

Luke Benz

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EDUCATION

Harvard T.H. Chan School of Public Health

2021-Present

PhD Student, Biostatistics

Yale University

2015-2019

BS, Applied Mathematics

- Phi Beta Kappa (Early Selection, Fall 2018)
- Summa Cum Laude
- Distinction in Major

Undergraduate Senior Thesis: *An Examination of Timeout Value, Strategy, and Momentum in NCAA Division 1 Men's Basketball* [[Link](#)]

EXPERIENCE

Medidata Solutions—New York, NY

August 2019 - June 2021

Senior Data Scientist (April 2021 - June 2021)

Statistical Analyst/Data Scientist (August 2019 - March 2021)

- Developed models to select sites for clinical trials and forecast enrollment and major milestones over the duration of the study.
- Built survival models to predict patient dropout and researched factors associated with dropout in Alzheimer's Disease clinical trials.
- Designed Python data pipeline for identifying various data transformations necessary to standardize and combine data across clinical trials.
- Maintained and developed NLP model to perform value level standardization of clinical data utilizing reinforcement learning techniques.

Yale School of Public Health—New Haven, CT

June 2016 - May 2019

Biostatistics Research Assistant

- Research assistant for Elizabeth Claus MD, PhD.
- Analyzed quality of life data for cancer patients with meningioma and low-grade glioma.
- Managed the recruitment and enrollment for the International Low Grade Glioma Registry.

National Institute of Standards and Technology—Gaithersburg, MD

Summers 2017 and 2018

Yale School of Public Health—New Haven, CT

June 2016 - May 2019

Summer Undergraduate Research Fellow (SURF)

- Research fellow in Information Technology Lab Statistical Engineering Division for Dr. Antonio Possolo (2018) and Dr. Andrew Rukhin (2017).
- Built NIST Homogeneity Assessor (NIHOMA), an R Shiny web application for exploring homogeneity of candidate reference materials using linear, Gaussian random effects model.
- Explored techniques for estimating heterogeneity variances in order to improve methods for combining results in collaborative studies with unreliable reported uncertainties.

- Wrote technical manual for internal NIST use:
Benz, L., Lafarge, T., and Possolo, A. “NIST Homogeneity Assessor User’s Manual.” [\[Link\]](#)

PUBLICATIONS

Benz, L. and Lopez, M. “Estimating the change in soccer’s home advantage during the Covid-19 pandemic using bivariate Poisson regression.” *AStA Advances in Statistical Analysis*, 2021. DOI <https://doi.org/10.1007/s10182-021-00413-9>. [\[Link\]](#)

Claus, E., Feliciano, J., **Benz, L.**, Calvocoressi, L. “Social media partnerships with patient organizations for neuro-oncology patient recruitment.” *Neuro-Oncology Practice*, 2019. 7(2):143-151. [\[Link\]](#)

Benz, L.S., Wensch, M.R., Schildkraut, J.M., Bondy, M.L., Warren, J.L., Wiemels, J.L. and Claus, E.B. “Quality of life after surgery for intracranial meningioma.” *Cancer*, 2017. 124(1): 161-166. [\[Link\]](#)

PRESENTATIONS

Benz, L. and Lopez, M. “Estimating the Change in Soccer’s Home Advantage During the COVID-19 Pandemic using Bivariate Poisson Regression.” Invited talk presented at *Harvard Sports Analytics Lab Seminar*. (April, 2021). [\[Link\]](#)

Benz, L. “An Examination of Timeout Value, Strategy, and Momentum in NCAA Division 1 Men’s Basketball.” Plenary talk presented at *Electronic Undergraduate Statistics Research Conference*. (November, 2019). [\[Link\]](#)

Benz, L. “An Examination of Timeout Value, Strategy, and Momentum in NCAA Division 1 Men’s Basketball.” Poster presented at *New England Symposium of Statistics in Sports*. Harvard University, Cambridge, MA (September, 2019). [\[Link\]](#)

Benz, L., Senders, J., Wefel, J., and Claus, E. “The International Low Grade Glioma Registry Patient-Reported Quality of Life.” Poster presented at *Society for Neuro-Oncology Annual Scientific Meeting*, New Orleans, LA (October, 2018). [\[Link\]](#)

Benz, L., “Launch and Demonstration of the NIST Homogeneity Assessor.” *National Institutes of Standards and Technology Summer Undergraduate Research Fellowship Colloquium*, Gaithersburg, MD (August, 2018). [\[Link\]](#)

Benz, L., “Combining Results in Collaborative Studies When Reported Uncertainties are Unreliable.” *National Institutes of Standards and Technology Summer Undergraduate Research Fellowship Colloquium*, Gaithersburg, MD (August, 2017). [\[Link\]](#)

SKILLS

Programming Languages and Frameworks R, Python, SQL, C, R/Shiny, L^AT_EX

SOFTWARE

ncaahoopR An R package for working with NCAA Basketball Play-by-Play Data. [\[Link\]](#)

AWARDS AND HONORS

Undergraduate Statistics Project Competition, American Statistical Association *Spring 2019*
First place research project for senior thesis, *An Examination of Timeout Value, Strategy, and Momentum in NCAA Division 1 Men’s Basketball*.

Statsketball Contest, American Statistical Association
2018 College Winner, Build Your Own Bracket Draft Challenge

April 2018

NIST Summer Undergraduate Research Fellowship, Yale University

Summers 2017, 2018

George J. Schulz Fellowship for the Natural Sciences, Yale University

Summer 2016

Michael Manzela Fellowship Supporting Cancer Research, Yale University

Summer 2016

TEACHING

Undergraduate Learning Assistant Physics 180 (University Physics), Yale University

Fall 2017

Peer Tutor Math 112 (Calculus I), Yale University

Fall 2016, Spring 2017