CURRICULUM VITAE

JASON J. BRAMBURGER

March 28, 2024

Jason J. Bramburger

Department of Mathematics and Statistics
Concordia University
1455 boul. de Maissonneuve Ouest, LB 901-21
email: jason.bramburger@concordia.ca

website: https://hybrid.concordia.ca/jbrambur/
YouTube channel: Jason Bramburger
GitHub profile: jbramburger

1 Biographical Information

1.1 Employment history

Jul 2022–present	*Tenure-track Assistant Professor* Concordia University, Montréal, QC, Canada Department of Mathematics and Statistics
Sep 2021–May 2022	*Tenure-track Assistant Professor* George Mason University, Fairfax, VA, USA Department of Mathematical Sciences
Sep 2020–Aug 2021	*Acting Instructor* University of Washington, Seattle, WA, USA Department of Applied Mathematics
Sep 2019–Aug 2020	*PIMS Postdoctoral Fellow* University of Victoria, Victoria, BC, Canada Department of Mathematics and Statistics
Sep 2017–Aug 2019	*NSERC Postdoctoral Fellow* Brown University, Providence, RI, USA Division of Applied Mathematics
May 2017–Aug 2017	*Instructor* Algonquin College, Ottawa, ON, Canada Academic Access Centre

Sep 2011–Aug 2017 *Teaching Assistant*
University of Ottawa, Ottawa, ON, Canada
Department of Mathematics and Statistics

Sep 2016–Dec 2016 *Lecturer*
University of Ottawa, Ottawa, ON, Canada
Department of Mathematics and Statistics

May 2011–Aug 2012 *Statistical Analyst*
Algonquin College, Ottawa, ON, Canada
Academic Operations and Planning Department

Sep 2010–May 2011 *Teaching Assistant*
Nipissing University, North Bay, ON, Canada
Department of Mathematics and Computer Science

Sep 2008–May 2011 *Math Drop-In Centre Attendant*
Nipissing University, North Bay, ON, Canada
Department of Mathematics and Computer Science

1.2   Affiliations

Jul 2022–present Member, Applied Mathematics Laboratory, Centre de recherches mathématiques (CRM), Montréal.

Jul 2022–present Member, Centre de recherches mathématiques (CRM), Montréal.

Sep 2021–Aug 2022 Fellow, Institute of Advanced Study, Guildford, UK.

1.3   Academic Training

Sep 2013 – Jul 2017 *Ph.D. in Mathematics*
University of Ottawa, Department of Mathematics and Statistics
Thesis title: *On the existence and stability of rotating wave solutions to lattice dynamical systems*
Supervisors: Benoit Dionne and Victor LeBlanc

Sep 2011 – Jul 2013 *M.Sc. in Mathematics*
University of Ottawa, Department of Mathematics and Statistics
Thesis title: *Steady-state/Hopf interactions in the Van der Pol oscillator with delayed feedback*
Supervisors: Benoit Dionne and Victor LeBlanc

Sep 2007 – May 2011 *B.A. Honours*
Nipissing University, Department of Mathematics and Computer Science
Specialization in Pure Mathematics with minor in Computer Science
Graduated with distinction

1.4   Research Interests

Dynamical systems; data-driven discovery; ordinary and partial differential equations; bifurcation theory; pattern formation; wave propagation; data science; spatial dynamics; ergodic theory; network science; polynomial optimization.

1.5   Honours and Awards

Sep 2021–Aug 2022   Fellow of the Institute of Advanced Study, Guildford, UK.

Sep 2019 – Aug 2020   Postdoctoral Fellowship, Pacific Institute for the Mathematical Sciences (PIMS)

Sep 2017 – Aug 2019   Postdoctoral Fellowship, Natural Sciences and Engineering Research Council (NSERC)

Nov 2017   Dean's Scholarship, University of Ottawa.

Sep 2013 – Aug 2017   Ontario Graduate Scholarship, Ontario Ministry of Training, Colleges and Universities.

Sep 2013–Aug 2017   Excellence Scholarship, University of Ottawa.

