Associate Professor
McGill University, Math. & Stats. Dept.
E-mail: `anush.tserunyan@mcgill.ca`
Website: https://www.math.mcgill.ca/atserunyan

March 27, 2025

Anush Tserunyan

RESEARCH Rooted in logic and **descriptive set theory**, my research lies in the nexus of ergodic theory, measured group theory, countable Borel equivalence relations, and graph combinatorics.

EDUCATION

2013 Jun 14	*Ph.D. in Mathematics*, **University of California, Los Angeles**, CA, USA
	Advisors: Alexander S. Kechris (Caltech), Itay Neeman (UCLA)
	Thesis [pdf]: *Finite generators for countable group actions;*
	Finite index pairs of equivalence relations;
	Complexity measures for recursive programs
2007 Jun 3	*M.S. in Informatics and Applied Mathematics*, 2007, **Yerevan State University**, Armenia
2005 Jun 6	*B.S. in Informatics and Applied Mathematics*, 2005, **Yerevan State University**, Armenia

ACADEMIC APPOINTMENTS

Main

2023 Jun–present	*Associate Professor*, Department of Mathematics & Statistics, **McGill University**, Canada
2020 Aug–2023 May	*Assistant Professor*, Department of Mathematics & Statistics, **McGill University**, Canada
2015 Aug–2020 Aug	*Assistant Professor*, Department of Mathematics, **University of Illinois Urbana-Champaign**, USA
2013 Aug–2015 Aug	*J.L. Doob Research Assistant Professor*, Department of Mathematics, **University of Illinois Urbana-Champaign**, USA

Visiting

2024 Dec 1–Jan 31	*Professeure Invitée*, **École Normale Supérieure de Lyon**, Lyon, France
	Host: Damien Gaboriau (ENS-Lyon)
2024 Sep 1–Nov 30	*Poste Rouge : Chercheuse Étrangère*, **CNRS**, Lyon, France
	Host: Damien Gaboriau (ENS-Lyon)
2023 Aug 12–26	*Simons Junior Professor*, **Banach International Mathematics Center/IMPAN**, Warsaw, Poland
	Program: *Simons Semester "STRUCTURES: set theory, model theory, logic and computer science"* [link]
2018 Jun 3–30	*Visiting Fellow*, **Bernoulli Center**, Lausanne, Switzerland
	Program: *Descriptive set theory and Polish groups*
2016 Mar 14–Apr 29	*Visiting Fellow*, **Institut Mittag-Leffler**, Djursholm, Sweden
	Program: *Classification of operator algebras: complexity, rigidity, and dynamics*

2024–2025   FRQ support for the CRM-CNRS International Research Lab, CRM, Montréal, Canada

       Amount: 10,000 CAD

2020–2026   NSERC Discovery Grant RGPIN-2020-07120

       Principal Investigator of project "Treeings, quasi-invariance, and ergodic combinatorics"

       Amount: 208,800 CAD

2020-2021   NSERC Discovery Launch Supplement DGECR-2020-00543

       Principal Investigator of project "Treeings, quasi-invariance, and ergodic combinatorics"

       Amount: 12,500 CAD

2019–2022   NSF Grant DMS-1855648

       Principal Investigator of project "Trees, quasi-invariance, and ergodic combinatorics"

       Amount: 120,000 USD

2015–2018   NSF Grant DMS-1501036

       Principal Investigator of project "Treeable equivalence relations and the use of probability groups in arithmetic combinatorics"

       Amount: 193,371 USD

2014–2016   AMS Simons Travel Grant

       Amount: 5,000 USD

2006–2007   Armenian National Science and Education Fund Grant

       Investigator of project "On Pairs of Disjoint Matchings of a Graph"

       Principal Investigator: Vahan Mkrtchyan

2018–2020   Lincoln Excellence for Assistant Professors Award, College of Liberal Arts and Sciences, University of Illinois Urbana-Champaign

2018   N. Tenney Peck Teaching Award in Mathematics, University of Illinois Urbana-Champaign

2015   Emil Artin Junior Prize in Mathematics [Wikipedia]

2012–2013   Dissertation Year Fellowship, UCLA

2011   Robert Sorgenfrey Distinguished Teaching Award, UCLA

2010–2011   Mangasar M. Mangasarian Fellowship for continuing graduate students, UCLA

2007   Chancellor's Prize for incoming graduate students, UCLA

2005   Presidential Award "*Best Undergraduate Student in Sciences and Information Technologies*"

       Awarded by a former president of Armenia Robert Kocharyan

2004   Anania Shirakatzi Scholarship for excellent studies, Yerevan State University

Publications

Ruiyuan Chen, Antoine Poulin, Ran Tao, and Anush Tserunyan. Tree-like graphings, wallings, and median graphings of equivalence relations. *Forum of Mathematics, Sigma*, 2025;13:e64 [arXiv, doi:10.1017/fms.2025.22]

