

# Benjamin Ackerman

BIostatistician, Data Scientist

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## Education

### Johns Hopkins Bloomberg School of Public Health

Baltimore, MD

PHD, BIostatistics

March 2020

- **Advisor:** Dr. Elizabeth A. Stuart
- **Dissertation Title:** "Statistical Methods for Transportability: Addressing External Validity and Measurement Error Concerns in Randomized Trials"

### Johns Hopkins University

Baltimore, MD

BACHELOR OF ARTS, PUBLIC HEALTH STUDIES

May 2015

- **Minor:** Applied Mathematics and Statistics
- **Honors Thesis:** "The Association Between Genetic Variants and IQ among Individuals with Autism Spectrum Disorders"  
| Advisor: Dr. Yin Yao

## Professional Experience

### Janssen Research & Development

Raritan, NJ

PRINCIPAL STATISTICIAN

Aug 2022 - Present

- Conducted simulation-based methods research for combining clinical trials with observational data on the Statistical Modeling and Methodology team

### Flatiron Health

New York, NY

QUANTITATIVE SCIENTIST

June 2020 - Aug 2022

- Developed methods and guidance for using EHR data to evaluate and improve cancer care in the United States.
- Led team of four Quantitative Scientists, managed overall project portfolio, oversaw the study design and delivery of custom data products.

### SAJE Consulting

Baltimore, MD

STATISTICIAN/PROGRAMMER

March 2016 - March 2020

- Conducted data analysis and produced publication-ready graphics for various research studies conducted by pharmaceutical and biotechnology companies
- Contributed to analyses for reports to the following regulatory agencies: FDA, EMA and NOMA.

### Data Science for Social Good

Chicago, IL

FELLOW

Summer 2018

- Partnered with AllianceChicago to build a predictive model to identify patients at risk of developing Type 2 Diabetes using de-identified electronic health records (EHR) data.

## Research Experience

### Graduate Research Assistant, Johns Hopkins Bloomberg School of Public Health

Baltimore, MD

DEPARTMENT OF BIostatistics

June 2016 - May 2020

- Worked with thesis advisor Dr. Elizabeth Stuart to evaluate and develop propensity score-type statistical methods for assessing and improving upon the generalizability of randomized controlled trials.
- Developed methods to improve upon the transportability of measurement error correction from external validation samples to lifestyle intervention trials.

DEPARTMENT OF MENTAL HEALTH

Sept 2016 - Aug 2017

- Collaborated with Dr. Heather Volk to examine the relationship between prenatal air pollution exposure and risk of Autism Spectrum Disorders, using data from the Boston Birth Cohort.

## CENTER FOR PUBLIC HEALTH AND HUMAN RIGHTS

Oct 2015 - Oct 2017

- Worked with Dr. Tonia Poteat to estimate HIV risk among MSM, transgender and gender variant populations in Africa
- Harmonized data from surveys across fourteen sites in eight different countries, addressed issues related to survey methodology for gathering data on sexual orientation and gender identity.

### Undergraduate Research Assistant

UNIT ON STATISTICAL GENOMICS, *National Institute of Mental Health*

Summer 2014

- Evaluated the association between genetic variants and IQ among individuals with Autism Spectrum Disorders using statistical analysis software PLINK and FBAT.

DEPARTMENT OF INFECTIOUS DISEASES, *Assaf Harofeh Medical Center*

Sept - Dec 2013

- Assessed the epidemiology of carbapenem-resistant enterobacter species in patients at Assaf Harofeh Medical Center in Israel and Detroit Medical Center.

SUMMER INSTITUTE TRAINING IN BIOSTATISTICS (SIBS), *Columbia University Mailman*

*School of Public Health*

Summer 2013

- 8-week program supported by the National Heart Lung and Blood Institute
- Conducted research in Center for Behavioral Cardiovascular Health with Dr. Keith Diaz.