Nov 2016   Teaching Assistant of the Year, Faculty of Science, University of Ottawa.

Jun 2016   André Dabrowski Scholarship, Department of Mathematics and Statistics, University of Ottawa.

Nov 2013   Dean's Scholarship, University of Ottawa.

Sep 2011 – Aug 2013   Master's Entrance Scholarship, Faculty of Postdoctoral and Graduate Studies, University of Ottawa.

Sep 2007 – May 2011   Carl Sanders Scholar, Nipissing University.

2   Research Activities

2.1   Publications

Student and post-doctoral co-authors are noted with an asterisk [∗].

Books

1. J. Bramburger.
   Data-Driven Methods for Dynamic Systems.
   Submitted to **Society for Industrial and Applied Mathematics (SIAM)**.

Peer-reviewed journal articles (published or accepted)

1. J. Bramburger and G. Fantuzzi.
   Data-driven discovery of invariant measures.
   Proceedings of the Royal Society A 480, (2024) 20230627.

2. D. Hill, J. Bramburger, and D. Lloyd.
   Dihedral rings of patterns emerging from a Turing bifurcation.
   Nonlinearity 37, (2024) 035015.

3. Z. Nicolaou and J. Bramburger.
   Complex localization mechanisms in networks of coupled oscillators: Two case studies.
   Chaos 34, (2024) 013131.

4. J. Bramburger and G. Fantuzzi.
   Auxiliary functions as Koopman observables: Data-driven analysis of dynamical systems via polynomial optimization.
   Journal of Nonlinear Science 34, (2023) 8.

5. K Kaheman[∗], U. Fasel, J. Bramburger, B. Strom, J.N. Kutz, and S. Brunton.
   The experimental multi-arm pendulum on a cart: a benchmark system for chaos, learning, and control.
   Hardware X 15, (2023) e00465.

6. J. Bramburger and M. Holzer.
   Pattern formation in random networks using graphons.
   SIAM Journal on Mathematical Analysis 55, (2023) 2150-2185.

7. A. Chernyavskiy, J. Bramburger, G. Fantuzzi, and D. Goluskin.
   Convex relaxations of integral variational problems: pointwise dual relaxation and sum-of-squares optimization.
   SIAM Journal on Optimization 33, (2023) 481-512.

8. D. Hill, J. Bramburger, and D. Lloyd.
   Approximate localised dihedral patterns near a Turing instability.
   Nonlinearity 36, (2023) 2567-2630. [Cover Article]

9. K. Kaheman[∗], J. Bramburger, J.N. Kutz, and S. Brunton.
   Saddle transport and chaos in the double pendulum.
   Nonlinear Dynamics 111, (2023) 7199-7233.

10. M. Tian, J. Bramburger, and B. Sandstede.
    Snaking bifurcations of localized patterns on ring lattices.
    IMA Journal on Applied Mathematics. 86, (2021) 1112-1140.

11. J. Bramburger, S. Brunton, and J.N. Kutz.
    Deep learning of conjugate mappings.
    Physica D 427, (2021) 133008.

12. J. Bramburger and C. Henderson.
    The speed of traveling waves in a FKPP–Burgers system.
    Archive for Rational Mechanics and Analysis 421, (2021) 643-681.

13. J. Bramburger.
    Isolas of multi-pulse solutions to lattice dynamical systems.
    Proceedings of the Royal Society of Edinburgh A 151, (2021) 916-852.

14. J. Bramburger, J.N. Kutz, and S. Brunton.
    Data-driven stabilization of periodic orbits.
    IEEE Access 9, (2021) 43504-43521.

15. J. Bramburger.
    Exact minimum speed of traveling waves in a Keller–Segel model.
    Applied Mathematics Letters 11, (2021) 106594.

16. J. Bramburger and D. Goluskin.
    Minimum wave speeds in monostable reaction-diffusion equations: sharp bounds by polynomial optimization.
    Proceedings of the Royal Society A 476, (2020) 20200450.

17. J. Bramburger, D. Dylewsky, and J.N. Kutz.
    Sparse identification of slow timescale dynamics.
    Physical Review E 102, (2020) 022204.