Anush Tserunyan and Jenna Zomback. A backward ergodic theorem along trees and its consequences for free group actions. *J. Eur. Math. Soc. (JEMS)*, to appear. 2023+ [arXiv]

Benjamin D. Miller and Anush Tserunyan. A ratio ergodic theorem via tiling and uniformly syndetic markers. *Ergodic Theory and Dynamical Systems: Proceedings of the Workshops University of North Carolina at Chapel Hill 2021*, edited by Idris Assani, Berlin, Boston: De Gruyter, 2024, pp. 99-116. [arXiv, doi:10.1515/9783111435503-004]

H. Guo, K. Kaempen, Z. Mo, S. Qunell, J Rogge, C. Song, A. Tserunyan, J. Zomback. Pairs of disjoint matchings and related classes of graphs. *Involve*, 16-2 (2023), 249–264. [arXiv, doi:10.2140/involve.2023.16.249]

Anush Tserunyan. Mixing and double recurrence in probability groups. *Fundam. Math.*, 260, 2023, 77-98. [arXiv, doi:10.4064/fm225-7-2022]

Anush Tserunyan. Pointwise ergodic theorem for locally countable quasi-pmp graphs. *J. Mod. Dyn.*, 18, 2022, 609-655. [arXiv, doi:10.3934/jmd.2022019]

Zhengda Mo, Sam Qunell, Anush Tserunyan, and Jenna Zomback. Characterization of saturated graphs related to pairs of disjoint matchings. *Illinois J. Math.*, 66(1):59–77, 2022. [arXiv, doi:10.1215/00192082-9719963]

Anton Bernshteyn, Michelle Delcourt, and Anush Tserunyan. Independent sets in algebraic hypergraphs. *J. Eur. Math. Soc. (JEMS)*, 24(1):1–35, 2022, published online in 2021. [arXiv, doi:10.4171/jems/1082]

Anush Tserunyan. A descriptive construction of trees and Stallings' theorem. In Trends in set theory, volume 752 of *Contemp. Math.*, pages 191–207. Amer. Math. Soc., [Providence], RI, [2020] ©2020. [arXiv, doi:10.1090/conm/752/15137]

Anton Bernshteyn, Michelle Delcourt, Henry Towsner, and Anush Tserunyan. A short nonalgorithmic proof of the containers theorem for hypergraphs. *Proc. Amer. Math. Soc.*, 147(4):1739–1749, 2019. [arXiv, doi:10.1090/proc/14368]

Anush Tserunyan. A Ramsey theorem on semigroups and a general van der Corput lemma. *J. Symb. Log.*, 81(2):718–741, 2016. [arXiv, doi:10.1017/jsl.2015.37]

Anush Tserunyan. Finite generators for countable group actions in the Borel and Baire category settings. *Adv. Math.*, 269:585–646, 2015. [arXiv, doi:10.1016/j.aim.2014.10.013]

Anush Tserunyan. Characterization of a class of graphs related to pairs of disjoint matchings. *Discrete Math.*, 309(4):693–713, 2009. [arXiv, doi:10.1016/j.disc.2008.01.004]

V. V. Mkrtchyan, V. L. Musoyan, and A. V. Tserunyan. On edge-disjoint pairs of matchings. *Discrete Math.*, 308(23):5823–5828, 2008. [arXiv, doi:10.1016/j.disc.2007.09.061]

Preprints

Anush Tserunyan and Robin Tucker-Drob. The Radon–Nikodym topography of amenable equivalence relations in acyclic graphs. 2024+.

Ruiyuan Chen, Grigory Terlov, and Anush Tserunyan. Nonamenable subforests of multi-ended quasi-pmp graphs. 2023+. [arXiv]

Benjamin D. Miller and Anush Tserunyan. Edge sliding and ergodic hyperfinite decomposition. 2017+. In revision. [arXiv]

EXPOSITORY
WRITING

Course notes

A. Tserunyan, *Introduction to Descriptive Set Theory*, semester-long graduate course notes [pdf]

A. Tserunyan, *Mathematical Logic*, semester-long graduate course notes [pdf]

A. Tserunyan, *A quick introduction to basic set theory* [pdf]

A. Tserunyan, *Topics in logic and applications*, three-day course notes for advanced undergraduates [pdf]

Reviews

A review of "C. T. Conley and B. D. Miller. A bound on measurable chromatic numbers of locally finite Borel graphs, *Math. Research Letters*, vol. 23, no. 6 (2016), pp. 1633–1644", *The Bulletin of Symbolic Logic*, vol. 23 (2017), no. 3, pp. 334–336 [pdf, doi]

