



Michael (Mikey) Chow

Citizenship, Visa Status

Canadian citizen

2018–2024 **US J1-Visa**

Education

2018– **PhD in Mathematics**, Yale University.

Under the supervision of Professor Hee Oh. Expected to graduate in May 2024.

2014–2018 **Honours Bachelor of Science, Specialist - Mathematics**, University of Toronto - St. George Campus. Graduated with “High Distinction”.

Areas of Interest

○ Dynamical systems, ergodic theory, homogeneous dynamics, discrete subgroups of Lie groups, hyperbolic geometry, thermodynamic formalism.

Publications and preprints

- [6] Michael Chow and Hee Oh. Multiple correlations of spectra for higher rank Anosov representations. Preprint, 31 pages, 2024.
- [5] Michael Chow and Hee Oh. Jordan and Cartan spectra in higher rank with applications to correlations. Preprint. arXiv:2308.16329, 46 pages, 2023.
- [4] Michael Chow and Elijah Fromm. Joint equidistribution of maximal flat cylinders and holonomies for Anosov homogeneous spaces. Preprint. arXiv:2305.03590, 56 pages, 2023.
- [3] Michael Chow and Pratyush Sarkar. Exponential mixing of frame flows for convex cocompact rank one locally symmetric spaces. Preprint. arXiv:2211.14737, 27 pages, 2022.
- [2] Michael Chow and Pratyush Sarkar. Local mixing of one-parameter diagonal flows on Anosov homogeneous spaces. *International Mathematics Research Notices*, 2023(18):15834–15895, 2023.
- [1] André Belotto da Silva, Edward Bierstone, and Michael Chow. Composite quasianalytic functions. *Compositio Mathematica*, 154(9):1960–1973, 2018.

Graduate Fellowships

- 2021. Theodore and Dorothy Sands Fellowship.
- 2020. Warren A. and Hibernia S. Tyrrell Fellowship.
- 2020. Nathan Hale Associates Scholarship - N & S Irvin Scholar.
- 2018. Robert Willets Carle Scholar.

Upcoming/Invited Lectures

- Nov 2023 **University of Toronto Dynamics Seminar**, University of Toronto.
Jordan and Cartan spectra in higher rank with applications to correlations.
- Nov 2023 **New England Dynamics and Number Theory Seminar**, Virtual.
Jordan and Cartan spectra in higher rank with applications to correlations.
- Nov 2023 **Penn State Dynamical Systems Workshop**, Pennsylvania State University.
Jordan and Cartan spectra in higher rank with applications to correlations.
- Oct 2023 **University of Illinois Chicago Dynamics Seminar**, University of Illinois, Chicago.
Jordan and Cartan spectra in higher rank with applications to correlations.
- Oct 2023 **University of Chicago Dynamics Seminar**, University of Chicago.
Jordan and Cartan spectra in higher rank with applications to correlations.
- Sep 2023 **Yale Group Actions, Geometry and Dynamics Seminar**, Yale University.
Jordan and Cartan spectra in higher rank with applications to correlations.
- Feb 2023 **Yale Group Actions, Geometry and Dynamics Seminar**, Yale University.
Joint equidistribution of maximal flat cylinders and holonomies in Anosov homogeneous spaces.
- Oct 2021 **Arbeitsgemeinschaft: Thin Groups and Super Approximation**, Mathematisches Forschungsinstitut Oberwolfach - virtual.
Exponential mixing: the case of convex cocompact manifolds.
- July 2018 **Canadian Undergraduate Mathematics Conference**, University of Saskatchewan.
An introduction to quasianalytic Denjoy-Carleman classes and a composite function problem.
Awarded CUMC Award of Excellence.

Visits

- July-Aug
2023 **Korea Institute for Advanced Study**, Seoul.

Conferences Upcoming/Attended

- Nov 2023 **Penn State Dynamical Systems Workshop**, Pennsylvania State University.
- Oct 2023 **Midwest Dynamics Conference**, University of Illinois, Chicago.
- June 2023 **Dynamics: Classical, Modern and Quantum**, Northwestern University.
- June 2023 **Homogeneous Dynamics and Geometry in Higher-Rank Lie Groups**, Institut des Hautes Études Scientifiques.
- June 2023 **Zurich Dynamics School and Conference**, University of Zurich.

- May 2023 **Dynamics, Rigidity and Arithmetic in Hyperbolic Geometry**, Institute for Computational and Experimental Research in Mathematics.
- Nov 2022 **Penn State Dynamical Systems Workshop**, Pennsylvania State University.
- June 2022 **Marc Burger's Prime**, ETH Zürich Forschungsinstitut für Mathematik.
- June 2022 **The Circle at Infinity: An International Colloquium in Honor of Curtis T. McMullen**, Harvard University.
- June 2022 **Ergodic Geometry, Number Theory and Margulis' Legacy: The Next Generation**, David Rubenstein Forum at the University of Chicago.
- May 2022 **Houston Workshop on Hyperbolic Dynamical Systems**, University of Houston.
- March 2022 **Simons Center's Workshop: Flexibility and Rigidity in Dynamical Systems**, Simons Center for Geometry and Physics.
- Oct 2021 **Penn State Dynamical Systems Workshop**, Pennsylvania State University.
- Oct 2021 **Arbeitsgemeinschaft: Thin Groups and Super Approximation**, Mathematisches Forschungsinstitut Oberwolfach - virtual.
- Jan 2020 **Winter School on Dynamics, Topology and Numbers**, Hausdorff Institute of Mathematics.
- Oct 2019 **MPS Conference on High Dimensional Expanders**, Simons Foundation's Gerald D. Fischbach Auditorium.
- Oct 2019 **Arbeitsgemeinschaft: Zimmer's Conjecture**, Mathematisches Forschungsinstitut Oberwolfach.

