Natalia Kravtsova

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[Google Scholar](#)
[GitHub](#)

Education

The Ohio State University	2019 – current

PhD program in Mathematics (theoretical track)
Advisor: Professor [Adriana Dawes](#)

The Ohio State University	2009 – 2014, 2015 – 2018

BS and MMS in Mathematics (biomathematics track), MS in Statistics

Moscow Conservatory	2008

Diploma in Music Theory and History

Working papers and preprints

- Kravtsova, N. *k-Sample inference via Multimarginal Optimal Transport.* Submitted [(arXiv)](#)

- Kravtsova, N. *The NP-hardness of the Gromov-Wasserstein distance.* [(arXiv)](#) [(codes)](#)

Publications

- Plourde, S. M., Kravtsova, N., & Dawes, A. T. (2024). *Asymmetry in centrosome maturation revealed through AIR-1 dynamics in the early C. elegans embryo.* Accepted in Scientific Reports

- Kravtsova, N., Chamberlin, H. M. & Dawes, A. T. (2023). *Efficient parameter generation for constrained models using MCMC.* Scientific Reports **13**, 16285 [(journal)](#)

- Kravtsova, N, McGee II, R. L., & Dawes, A. T. (2023). *Scalable Gromov-Wasserstein based comparison of biological time series.* Bulletin of Mathematical Biology **85**, 77 [(journal)](#) [(codes)](#)

- Ignacio, D. P., Kravtsova, N., Henry, J., Palomares, R. H., & Dawes, A. T. (2022). *Dynein localization and pronuclear movement in the C. elegans zygote.* Cytoskeleton, 79(12), 133–143. [(journal)](#)

- Dawes, A. T., Wu, D., Mahalak, K. K., Zitnik, E. M., Kravtsova, N., Su, H., & Chamberlin, H. M. (2017). *A computational model predicts genetic nodes that allow switching between species-specific responses in a conserved signaling network.* Integrative Biology, 9(2), 156-166. [(journal)](#)

- Kravtsova, N., & Dawes, A. T. (2014). *Actomyosin regulation and symmetry breaking in a model of polarization in the early Caenorhabditis elegans embryo: symmetry breaking in cell polarization.* Bulletin of Mathematical Biology, 76, 2426-2448. [(journal)](#)

Conference and seminar presentations

- Tulane University Mathematics Department Seminar (November 2024)
  Two results in Optimal Transport with applications to biomedical data (seminar talk)

- AMS 2024 Spring Southeastern Sectional Meeting
  k-Sample inference via Multimarginal Optimal Transport (talk in special session "Advances in Shape and Topological Data Analysis")

- Topology, Geometry, and Data Seminar (January 2024, The Ohio State University, Department of Mathematics)
  k-Sample inference via Multimarginal Optimal Transport (seminar talk)

- 2023 SIAM Great Lakes Section Meeting (GLSIAM23)
  Scalable Gromov-Wasserstein based comparison of biological time series (contributed talk)

- Society for Mathematical Biology 2023 Annual Meeting
  Scalable Gromov-Wasserstein based comparison of biological time series (minisymposium talk)

- Third Graduate Student Conference: Geometry and Topology meet Data Analysis and Machine Learning (GTDAML2023)
  Scalable Gromov-Wasserstein based comparison of biological time series (talk)

- Society for Mathematical Biology 2019 Annual Meeting
  Efficient parameter generation for constrained models using MCMC (poster)

Teaching

Columbus State Community College, Department of Mathematics
Instructor of Record: Calculus I, pre-algebra, intermediate algebra, business mathematics

The Ohio State University, Department of Mathematics
Teaching Assistant: Calculus (I, II, III), college algebra

The Ohio State University, Department of Statistics
Teaching Assistant: elementary statistics, business statistics, statistics for life sciences

Programming skills

C++, Python, R, Matlab (link to GitHub page)