Introductory Analysis I - MATH 1052 (previously the first half of 1002) - 1 time
 Calculus and Introductory Analysis II - MATH 2052 (previously the second half of 1002) - 1 time
 Introductory Algebra I - MATH 1152 (previously the first half of 1102) - 1 time
 Introductory Algebra II - MATH 2152 (previously the second half of 1102) - 1 time
 Introduction to Mathematical Reasoning - MATH 1800 - 24 times
 Introduction to Mathematical Logic - MATH 4802 - 3 times
 Elementary Calculus I - MATH 1007 - 3 times
 Ordinary Differential Equations - MATH 2454 - 1 time
 Differential Equations and Infinite Series - MATH 1005 - 8 times
 Analytic Number Theory - MATH 4305/5305 - 1 time
 Algebra I - MATH 1102 (two semester course) - 3 times
 Calculus and Introductory Analysis I - MATH 1002 (two semester course) - 2 times
 Precalculus: Functions and Graphs - MATH 0005 - 9 times
 Linear Algebra for Engineering or Science - MATH 1104 - 2 times
 Calculus for Engineering or Physics - MATH 1004 - 1 time
 Math Matters (one week mini course) - 3 times

University of Lethbridge

Mathematical Concepts - MATH 2000 - 2 times
 Discrete Structures - CPSC 1820 - 4 times
 Linear Algebra - MATH 3410 - 1 time
 Elementary Linear Algebra - MATH 1410 - 4 times
 Introduction to Probability and Statistics - STAT 1770 - 3 times
 Calculus I - MATH 1560 - 2 times

Queen's University

Linear Algebra - MATH 111 (two semester course) - 1.5 times
 Differential and Integral Calculus - MATH 126 - 1 time

LECTURES AND PRESENTATIONS

Hilbert's Tenth Problem

Carleton University Math Society Colloquium - Carleton University - 31 January 2024

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Carleton University Math Society Pi Day Seminar - Carleton University - 14 March 2023

What Are Prime Numbers, and Why Are They Important?

Carleton University Math Society Pi Day Seminar - Carleton University - 13 March 2020

Hilbert's Tenth Problem

Carleton University Math Society Colloquium - Carleton University - 6 November 2015

Goodstein's Theorem, or how big numbers can break things

Carleton University Math Society Colloquium - Carleton University - 4 March 2015

Student Seminar - University of Lethbridge - 15 March 2013

Hilbert's Tenth Problem

Number Theory and Combinatorics Seminar - University of Lethbridge - 30 January 2012

Lower bounds for fractional moments of L-functions

Number Theory Section, CMS Summer Meeting - University of Alberta - 4 June 2011

Number Theory Seminar and Combinatorics - University of Lethbridge - 10 September 2008

An explicit inequality equivalence of the generalized Riemann hypothesis for a member of the Selberg Class
 Number Theory Day - BIRS - 2 May 2010
 Number Theory Seminar and Combinatorics - University of Lethbridge - 16 October 2009
 Diophantine equations and the generalized Riemann hypothesis
 CNTA X Contributed Talk - Waterloo - 14 July 2008
 Number Theory Day - University of Lethbridge - 7 May 2008
 Model Theory Seminar - McMaster University - 13 March 2008
 Number Theory Seminar - University of Ottawa - 3 December 2007
 Number Theory Seminar and Combinatorics - University of Lethbridge - 26 September 2007
 Fractional moments of the Riemann zeta function
 Number Theory Seminar and Combinatorics - University of Lethbridge - 20 March 2008
 Some unprovable statements in number theory
 Departmental Colloquium - University of Lethbridge - 21 September 2007
 Number Theory Seminar and Combinatorics - University of Lethbridge - 12 September 2007
 Number Theory Seminar - Queen's University - 5 November 2004
 The generalized Riemann hypothesis for a number field is Diophantine
 Number Theory Seminar - Queen's University - 20 October 2006
 The Todorčević-Velicković equivalence of Martin's axiom
 Set Theory Seminar - University of Toronto - 2 August 2003

PROFESSIONAL ACTIVITIES

Review of textbooks for Cambridge University Press, the American Mathematical Society, and Pearson.
 Review of papers for Theoretical Computer Science and the Czechoslovak Mathematical Journal.
 Math honours projects supervised at Carleton University (four in total): one in summer 2019, one in fall 2020, two in summer 2020.
 Dean's Summer Research Internship student supervision, Carleton University, summer 2016.
 Co-organizer, Alberta Number Theory Days 2013 (with David Roe).
 Fun With Math high school outreach, University of Lethbridge, Spring 2013 (with A. Momeni and S. Yazdani).
 Co-organizer, Alberta Number Theory Days 2011 (with Amir Akbary).
 Putnam Competition preparation sessions instructor, University of Lethbridge, Fall 2010.
 Summer undergraduate student co-supervision, University of Lethbridge, Summer 2009.

Committees at Carleton University

Cyclical review committee: winter 2024 and 2024/25
 Planning committee: 2024/2025
 Retention committee: 2024/2025
 Priorities committee: 2023/2024 and 2022/2023
 Director search committee: 2023/2024
 Personnel committee: 2023/2024 and 2014/2015
 Working group on service courses: 2021/2022
 NSERC USRA / DSRI coordinator: 2022/2023, 2019/2020 and 2018/2019
 Planning committee: 2019/2020 (chair) and 2018/2019
 Hiring committee: fall 2018
 Recruitment committee: 2018/2019, 2016/2017, 2015/2016, and 2014/2015
 Director search committee: 2017/2018
 Retention committee: 2017/2018, 2016/2017, and 2015/2016

CONFERENCES ATTENDED

Canadian Number Theory Association XIII Meeting · June 16 - June 20 2014 · Carleton University
 Alberta Number Theory Days · May 10 - May 12 2013 · BIRS (co-organizer)
 Canadian Number Theory Association XII Meeting · June 17 - June 22 2012 · University of Lethbridge
 Alberta Number Theory Days · June 17 - June 19 2011 · BIRS (co-organizer)
 Special Section in Number Theory, CMS Summer Meeting · June 3 - June 5 2011 · University of Alberta
 Workshop on Analytics Aspects of L -functions · May 29 - June 3 2011 · University of Calgary
 Alberta Number Theory Days · April 30 - May 2 2010 · BIRS
 Alberta Number Theory Day · April 30 2009 · University of Calgary

Canadian Number Theory Association X Meeting · July 13-18 2008 · University of Waterloo
Alberta Number Theory Day · May 7 2008 · University of Lethbridge