## Publications

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### Peer-Reviewed/In Press:

1. **Ackerman, B.**, Siddique, J., Stuart, E.A. (2021). "Calibrating validation samples when accounting for measurement error in intervention studies." *Statistical Methods in Medical Research*.
2. Seamans, M.J., Hong, H., **Ackerman, B.**, Schmid, I., Stuart, E.A. (2021). "Generalizability of subgroup effects." *Epidemiology*.
3. Rao, A., Rucinski, K., Jarrett, B., **Ackerman, B.**, Wallach, S., Marcus, J., et al. (2021). "Perceived interruptions in HIV prevention and treatment services associated with COVID-19 for gay, bisexual, and other men who have sex with men in 20 countries." *Journal of Acquired Immune Deficiency Syndromes*.
4. **Ackerman, B.**, Lesko, C.R., Siddique, J., Susukida, R., Stuart, E.A. (2020). "Generalizing randomized trial findings to a target population using complex survey population data." *Statistics In Medicine*.
5. Ackerman, S.E., Gonzalez, J.C., Pearson, C.I., Gregorio, J.D., Hartmann, F.J., Kenkel, J.A., Luo, A., Ho, Po, LeBlanc, H., Kimmey, S.C., Nguyen, M.L., Paik, J.C., Sheu, L.Y., **Ackerman, B.**, et al. (2020). "Immune-stimulating antibody conjugates elicit robust myeloid activation and durable antitumor immunity." *Nature Cancer*.
6. Santos, G.M., **Ackerman, B.**, Rao, A., Wallach, S., Ayala, G., et al. (2020). "Economic, mental health, HIV prevention and HIV treatment impact of COVID-19 and the COVID-19 response on a global sample of cisgender gay men and other men who have sex with men." *AIDS and Behavior*.
7. Lesko, C.R., **Ackerman, B.**, Webster-Clark, M., Edwards, J.K. (2020). "Target validity: bringing treatment of external validity in line with internal validity." *Current Epidemiology Reports*.
8. Schmid, I., Rudolph, K.E., Nguyen, T.Q., Hong, H., Seamans, M.J., **Ackerman, B.**, Stuart, E.A. (2020). "Comparing the performance of statistical methods that generalize effect estimates from randomized controlled trials to much larger target populations." *Communications in Statistics - Simulation and Computation*.
9. **Ackerman, B.**, Schmid, I., Rudolph, K. E., Seamans, M. J., Susukida, R., Mojtabai, R., Stuart, E. A. (2019). "Implementing statistical methods for generalizing randomized trial findings to a target population." *Addictive Behaviors*, 94, 124-132.

10. Nguyen, T. Q., **Ackerman, B.**, Schmid, I., Cole, S., Stuart, E.A. (2018). "Sensitivity analyses for effect modifiers not observed in the target population when generalizing treatment effects from a randomized controlled trial: Assumptions, models, effect scales, data scenarios, and implementation details." *PLoS One*.
11. Lenis, D., **Ackerman, B.**, Stuart, E.A. (2018). "Measuring model misspecification: Application to propensity score methods on complex survey data." *Computational Statistics & Data Analysis*, 128, 48-57.
12. Poteat, T., **Ackerman, B.**, Diouf, D., Ceesay, N., Mothopeng, T., Odette, K-Z, et al. (2017). "HIV prevalence and behavioral and psychosocial factors among transgender women and cisgender men who have sex with men in 8 African countries: A cross-sectional analysis." *PLoS Med*, 14(11): e1002422.
13. Stuart, E. A., **Ackerman, B.**, Westreich, D. (2017). "Generalizability of randomized trial results to target populations: Design and analysis possibilities." *Research on Social Work Practice*, 28(5), 532-537.
14. Tao, Y., Gao, H., **Ackerman, B.**, Guo, W., Saffen, D., Shugart, Y. Y. (2016). "Evidence for contribution of common genetic variants within chromosome 8p21.2-8p21.1 to restricted and repetitive behaviors in autism spectrum disorders." *BMC Genomics*, 17(1), 163.
15. Lazarovitch, T., Amity, K., Coyle, J. R., **Ackerman, B.**, Tal-Jasper, R., Ofer-Friedman, H., et al. (2015). "The complex epidemiology of carbapenem-resistant enterobacter infections: A multi-center descriptive analysis." *Infection Control and Hospital Epidemiology*, 36(11), 1283-1291.