Teaching Experience

- 2021–2023 **Calculus Instructor**, Yale University.
Lecturing and grading.
 - MATH120 Calculus of Several Variables. Under the supervision of John Hall (2021 Fall) and Ian Adelstein (2023 Spring).
 - MATH115 Calculus of One Variable II. Under the supervision of Brett Smith (2021 Spring) and Meghan Anderson (Fall 2023).
- 2019–2022 **Teaching Assistant**, Yale University.
Leading tutorials and/or grading.
 - MATH360 Intro to Lie Groups. Under the supervision of Philsang Yoo (2020 Spring).
 - MATH350 Abstract Algebra. Under the supervision of Miki Havlicekova (2019 Fall).
 - MATH305 Analysis 2. Under the supervision of Hee Oh (2022 Spring).
 - MATH225 Linear Algebra and Matrix Theory. Under the supervision of Kalina Mincheva (2019 Fall).
 - MATH115 Calculus of One Variable II. Under the supervision of Brett Smith (2021 Summer, 2020 Summer).
- 2019 **Lead Instructor for Yale Young Global Scholars Program**, Yale University.
Created and gave original seminars about mathematics in science, biology and computer science for talented high school students, mentored many students on their research projects, and organized social activities.
- 2018 **Calculus Coach**, Yale University.
Tutoring several small groups of students.
 - MATH120 Multivariable Calculus. Under the supervision of Sudesh Kalyanswamy. (2018 Fall)

- 2017 **The Victoria College Math Tutor**, University of Toronto - St. George Campus, Victoria College.
Held drop-in help hours for MAT136, MAT137 students.
- 2015–2018 **Teaching Assistant**, University of Toronto - St. George Campus.
Leading tutorial sections, office hours, test-solving, grading, invigilation.
- MAT257 Analysis II. Under the supervision of Professor Edward Bierstone (2017 Fall/ 2018 Spring).
 - MAT246Y Concepts in Abstract Mathematics. Under the supervision of Jonathan Korman (2017 Summer).
 - MAT237Y Multivariable Calculus. Under the supervision of Larissa Richards (2018 Summer).
 - MAT137Y Calculus! Under the supervision of Professor Alfonso Gracia-Saz (2017 Fall/ 2018 Spring, 2016 Fall/ 2017 Spring, 2015 Fall/ 2016 Spring).

Undergraduate Research Experience

- 2016–2018 **Researcher - NSERC USRA**, University of Toronto - St. George Campus.
Summer research projects under a professor's supervision. Funded by the Natural Sciences and Engineering Research Council of Canada, Undergraduate Student Research Award.
- 2017 Summer, 2018 Summer. Under the supervision of Professor Edward Bierstone. On various problems concerning quasianalytic functions.
 - 2016 Summer. Under the supervision of Professor Kumar Murty. On applications of quantum computing to problems in number theory.

Select Academic Honours (pre-graduate school)

William Lowell Putnam Mathematical Competition

- 2017. 21st overall. 1st in Canada. University of Toronto team ranked 4th.

University of Toronto Undergraduate Mathematics Competition

- 2016–2018. 1st place.
- 2015. 3rd place.

Undergraduate Scholarships and Awards

- 2018. Nathan Mendelsohn Prize.
- 2018. Canadian Undergraduate Mathematics Conference Award of Excellence.
- 2018. Scott Memorial Scholarship.
- 2018, 2017. Margaret Ronald Taylor and Thomas Paxton Scholarships in Math.
- 2017. Norman Stuart Robertson Scholarship in Math.
- 2017. Ivan Szak Scholarship in Math.
- 2017. Samuel Beatty in-course Scholarship.
- 2017, 2016. Richard Jeffrey Maybee Memorial Scholarships.
- 2016. John Macara, Barrister of Goderich, Scholarship.
- 2015. Dr. John Benjamin Gullen Scholarship.
- 2015. Joseph Alfred Whealey in-course Scholarship.
- 2014. University of Toronto Scholar (Entrance).
- 2014. University of Toronto National Biology Competition Scholarship (Entrance).
- 2014. Clifton Graham Roberts Admission Award (Entrance).

Select Grade 12 Awards

- Bronze medal at the 55th International Mathematical Olympiad (Team Canada).
- 24th overall, 1st in Canada, on the 2014 USA Mathematical Olympiad.
- Top score in Canada on the American Invitational Mathematics Examination.
- 3rd highest score on the 2014 University of Toronto's National Biology Competition.
- Governor General's Medal Recipient.

Service

- 2020–2024 **Graduate Student Assembly Representative**, *Disciplinary Committee member (2020–2022)*, Yale University.
Elected by the math graduate students.
- 2019 **Volunteer Putnam Trainer**, Yale University.
Held problem solving sessions to train for the Putnam Competition.
- 2018 **Volunteer Putnam Trainer**, University of Toronto - St. George Campus.
Held problem solving sessions to train for the Putnam Competition.
- 2018 **Canada Math Camp Speaker**, University of Toronto - St. George Campus.
Held a problem solving session for high school students invited to the camp.