Aaron Fisher

Johns Hopkins Bloomberg School of Public Health
615 N Wolfe St
Office E3032
Baltimore, MD 21205
✉ *aafisher@hsph.harvard.edu*
http://aaronjfisher.github.io

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

R. Y. Coley, **A. J. Fisher**, M. Mamawala, H. B. Carter, K. J. Pienta, S. L. Zeger (2016). A Bayesian Hierarchical Model for Prediction of Latent Health States from Multiple Data Sources with Application to Active Surveillance of Prostate Cancer. *Biometrics.* (link)

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.* (link)

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

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

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).*

Submitted

A. J. Fisher, M. Rosenblum (2016). Stochastic Optimzation of Adaptive Enrichment Designs for two Subpopulations. (link)

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

A. J. Fisher, H Jaffee, M Rosenblum (2014). interAdapt – An Interactive Tool for Designing and Evaluating Randomized Trials with Adaptive Enrollment Criteria. (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, C, java, D3.js, stata, shell scripting, LaTeX

Reviewer

Journal of the American Statistical Association (1); Computational Statistics and Data Science (1); 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

2016	"Optimizing Adaptive Enrichment Designs ." JSM, Chicago IL. *Contributed Poster.*
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

2016	Organizer for HSPH Biostatistics faculty panel on preparing for the job market
2015	Volunteer with Thread: Thread is a mentorship and tutoring program that enrolls underperforming high school students who face significant barriers outside of the classroom.
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: January 14, 2017