Joe Tran

CONTACT INFORMATION

Graduate Student, Mathematics and Statistics
Department of Mathematics and Statistics
York University

Email: joetran0@my.yorku.ca
Citizenship: Canadian

EDUCATION

Ph.D. Mathematics and Statistics (Applied Mathematics) 09/2025-04/2029 (*expected*)
York University, Faculty of Graduate Studies, Department of Mathematics and Statistics

- Supervisor: Woldegebriel Assefa Woldegerima
- Research Area: Mathematical Epidemiology, Dynamical Systems
- Admitted to the Ph.D. program at York University.

M.A. Mathematics and Statistics (Pure Mathematics) 09/2024-08/2025
York University, Faculty of Graduate Studies, Department of Mathematics and Statistics

- Supervisor: Pavlos Motakis
- Research Area: Functional Analysis and Banach Space Theory
- Project: *Projections and Complemented Subspaces in Banach Spaces*

B.Sc. Mathematics for Education 09/2020-04/2024
York University, Faculty of Science, Department of Mathematics and Statistics

- Specialized Honours
- With Distinction
- GPA: 7.90/9.00

RESEARCH INTERESTS

Mathematical epidemiology, dynamical systems in population health, compartmental models (SIR, SEIR, SEIRS), geometric singular perturbation theory (GSPT).

PUBLICATIONS

1. J. Tran, W. A. Woldegerima, *Singular perturbation analysis of a two-time scale model of vector-borne disease: Zika virus model as a case study*, Chaos, Solitons & Fractals 194 (2025), 116209.

PROJECTS

Projections and Complemented Subspaces in Banach Spaces
M.A. Survey Paper 12/2024-08/2025

Singular perturbation analysis of a two-time scale model of vector-borne disease: Zika virus model as a case study
Summer Research Assistant 05/2024-03/2025

The Distance From Rank r Projection Operators to the Nilpotent Operators on $\mathbb{C}^n$
NSERC Undergraduate Summer Research Award 05/2023-08/2023

Predicting Wordle Results
Mathematical Contest in Modelling 02/2023

Presentations

- *Projections and Complemented Subspaces in Banach Spaces*, M.A. Survey Paper Colloquium — 08/2025
- *On Almost All Trees Have Quantum Symmetry*, Mathematics Seminar — 07/2025
- *Singular perturbation analysis of a two-time scale model of vector-borne disease: Zika virus model as a case study*, Mathematics Seminar — 05/2025
- *Guest Speaker From York University: Q&A and Turning DNA into Numbers*, Dr. Norman Bethune Collegiate Institute (Bethune Math Club) — 03/2024
- *The Distance From Rank r Projection Operators to the Nilpotent Operators on* $\mathbb{C}^n$, Faculty of Science Summer Research Conference — 08/2023

Volunteer Service

Department of Mathematics and Statistics, York University.

- Panellist at the *Ask me anything: Data Science, Math and Actuarial Science* Information Session — 03/2025
- York Science 101 Panelist at the *Fall Open House* Event — 11/2024
- Science Faculty Council — 09/2024-04/2025
- Graduate Curriculum Committee — 09/2024-04/2025
- Science Student Ambassador — 09/2024-04/2025
- President of Club Infinity — 06/2024-Present
- Brunch at York Science — 04/2024
- Mathematics for Education Panellist at the *Ask Me Anything: Mathematics and Statistics Programs* Webinar Event — 03/2024
- Volunteer for *Fall Open House* — 11/2023
- Member of the Tenure and Promotion Adjudicating Committee of the Pure Mathematics Section — 09/2023-04/2024
- Event Coordinator of Club Infinity — 05/2023-06/2024
- Science Rendezvous — 05/2023
- Volunteer for *Spring Open House* — 03/2023

Honours, Bursaries, & Awards

- YU Graduate Fellowship - Masters Domestic — 09/2024, 01/2025
- York Graduate Scholarship — 09/2024
- York University Undergraduate Bursary — 04/2024
- York University Continuing Student Scholarship — 02/2024
- NSERC Undergraduate Student Research Award — 05/2023-08/2023
- Member of Dean's Honour Roll — 04/2021, 04/2023
- Abe Karass/Donald Solitar Award — 03/2023
- Chair's Honour Roll in Mathematics and Statistics — 11/2022
- York University Continuing Student Scholarship — 08/2022
- York University Automatic Entrance Scholarship — 08/2020

Teaching Experience

Teaching Assistant at York University.

- MATH 1013, Applied Calculus I – F23, W24, F24
- MATH 1014, Applied Calculus II – S23, W24, S25
- MATH 1021, Linear Algebra I – S23
- MATH 1025, Applied Linear Algebra – F23
- MATH 1200, Problems, Conjectures, and Proofs – F23 (TL), F24 (TL), W25 (TL), F25 (TL)
- MATH 1300, Differential Calculus with Applications – S23, W25
- MATH 1310, Integral Calculus with Applications – F25 (TL)
- MATH 1506, Mathematics I for the Biological and Health Sciences – S24 (TL)
- MATH 1507, Mathematics II for the Biological and Health Sciences – W25
- MATH 1581, Business Mathematics I – S23
- MATH 2001, Real Analysis I – F24, F25
- MATH 2015, Applied Multivariate and Vector Calculus – S25, F25
- MATH 2022, Linear Algebra II – W24, W25