INVITED
TALKS AND
LECTURES

Plenary conference talks

2024 Jan 6–7	SUMM 2024, UQÀM, Montréal, Canada
2021 Jun 21–22	2021 Chapel Hill Ergodic Theory Workshop : Global Online Edition, North America
2019 Jul 1–5	[could not go] The 7th European Set Theory Conference, Erwin Schrödinger Institute, Vienna, Austria
2018 Jul 23–28	Logic Colloquium 2018, Udine, Italy
2017 Jun 18–24	The 41st Summer Symposium in Real Analysis, The College of Wooster, OH, USA
2015 Mar 25–28	The North American Annual Meeting of the Association for Symbolic Logic, UIUC, Urbana-Champaign, IL, USA

Named Lectures

2023 Jan 27	Evelyn Nelson Memorial Lecture [link], McMaster University, Canada

General mathematics colloquia

2024 May 1	Mathematics Colloquium [link], University of Chicago, USA
2024 Feb 14	Mathematics Colloquium [link], University of Toronto, Canada
2022 Nov 18	Mathematics Colloquium [link], Queen's University, Canada
2022 Sep 23	Colloque des Sciences Mathématiques du Québec [link], CRM–ISM, Montréal, Canada
2022 Mar 22	Mathematics Colloquium [link], University of Haifa, Israel (virtual)
2021 Jun 14	Pure Mathematics Seminar, University of East Anglia, UK (virtual)
2021 May 1 & 15	Yerevan Mathematics Colloquium, Armenia (virtual)

2021 Mar 16	Mathematics Colloquium, Chulalongkorn University, Thailand (virtual)
2020 Oct 29	Mathematics Colloquium, University of Virginia, USA (virtual)
2019 Mar 29	Millican Colloquium, University of North Texas, USA
2018 Sep 14	Mathematics Colloquium, University of Illinois at Chicago, USA
2016 Sep 30	Mathematics Colloquium, Queen's University, Canada
2016 Feb 25	Mathematics Colloquium (Oliver Club), Cornell University, USA
2015 Nov 12	Mathematics Colloquium, Western Illinois University, USA

Mini-courses and tutorials

2024 Jun 17–21   "Young Set Theory" Workshop [link] within the "Measurable Combinatorics" Semester [link], Erdős Center, Rényi Institute, Budapest, Hungary

> Tutorial: *How a logician proves pointwise ergodic theorems* (3 lectures, 50-minute)

2024 May 14–17   2024 Association of Symbolic Logic Annual Meeting [link], Iowa State University, USA

> Tutorial: *How a logician proves pointwise ergodic theorems* (3 lectures, 50-minute)

2023 Aug 14–18   "Descriptive Set Theory and Dynamics" Workshop [link] within the Simons Semester "STRUCTURES: set theory, model theory, logic and computer science" [link], Banach Center, Warsaw, Poland

> Tutorial: *The geography of amenable subrelations of acyclic graphs and beyond* (3 lectures, 1-hour)

2022 Jul 25–28   C*-dynamics and Set Theory School in Paris 2022 [link], Paris, France

> Mini-course: *Ergodic theorems and tilings* (4 lectures, 1-hour)

2019 Jan 12–19   The 47th Winter School in Abstract Analysis [link], Czech Republic

> Mini-course: *Countable Borel equivalence relations, ergodic theory, and measured group theory* (3 lectures, 1-hour)

2017 May 5–11   The 15th Annual Spring Institute: Noncommutative Geometry and Operator Algebras [link], Vanderbilt University, USA

> Mini-course: *Countable Borel equivalence relations, ergodicity, and turbulence* (3 lectures, 1-hour long)

2016 Jun 6–10   Undergraduate Summer School [link] within Thematic Program on Model Theory, University of Notre Dame, USA

> Mini-course: *Introduction to Model Theory II* (4 lectures, 1-hour long)

2013, Jul 14–Aug 3   2013 Undergraduate Logic Summer School [link], Logic Center, Univ. of California, Los Angeles

> Mini-course: *Descriptive Set Theory* (15 lectures, 1-hour long)

2012, Jun 24–Jul 14   2012 Undergraduate Logic Summer School [link], Logic Center, Univ. of California, Los Angeles

> Mini-course: *First Order Logic and Gödel's Incompleteness Theorem* (15 lectures, 1-hour long)

Conference talks (non-plenary)

*2025 Jun 23–27   IMJ-PRG summer school 2025 - Groupoids from a measurable, topological and geometric perspective [link], Institut de Mathématiques de Jussieu-Paris Rive Gauche, Université Paris Cité, Paris, France

2025 Feb 7–9   22$^{\text{th}}$ Very Informal Gathering (VIG) honoring Alexander Kechris on the occasion of his formal retirement from Caltech [link], UCLA Logic Center, Los Angeles, CA, USA

2025 Jan 13–17   "Set Theory" Workshop, Oberwolfach, Germany

2024 Sep 16–20   European Set Theory Conference 2024 [link], University of Münster, Germany

2024 Sep 9–13   "Probability, Dynamics, and the Geometry of Groups" Conference [link], University of Münster, Germany

2024 Jun 24–28   "Measurable Combinatorics" Workshop [link] within the "Measurable Combinatorics" Semester [link], Erdős Center, Rényi Institute, Budapest, Hungary

