MARINA HERNANDEZ

Baltimore, MD | mherna55@jhu.edu | (603)667-0887 | linkedin: marina-hernandez1 | Citizen USA, EU

EDUCATION

Johns Hopkins University Expected 2026

PhD Candidate, Biostatistics. Advisors: Ciprian Crainiceanu, Brian Caffo

Cornell University May 2020

BA, Statistics. Cum Laude

Thesis: On a Connection Between the Bradley-Terry Model and Win Ratio

EXPERIENCE

Johns Hopkins University, *Graduate Research Assistant* 2021-Present

- Key statistician on an analytic core team collaborating with physicians to investigate adverse cardiac surgery outcomes; mission is to modify current protocols, ultimately improving patient care on a global scale. Responsibilities: (1) high-dimensional data integration, cleaning, and quality control; (2) analytic database development; (3) methods development and implementation involving modeling effects of hemodynamic time series.
- Implemented causal inference for high-dimensional, multilevel data using matching. Responsibilities: (1) transformed NHANES data into an analytical format for matching on high-dimensional, multilevel physical activity; (2) conducted matching using distributional distances and executed sensitivity analyses in R.
- Evaluated the win probability used for survival analysis in traditional clinical trials with a focus on addressing censoring. Responsibilities: Computed bias and variance, both theoretically and via simulation, of nonparametric and parametric win probability estimators for a single-endpoint; to be extended to competing risks.
- Teaching assistant for statistical analysis and methods courses. Developed course materials in conjunction with instructors, conducted office hours and lab sessions, engaged and assisted students, graded assignments.

Eli Lilly and Company, *Statistics PhD Intern* (Advisors: Melissa Williamson, Mingyang Shan) Summer 2024

- Project: Propagating uncertainty from decentralized ratings in treatment effect estimation for Alzheimer's

NIH/NHLBI Office of Biostatistics Research, *Biostatistics Intern* (Advisor: Eric Leifer) Summer 2019

- Researched recurrent event methods for survival analysis of cardiovascular clinical trials and founded early-stage work with the win ratio, a novel method for the analysis of ranked composite endpoints.

UConn Statistics Biopharmaceutical Summer Academy, *Student* Summer 2020

- Attained a thorough understanding modern statistical methodology in clinical trials and drug development.
- Completed a project on trial design and analysis of safety/efficacy of a Phase II drug trial using R and was selected out a pool of 100+ students to deliver a presentation to fellow students and biostatisticians.

PUBLICATIONS

Hernandez M, Crainiceanu CM, Caffo B (2024+). Evaluation of the win probability for single endpoint trials under exponential survival time assumptions. To be submitted to *Statistics in Medicine*

Hernandez M, Crainiceanu CM (2024+). Sensitivity analysis for matching on high-dimensional predictors subject to within-person variation: A case study of racial disparity in US mortality. Revising for *Biometric Practice*

Goeddel L, **Hernandez M**, et al. (2023+). Arterial hypotension, venous hypertension, and acute kidney injury in coronary artery bypass surgery: a retrospective cohort study. Submitted to *Anesthesia & Analgesia*

Goeddel L, **Hernandez M**, et al. (2024). Assessment of Renal Vein Stasis Index by Transesophageal Echocardiography During Cardiac Surgery: A Feasibility Study. *Anesthesia & Analgesia*

Goeddel L, Koffman L, **Hernandez, M.**, et al. (2024). Occurrence of Low Cardiac Index During Normotensive Periods in Cardiac Surgery: A Prospective Cohort Study Using Continuous Noninvasive Cardiac Output Monitoring. *Anesthesia & Analgesia*

STATISTICAL VOLUNTEER PROJECTS

- Maryland Zoo: Enhancing Reproductive Success in Captive Panamanian Golden Frogs via Hormonal Induction
- Co-founder of Statistics in the Community (STATCOM) at Johns Hopkins

PROFESSIONAL DEVELOPMENT

Technical Skills: R, Stata, LaTeX, Excel, Basic SAS

Peer Review Activity: Anesthesia and Analgesia (2024-)

Leadership: Leader in Biostatistics Student Organization (2023-)

Awards: Applied and awarded position on Epidemiology and Biostatistics of Aging National Institutes of Health (NIH) training grant 5T32AG000247-23; PI: Karen Bandeen-Roche

Languages: Fluent Spanish, Intermediate French

Other Development: Ralph Lauren, *Sales Associate* (2020-present); **Van Heusen,** *Key Holder* (2019-2020); **G.H.Bass & Co.,** *Sales Associate* (2017-2019)

GRADUATE COURSEWORK

Clinical Trials, Survival Analysis, Epidemiological Methods, Probability Theory, Statistical Theory, Causal Inference, Risk Prediction and Precision Medicine, Statistical Computing, Data Science, Real Analysis