Robin Dunn

Novartis Pharmaceuticals Corp • East Hanover, NJ 07936 • robin.dunn@novartis.com • robinmdunn.github.io

Current Work

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.

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.

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, 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.

[3] Robin Dunn, Aaditya Ramdas, Sivaraman Balakrishnan, and Larry Wasserman. Gaussian Universal Likelihood Ratio Testing. *arXiv preprint*, 2021. URL https://arxiv.org/abs/2104.14676. Under revision, post-review at *Biometrika*.

[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 Dalmasso*, 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`.

Invited Presentations

[1] A Risk Score for End-Stage Knee Osteoarthritis. Joint work with Joel Greenhouse, Peter Mesenbrink, David James, and David Ohlssen. Applied Survival Analysis course taught by Joel Greenhouse. Carnegie Mellon University. Pittsburgh, PA (virtual). February 2022. Presentation.

[2] Distribution-Free Prediction Sets. Joint work with Larry Wasserman and Aaditya Ramdas. Kenyon College. Gambier, OH (virtual). April 2021. Presentation. (Note: Originally intended as presentation for April 2020 Pi Mu Epsilon Math Honors Society Initiation and Banquet. Postponed due to COVID.)

[3] A Risk Score for End-Stage Knee Osteoarthritis. Joint work with Joel Greenhouse, Peter Mesenbrink, David James, and David Ohlssen. Novartis Pharmaceuticals Corporation. East Hanover, NJ. March 2020. Presentation.

[4] A Risk Score for End-Stage Knee Osteoarthritis. Joint work with Joel Greenhouse, Peter Mesenbrink, David James, and David Ohlssen. Applied Survival Analysis course taught by Joel Greenhouse. Carnegie Mellon University. Pittsburgh, PA. February 2019. Presentation.

Contributed Presentations

[1] Advances in Nonasymptotic and Nonparametric Inference. Thesis defense. Carnegie Mellon University. Pittsburgh, PA (virtual). July 2021. Presentation.

[2] Advances in Universal Inference. Thesis proposal. Carnegie Mellon University. Pittsburgh, PA (virtual). July 2020. Presentation.

[3] Statistical Models for Predicting Knee Osteoarthritis Endpoints: Data from the Osteoarthritis Initiative. Joint work with Joel Greenhouse, Peter Mesenbrink, David James, and David Ohlssen. ENAR 2018. Atlanta, GA. March 2018. Poster.

[4] Predicting Knee Osteoarthritis Endpoints. Joint work with Joel Greenhouse, Peter Mesenbrink, David James, and David Ohlssen. Advanced Data Analysis final presentation. Carnegie Mellon University. Pittsburgh, PA. December 2017. Presentation.

[5] Predicting Knee Replacement from the Osteoarthritis Initiative. Joint work with Peter Mesenbrink, David James, David Ohlssen, and Joel Greenhouse. Final internship presentation at Novartis Pharmaceuticals Corporation. East Hanover, NJ. August 2017. Presentation.

Honors and Awards

PhD Teaching Assistant of the Year *May 2019*
Carnegie Mellon University Department of Statistics & Data Science

Gertrude M. Cox Scholarship *Apr 2016*
ASA Committee on Women in Statistics and Caucus for Women in Statistics

Reginald B. Allen Prize *Apr 2016*
Kenyon College Department of Mathematics & Statistics

NSF Graduate Research Fellowship *Mar 2016*
National Science Foundation

Goldwater Scholar *Mar 2015*
Barry Goldwater Scholarship and Excellence in Education Foundation

CAUSE Undergraduate Statistics Class Project Competition, third place *Jul 2013*
Consortium for the Advancement of Undergraduate Statistics Education