2022 Nov 28–Dec 2   "Group Actions: Dynamics, Measure, Topology" Workshop [link], University of Münster, Germany

2021 Jun 15   "Expanding Dynamics XIII: The School", International Online Workshop

2021 Feb 23   "Expanding Dynamics IX", international online workshop

2019 Jul 8–12   "Measurability, Ergodic Theory and Combinatorics" Workshop, Warwick Mathematics Institute, Warwick, UK

2019 Jun 4–6   "Boundaries of Random Walks and Applications", Bowdoin College, Brunswick, ME, USA

2019 Feb 1–3   20$^{\text{th}}$ Very Informal Gathering (VIG) celebrating the 50th anniversary of the start of the "cabal", UCLA Logic Center, Los Angeles, CA, USA

2018 Sep 1–3   "Group Theory and Dynamical Systems" Workshop, UT Austin, Austin, TX, USA

2018 Jul 14–21   "Ramsey Theory in Logic, Combinatorics and Complexity" Workshop, Bertinoro (Forlì-Cesena), Italy

2018 Jun 12   Descriptive Set Theory Day, Turin, Italy

2018 Apr 21   Wabash Extramural Modern Analysis Seminar, Wabash College, Crawfordsville, IN, USA

2018 Feb 5–9   "Borel Combinatorics and Ergodic Theory" Conference, Bernoulli Center, Lausanne, Switzerland

2018 Jan 10–13   First Mexico/USA Logic Fest, Instituto Tecnológico Autónomo de México, Mexico City, Mexico

2017 Sep 15–17   Simon Fest, Rutgers University, NJ, USA

2017 Jun 5–9   Concentration Week on Ergodic Theory and Operator Algebras, Texas A&M University, TX, USA

2017 May 5–11   The 15$^{\text{th}}$ Annual Spring Institute: Noncommutative Geometry and Operator Algebras, Vanderbilt University, TN, USA

2017 Feb 11–19   "Set Theory" Workshop, Oberwolfach, Germany

2016 Dec 12–16   "Current Trends in Descriptive Set Theory" Workshop, Erwin Schrödinger Institute for Mathematics and Physics, Vienna, Austria

2016 Oct 20–23   "Set Theory" Workshop, University of Illinois at Chicago, IL, USA

2016 Sep 11–16	"Set Theory and Its Application in Topology" Workshop, Banff International Research Station, Oaxaca, Mexico
2016 Aug 38–Sep 3	"Measured Group Theory" Workshop, Oberwolfach, Germany
2016 Jul 31–Aug 6	"Set Theory" Special Session, Logic Colloquium 2016, Leeds, UK
2016 Mar 23	"Classification and Set Theory" Workshop, Institut Mittag-Leffler, Sweden
2015 Oct 30–Nov 1	Midwest Dynamical Systems Meeting, Ohio State University, OH, USA
2015 Aug 2–4	36$^{\text{th}}$ Semiannual Wasatch Topology Conference, Park City, UT, USA
2015 Jul 19–24	"Combinatorics Meets Ergodic Theory" Workshop, Banff International Research Centre, Banff, AB, Canada
2015 Mar 7	3$^{\text{rd}}$ Annual Midwest Women in Mathematics Symposium, Dominican University, IL, USA
2015 Feb 28–Mar 1	Spring Conference in Set Theory and Computability, University of Florida, Gainesville, FL, USA
2015 Jan 10–Feb 1	18$^{\text{th}}$ Very Informal Gathering (VIG) in honor of Tony Martin, UCLA Logic Center, Los Angeles, CA, USA
2014 June 2–6	"Logic, Dynamics, and Interactions 2", University of North Texas, Denton, TX, USA
2014 May 24–28	"Ramsey Theory" Conference, University of Denver, Denver, CO, USA
2014 Apr 5–6	AMS Western Spring Sectional Meeting, University of New Mexico, Albuquerque, NM, USA
2014 Jan 12–18	"Set Theory" Workshop, Oberwolfach, Germany
2013 Oct 5–6	AMS Fall Southeastern Sectional Meeting, University of Louisville, Louisville, KY, USA
2013 May 8–11	ASL North American Annual Meeting, Waterloo, ON, Canada
2013 Mar 1–3	AMS Spring Southeastern Sectional Meeting, University of Mississippi, Oxford, MS, USA
2012 Oct 6–7	MAMLS Conference, Rutgers University, New Brunswick, NJ, USA
2012 Sep 10–14	"Applications to Operator Algebras" Workshop, Fields Institute, Toronto, ON, Canada

