

Egor Lappo

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Please note: in 2022 I have changed my name. Prior to that, I was known as **Egor Alimpiev**.

Education

2022-2026

PhD in Biology

Stanford University, Stanford, CA

2018-2022

Bachelor of Science with Honors in Mathematics

Stanford University, Stanford, CA

GPA: **3.98/4.0**. Advisor: Ciprian Manolescu. Honors thesis titled *Concordance of spatial graphs*.

Publications

- [1] E. Lappo and N. Rosenberg. “A lattice structure for ancestral configurations arising from the relationship between gene trees and species trees.” In: *Discrete Applied Mathematics* 343 (2024), pp. 65–81. DOI: [10.1016/j.dam.2023.09.033](https://doi.org/10.1016/j.dam.2023.09.033).
- [2] E. Lappo and N. Rosenberg. “Solving the Arizona search problem by imputation.” In: *iScience* 108831 (2024). DOI: [10.1016/j.isci.2024.108831](https://doi.org/10.1016/j.isci.2024.108831).
- [3] E. Lappo. “Concordance of spatial graphs.” In: *Canadian Mathematical Bulletin* 66 (4 2023), pp. 1091–1108. DOI: [10.4153/S000843952300019X](https://doi.org/10.4153/S000843952300019X).
- [4] E. Lappo, K. Denton, and M. Feldman. “Conformity and anti-conformity in a finite population.” In: *Journal of Theoretical Biology* 563 (2023), p. 111429. DOI: [10.1016/j.jtbi.2023.111429](https://doi.org/10.1016/j.jtbi.2023.111429).
- [5] E. Lappo, N. Rosenberg, and M. Feldman. “Cultural transmission of move choice in chess.” In: *Proceedings of the Royal Society B* 290 (2023), p. 20231634. DOI: [10.1098/rspb.2023.1634](https://doi.org/10.1098/rspb.2023.1634).
- [6] E. Alimpiev and N. Rosenberg. “A compendium of covariances and correlation coefficients of coalescent tree properties.” In: *Theoretical Population Biology* 143 (2022), pp. 1–13. DOI: <https://doi.org/10.1016/j.tpb.2021.09.008>.

- [7] E. Lappo and N. Rosenberg. “Approximations to the expectations and variances of ratios of tree properties under the coalescent.” In: *G3 Genes/Genomes/Genetics* (Aug. 2022). DOI: [10.1093/g3journal/jkac205](https://doi.org/10.1093/g3journal/jkac205).
- [8] E. Alimpiev and N. Rosenberg. “Enumeration of coalescent histories for caterpillar species trees and p-pseudocaterpillar gene trees.” In: *Advances in Applied Mathematics* 131 (2021), p. 102265. DOI: <https://doi.org/10.1016/j.aam.2021.102265>.

Conference presentations

- 2024 JOINT MATHEMATICS MEETINGS 2024
Enumeration of rankings for a certain class of rankable TCNs.
- 2024 TAGC 2024
Solving the Arizona search problem by imputation.

Honors, Awards, and Fellowships

- 2023 HONORABLE MENTION FOR THE MORGAN PRIZE
Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student is an annual award given to an undergraduate student in the US, Canada, or Mexico who demonstrates superior mathematics research. The prize has been described as the highest honor given to an undergraduate in mathematics.
- 2022 STANFORD GRADUATE FELLOWSHIP
Provides a stipend to outstanding students pursuing doctoral degrees in science and engineering at Stanford.
- 2022 UNDERGRADUATE RESEARCH AWARD
Awarded by the Department of Mathematics to one graduating senior for superior work in a senior thesis.
- 2021 EXCELLENCE IN TEACHING AWARD
Awarded by the Department of Biology to superb teaching assistants.
- 2020 HUMANITIES RESEARCH INTENSIVE FELLOWSHIP
Support for individual research projects and access to grants.
- 2017 GOLD MEDAL AT THE INTERNATIONAL BIOLOGY OLYMPIAD
Ranked 11th and top of my national team.

Teaching

- 2024

GENE 220: INTRODUCTION TO GENETICS, ETHICS, AND SOCIETY
Student-run course.

- 2024 **BIO 244: FUNDAMENTALS OF MOLECULAR EVOLUTION**
Taught by Prof. Dmitri Petrov. Wrote exams and problem sets, gave lectures, held weekly sections, office hours.
- 2023 **BIO 82: GENETICS**
Held weekly sections, office hours.
Stanford University.
- 2021 **BIO 187: MATHEMATICAL POPULATION BIOLOGY**
Taught by Prof. Noah Rosenberg. Gave lectures, assisted students with final projects.
Stanford University
- 2020-2022 **COURSE GRADER IN THE MATHEMATICS DEPARTMENT**
Graded classes in general, algebraic, and differential topology, algebra.
Stanford University

Service

- 2022 **STANFORD BIOLOGY PHD PREVIEW PROGRAM MENTOR**
Worked with prospective applicants from historically excluded groups on their application materials (CV, statement of purpose), held interview prep sessions.
Stanford University

Technical skills

- C, Nix, Rust, Python, Haskell
- Statistical programming in R and Bayesian computation with Stan
- SageMath and Mathematica

Languages

- *Russian* (Native)
- *English* (Native)
- *Chinese* (Beginner)