#### Non Peer-Reviewed/In Press:

16. Stuart, E.A. and **Ackerman, B.** (2020). "Commentary on Yu et al.: Opportunities and Challenges for Matching Methods in Large Databases." *Statistical Science*, In Press.

## Honors and Awards

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- 2022 **Flatiron Values Award: "Know when to startup and when to scale"**, Flatiron Health
- 2020 **Student Recognition Award**, Student Assembly, Johns Hopkins Bloomberg School of Public Health
- 2020 **Student Travel Award**, 13th International Conference on Health Policy Statistics (ICHPS)
- 2019 **Special Award for Outstanding Student Service**, Johns Hopkins Department of Biostatistics
- 2019 **Best Student Paper Award - 3rd Place**, Joint Statistical Meetings (JSM) - Biopharmaceutical Section
- 2019 **3 Minute Thesis (3MT) Competition - 3rd Place + Alumni Choice Winner**, Johns Hopkins University
- 2017 **Delta Omega Poster Competition - 2nd Place (Applied Research)**, Johns Hopkins Bloomberg School of Public Health
- 2015 **Best Senior Thesis in Public Health**, Johns Hopkins University
- 2011-2015 **Dean's List**, Johns Hopkins University

## Computing Projects and Resources

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### generalize (R Package)

- Software for implementing statistical methods to assess and improve upon generalizability of RCTs to well-defined target population
- <https://benjamin-ackerman.github.io/generalize>

### How will the House Tax Bill Impact Graduate Students? (R Shiny App)

- Web app to calculate estimated 2018 federal income tax under proposed H.R. 1 tax bill
- *Featured in Science Magazine* (see section on Tuition Waivers)
- <https://benjaminackerman.shinyapps.io/GOPtax2017/>

## Professional Activities

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- Outreach** 2017-2018 “This is Public Health” Ambassador for the Association of Schools and Programs of Public Health (ASPPH)
- Reviewer** *Biometrics, Statistics in Medicine, American Journal of Epidemiology, PLOS ONE, Pharmaceutical Statistics, The Journal of Experimental Education, Sexuality Research and Social Policy*
- Membership** American Statistical Association (ASA)  
Eastern North America Region of the International Biometrics Society (ENAR)  
Society for Research on Educational Effectiveness (SREE)
- Session Chair** “Who’s There? Missing codes, records, and people in administrative data” at the 13th International Conference on Health Policy Statistics (ICHPS)

## Academic Service

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- 2019-2020 **Co-President**, JHSPH Mental Health Grad Network
- 2016-2020 **Tea Time Organizer**, Johns Hopkins Department of Biostatistics
- 2018-2019 **PhD Representative to Faculty Meetings**, Johns Hopkins Department of Biostatistics

## Talks and Presentations

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### Invited Talks

- 2022 **Using Real-World Data to Assess Representativeness and Improve Generalizations of Study Findings**  
*Society for Clinical Trials, 43rd Annual Meeting, San Diego, CA.*
- 2020 **Estimating Population Effects: Generalizing Randomized Trial Findings to a Target Population**  
*Department of Biostatistics, Vanderbilt University School of Medicine, Virtual (due to COVID-19).*
- Generalizing Randomized Trial Findings to a Target Population using Complex Survey Population Data**  
*Society for Research on Educational Effectiveness (SREE) Spring 2020 Conference, Virtual (due to COVID-19).*
- 2019 **Sensitivity Analysis for Unobserved Effect Modification when Generalizing Findings from Randomized Trials to Target Populations**  
*FCSM/WSS Workshop on Sensitivity Analysis with Integrated Data, Washington, DC.*
- Using Statistics and Data Science for Public Health and Social Good**  
*Department of Global and Community Health, George Mason University, Fairfax, VA.*  
Invited talk for National Public Health Week 2019