Selected and recent seminars

*2025 Mar 31	Seminar "Groups and Actions", Laboratoire mathématique d'Orsay, Université Paris-Saclay, Orsay, France
*2025 Mar 18	Séminaire de théorie des groupes à l'ENS [link], École Normale Supérieure de Lyon, France
*2025 Mar 14 & 21	François LeMaître's "Groupe de travail de théorie ergodique !", École Normale Supérieure de Lyon, France
2024 Dec 10 & 17	Damien Gaboriau's "Groupe de travail: Actions !", École Normale Supérieure de Lyon, France
2024 Oct 17	Séminaire Logique Mathématique, Institut Camille Jordan, Université Lyon 1, France
2024 Apr 4	Algebra and Combinatorics Seminar, Leipzig University, Leipzig, Germany

2023 Feb 10	Nankai Logic Colloquium, Nankai University, China (virtual)
2022 Mar 2	Analysis Seminar, University of Waterloo, Canada (virtual)
2021 Dec 8	Models and Sets Seminar, Leeds University, UK (virtual)
2021 Nov 11	Dynamical Systems Seminar, KTH Royal Institute of Technology, Stockholm, Sweden (virtual)
2021 Jul 6	Damien Gaboriau's "Groupe de travail: Actions !", École Normale Supérieure de Lyon, France (virtual)
2021 Jun 26	Functional Analysis, Operator Theory, and Dynamical Systems Seminar, Leipzig, Germany (virtual)
2021 May 26	Séminaire de Logique Lyon-Paris, France (virtual)
2021 May 11	Ergodic Theory and Dynamical Systems Seminar, University of Warwick, UK (virtual)
2021 Apr 7	Groups and Dynamics Seminar, Texas A&M University, USA (virtual)
2021 Apr 1	Pacific Dynamics Seminar (virtual)
2021 Mar 19	Set Theory Seminar, University of Toronto, Canada (virtual)
2021 Feb 2	Logic Seminar, Carnegie Mellon University, USA (virtual)
2021 Jan 20	Geometric Group Theory Seminar, McGill University, Canada (virtual)
2021 Jan 15	Analysis Seminar, McGill University, Canada (virtual)
2020 Nov 4	Logic Seminar, Caltech, USA (virtual)
2020 Oct 30	Logic Colloquium, UC Berkeley, USA (virtual)
2020 Oct 9	Logic Seminar, Cornell University, USA (virtual)
2020 Jun 18	Research Seminar, Kurt Gödel Research Center for Mathematical Logic, University of Vienna, Austria (virtual)
2020 Jun 4	Séminaire d'Algèbres d'Opérateurs, Institut de mathématiques de Jussieu – Paris Rive Gauche, Université Paris Diderot, France (virtual)
2018 Nov 15	Functional Analysis Seminar, University of California at San Diego, USA
2018 Nov 9	UCLA–Caltech Cabal Seminar, University of California, Los Angeles, USA
2018 Oct 18	Logic Seminar, Carnegie Mellon University, USA
2018 Sep 4	Groups and Dynamics Seminar, Texas A&M, USA
2018 Jul 30	Combinatorics Seminar, Rényi Institute of Mathematics, Budapest, Hungary
2017 Jun 2	UCLA–Caltech Cabal Seminar, University of California, Los Angeles, USA
2017 May 30	Logic Seminar, California Institute of Technology, USA
2016 May 12	Research Seminar, Kurt Gödel Research Center for Mathematical Logic, University of Vienna, Austria

Research workshops

*2025 Oct 6–10	AIM SQuaREs "Containers from different angles", part 3/3, American Institute of Mathematics, Pasadena, CA, USA

*2025 May 5–9	AIM SQuaREs "Measured group theory and combinatorics", part 3/3, American Institute of Mathematics, Pasadena, CA, USA
2024 Apr 8–12	AIM SQuaREs "Measured group theory and combinatorics", part 2/3, American Institute of Mathematics, Pasadena, CA, USA
2023 Mar 11–15	AIM SQuaREs "Containers from different angles", part 2/3, American Institute of Mathematics, Pasadena, CA, USA
2022 Oct 10–14	AIM SQuaREs "Containers from different angles", part 1/3, American Institute of Mathematics, San Jose, CA, USA
2021 Aug 9–13	AIM SQuaREs "Measured group theory and combinatorics", part 1/3, American Institute of Mathematics, San Jose, CA, USA
2022 Jun 27–Jul 1	"Descriptive Graph Theory" Workshop, American Institute of Mathematics, San Jose, CA, USA
2017 Aug 14–18	"Nonstandard methods in combinatorial number theory" Workshop, American Institute of Mathematics, San Jose, CA, USA