18. J. Bramburger and B. Sandstede.
    Localized patterns in planar bistable weakly coupled lattice systems.
    Nonlinearity 33, (2020) 3500-3525.

19. J. Bramburger and B. Sandstede.
    Spatially localized structures in lattice dynamical systems.
    Journal of Nonlinear Science 30, (2020) 603-644.

20. J. Bramburger and J.N. Kutz.
    Poincaré maps for multiscale physics discovery and nonlinear Floquet theory.
    Physica D 408, (2020) 132479.

21. J. Bramburger, C. Cuevas-Maraver, and P.G. Kevrekidis.
    Vortex pairs in the discrete nonlinear Schrödinger equation.
    Nonlinearity 33, (2020) 2159-2180.

22. J. Bramburger.
    Ultracontractive properties for directed graph semigroups with applications to coupled oscillators.
    Canadian Mathematical Bulletin 63, (2020) 13-30.

23. J. Bramburger.
    Stable periodic solutions to lambda-omega lattice dynamical systems.
    Journal of Differential Equations 268, (2020) 3201-3254.

24. S. Alexander, J. Bramburger, and E. McDonough.
    Dark disk substructure and superfluid dark matter.
    Physics Letters B 797, (2019) 134871.

25. J. Bramburger, D. Altschuler, C. Avery, T. Sangsawang, M. Beck, P. Carter, and B. Sandstede.
    Localized radial roll patterns in higher space dimensions.
    SIAM Journal on Applied Dynamical Systems 18, (2019) 1402-1453.

26. J. Bramburger and F. Lutscher.
    Analysis of integrodifference equations with a separable dispersal kernal.
    Acta Applicandae Mathematicae 161, (2019) 127-151.

27. J. Bramburger.
    Rotating wave solutions to lattice dynamical systems II: Persistence results.
    Journal of Dynamics and Differential Equations 31, (2019) 499-536.

28. J. Bramburger.
    Rotating wave solutions to lattice dynamical systems I: The anti-continuum limit.
    Journal of Dynamics and Differential Equations 31, (2019) 469-498.

29. J. Bramburger.
    Stability of infinite systems of coupled oscillators via random walks on weighted graphs.
    Transactions of the American Mathematical Society 372, (2019) 1159-1192.

30. J. Bramburger, B. Dionne, and V.G. LeBlanc.
    Zero-Hopf bifurcation in the Van der Pol oscillator with delayed position and velocity feedback.
    Nonlinear Dynamics 78, (2014) 2959-2973.

Peer-reviewed journal articles (submitted)

1. J.N. Kutz, A. Rahman, M. Ebers, J. Koch, and J. Bramburger. *Universal dynamics of damped-driven systems: The logistic map as a normal form for energy balance.*

2. M. Neuman and J. Bramburger.
   Transferability of graph neural networks using graphon and sampling theories.

3. J. Bramburger, M. Holzer, and J. Williams[∗].
   Persistence of steady-states for dynamical systems on large networks.

Non-refereed conference reports

1. J. Bramburger.
   Localized patterns on graphs: The influence of dimension and topology on pattern formation.
   Oberwolfach Reports 37, (2021) 16-17.

Outreach and public interest articles

1. J. Bramburger.
   The emerging utility of graphons in applied math.
   SIAM News 56, (2023) October.

2. J. Bramburger.
   Patterns and waves in theory, experiment, and application.
   Snapshot of Modern Mathematics from Oberwolfach (2023).

2.2   Research presentations

Invited talks at conferences and workshops

- ⌢ [*Upcoming*] 11th European Nonlinear Dynamics Conference. Delft, Netherlands. July 22, 2024.

- ⌢ [*Upcoming*] Workshop on Advancing Fluid and Soft-Matter Dynamics with Machine Learning and Data Science. Madison, WI, USA. June 3, 2024.

1. 10th International Congress on Industrial and Applied Mathematics (ICIAM 2023). Tokyo, Japan. August 20, 2023.

