

Robin Dunn

Novartis Pharmaceuticals Corp • East Hanover, NJ 07936 • dunn.robinn.m@gmail.com • robinmdunn.github.io

Education

Carnegie Mellon University

PITTSBURGH, PA

PhD in Statistics

Aug 2016 – July 2021

Thesis topic: *Advances in Nonasymptotic and Nonparametric Inference*.

Co-advisors: Larry Wasserman, Aaditya Ramdas.

Master of Science in Statistics

Aug 2016 – May 2017

Kenyon College

GAMBIER, OH

Bachelor of Arts in Mathematics, Scientific Computing Concentration

Aug 2012 – May 2016

Valedictorian, Highest Honors in Mathematics, Distinction on Mathematics Senior Exercise.

Phi Beta Kappa. GPA: 4.0.

Experience

Novartis Pharmaceuticals Corporation

EAST HANOVER, NJ

Principal Statistical Consultant

Sept 2021 – present

Implement state-of-the-art statistical methods, models, and machine learning at the trial and project level. Advanced Exploratory Analytics group of the Advanced Methodology & Data Science team.

Biostatistics PhD Intern

May 2017 – Aug 2017

Advisors: Peter Mesenbrink (primary), David James, David Ohlssen

Analyzed data from the Osteoarthritis Initiative's ten-year longitudinal database. Constructed predictive models for knee replacements, explored missing data methods, and applied joint models for longitudinal and time-to-event data. Presented on several international conference calls.

Carnegie Mellon University Department of Statistics & Data Science

PITTSBURGH, PA

Research Assistant

Aug 2016 – July 2021

Research Collaborator for CMU / Novartis Partnership

Feb 2020 – Sep 2020

Collaborated on analysis of a personalized medicine cancer treatment, through a [partnership](#) between Novartis Pharmaceuticals and Carnegie Mellon's Department of Statistics & Data Science. Developed multistate models for patient progression from pre-treatment through follow-up. Consulted with physicians, statisticians, and biometricians. Presented on twice weekly international conference calls.

Instructor for 36-315: Statistical Graphics and Visualization

May 2019 – June 2019

Developed course materials, presented lectures, led labs, and held office hours.

Topics: choosing and interpreting graphics, mastering ggplot, interactive graphics with shiny.

Head Teaching Assistant for 36-462/662: Data Mining

Aug 2019 – Dec 2019

Head Teaching Assistant for 36-402/608: Advanced Methods for Data Analysis

Jan 2019 – May 2019

Head Teaching Assistant for 36-315: Statistical Graphics and Visualization

Aug 2018 – Dec 2018

Held office hours, led lab sections, graded assignments, coordinated course logistics, filled in for lecture.

Research Mentor for Summer Undergraduate Research Experience in Statistics

May 2018 – July 2018

Student advisees: Alexander Asemota, Sophia Hecht, Daniel Rodriguez

Faculty supervisors: Anjali Mazumder, Chad Schafer

Mentored students to identify research directions on data science for justice. Provided guidance on R tools (ggplot, data.table, shapefiles) and statistical models (generalized linear models, random forests, spatiotemporal ETAS models). Students presented their final work at a departmental seminar and at the poster session of the American Statistical Association's 2018 StatFest.

Kenyon College Office of Institutional Research

GAMBIER, OH

Institutional Research Student Consultant

Aug 2013 – June 2016

Analyzed survey data in R, wrote reports on statistical findings, hosted focus groups, and interpreted data to support professors applying for grants. Created a Tableau [data visualization](#) of majors and careers of Kenyon graduates.

Publications

- [1] Robin Dunn, Larry Wasserman, and Aaditya Ramdas. Distribution-Free Prediction Sets for Two-Layer Hierarchical Models. *Journal of the American Statistical Association*, 0(ja):1–29, 2022. URL <https://doi.org/10.1080/01621459.2022.2060112>.
R package: [ConformalTwoLayer](#).
 - [2] Robin Dunn, Aaditya Ramdas, Sivaraman Balakrishnan, and Larry Wasserman. Gaussian Universal Likelihood Ratio Testing. *arXiv preprint*, 2022. URL <https://arxiv.org/abs/2104.14676>. Under review, post-revision at *Biometrika*.
 - [3] Robin Dunn, Larry Wasserman, and Aaditya Ramdas. Universal Inference Meets Random Projections: A Scalable Test for Log-Concavity. *arXiv preprint*, 2021. URL <https://arxiv.org/abs/2111.09254>.
R package: [LogConcaveUniv](#).
 - [4] Robin Dunn, Joel Greenhouse, David James, David Ohlssen, and Peter Mesenbrink. Risk Scoring for Time to End-Stage Knee Osteoarthritis: Data from the Osteoarthritis Initiative. *Osteoarthritis and Cartilage*, 28(8):1020–1029, 2020. URL <https://doi.org/10.1016/j.joca.2019.12.013>.
 - [5] Niccolò Dalmaso*, Robin Dunn*, Benjamin LeRoy*, and Chad Schafer. A Flexible Pipeline for Prediction of Tropical Cyclone Paths. *ICML Workshop on Climate Change: How can AI help?*, 2019. URL <https://www.climatechange.ai/papers/icml2019/14>.
*Equal contributions. R package: [TCPredictionbands](#).
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Honors and Awards

PhD Teaching Assistant of the Year

May 2019

Carnegie Mellon University Department of Statistics & Data Science

Awarded for head TA performance in 36-402/608: Advanced Methods for Data Analysis (Spring 2019).

Gertrude M. Cox Scholarship

Apr 2016

ASA Committee on Women in Statistics and Caucus for Women in Statistics

Awarded yearly to one woman in or entering the early stages of graduate statistical training (MS or PhD) and to one woman in a more advanced stage of training.

Reginald B. Allen Prize

Apr 2016

Kenyon College Department of Mathematics & Statistics

Awarded each year to a student whom the professors of the Department of Mathematics decide has done the most outstanding work in mathematics.

NSF Graduate Research Fellowship

Mar 2016

National Science Foundation

Recognizes and supports outstanding graduate students in NSF-supported science, technology, engineering, and mathematics disciplines who are pursuing research-based master's and doctoral degrees.

Goldwater Scholar

Mar 2015

Barry Goldwater Scholarship and Excellence in Education Foundation

National award for undergraduate students interested in pursuing scientific research careers.

CAUSE Undergraduate Statistics Class Project Competition, third place

Jul 2013

Consortium for the Advancement of Undergraduate Statistics Education

Won third place in a national competition for a project titled “Studies on Water Components” that used bootstrapping statistical methodology to analyze water sampling data.

Service

Peer reviewer

2019 – present

ECML PKDD PharML workshop (2022), ICML climate change workshop (2021),

NeurIPS climate change workshop (2019, 2020, 2021), *Journal of Machine Learning Research* (2019)

PhD student mentor

2018, 2020

Conference volunteer

2018 – 2020

Women in Data Science (WiDS) Pittsburgh @ CMU conference volunteer

Professional Memberships

- American Statistical Association
- ENAR International Biometric Society
- Institute of Mathematical Statistics