

Mykhaylo M Malakhov

mykmal.xyz | malak039@umn.edu | 530.840.6245

EDUCATION

UNIVERSITY OF MINNESOTA

PHD IN BIOSTATISTICS

Expected 2025 | Minneapolis, MN

Advisor: Wei Pan

ANDREWS UNIVERSITY

BS IN MATHEMATICS

May 2020 | Berrien Springs, MI

Minor in Computing

BUDAPEST SEMESTERS IN MATHEMATICS

STUDY ABROAD

Fall 2019 | Budapest, Hungary

LINKS

Twitter: twitter.com/MykMal

LinkedIn: linkedin.com/in/mykmal

GitHub: github.com/MykMal

ORCID: 0000-0002-6856-3913

Google Scholar: [e5Q7sMQAAAAJ&hl](https://scholar.google.com/citations?user=e5Q7sMQAAAAJ&hl)

GRADUATE COURSES

THEORY

- Honors Real Analysis I & II
- Theory of Statistics I & II
- Biostatistics: Regression
- Advanced Regression and Design
- Linear Models
- Probability Models for Biostatistics
- Advanced Statistical Inference
- Bayesian Decision Theory and Data Analysis

ELECTIVES

- Statistics for Human Genetics and Molecular Biology
- Advanced Statistical Genetics and Genomics
- GIS and Spatial Analysis for Public Health
- Seminar: Transethnic Association Studies
- Seminar: Imaging Genetics

OTHER

- Research Skills in Biostatistics
- Foundations of Public Health
- Biomedical Ethics

SKILLS

Languages

R • Python • shell scripting • \LaTeX

Tools

Unix/Linux • plink • PrediXcan • git

EXPERIENCE

UMN SCHOOL OF PUBLIC HEALTH | PREDOCTORAL TRAINEE

2020 - present | Minneapolis, MN

- Helped develop a **nonlinear extension of transcriptome-wide association studies (TWAS)** and showed that it identifies genes missed by standard TWAS
- Currently working on a method that will **identify genes with tissue-specific patterns** of genetic regulation
- Currently working on **leveraging proteomics data to boost the power of genome-wide association studies (GWAS)**

INSTITUTE FOR PURE & APPLIED MATHEMATICS | RESEARCHER

Summer 2019 | Los Angeles, CA

- Proposed novel **attractor reconstruction and model calibration** methods
- Showcased these methods by **inferring reaction rate coefficients** for hydrogen-oxygen combustion from a time series of one observable

WILLIAMS COLLEGE | RESEARCH INTERN

Summer 2018 | Williamstown, MA

- Project 1: demonstrated how to improve management outcomes for **white-nose syndrome in bats** by considering metapopulation dynamics
- Project 2: established guidelines for **transboundary infectious disease management** when multiple administrative jurisdictions set different objectives

ANDREWS UNIVERSITY | UNDERGRADUATE RESEARCH FELLOW

Summer 2017 | Berrien Springs, MI

- Modeled the effects of climate change on **seabird behavior and population dynamics**, proving that egg cannibalism can yield strong Allee effects

PUBLICATIONS

1. Lin Z, Xue H, **Malakhov MM**, Knutson KA, and Pan W. Accounting for nonlinear effects of gene expression identifies additional associated genes in transcriptome-wide association studies. *Human Molecular Genetics* 2022;31:2462–70.
2. Blackwood JC, **Malakhov MM**, Duan J, et al. Governance structure affects transboundary disease management under alternative objectives. *BMC Public Health* 2021;21.
3. Duan J, **Malakhov MM**, Pellett JJ, Phadke IS, Barber J, and Blackwood JC. Management efficacy in a metapopulation model of white-nose syndrome. *Natural Resource Modeling* 2021;34:e12304.

SELECTED AWARDS

National

2018 Barry M. Goldwater Scholarship

University of Minnesota

2022 1st place, People's Choice Award at the SPH Research Day conference

2022 2nd place, Best Poster Award at the SPH Research Day conference

2022 3rd place in the Interdisciplinary Health Data Competition

2020 Dean's PhD Scholars Award

2020 Jean Roberts Biostatistics Fellowship

Andrews University

2018 Harold T. Jones Scholarship for highest mathematical excellence

2018 Louis Ulloth Scholarship for most significant leadership

2016 Full tuition ACT/SAT Scholarship