2. Canadian Applied and Industrial Mathematical Society (CAIMS) Annual Meeting. Fredericton, NB, Canada. June 15, 2023.

3. Canadian Mathematical Society (CMS) Summer Meeting. Ottawa, ON, Canada. June 3, 2023.

4. Society for Industrial and Applied Mathematics (SIAM) Conference on Applications of Dynamical Systems. Portland, OR, USA. May 14, 2023.

5. Dynamics Days 2023. Held virtually, January 9, 2023.

6. Canadian Mathematical Society (CMS) Winter Meeting. Toronto, ON, Canada. December 2, 2022.

7. Society for Industrial and Applied Mathematics (SIAM) Conference on Mathematics of Data Science. San Diego, CA, USA. September 26, 2022.

8. Society for Industrial and Applied Mathematics (SIAM) Conference on Nonlinear Waves and Coherent Structures. Bremen, Germany. August 30, 2022.

9. Workshop "Surrey Workshop on Data and Dynamics". University of Surrey, Guildford, UK. May 25, 2022.

10. Center for Nonlinear Science (CNLS) Annual Conference 2022 on Physics-Informed Machine Learning. Sante Fe, NM, USA. May 11, 2022.

11. Workshop "Dynamics of Waves and Patterns". Oberwolfach Research Institute for Mathematics, Oberwolfach, Germany. August 13, 2021.

12. Society for Industrial and Applied Mathematics (SIAM) Conference on Applications of Dynamical Systems. Held virtually. May 25, 2021.

13. Dynamics Days Digital 2020. Held virtually. August 25, 2020.

14. 2019 Society for Industrial and Applied Mathematics (SIAM) Pacific Northwest Conference. Seattle, WA, USA. October 20, 2019.

15. Society for Industrial and Applied Mathematics (SIAM) on Applications of Dynamical Systems. Snowbird, UT, USA. May 22, 2019.

16. The Eleventh IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena. Athens, GA, USA. April 18, 2019.

17. Workshop "Boston University/Keio University Workshop". Boston, MA, USA. June 28, 2018.

18. Society for Industrial and Applied Mathematics (SIAM) on Nonlinear Waves and Coherent Structures. Orange, CA, USA. June 11, 2018.

