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
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." Pre-Print. **[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., Wrensch, 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 Colloqium*, 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 Colloqium*, Gaithersburg, MD (August, 2017). **[Link]**

SKILLS

Programming Languages and Frameworks R, Python, SQL, C, R/Shiny, LaTeX

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 *April 2018*
2018 College Winner, Build Your Own Bracket Draft Challenge

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*