

# Curriculum Vitae

Tom Potter

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## Graduate Education

- M.Sc. in Mathematics from Dalhousie University awarded May 2014.
- Program in progress: Ph.D. in Mathematics at Dalhousie University, expected to graduate in October 2024.

## Master's Thesis

- The Bochner Integral and an Application to Singular Integrals. Defense date: February 25, 2014. Supervisor: Dr. Keith Taylor.

## Ph.D. Thesis

- Subspaces of  $L^2(\mathbb{R}^n)$  Invariant Under Crystallographic Shifts. Defense date: Summer, 2024. Supervisor: Dr. Keith Taylor.

## Undergraduate Education

- B.Sc. Honours in Mathematics from Dalhousie University awarded May 2009. Honours Thesis: Schwartz Functions, Tempered Distributions, and the Hilbert Transform. Supervisor: Dr. Andrea Fraser.

## Awards and Recognitions

- Received NSERC Undergraduate Student Research Awards in 2008 and 2009. These projects were done under the supervision of Dr. Andrea Fraser, at Dalhousie University. My work in 2008 set the stage for my honours thesis, providing me the foundations from measure theory, Fourier analysis, point set topology, and distribution theory. My work during the summer of 2009 was self-directed study in functional analysis and differential geometry of curves and surfaces.
- Awarded Ralph & Frances Lewis Jeffery Scholarship upon graduation in 2009. This scholarship was awarded upon completion of my B.Sc. in Mathematics at Dalhousie. This scholarship is awarded annually to a student who has completed the final year of an honours degree in Mathematics, and who has maintained at least a second-class standing during the first three years of the class.
- Received NSERC CGS-M Alexander Graham Bell Canada Graduate Scholarship in 2009-2010.

## Teaching Experience

### Courses Taught

- See Academic Positions Held

### TA and Other Teaching Experience

- More than a decade of teaching assistant experience: leading tutorials at Dalhousie University, TA at Help Desk, Grading exams, projects, tests, quizzes.
- More than a decade of experience private tutoring: tutored courses in Calculus, Linear Algebra, Math for Commerce, Math for Engineering, Math for Life Sciences, High School Math, Differential Equations, Functional Analysis.
- See Outreach section for additional Teaching Experience in the local school community.

## Academic Positions Held

- Research Assistant at Dalhousie Physics Department, January 2013 to August 2013:
  - Worked on mathematical problems pertaining to Adiabatic Quantum Computing, under the supervision of Dr. Jordan Kyriakidis.
- Instructor for Math 2002, Summer (B) session 2018.
- Instructor for Math 1115, Summer (A) session 2019.W
- Instructor for Math 2002, Summer (B) session 2020.

- Instructor for Math 2002, Summer (B) session 2021.
- Instructor for Math 2002, Summer (B) session, 2022.
- Instructor for Math 2002, Summer (B) session, 2023.

## Outreach

- Presenter and Content Developer for Nova Scotia Math Circles: Fall 2018 to Summer 2020.
  - Visited Schools around Nova Scotia to give interactive and meaningful presentations involving Mathematics. This commitment involved 200—260 hours per academic year.
  - Created and designed content for these presentations.
  - Helped boost confidence and foster enthusiasm for math by giving fun, hands-on presentations that appealed to a variety of learning styles.
- Program Director of Nova Scotia Math Circles: August 2020 to Present.
  - Running all aspects of the Nova Scotia Math Circles program.
  - Trained and managed a team of 15 to 25 people. Managed the timesheets and pay issues for this team.
  - Relationship-building and collaborating with other outreach programs, such as [Imhotep's Legacy Academy](#), WISEatlantic, University of Waterloo Math Circles, Julia Robinson Math Festival.
  - Diversity work: this included developing a pilot afterschool program for Indigenous students at two local schools. Also coordinated visits for students of African Ancestry at Dalhousie, with role model presenters.
  - Kept detailed records for reports and promotional purposes. Composed annual reports for department and sponsors.
  - Coordinated and arranged visits for hundreds of classrooms per year, including schools in remote districts. Kept detailed records of all these presentations, including teacher feedback.
  - Coordinated special outreach presentations for homeschool groups, private schools, and Girl Guides.
  - Coordinator for Canadian Math Kangaroo for two consecutive years, including awards ceremony. This year I organized the contest for 160 students.
  - Developed, prepared, and ran events for the Math Department at Dalhousie: Open House, Dal Discovery Days.
  - Planned and organized 8 to 10 evening events at Dalhousie each year, including vetting presentations, ordering food, room bookings. These events were aimed at Jr High and Highschool students from around the province or further abroad, who could attend in person or via zoom. The presentations were designed to be interactive, and were given by graduate students, advanced undergraduate students, postdoctoral researchers, faculty member at Dalhousie and neighbouring universities, former Math Circles directors, and teachers.

- Prepared material for various events such as South Shore Science Fair, Family STEAM Day at MSVU, NMES STEM night, KCA STEAM Day.
- Updated and maintained the [NS Math Circles](#) website (HTML, CSS); created all new, responsive webforms.

## Publications

- Forthcoming: Subspaces of  $L^2(\mathbb{R}^n)$  Invariant Under Crystallographic Shifts
  - *Note: This will be an article based on work in my dissertation.*

## Talks Given

- Tempered Distributions and the Hilbert Transform. Given at Canadian Undergraduate Math Conference in 2009.
- Path-connectedness of Sublevel, Level, and Superlevel Sets of Eigengap Functions in the Space of Hermitian Matrices. Given at the Honours Seminar for Dalhousie Department of Mathematics and Statistics, on March 21, 2013.
- Interactive Problem Solving. Given at the November 2020 Math Circles Monthly Event.
- Tessellations and Symmetry: Given at the November 2021 Math Circles Monthly Event.
- Toads and Frogs: Given at October 2021 Math Circles Monthly Event.
- Exploring Probability: Part 1 (with Cali Park): Given at the November 2022 Math Circles Monthly Event.
- Exploring Probability: Part 2 (with Cali Park): Given at the December 2022 Math Circles Monthly Event.
- Dots and Boxes: Given at the September 2023 Math Circles Monthly Event.

## Other

- Math Ph.D. Representative for the Math and Stats graduate student council: 2017/2018 Academic Year.
- Vice President Internal (Treasurer) for the Math and Stats graduate student council: 2018/2019 Academic Year.