19. Dynamics Days 2018. Denver, CO, USA. January 6, 2018.

20. Canadian Applied and Industrial Mathematical Society (CAIMS) Annual Meeting. Halifax, NS, Canada. July 17, 2017.

21. Canadian Mathematical Society (CMS) Winter Meeting. Niagara Falls, ON, Canada. December 4, 2016.

22. The 2015 AMMCS-CAIMS Congress. Waterloo, ON, Canada. June 11, 2015.

23. Canadian Mathematical Society (CMS) Winter Meeting. Ottawa, ON, Canada. December 9, 2013.

24. Nipissing University's Fourth Annual Undergraduate Research Conference. North Bay, ON, Canada. April 2, 2011.

Invited colloquia and seminars

1. Machine Learning Seminar, University of Ottawa, Ottawa, ON, Canada. March 12, 2024.

2. CMX Lunch Seminar, California Institute of Technology, Pasadena, CA, USA. September 20, 2023.

3. Applied and Computational Math Seminar, George Mason University. Fairfax, VA, USA. April 28, 2023.

4. Alan Turing Institute Seminar, Alan Turing Institute. Online. November 17, 2022.

5. Department of Mathematics and Statistics Seminar, Concordia University. Montréal, QC, Canada. November 11, 2022.

6. Applied Nonlinear Dynamics Seminar, University of Leeds. Leeds, UK. May 23, 2022.

7. Applied Mathematics Seminar, Auburn University. Auburn, AB, USA. May 6, 2022.

8. Department of Mathematics Colloquium, University of Alabama at Birmingham. Birmingham, AB, USA. April 15, 2022.

9. Advanced Modeling and Simulations Seminar, University of Texas at El Paso. El Paso, TX, USA. March 4, 2022.

10. Aerodynamics and Control Seminar, Imperial College London. London, UK. February 3, 2022.

11. Computer Science and Mathematics Research Seminar, Nipissing University. North Bay, ON, Canada. November 19, 2021.

12. Analysis, Dynamics, and Applications Seminar, University of Arizona. Tucson, AZ, USA. November 16, 2021.

13. AIMS Lab Seminar, McMaster University. Hamilton, ON, Canada. November 15, 2021.

14. Department of Mathematics Colloquium, University of Surrey. Guildford, UK. October 27, 2021.

15. Analysis and Applied Math Seminar, University of Toronto. Toronto, ON, Canada. October 22, 2021.

16. C^3S^2 Seminar, Clarkson University. Potsdam, NY, USA. October 22, 2021.

17. CRM Applied Mathematics Seminar, McGill University. Montréal, QC, Canada. October 4, 2021.

18. PDE Seminar, University of Houston. Houston, TX, USA. November 20, 2020.

19. Applied PDE Seminar, University of Washington. Seattle, WA, USA. March 12, 2020.

20. Applied Mathematics Seminar, University of Victoria. Victoria, BC, Canada. January 29, 2020.

21. Applied Mathematics Seminar, University of Washington. Seattle, WA, USA. June 5, 2019.

22. Physical Mathematics Seminar, Massachusetts Institute of Technology. Boston, MA, USA. December 11, 2018.

23. Dynamical Systems Seminar, University of Minnesota - Twin Cities. Minneapolis, MN, USA. October 23, 2018.

24. Computational and Applied Mathematics Seminar, University of Kansas. Lawrence, KS, USA. September 26, 2018.

25. MINDS Seminar, Vrije Universiteit Amsterdam. Amsterdam, Netherlands. March 13, 2018.

26. Applied Math and Computation Seminar, University of Massachusetts Amherst. Amherst, MA, USA. February 20, 2018.

27. Dynamical Systems Seminar, Boston University. Boston, MA, USA. February 12, 2018.

28. LCDS Seminar, Brown University. Providence, RI, USA. September 25, 2017.

29. Applied Mathematics Seminar, University of Ottawa. Ottawa, ON, Canada. April 21, 2017.

Invited mini-tutorials and mini-courses

⌢ [*Upcoming*] Society for Industrial and Applied Mathematics (SIAM) on Nonlinear Waves and Coherent Structures. Baltimore, MD, USA. June 24, 2024.

1. Canadian Mathematical Society (CMS) Winter Meeting. Montréal, QC, Canada. December 1, 2023.

Contributed talks at conferences and workshops

1. Dynamics Days 2019. Evanston, IL, USA. January 5, 2019.

2. The Canadian Applied and Industrial Mathematical Society (CAIMS) Annual Meeting. Edmonton, AB, Canada. June 30, 2016.

Contributed posters

1. KUMUNU Conference on PDE, Dynamical Systems, and Applications. Columbia, MO, USA. April 27, 2019.

2. Dynamics Days 2019. Evanston, IL, USA. January 5, 2019.

3. KUMUNU Conference on PDE, Dynamical Systems, and Applications. Lawrence, KS, USA. April 21, 2018.

2.3   Research funding

External research funding (awarded)

1. **NSERC Discovery Grant**, $160,000 CAD
   ($32,000 CAD/year for five years), April 2023 - March 2028
   Title: *Data-Driven Methods for Dynamical Systems Analysis*

2. **NSERC Discovery Launch Supplement**, $12,500 CAD
   April 2023 - March 2028

3. **Applied Mathematics Program of the National Science Foundation**, $299,000 USD
   Declined due to move to Concordia University
   Title: *Steady and Recurrent Patterns in Spatially Extended Systems*

4. **4-VA Collaborative Research Grant**, $30,000 USD
   February 2022 - June 2023
   Title: *Epidemic Surveillance and Prediction via Public Domain Sources*
   Co-PI: Shane Ross (Virginia Tech)

Internal research funding (awarded)

1. **Dean's Special Initiative Grant**, $1,500 CAD
   October 2022
   Co-PI: Anna Brinkerhoff (Concordia University, philosophy)

2. **Concordia University Faculty of Arts and Science Start-Up Grant**, $40,000 CAD
   September 2022 - August 2024

Research travel funding

1. **London Mathematical Society Scheme 2 Grant**, £1,500, May 2023.

