MAXIMILIAN ROHDE

www.maximilianrohde.com maximilian.d.rohde@vanderbilt.edu 847-917-9928

EDUCATION

PhD in Biostatistics (in progress)

Vanderbilt University (2020 - Present)
Advisor: Dr. Frank Harrell

BA in Physics and BA in Geology

Carleton College (2013-2017)

EMPLOYMENT

Research / Teaching Assistant

Vanderbilt Department of Biostatistics

09/2020 - Present

- Served as a statistician for the ACTIV-6 clinical trial: a randomized placebo-controlled trial evaluating repurposed therapies in patients with COVID-19. Conducted the interim analyses and created reproducible reports for the Data and Safety Monitoring Board (DSMB).
- Developed methodology and R packages for the analysis of ordinal longitudinal data within a Bayesian framework.
- Led discussion sections and provided 1-on-1 assistance as a teaching assistant for multiple graduate courses. Received the 2022 Distinguished Teaching Assistant award for "excellence in teaching and a dedication to peer education".

ORISE Fellow

Division of Antivirals (FDA / CDER)

07/2019 - 09/2020

- Conducted an analysis of 37 phase II and III clinical trials to address safety concerns regarding the use of direct-acting antivirals for Hepatitis C. Published research as first author and was awarded the FDA/CDER best poster award from the ORISE program.
- Collaborated on an analysis of 9 clinical trials to determine novel clinical endpoints for immunological non-responders after HIV antiretroviral therapy. Standardized / cleaned data and collaborated with FDA Office of Biostatistics on statistical modeling of longitudinal outcomes.
- Analyzed phase III clinical trial data with FDA clinical review staff in support of the approval of new PrEP medications for HIV prevention. Created data summaries and visualizations for the clinical review document and FDA advisory committee presentations, and produced dashboards for interactive data display using R Shiny.
- Implemented an analysis of next-generation sequencing data using `Biopython` to differentiate between *Streptococcus pneumoniae* serotypes in infected patients.

ORISE Fellow

Bioinformatics / Regulatory Review Science (FDA / CDER)

01/2018 - 07/2019

- Created a Python-based natural-language processing tool to map medical terms within drug product labels to the SNOMED-CT medical ontology. Developed a web-based user interface in Flask and deployed it for use within the FDA Office of New Drugs.
- Pooled and standardized adverse event data from over 5,000 clinical trials to identify key areas where sponsors are not in compliance with CDISC data standards and provided recommendations to improve quality of sponsor-submitted data.
- Implemented a machine-learning classifier to classify FDA meeting-minute documents into a hierarchy of topics to reduce the need for manual labeling.

RESEARCH INTERESTS

- Clinical trials:
  Bayesian and adaptive designs
- Pharmaceutical development and regulatory science
- Statistical computing and R package development
- Statistics education

PROGRAMMING EXPERIENCE

- R (advanced):
  `ggplot2`, `dplyr`, `purrr`, `tidymodels`, `Shiny`
- Python (intermediate):
  `numpy`, `pandas`, `matplotlib`, `scikit-learn`, `PyTorch`
- REDCap
- `git` / GitHub
- Quarto / R Markdown
- Stan / `brms` / `rstanarm`
- Unix shell scripting
- LaTeX
- JavaScript

HIGHLIGHTED COURSEWORK

- Contemporary Statistical Inference
- Clinical Trials and Experimental Design
- Advanced Statistical Computing
- Advanced Probability Theory and Real Analysis
- Advanced Regression Analysis I (Linear Models and Generalized Linear Models)
- Advanced Regression Analysis II (Longitudinal Models)
- Advanced Statistical Learning and Inference (Machine Learning)
- Statistical Collaboration
- Survival Analysis
- Regression Modeling Strategies

EMPLOYMENT (CONTINUED)

Senior Academic Tutor

Prep1on1

09/2017 - Present

- Tutored high school and undergraduate students in statistics, calculus, physics, chemistry, biology, and ACT/SAT test preparation.
- Led training workshops for other tutors on effective science teaching.
- Coauthored a company-wide mathematics and science curriculum for the ACT standardized test.

Science Policy Intern

MIT Washington Office

09/2017 - 12/2017

- Attended and reported on events related to science policy in Washington DC: congressional hearings, think-tank seminars, and scientific society meetings. Published briefs for a weekly report sent to the MIT administration.
- Researched and wrote reports with senior staff on science policy topics relevant to MIT, including a long-form report on autonomous vehicle policy.

Research Intern

USGS Albuquerque Seismological Laboratory (IRIS Internship program)

07/2016 - 09/2016

- Installed arrays of broadband seismometers at the Albuquerque Seismological Laboratory to conduct experiments characterizing long-period seismic noise.
- Developed automated data analysis workflows using Python and created novel data visualizations.
- Published research as first author in *Seismological Research Letters* and presented at the 2016 American Geophysical Union annual meeting.

HIGHLIGHTED RESEARCH

Effect of Ivermectin vs Placebo on Time to Sustained Recovery in Outpatients With Mild to Moderate COVID-19: A Randomized Clinical Trial

JAMA

Role: Statistician with the ACTIV-6 Data Coordinating Center. Performed interim analyses and wrote reports for DSMB presentations.

Naggie, S., Boulware, D. R., Lindsell, C. J., Stewart, T. G., Gentile, N., Collins, S., ... & Patel, V. (2022). Effect of Ivermectin vs Placebo on Time to Sustained Recovery in Outpatients With Mild to Moderate COVID-19: A Randomized Clinical Trial. *JAMA*.

No Association Between DAA Treatment for HCV Infection and Herpes Zoster Infection in Analysis of Data From 37 Clinical Trials

Clinical Gastroenterology and Hepatology

Rohde, M. D., Tracy, L., Komatsu, T. E., El-Kamary, S. S., & Carter, W. (2020). No Association Between DAA Treatment for HCV Infection and Herpes Zoster Infection in Analysis of Data From 37 Clinical Trials. *Clinical Gastroenterology and Hepatology*.

Characterizing local variability in long-period horizontal tilt noise

Seismological Research Letters

Rohde, M. D., Ringler, A. T., Hutt, C. R., Wilson, D. C., Holland, A. A., Sandoval, L. D., Storm, T. (2017). Characterizing local variability in long-period horizontal tilt noise. *Seismological Research Letters*.

Globally coherent short duration magnetic field transients and their effect on ground based gravitational-wave detectors

Classical and Quantum Gravity

Kowalska-Leszczynska, I., Bizouard, M. A., Bulik, T., Christensen, N., Coughlin, M., Gołkowski, M., ... **Rohde, M.** (2017). Globally coherent short duration magnetic field transients and their effect on ground based gravitational-wave detectors. *Classical and Quantum Gravity*.