Andrew **Gard**

Assistant Professor of Mathematics

Lake Forest College

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Professional Experience

Lake Forest College — *Lake Forest, Illinois, USA*
Assistant Professor of Mathematics — *2019-present*

University of the Virgin Islands — *Saint Croix, US Virgin Islands*
Assistant Professor of Mathematics — *2014-2019*

Ohio Wesleyan University — *Delaware, Ohio*
Visiting Assistant Professor of Mathematics — *2012-2014*

Education

Doctor of Philosophy, Mathematics
Ohio State University — *2012*

Bachelor of Science, Mathematics
Ohio State University — *1999*

Bachelor of Arts, Philosophy
Ohio State University — *1999*

Publications

1. Gard, A., & Adelson, G. (2023). *Correlational trends in floristic quality assessment (under construction)*.
2. Gard, A., & Wilson, E. (2022). Prediction intervals for interpolants. *Under Revision at The Rocky Mountain Journal of Mathematics*.
3. Gard, A. (2022). The lion and man problem on riemannian manifolds. *Under Revision at the International Journal of Game Theory*.
4. Gard, A. (2018). The wild goose chase problem. *The American Mathematical Monthly*, *125*(7), 602–611. https://doi.org/10.1080/00029890.2018.1465785
5. Ekici, C., & Gard, A. (2016). Inquiry-based learning of transcendental functions in calculus. *PRIMUS*, *27*. https://doi.org/10.1080/10511970.2016.1214654
6. Gard, A. (2013). Procedings of the midstates conference of undergraduate research in mathematics and computer science (editor). *Ohio Wesleyan University*.
7. Gard, A. (2012). *Reverse isoperimetric inequalities in R3* [PhD thesis, Ohio State University]. http://rave.ohiolink.edu/etdc/view?acc_num=osu1330528578

Package development

- The **fqar** package. Tools in R for downloading and analyzing floristic quality assessment data. Published to the Central R Archive Network (CRAN) September 2022.

Teaching

Over ten years of experience as a college professor. Exceptionally high reviews from students, peers, and supervisors. **Specialization: statistics in the *R* programming environment**. Other notable experience: linear algebra, calculus (all levels), geometry, math for educators, developmental math.

Selected recent courses:

- *R Programming*. A project-based introduction to data science using *R*. Topics include data cleaning and visualization, multiple linear regression, analysis of variance, and bootstrapping.
- *Mathematical Probability*. Discrete and continuous probability distributions, the law of large numbers, the central limit theorem, random variables, and moment-generating functions.

- *Introduction to Probability and Statistics*. Comprehensive coverage of standard statistical techniques utilizing *R* as the primary technological tool.
- *Calculus I-III*. Differential and integral calculus with a focus on practical application.
- *Modern Geometry*. A seminar-style introduction to non-Euclidean geometry. Students read, present, and discuss ideas with one each other, with the professor acting as guide and chaperone.

Undergraduate Research

- *Investigating co-occurrence in Chicagoland floristic quality assessments*, with Irene Lulabelwa and Ryan Sorrells. Summer 2023.
- *Measuring success in Formula 1 racing*, with Lethu Mncube. Spring 2023.
- *Using machine learning to detect the presence of the onchocerca parasite*, with Jovana Jovanovska. Academic year 2022-2023.
- *Developing quantitative tools for floristic quality assessment*, with Alexia Myers. Summer 2022
- *Uncertainty in SIR epidemiological models*, with Kateryna Malkina. Summer 2022
- *Exploring the broader impacts of the COVID-19 pandemic*, with Veronika Chernikov, Christopher Arzate-Benitez, and Kenza Kantour. Summer 2021
- *The lion-and-man problem in the hyperbolic disk*, with Dipika Subramaniam. Academic year 2020-2021.
- *Prediction intervals for interpolants*, with Ethan Wilson. Summer 2020.
- *Propagation of uncertainty in polynomial interpolants*, with Tione Grant, Nikkoiya Cromwell, and Darryle Cyrille. Summer 2018.

Technology

I embrace technology as a tool for building mathematical and statistical understanding. My primary tool is *R*, but I also make frequent use of *MatLab, Geogebra, Excel*, and others as necessary and appropriate.

My YouTube channel (`https://www.youtube.com/c/EquitableEquations`) includes over 300 tutorials in statistics, *R* programming, and mathematics. It currently attracts more than 45,000 views per month.

Service

Current roles within the Lake Forest College shared governance structure:

- *Academic Honesty Judicial Board* (2020-2022). Adjudicates claims of student misconduct in classes, including accusations of cheating on exams and plagarism of papers
- *LFC-RFU Steering Committee* (2020-2022). Supports Lake Forest College's partnership programs with Rosalind-Franklin University, particularly the Health Professionals Program. e
- *Pre-Health Advising Committee* (2021-2022). Provides support and guidance for students intending to go to graduate school in health-related fields.

Additional recent professional development

- *Introduction to Python Programming*. University of Pennsylvania MOOC. Fall 2022.
- *Building R Packages*. John Hopkins University MOOC. Summer 2022.
- *Advanced R Programming*. John Hopkins University MOOC. Summer 2022.
- *Infectious Disease Modeling I and II*. Imperial College of London MOOC. Spring 2021.
- *VI-EPSCoR Mentor Training Program*. NSF-funded leadership training for faculty members conducting research with undergraduates. Spring 2018.