2. **SIAM Early Career Travel Award** (SIAM Conference on Applications of Dynamical Systems 2021, $650 USD, May 2021.

3. **AMS-Simons Travel Grant**, $4,000 USD, July 2018-August 2019.

4. **SIAM Early Career Travel Award** (SIAM Conference on Nonlinear Waves and Coherent Structures, $650 USD, July 2018.

5. **University of Ottawa's Faculty of Graduate and Postdoctoral Studies Travel Grant**, $550 CAD, July 2017.

Research funding awarded to students and post-docs

1. **NSERC Undergraduate Research Award**, $8,120 CAD (Marco Mignacca)
   Summer 2023
   Title: *Data-driven approximation of the Koopman operator using wavelet bases*

2. **Faculty of Arts and Science Don and Bonnie Poole Undergraduate Summer Research Internship**, $9,300 CAD (Georgia Brooks)
   Summer 2023
   Title: *Autoencoders for Learning Conjugacies*

3   Teaching Activities

3.1   Courses taught

Courses taught at Concordia University

1. **Linear and Nonlinear Dynamical Systems** (MATH 474), Fall 2024

2. Topics in Pure and Applied Mathematics: **Data-Driven Methods for Dynamic Systems** (MATH 494 / MAST 680 / MAST 865), Winter 2023

3. **Mathematical Modelling** (MAST 331), Winter 2023

4. **Ordinary Differential Equations** (MATH 370), Fall 2022

Courses taught at George Mason University

1. **Analytic Geometry and Calculus II** (MATH 114), Fall 2021

2. **Advanced Calculus I** (MATH 315), Fall 2021

Courses taught at the University of Washington

1. **Computational Methods for Data Analysis** (AMATH 482), Winter 2021

2. **Vector Calculus and Complex Analysis - Graduate** (AMATH 501), Fall 2020

3. **Vector Calculus and Complex Analysis - Undergraduate** (AMATH 401), Fall 2020

Courses taught at the University of Victoria

1. **Introduction to Partial Differential Equations** (MATH 346), Spring 2020

Courses taught at Brown University

1. **Applied Dynamical Systems** (APMA 1360), Spring 2019

2. **Methods of Applied Mathematics I** (APMA 0330), Summer 2018

Courses taught at the University of Ottawa

1. **Introduction to Calculus and Vectors** (MAT 1339 A), Fall 2016

3.2   Supervised students and post-doctoral fellows

PhD students

1. **Jackson Williams**. George Mason University. Fall 2022 - present.
   Co-supervisor: Matt Holzer (George Mason University, Mathematical Sciences)

Master's students

1. **Daniel Fassler**. Concordia University. Fall 2023 - present.
   Co-supervisor: Simone Brugiapaglia (Concordia, Math and Stats)

2. **Bocheng Ruan**. Concordia University. Fall 2023 - present.
   Co-supervisor: Pawel Gora (Concordia, Math and Stats)

Undergraduate students

1. **Marco Mignacca**, NSERC USRA. Summer 2023
   Co-supervisor: Simone Brugiapaglia (Concordia, Math and Stats)

2. **Georgia Brooks**, Don and Bonnie Poole Undergraduate Summer Intern. Summer 2023

3. **Marco Mignacca**, Honours Project, Concordia University. Winter 2023.

4. **Jiajun Bao, Amelia J. Nathan, and Carter Peyton**, Directed studies course, University of Washington. Winter 2021.

5. **Xuchen Wu**, Undergraduate research associate, University of Victoria. Fall 2019 - Winter 2020.