Research visits

2025 Feb 1–Jun 30	Hosts: François Le Maître, Pierre Fima, Romain Tessera, Institut de Mathématiques de Jussieu-Paris Rive Gauche, Université Paris Cité, Paris, France
2024 Sep 1–2025 Jan 31	Host: Damien Gaboriau, École Normale Supérieure de Lyon, Lyon, France
2024 Apr 2–5	Hosts: Łukasz Grabowski and Felix Pogorzelski, Leipzig University, Leipzig, Germany
2018 Oct 29–Nov 25	Host: Alexander Kechris, Caltech, Pasadena, CA, USA
2018 Oct 15–21	Host: Clinton Conley, Carnegie Mellon University, Pittsburgh, PA, USA
2018 Sep 3–11	Host: Robin Tucker-Drob, Texas A&M, College Station, TX, USA
2018 Aug 29–Sep 1	Hosts: Lewis Bowen and Kate Juschenko, University of Texas, Austin, TX, USA
2018 Jul 28–Aug 1	Host: Miklós Abért, Rényi Institute of Mathematics, Budapest, Hungary
2017 Jun 1–4	Host: Andrew Marks, UCLA, Los Angeles, CA, USA
2017 May 27–Jun 1	Host: Alexander Kechris, Caltech, Pasadena, CA, USA
2016 Dec 4–11	Host: Benjamin Miller, Kurt Gödel Research Center for Mathematical Logic, University of Vienna, Vienna, Austria
2016 Jun 31–Jul 9	Host: Damien Gaboriau, École Normale Supérieure de Lyon, Lyon, France
2016 May 1–13	Host: Benjamin Miller, Kurt Gödel Research Center for Mathematical Logic, University of Vienna, Vienna, Austria
2016 Feb 21–26	Host: Justin Moore, Cornell University, Ithaca, USA

MENTORSHIP **Postdocs**

2022 Aug–2023 Aug	*Konrad Wróbel*, CRM-ISM postdoctoral fellow, Centre de Recherches Mathématiques
2022 Aug–2023 Aug	*Samuel Mellick*, Math. & Stats. Dept., McGill University
2021 Sep–2022 Aug	*Ruiyuan (Ronnie) Chen*, CRM-SIMONS postdoctoral fellow, Centre de Recherches Mathématiques

2019 Aug–2020 Aug	*Pavlos Motakis*, J.L. Doob Research Assistant Professor, Math. Dept., Univ. of Illinois Urbana-Champaign
2018 Aug–2021 Aug	*Ruiyuan (Ronnie) Chen*, J.L. Doob Research Assistant Professor, Math. Dept., Univ. of Illinois Urbana-Champaign

Ph.D. students

2022 Jun–present	*Antoine Poulin*, Math. & Stats. Dept., McGill University
2020 Aug–2023 Aug	*Matthew Bowen*, Math. & Stats. Dept., McGill University
2019 Jan–2023 May	*Grigory Terlov*, Math. Dept., Univ. of Illinois Urbana-Champaign
2017 Jul–2022 Dec	*Dakota Ihli*, Math. Dept., Univ. of Illinois Urbana-Champaign
2018 May–2022 May	*Jenna Zomback*, Math. Dept., Univ. of Illinois Urbana-Champaign
2015 Aug–2018 May	*Anton Bernshteyn*, Math. Dept., Univ. of Illinois Urbana-Champaign

M.Sc. students

2024 May–present	*Alexandra Bell*, Math. & Stats. Dept., McGill University
2024 May–present	*Tasmin Chu*, Math. & Stats. Dept., McGill University
2024 Jan–present	*Owen Rodgers*, Math. & Stats. Dept., McGill University
2021 Sep–2023 Aug	*Ran Tao*, Math. & Stats. Dept., McGill University
2017 Jul–2018 May	*Wei Dai*, Math. Dept., Univ. of Illinois Urbana-Champaign

Undergraduates

2024 Summer	*Zhaoshen Zhai*, research project "Tree-like graphings of countable Borel equivalence relations", funded by SURA, Math. & Stats. Dept., McGill University
2024 Summer	*Kaining Gia*, *Samy Kamal Lahlou*, Math 470, study/research project "Dynamical systems: ergodic theorems for amenable groups", Math. & Stats. Dept., McGill University
2023 Summer	*Alexandra Bell*, *Owen Rodgers*, research project "Measure-class preserving transformations and Kakutani's criterion", funded by NSERC and SURA, Math. & Stats. Dept., McGill University
2021 Fall	*Gabriel Levrel* (Math 470), *Sam Mayo* (Math 470), *Thomas Buffard* (Math 410), study/research project "Infinite games and Borel determinacy", Math. & Stats. Dept., McGill University
2021 Winter	*Ran Tao* (Math 480), reading course "Descriptive Set Theory and Applications", Math. & Stats. Dept., McGill University
2019 Jan–2020 May	Faculty Mentor of the project "Pairs of Disjoint Matchings" at the Illinois Geometry Lab, Math. Dept., Univ. of Illinois Urbana-Champaign

TEACHING **Graduate courses**

2023 Fall	*Advanced Real Analysis*, Math 564, McGill University
2022 Fall	(Topics) *Descriptive Set Theory*, Math 595, McGill University
2022 Winter	(Topics) *Ergodic Theory and Measured Group Theory*, Math 594/740, McGill University

