Joe Marion

2820 Vixen Lane, Silver Spring, MD 20906
(303) 565-7688 | josephcmarion@gmail.com

EDUCATION

Duke University, Durham, NC — Durham, NC - August 2018
- Ph.D. in Statistical Science
- Dissertation: Finite Sample Bounds and Path Selection for Sequential Monte Carlo
- Advisor: Dr. Scott Schmidler

Cornell University**,** Ithaca, NY — Ithaca, NY - May 2010
- B.A. with Distinction in Mathematics and Economics

EXPERIENCE

Berry Consultants, *Statistical Scientist*, Austin, TX — August 2018-Present
- Collaborated with non-technical clients to develop complex and innovative clinical trial designs.
- Evaluated the risks, rewards, and robustness of designs using massive, parallel computer simulations.
- Regularly briefed the results and implications of these simulations to clients, making technical statistical topics accessible to lay audiences.
- Authored technical manuscripts for regulators and prepared clients for high-profile FDA interactions such as the *Complex and Innovative Trial Design Program* and public *Advisory Committee Meetings*.

LA County COVID-19 Modeling Team, *Statistical Scientist*, Austin, TX — March 2020-June 2021
- Developed demand forecast model for hospital resources in Los Angeles County using Bayesian epidemiological models and time-varying dynamic linear regressions.
- Our team won the LA County 2021 Quality and Productivity Gold Eagle Award for excellence.

Maxpoint, *Data Science Intern*, Durham, NC — May 2017-August 2017
- Measured the impact of online advertising campaigns on billions of customer visits to brick-and-mortar stores. Evaluated advertising efficacy using causal inference, Bayesian methods and machine learning
- Assessed current methods for monitoring store foot traffic using cell phone signals. Recommended data driven improvements that substantially improved the accuracy and stability of predicted visits to stores.

Geometric Data Analytics, *Research Intern*, Durham, NC — May 2016-August 2016
- Developed spatio-temporal models to detect anomalies in traffic patterns in Rio, Brazil. Worked with government agencies to deploy the model for real time analysis during the 2016 Rio Olympics.

Blizzard Entertainment, *Data Science Intern*, Irvine, CA — May 2015-August 2015
- Designed machine learning ensemble for predicting user churn, improving predictive performance by 8%.
- Applied methods from causal inference to determine causes of user turnover, providing actionable solutions
- Developed key performance metric using clustering to measure game balance in *Heroes of the Storm*.

US Army, *Field Artillery Officer*, El Paso, TX — May 2010-August 2014
- Deployed as a combat adviser to the Afghan National Army (2012-2013) and Iraqi Ground Forces (2011)
- Senior officer in charge of planning and executing week-long training missions involving 100+ Soldiers.
- Awards include the Bronze Star Medal, Army Commendation Medal and Combat Action Badge

PUBLICATIONS

Marion, J. and Ruiz, J. and Saville, B. R. (2022). *Bayesian Model of Disease Progression in MPS IIIA.* Statistics in medicine, 41(18), 3579–3595. https://doi.org/10.1002/sim.9435

Khanna, S. and Assi, M. and Lee, C. and Yoho, D. and Louie, T. and **Marion, J.** et al. (2022). *Efficacy and Safety of RBX2660 in PUNCH CD3, a Phase III, Randomized, Double-Blind, Placebo-Controlled Trial with a Bayesian Primary Analysis for the Prevention of Recurrent Clostridioides difficile Infection*. Drugs, 82(15), 1527–1538. https://doi.org/10.1007/s40265-022-01797-x

Butler, C. and Hobbs, F.D. R. and Gbinigie, O. and Rahman, R. M.. and Hayward, G., and **Marion J**. et al (2022). *Molnupiravir Plus Usual Care Versus Usual Care Alone as Early Treatment for Adults with COVID-19 at Increased Risk of Adverse Outcomes (PANORAMIC): Preliminary Analysis from the United Kingdom Randomised, Controlled Open-Label, Platform Adaptive Trial*. Preprint at https://ssrn.com/abstract=4237902.

Marion, J. and Mathews, J. and Schmidler, S. C. (2022). *Finite Sample Complexity of Sequential Monte Carlo Estimators*. Manuscript in review. https://arxiv.org/abs/1803.09365

PRESENTATIONS

Borrowing Phase 2 Data in Phase 3: The PUNCH CD3 Trial. DIA Innovative Trial Designs Conference, November 2022.

A Disease Progression Model for Analyzing Clinical Trials in MPS IIIA. Poster. ASA Biopharmaceutical Section Regulatory-Industry Statistical Workshop, September 2021.

Platform Trial Designs for Continuous Biomarkers. Duke Industry Statistics Symposium, April *2021*

A Disease Progression Model for Analyzing Clinical Trials in MPS IIIA. Poster. WORLDSymposium, February 2021.

Design of a Single Arm Trial in a Rare, Progressive Disease Using a Disease Progression Model. DIA Bayesian Scientific Working Group KOL Lecture Series, August 2020.

Automated Design of Adaptive Trials Using Bayesian Optimization. Joint Statistical Meetings, July 2020.

Design of a Single Arm Trial in a Rare, Progressive Disease Using a Disease Progression Model. DIA 2020 Global Meeting, June 2020.

Dynamic Borrowing Strategies for Pivotal Studies. Orange County Biostatistics Symposium, May 2019.

COMPUTER SKILLS

- Scripting languages: R, Python, MATLAB, Julia
- Probabilistic programming languages: Stan, JAGS, PyMC3
- Database languages: SQL, MongoDB, Hive, Spark
- Visualization tools: Tableau, Shiny, Plotly