Thesis examination committees

1. Moyi Tian, PhD Thesis Examiner, May 2024
   Title: *TBD*
   Division of Applied Mathematics, Brown University

2. Kylian Ajavon, MSc Thesis Examiner, March 2024
   Title: *Surrogate models for diffusion on graphs: A high-dimensional polynomial approach*
   Department of Mathematics and Statistics, Concordia University

3. Mahbubur Rahman, PhD Thesis Examiner, September 2023
   Title: *Absolutely continuous invariant measures for piecewise convex maps of an interval with countable number of branches.*
   Department of Mathematics and Statistics, Concordia University

4. Chun Ho Lau, PhD Thesis Examiner, June 2023
   Title: *Boundedness of operators on local Hardy spaces and periodic solutions of stochastic partial differential equations with regime-switching*.
   Department of Mathematics and Statistics, Concordia University

5. Ted Szylowiec, Master's Thesis Examiner, May 2023
   Title: *Islands and ellipses in 2D dynamical systems.*
   Department of Mathematics and Statistics, Concordia University

Comprehensive examination committees

1. Dominic Blanco, PhD Comprehensive Exam, March 2024
   Department of Mathematics and Statistics, McGill University

2. Sina Mohammad-Taheri, PhD Comprehensive Exam, December 2022
   Department of Mathematics and Statistics, Concordia University

4 Academic Service

Department of Mathematics and Statistics at Concordia

1. **Library Liaison** (Summer 2022 - Fall 2023)

2. **Member of the Hiring Committee** for LTA in Pure and Applied Mathematics (Winter 2023)

3. **Member of the Working Group** for the curriculum revision of the Major in Mathematics and Statistics (Winter 2023)

4. **Member of the Hiring Committee** for tenure-track position in Logic and Set Theory (Winter 2023)

5. **Member of the Hiring Committee** for tenure-track position in Analysis and Dynamical Systems (Fall 2022 - Winter 2023)

External service

1. **Early-Career Editorial Board Member**, Physica D (Winter 2022 - present)

2. **Member of the Nipissing University Alumni Advisory Board**, Nipissing University (Summer 2021 - present)

3. **Scientific Organization Committee**, CMS Winter Meeting (November 29 - December 2, 2024)

4. **CRM-ISM Postdoc Selection Committee** (Winter 2024)

5. **Postdoctoral Advisor**, Brown University SIAM Student Chapter (Fall 2017 - Summer 2019)

6. **Graduate Student Representative**, University of Ottawa's Faculty of Science (Fall 2014 - Summer 2017)

7. **President**, Mathematics Graduate Student Association of the University of Ottawa (Fall 2014 - Summer 2016)

Event organization

1. **BIRS Workshop on Structured Machine Learning and Time-Stepping for Dynamical Systems**
   Banff, AB, Canada. February 2024.
   Co-organizers: Chris Budd (Bath), Jingwei Hu (Washington), Nathan Kutz (Washington), and Andy Wan (UC Merced)

2. Scientific session "Mathematics of Machine Learning"
   CMS Winter Meeting. Montréal, QC, Canada. December 1-4, 2023.
   Co-organizer: Ben Adcock (Simon Fraser), Giang Tran (Waterloo), Hamid Usefi (Memorial)

3. CRM Applied Math Seminar
   Montréal, QC, Canada. Fall 2023 and Winter 2024.
   Co-organizers: Simone Brugiapaglia (Concordia), Tim Hoheisel (McGill) and Matthieu Cadiot (McGill)

4. Scientific session "Studying dynamical systems using polynomial optimization tools"
   SIAM Conference on Applications of Dynamical Systems. Portland, OR, USA. May 14 - 18, 2023.
   Co-organizer: David Goluskin (Victoria)

5. CRM Applied Math Seminar
   Montréal, QC, Canada. Winter 2023.
   Co-organizers: Simone Brugiapaglia (Concordia) and Matthieu Cadiot (McGill)

6. CRM Applied Math Seminar
   Montréal, QC, Canada. Fall 2022.
   Co-organizers: Simone Brugiapaglia (Concordia) and Daniel Tageddine (McGill)

7. **Surrey IAS Workshop on Data and Dynamics**
   Guildford, UK. May 25-26, 2022.
   Co-organizers: Stephen Klus (Surrey), David Lloyd (Surrey), and Naratip Santitissadeekorn (Surrey)