2019 Fall	*Descriptive Set Theory*, Math 574, Univ. of Illinois Urbana-Champaign
2019 Spring	(Topics) *Countable Borel Equivalence Relations*, Math 595, Univ. of Illinois Urbana-Champaign
2018 Spring	*Set Theory*, Math 574–ST, Univ. of Illinois Urbana-Champaign
2017 Fall	*Mathematical Logic*, Math 570, Univ. of Illinois Urbana-Champaign
2017 Spring	*Real Analysis*, Math 540, Univ. of Illinois Urbana-Champaign
2016 Fall	*Model Theory*, Math 571, Univ. of Illinois Urbana-Champaign
2015 Fall	*Mathematical Logic*, Math 570, Univ. of Illinois Urbana-Champaign
2015 Spring	(Topics) *Classification in Ergodic Theory*, Math 595, Univ. of Illinois Urbana-Champaign
2014 Fall	*Mathematical Logic*, Math 570, Univ. of Illinois Urbana-Champaign
2014 Spring	*Descriptive Set Theory*, Math 574–DST, Univ. of Illinois Urbana-Champaign

Undergraduate courses

2024 Winter	*Honours Algebra 2*, Math 251, McGill University
2023 Fall	*Mathematical Logic*, Math 318, McGill University
2022 Fall	*Honours Analysis 1*, Math 254, McGill University
2022 Winter	*Honours Complex Variables*, Math 249, McGill University
2021 Fall	*Mathematical Logic*, Math 318, McGill University
2021 Winter	*Algebra 2: Linear Algebra*, Math 236, McGill University
2020 Fall	*Mathematical Logic*, Math 318, McGill University
2019 Spring	*Set Theory and Topology*, Math 432, Univ. of Illinois Urbana-Champaign
2017 Fall	*Fundamental Mathematics (Honors)*, Math 347H, Univ. of Illinois Urbana-Champaign
2017 Spring	*Set Theory and Topology*, Math 432, Univ. of Illinois Urbana-Champaign
2015 Fall	*Fundamental Mathematics*, Math 347, Univ. of Illinois Urbana-Champaign
2014 Fall	*Elementary Real Analysis*, Math 444, Univ. of Illinois Urbana-Champaign
2013 Fall	*Applied Linear Algebra*, Math 415, Univ. of Illinois Urbana-Champaign
2011 Fall	*Calculus of Several Variables (Honors)*, Math 32AH, Univ. of California Los Angeles

OUTREACH   I am involved with the outreach program *Honors Courses in Math* of the *Armenian Society Of Fellows*, through which I have been voluntarily teaching advanced undergraduate mathematics courses in Armenia (remotely) and supervising students.

Courses taught

2025 Spring	*Measure theory with ergodic horizons* [website]
2024 Spring	*Mathematical Logic: Model Theory & Computability* [website]
2023 Spring	*Metric spaces and topology* [website]
2021 Summer	*Finite state Markov chains* [website]

Students supervised

2023 Jun–2025 Feb	*Hayk Melkonyan*, high school student, the College of National Polytechnic University, Armenia

| 2023 May–Jun | *Vahagn Hovhannisyan*, undergraduate, department of Mathematics, Yerevan State University, Armenia |

Editorial

2024 Feb–present	*Editor*, Journal of Logic & Analysis, Springer
2019 Jan–present	*Editor*, Mathematical Logic Quarterly, Wiley
2017 Dec–present	*Editor*, Archive for Mathematical Logic, Springer

Grant panels

NSF panels: twice

Refereeing

Discrete Mathematics (Elsevier)
Ergodic Theory and Dynamical Systems (Cambridge University Press)
Fundamenta Mathematicae (Polish Academy of Sciences)
Journal of the AMS (American Mathematical Society)
Journal of the EMS (European Mathematical Society)
Journal of Modern Dynamics (American Institute of Mathematical Sciences)
Journal of Symbolic Logic (Association for Symbolic Logic)
Proceedings of the AMS (American Mathematical Society)
Notices of the AMS (American Mathematical Society)
Studia Mathematica (Polish Academy of Sciences)
Transactions of the AMS (American Mathematical Society)

