Eric Stubley

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Citizenship: Canadian

Education

2015–2021 (expected) **Doctor of Philosophy, Mathematics**
University of Chicago
Thesis: Partial weight one Hilbert modular forms in ordinary families
Advisor: Frank Calegari

2015–2017 **Master of Science, Mathematics**
University of Chicago

2011–2015 **Bachelor of Science, Honours Mathematics**
McGill University

Research Interests

Algebraic number theory, especially Galois representations, Galois cohomology, and the Langlands program

Awards and Honours

2017–2020 **NSERC Postgraduate Scholarship, doctoral level**
NSERC, held at University of Chicago
Competitive scholarship awarded annually to around 400 students associated with Canada

2018, 2019 **Nominated for the Physical Sciences Teaching Prize**
University of Chicago
Awarded to up to 3 graduate student teachers each year based on undergraduate nominations

2015 **Charles Fox Memorial Prize in Mathematics**
McGill University Faculty of Science
Awarded annually to one student who has achieved high academic standing in mathematics

2014, 2015 **NSERC Undergraduate Student Research Award**
NSERC, held at McGill University
Competitive scholarship funding summer research

2013 **Richard and Mary Shaw Scholarship in Science**
McGill University Faculty of Science
Awarded annually to one student who has achieved high academic standing in science

2012 **Scholarship offer**
McGill University Schulich School of Music

2011 **Gold Medal**
Canada-Wide Science Fair
One of 10 gold medals, project on numerical modelling of bacterial population growth

Publications

Partial weight one Hilbert modular forms in ordinary families
In preparation.

Classicality for partial weight one Hilbert modular forms
In preparation.

Class groups of Kummer extensions via cup products in Galois cohomology
Joint with Karl Schaefer
Trans. Amer. Math. Soc. **372** (2019), no. 10, 6927-6980.

Invited Talks

June 2020 **Locally split Galois representations and Hilbert modular forms of partial weight one**
UCLA, number theory seminar (online)

April 2020 **Locally split Galois representations and Hilbert modular forms of partial weight one**
UIUC, number theory seminar (online)

January 2020 **Class groups, congruences, and cup products**
UW Madison, number theory seminar

September 2018 **Class groups, congruences, and cup products**
Johns Hopkins University, number theory seminar

Other Talks

2015–2020 I regular speak in University of Chicago graduate student seminars, particularly the student number theory seminar. I give an average of 8 of these talks per year.

June 2020 Chicago Number Theory Day 2020, lightning talk

January 2015 Seminar in Undergraduate Mathematics in Montreal

October 2014 McGill University Faculty of Science Undergraduate Research Conference, poster presentation

July 2014 Canadian Undergraduate Mathematics Conference

Teaching Experience

2017–2021 **Lecturer**, *University of Chicago*
Responsibilities included planning and giving all lectures, assigning weekly homework, writing and grading weekly quizzes, writing and grading midterm and final exams, supervising a team of undergraduate teaching assistants, and assigning final grades. Courses taught:
- Calculus 3 (Fall 2019 (2 Sections), Winter 2021)
- Studies in Mathematics 1 & 2 (Fall 2018, Winter 2019)
- Elementary Functions and Calculus 1 & 2 (Fall 2017, Winter 2018)

Summers 2019, 2020 **Mentor**, *Canada/USA Mathcamp*
Instructor and academic advisor for an intensive 5-week summer program in mathematics for high school students. Designed and taught 14 short courses on undergraduate and graduate level topics in mathematics. As the academic advisor to a group of 6–7 students, I helped guide them to which of the 20+ classes offered every week best suited their background and interests. Select list of courses taught:
- Congruences of Bernoulli numbers and zeta values (Summer 2020 (online))
- Introduction to ring theory (Summer 2020 (online))
- How to ask questions? (Summer 2020 (online))
- Change ringing (Summer 2019 (with Tim Black))
- Everything you ever wanted to know about finite fields (Summer 2019)
- You can't solve the quintic (Summer 2019)

Summer 2018 **Teaching Assistant**, *Chicago Scholars Program*
Teaching assistant at a college preparation program for first generation college students for a six week class in elementary number theory and cryptography. Responsibilities included grading weekly homework assignments, assisting the instructor in preparing lectures, and guiding student discussions and classwork.

2016–2017 **College Fellow**, *University of Chicago*
Teaching assistant for upper level undergraduate classes. Responsibilities included grading, running problem sessions, writing exam questions, and giving several lectures.
- Partial Differential Equations (Spring 2017)
- Ordinary Differential Equations (Winter 2017)
- Complex Analysis (Fall 2016)

2016–2017 **Graduate Student Mentor**, *University of Chicago*
Supervised undergraduate projects for the University of Chicago directed reading program (DRP) and research experience for undergraduates program (REU). Responsibilities included advising students in choosing topics for reading courses, guiding students through research projects, and assisting students in preparing oral presentations and written reports.

2014–2015 **Undergraduate Teaching Assistant**, *McGill University*
Worked at the drop-in mathematics helpdesk. Assisted students from all undergraduate mathematics classes with understanding material from classes and homework problems.

Professional Service

Reviewer for Transactions of the American Mathematical Society.

Spring 2018, 2019 Organized one day improv workshops for graduate students in mathematics.

Spring 2018 Organized a seminar on Classical Papers in Number Theory.

Winter 2018 Organized a seminar on Iwasawa Theory.

September 2017 Organized WOMP, the warm up program for incoming graduate students in mathematics.

Spring 2016 Organized a learning seminar for first year graduate students in number theory.

Professional Development

Fall 2020 Fundamentals of teaching in the mathematical sciences
Chicago Center for Teaching, Chicago

June 2018 Communicating mathematics effectively
University of Washington, Seattle

Fall 2018 Course design and college teaching
Chicago Center for Teaching, Chicago

April 2017 Improv for science communication
University of Chicago Physical Sciences Division, Chicago

Conferences and Workshops Attended

August 2020 Serre weights conjectures and geometry of Shimura varieties
CRM, Montreal (online)

June 2020 Chicago Number Theory Day
UIC, Chicago (online)

March 2020 Arbeitsgemeinschaft: derived Galois deformation rings and cohomology of arithmetic groups
Oberwolfach, Germany (cancelled)

March 2020 Arizona winter school on nonabelian Chabauty
University of Arizona, Tucson

October 2019 Midwest arithmetic geometry and number theory series
OSU, Columbus

March 2018 Arizona winter school on Iwasawa theory
University of Arizona, Tucson

November 2017 Motives, Galois representations, and cohomology around the Langlands program
IAS, Princeton

March 2017 Arizona winter school on perfectoid spaces
University of Arizona, Tucson

January 2015 Seminar in undergraduate mathematics in Montreal
Université de Montréal, Montreal

July 2014 Canadian undergraduate mathematics conference
Carleton University, Ottawa

June 2014 Counting arithmetic objects
CRM, Montreal