Stephen Rhodes

Clinical Research Biostatistician III

University Hospitals Cleveland Medical Center

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Skills and Expertise

R & R-Studio	used for over 10 years; developed the pmcalibration and pminternal packages
Python	regularly used packages: numpy, pandas, scipy, psychopy, sklearn
Other Programming Languages	SLURM (for high performance computing); SQL (for databases); Stan (for Bayesian Modeling)
Communication	both written and spoken to both technical and non-technical audiences
Clincial Research	clinical trial design and estimands; analysis of large healthcare databases; causal inference with observational data (potential outcomes framework, DAGs)

Experience

Clinical Research Biostatistician III

Cleveland OH, USA

University Hospitals, Cleveland Medical Center *2022-present*

- Devised analysis plans and assisted with the design of several ongoing randomized trials as well as large grant applications (e.g., a PCORI grant submitted Jan 2024).
- Used several large administrative databases (Premier healthcare database, Marketscan, allofus, ICES (Ontario health records)) to create cohorts and perform analyses. This work has resulted in several articles in high impact journals; for example, on aderance to antibiotic guidelines around surgery (see CV for full list).
- Developed and evaluated prediction models for opioid use and surgical site infection following pelvic surgery. I have written two R packages that implement key parts of prediction model validation for a range of model types.
- Automated the extraction of publication records for analysis of publishing trends in Urology, with a particular focus on the representation of female urologists. Initial results published in European Urology and European Urology Focus.

Postdoctoral Fellow

Toronto ON, CA

Baycrest Hospital, Rotman Research Institute (University of Toronto) *2019-2021*

- Conducted experiments on the role of interference in older adults' short term memory (published in Psychonomic Bulletin & Review).
- Developed a project using functional magnetic resonance imaging to decode currently active neural representations in short-term memory (shelved due to Covid-19).
- Used neural network image classification models to measure image similarity for testing against human perception and memory.
- Developed and led a workshop on Bayesian data analysis (materials here). This workshop was given at the Rotman Institute in October 2019 and at the Case Western Reserve University School of Applied Social Sciences in February 2020.

Postdoctoral Fellow

Columbia MO, USA

University of Missouri, Dept. of Psychological Sciences *2016-2019*

- Part of a collaboration on aging and memory between groups in the US, UK, and Switzerland (`http://womaac.psy.ed.ac.uk/`).
- Led the development of analysis pipelines that addressed the hypotheses of interest to our collaborators (example here) and performed analyses of experimental data using generalized linear mixed effects models.
- Developed a protocol for data documentation and archiving to ensure that results were reproducible by others. The data and analysis code from this project are archived and publicly available on the open science framework (`http://osf.io/3wnu2`).
- Led two projects synthesizing findings in the literature on memory and aging. Used meta-analytic models to provide new insights into long-standing research questions. Published in Psychology & Aging and Psychonomic Bulletin & Review.
- Co-developed and led a two day workshop on the statistical modeling using maximum likelihood and Bayesian estimation techniques (materials here).

Education

The University of Edinburgh

Edinburgh, UK

PhD Cognitive Psychology *2012-2016*

The University of Edinburgh

Edinburgh, UK

MSc Human Cognitive Neuropsychology *2011-2012*

University of Leeds

Leeds, UK

BSc (hons) Psychology *2008-2011*