

Mykhaylo M Malakhov

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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

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

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GRADUATE COURSES

COMPLETED

- Honors Analysis I & II
- Theory of Statistics I & II
- Biostatistics: Regression
- Advanced Regression and Design
- Linear Models
- Research Skills in Biostatistics
- Probability Models for Biostatistics
- Statistics for Human Genetics and Molecular Biology
- Seminar: Transethnic Association Studies

CURRENT

- Foundations of Public Health
- Advanced Statistical Inference
- Bayesian Decision Theory and Data Analysis
- Advanced Statistical Genetics and Genomics
- Seminar: Imaging Genetics

SKILLS

TECHNICAL

Languages

R • Python • \LaTeX

Tools

Unix/Linux • plink • PrediXcan

HUMAN LANGUAGES

English • Ukrainian • Russian

EXPERIENCE

UMN SCHOOL OF PUBLIC HEALTH | PREDOCTORAL TRAINEE

2020 - present | Minneapolis, MN

- Funded by a **National Institutes of Health** NIGMS T32 Training Grant through the **Interdisciplinary Biostatistics Training in Genetics and Genomics** program
- Helped develop a nonlinear extension of **transcriptome-wide association studies (TWAS)** and showed that it identifies genes missed by standard TWAS
- Proposed statistical tests for determining whether the **genetic regulation of gene expression** is significantly different between two tissues
- Currently building a **causal inference framework** for gene co-expression networks based on instrumental variables regression
- Mentor: Wei Pan (University of Minnesota)

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
- Mentors: Robert Martin and Daniel Eckhardt (Air Force Research Laboratory)

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
- Mentors: Julie C. Blackwood (Williams College) and Katriona Shea (Penn State)

PUBLICATIONS

1. Lin Z, Xue H, **Malakhov MM**, Knutson K, and Pan W. Accounting for nonlinear effects of gene expression identifies additional associated genes in transcriptome-wide association studies. *Human Molecular Genetics* 2022.
2. Blackwood JC, **Malakhov MM**, Duan J, et al. Governance structure affects transboundary disease management under alternative objectives. *BMC Public Health* 2021;21:1782.
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

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