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Aaron Fisher

Education

2016 **PhD in Biostatistics**, *Johns Hopkins Bloomberg School of Public Health*, Baltimore, MD.
Advisors: Vadim Zipunnikov & Brian Caffo
Thesis: Methods for High Dimensional Analysis, Multiple Testing, and Visual Exploration

2010 **BA in Economics**, *University of Rochester*, Rochester, NY.
Summa cum laude

Academic Papers

Peer-Reviewed Publications

A. J. Fisher, G. B. Anderson, R. Peng, J. Leek (2014). A randomized trial in a massive online open course shows people don't know what a statistically significant relationship looks like, but they can learn. *PeerJ.* (link; 6,428 unique visitors as of September 1, 2015).

To Appear

M. Rosenblum, T. Qian, Y. Du, H. Qiu, **A. J. Fisher** (2016). Multiple Testing Procedures for Adaptive Enrichment Designs: Combining Group Sequential and Reallocation Approaches. *Biostatistics.*

Y. Webb-Vargas, S. Chen, **A. J. Fisher,** A. Mejia, Y. Xu, C. Crainiceanu, B. Caffo, M. A. Lindquist (2016). Big Data and Neuroimaging. *Statistics in Biosciences (Invited Submission).*

A. J. Fisher, B. Caffo, B. Schwartz, V. Zipunnikov (accepted in 2015). Fast, Exact Bootstrap Principal Component Analysis for $p > 1$ million. *Journal of the American Statistical Association (TM)*. (link).

Submitted

R. Y. Coley, **A. J. Fisher**, M. Mamawala, H. B. Carter, K. J. Pienta, S. L. Zeger (2015). Bayesian Joint Hierarchical Model for Prediction of Latent Health States with Application to Active Surveillance of Prostate Cancer. (link).

T. Qian, E. Colantuoni, **A. J. Fisher**, M. Rosenblum (2015). Impact of Delayed Outcomes, Accrual Rates, and Prognostic Variables on a Simulated Randomized Trial with Adaptive Enrichment. (link).

A. J. Fisher, H Jaffee, M Rosenblum (2014). interAdapt – An Interactive Tool for Designing and Evaluating Randomized Trials with Adaptive Enrollment Criteria. (link).

Technical Reports

A. J. Fisher, R. Y. Coley, S. L. Zeger (2015). Fast Out-of-Sample Predictions for Bayesian Hierarchical Models of Latent Health States. (link).

Awards and Scholarships

2016 **Margaret Merrell Award (co-winner with Amanda Mejia):** Departmental award recognizing outstanding research by a Biostatistics doctoral student (link).

2014 **June B. Culley Award:** Honors outstanding achievement by a Biostatistics student on his or her school-wide oral examination paper (link)

2012-2015 **Doctoral Training Grant in Environmental Biostatistics:** Provides funding for at least three years

2006-2010 **Undergraduate Awards:** Phi Beta Kappa; John Dows Mairs Prize (University of Rochester Economics Dept); Omicron Delta Epsilon International Honor Society for Economics; Theta Chi Long, Walter, Ott Award; Theta Chi Valentine H. Zahn Fund

Software

bootSVD An R package for implementing fast, exact bootstrap principal component analysis and singular value decompositions for high dimensional data (i.e. > 1 million covariates). Matrices too large for memory can be entered as class `ff` objects, with contents stored on disk. (CRAN link; GitHub link)

ggBrain An R package for beautiful brain image figures with ggplot. This packages allows color to be mapped to both (1) tissue intensities of the template image, and (2) values of a voxel-wise test statistic. (GitHub link)

interAdapt An interactive tool for designing and evaluating randomized trials with adaptive enrollment criteria (Shiny App link; CRAN link; Github link).

Professional Experience

2010 (Summer) **Structured Decisions Corporation**, *Newton*, MA.
Intern Analyst - Background research project for a linear programming application

Computer Skills

Advanced Skills	R
Basic Skills	git, Python, MATLAB, D3.js, stata, C, shell scripting, LaTeX

Reviewer

2015	Journal of the American Statistical Association (1)
2014	Risk Analysis (2)

Teaching

Co-Instructor

2015 Statistical Reasoning I and II: My role included teaching independently for 13 hours of lectures *(MPH Level Course, JHSPH Summer Institute of Epidemiology and Biostatistics)*

Guest Lecturer

2013 Essentials of Probability and Statistical Inference I-II *(Biostatistics ScM Level, JHSPH)*

Lab Lecturer with Content Design

2012-2014 Essentials of Probability and Statistical Inference I-IV: Designed and administered a weekly 1-hour lab lecture. In the second year of this course, we reduced this lab to a 1-hour session every two weeks. *(Biostatistics ScM Level, JHSPH)*

Lab Lecturer without Content Design

2014-2015 Statistical Methods in Public Health II: Administered approximately 16 hours of lab lecture in each year of the course. *(MPH Level, JHSPH)*

Educational Presentations

2013-2015 JHU Biostatistics Journal Club: I have given talks on high dimensional asymptotics, adaptive clinical trials, and the Bayesian Bootstrap

2013-2015 JHU Biostatistics Computing Club: I have given talks on environments in R, and on LaTeX

General TA Roles

2014-2015 Statistical Methods in Public Health I and IV *(MPH Level, JHSPH)*

2012 Statistical Reasoning I and II, *(MPH Level, JHSPH Summer Institute of Epidemiology and Biostatistics)*

Conference Presentations

2015 "A Randomized Trial in a Massive Online Open Course Shows People Don't Know What a Statistically Significant Relationship Looks Like, but They Can Learn." JSM, Seattle WA. *Contributed Speed Session & Poster.*

2015 "Fast Exact Bootstrap Principal Component Analysis for $p > 1$ million." ENAR, Miami, FL. *Contributed Talk.*

2014 "Fast, Exact Bootstrap Principal Component Analysis for $p > 1$ Million." 4th Annual Hopkins Imaging Conference (link). Baltimore, MD, *Invited Short Talk & Poster.*

2014 "Fast Exact Bootstrap Principal Component Analysis for $p > 1$ million: Leveraging Low-Dimensional Structure Across High-Dimensional Bootstrap Samples." JSM, Boston, MA. *Contributed Speed Session & Poster.*

2014 "People Can't See Statistical Significance: A Massive Randomized Trial on the Visual Perception of Relationships." ENAR Spring Meeting, Baltimore, MD, *Contributed Talk.*

Other Leadership & Service Roles

2015-present Volunteer with Thread

Thread is an mentorship and tutoring program that enrolls underperforming high school students who face significant barriers outside of the classroom. Students are supported for ten years after joining Thread, both during and after high school. I work on the Specialist Team, mostly tutoring Thread students in college.

2015 Facilitator at JHU Data Science Hackathon: Assisted a team through the process of scraping web data and building a shiny app (3-day event)

2014-2015 JHU Biostatistics Meat Chili Champion

2013-2014 JHU Biostatistics Vegetarian Chili Champion

2012-2013 Co-organizer of JHU Biostatistics Computing Club, with Prasad Patil (speaker schedule link)

Last updated: March 14, 2016