8. Applied and Computational Math Seminar
   George Mason University, Fairfax, VA, USA. Fall 2021 - Winter 2022.
   Co-organizers: Dan Anderson (George Mason) and Maria Emelianenko (George Mason)

9. Data-Driven Methods in Science and Engineering Seminar
   Virtual, hosted by University of Washington. Fall 2020 - Winter 2021.
   Co-organizers: Joe Bakarji (Washington), Henning Lange (Washington), and Jordan Snyder (Washington)

10. Scientific session "Leveraging machine learning for dynamics and control"
    SIAM Conference on Applications of Dynamical Systems. Held virtually. May 23 - 27, 2021.
    Co-organizer: Eurika Kaiser (Washington)

11. Scientific session "Machine learning methods for dynamical systems"
    2019 SIAM PNW Conference. Seattle, WA, USA. October 18 - 20, 2019.
    Co-organizer: Henning Lange (Washington)

12. Scientific session "Recent advances in lattice dynamical systems"
    SIAM Conference on Applications of Dynamical Systems. Snowbird, UT, USA. May 19 - 23, 2019.
    Co-organizer: Tim Faver (Leiden)

13. Scientific session "Spatial dynamics: Local and global results"
    SIAM Conference on Nonlinear Waves and Coherent Structures. Orange, CA, USA. June 11 - 14, 2018.
    Co-organizers: Bente Bakker (Leiden) and Ryan Goh (Boston)

14. LCDS Seminar
    Brown University, Providence, RI, USA. Fall 2018 - Summer 2019.
    Co-organizers: Stephanie Dodson (Colby)

15. Brown-BU-UMass Dynamics and PDE Seminar
    Boston, MA, USA. May 3, 2019.
    Co-organizers: Ryan Goh (Boston) and Stathis Charalampidis (Cal Poly)

16. Brown-BU-UMass Dynamics and PDE Seminar
    Amherst, MA, USA. November 16, 2018.
    Co-organizers: Ryan Goh (Boston) and Stathis Charalampidis (Cal Poly)

17. Brown-BU Dynamics and PDE Seminar
    Providence, RI, USA. April 19, 2018.
    Co-organizer: Ryan Goh (Boston)

18. Brown-BU Dynamics and PDE Seminar
    Boston, MA, USA. November 30, 2017.
    Co-organizer: Ryan Goh (Boston)

Papers refereed since Concordia appointment

1. Applied Mathematics Letters (**1 paper** in Winter 2023)

2. Chaos, Solitons, & Fractals (**1 paper** in Winter 2023)

3. IEEE Control Systems Letters (**1 paper** in Fall 2023)

4. Journal of Complex Networks (**2 papers**: 1 in Summer 2023, 1 in Fall 2023)

5. Journal of the European Mathematical Society (**1 paper** in Fall 2022)

6. Journal of Nonlinear Science (**3 papers**: 1 in Fall 2023, 2 in Winter 2024)

7. Machine Learning: Science and Technology (**1 paper** in Fall 2023)

8. Physica D (**8 papers**: 1 in Fall 2022, 4 in Winter 2023, 1 in Summer 2023, 1 in Fall 2023, 1 in Winter 2024)

9. SIAM Journal on Applications of Dynamical Systems (**1 paper** in Fall 2022)

10. SIAM Journal on Scientific Computing (**1 paper** in Fall 2023)

11. SIAM Review (**1 paper** in Winter 2024)

Grants refereed since Concordia appointment

1. NSERC Discovery Grant (**1 proposal** in Winter 2024)

Outreach activity and interviews

1. Recorded full course lectures for Linear and Nonlinear Dynamical Systems (MATH 474) and uploaded to YouTube. 36 videos.

2. Recorded full course lectures for Mathematical Modelling (MAST 330) and uploaded to YouTube. 27 videos.

3. Recorded full course lectures for Ordinary Differential Equations (MATH 370) and uploaded to YouTube. 32 videos.

4. Interviewed by Jousef Murad for the Engineered Mind podcast: Chaos, Turbulence, & Machine Learning - Jason Bramburger | Podcast 68.