Conference and workshop organization

*2026 Apr 12–17	Oberwolfach Workshop "Groups and Dynamics: Topology, Measure, and Borel Structure", Mathematical Research Institute of Oberwolfach, Germany
*2025 Dec 5–8	Scientific committee for plenary talks and special sessions, *2025 CMS Winter Meeting*, Toronto, Canada [link]
*2025 Aug 25–29	Conference on "Orbit equivalence and topological and measurable dynamics" [link], dedicated to the 60$^{\text{th}}$ birthday of Damien Gaboriau, Centre International de Rencontres Mathématiques, Luminy, France
2023 Aug 21–25	"Descriptive Set Theory and Dynamics" Conference [link] within the Simons Semester "STRUCTURES: set theory, model theory, logic and computer science", Banach Center, Warsaw, Poland [link]
2023 May 22-26	Workshop "Measured Group Theory, Stochastic Processes on Groups, and Borel Combinatorics", Centre International de Rencontres Mathématiques, Luminy, France [link]
2023 Mar 20–24	"Borel and Measurable Combinatorics in Algebra and Dynamics" Workshop [link] within the Thematic Program "Set Theoretic Methods in Algebra, Dynamics and Geometry", Fields Institute, Toronto, Canada [link]
2023 Jan–Jun	Special semester on "Geometric Group Theory" [link] and the Workshop "Measured Group Theory" (Mar 6–17) [link] within it, Centre de Recherches Mathématiques, Montréal, Canada

2022 Mar 27–Apr 1	Banff Workshop "Interactions between Descriptive Set Theory and Smooth Dynamics", Banff International Research Station, Banff, Canada [link]
2022 Feb 13–19	Oberwolfach Mini-workshop 2207b "Descriptive Combinatorics, LOCAL Algorithms and Random Processes", Mathematical Research Institute of Oberwolfach, Germany [link]
2022 Jan 16–22	Oberwolfach Workshop 2203 "Groups and Dynamics: Topology, Measure, and Borel Structure", Mathematical Research Institute of Oberwolfach, Germany [link]
2021 Jun 22–25	Special session "Set Theory", *ASL Annual Meeting 2021*, USA (virtual) [link]
2021 Jan 8–9	Plenary talks, *ASL Winter Meeting 2021 with the JMM*, Washington DC, USA (virtual) [link]
2020 Dec 4–8	Special session "Logic and its applications", *2020 CMS Winter Meeting*, Montréal, Canada (virtual) [link]
2020 Dec 3	Mini-course "The Lovász Local Lemma and its applications in ergodic theory and descriptive set theory" by Anton Bernshteyn, *CMS Winter Meeting 2020*, Montréal, Canada (virtual) [link]
2018 May 16–19	Special session "Set Theory", *ASL North American Annual Meeting 2018*, Macomb, IL, USA [link]
2018 Jan 10–13	Plenary talks, *ASL Winter Meeting 2018 with the JMM*, San Diego, CA, USA [link]

Seminar organization

2020 Fall–present	*Descriptive Dynamics and Combinatorics Seminar*, McGill University
2021 Mar–Dec	*Yerevan Mathematics Colloquium*, Virtual
2018 Fall–2020 Spr	*Descriptive Set Theory Seminar*, Univ. of Illinois Urbana-Champaign
2018 Spr	*Operator Algebra and Descriptive Set Theory Learning Seminar*, Topic: cost and ℓ^2-Betti numbers, Univ. of Illinois Urbana-Champaign
2015 Fall–2020 Spr	*Logic Seminar*, Univ. of Illinois Urbana-Champaign
2015 Fall–2018 Spr	*Model Theory and Descriptive Set Theory Learning Seminar*, Univ. of Illinois Urbana-Champaign
2014 Spr	*Descriptive Ergodic Theory Learning Seminar*, Univ. of Illinois Urbana-Champaign
2009 Spr	*Descriptive Complexity Theory Learning Seminar*, Univ. of California, Los Angeles

Committees

2023–24	Chair Advisory, Math. & Stats., McGill University
2022–23	Undergraduate Affairs, Math. & Stats., McGill University
2021–22	Undergraduate Affairs, Math. & Stats., McGill University
2020–21	Undergraduate Affairs, Math. & Stats., McGill University
2018–19	Strategic Planning, Mathematics, Univ. of Illinois Urbana-Champaign
2018–19	Graduate Recruiting and Application Screening, Mathematics, Univ. of Illinois Urbana-Champaign
2018–19	Comprehensive Exams: Mathematical Logic (Math 570), Mathematics, Univ. of Illinois Urbana-Champaign
2017–18	Postdoc Search, Mathematics, Univ. of Illinois Urbana-Champaign

2017–18	Graduate Recruiting and Application Screening, Mathematics, Univ. of Illinois Urbana-Champaign
2017–18	Comprehensive Exams: Mathematical Logic (Math 570), Mathematics, Univ. of Illinois Urbana-Champaign
2016–17	Honors Courses, Mathematics, Univ. of Illinois Urbana-Champaign
2016–17	Comprehensive Exams: Real Analysis (Math 540), Mathematics, Univ. of Illinois Urbana-Champaign
2016–17	Comprehensive Exams: Mathematical Logic (Math 570), Mathematics, Univ. of Illinois Urbana-Champaign
2015–16	Postdoc Search, Mathematics, Univ. of Illinois Urbana-Champaign
2015–16	Comprehensive Exams: Mathematical Logic (Math 570), Mathematics, Univ. of Illinois Urbana-Champaign