### Conference Talks and Posters

- 2021 **Trends in Diagnosis and Treatment of Early Breast Cancer in the United States during the COVID-19 Era**  
*ASCO Quality Care Symposium, Virtual (due to COVID-19), Poster.*
- Identifying COVID-19 Diagnoses Using Unstructured Electronic Health Records**  
*Joint Statistical Meetings (JSM), Virtual (due to COVID-19), Contributed SPEED Talk.*

2020 **Generalizing Randomized Trial Findings to a Target Population using Complex Survey Population Data**

- ENAR Spring Meeting, *Virtual (due to COVID-19)*, Contributed Talk.
- 13th International Conference on Health Policy Statistics (ICHPS), *San Diego, CA*, Poster.
- The Statistical and Applied Mathematical Sciences Institute (SAMSI) Program on Causal Inference Opening Workshop, *Durham, NC*, Poster.

2019 **Calibrating Validation Samples when Correcting for Measurement Error in Intervention Study Outcomes**

- Joint Statistical Meetings (JSM), *Denver, CO*, Topics Contributed Talk.
- ENAR Spring Meeting, *Philadelphia, PA*, Contributed Talk.

**generalize: Statistical Software for Implementing Methods to Generalize Randomized Trial Findings to a Well-Defined Target Population**

- Society for Research on Educational Effectiveness (SREE) Spring 2019 Conference, *Washington, DC*, Poster.
- Institute of Education Sciences (IES) Annual PI Meeting, *Washington, DC*, Poster.

2018 **Supporting Proactive Diabetes Screenings to Improve Health Outcomes**

- Data Science for Social Good Data Fest, Chicago, IL*, Speed Talk and Poster.

**Sensitivity Analysis for an Unobserved Moderator in Trial-to-Target-Population Generalization of Treatment Effects**

- Society for Research on Educational Effectiveness (SREE) Spring 2018 Conference, Washington, DC*, Contributed Talk.

**Estimating Population Effects: Case Study of Generalizing Results of a Methamphetamine Dependence Trial**

- 12th International Conference on Health Policy Statistics (ICHPS), Charleston, SC*, Contributed Talk.

2017 **Characterizing the Burden of HIV and Specific Vulnerabilities among Transgender Women compared to Men who have Sex with Men across Eight Sub-Saharan African Countries**

- Joint Statistical Meetings (JSM), *Baltimore, MD*, Contributed Talk.
- Johns Hopkins LGBT Research Day, *Baltimore, MD*, Talk.

2016 **Sensitivity Analysis for an Unobserved Moderator in RCT-to-Target-Population Generalization of Treatment Effects**

- Joint Statistical Meetings (JSM), Chicago, IL*, SPEED Talk and Poster.

2015 **Genetic Variants and IQ Among Individuals with Autism Spectrum Disorder**

- 6th Annual Undergraduate Conference in Public Health, *Baltimore, MD*, Talk and Poster.
- National Institutes of Health Summer Research Program Poster Day (2014), *Bethesda, MD*, Poster.

## Teaching Experience

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2018- **Advanced Data Science I (Guest Lecturer)**, JHSPH (25 graduate students)

2019 Professor: Dr. Stephanie Hicks, Dr. Roger Peng

Designed and led a 80-minute tutorial on creating R packages, Shiny apps and GitHub pages

### Teaching Assistant

- 2018- **Causal Inference in Medicine and Public Health I**, JHSPH (60 graduate students)  
2020 Professor: Dr. Elizabeth Stuart  
TA. Held weekly office hours to review causal inference topics for both experimental and non-experimental studies, gave lecture on generalizability of randomized controlled trials.
- 2016- **Public Health Biostatistics**, JHU (225 undergraduate students)  
2019 Professor: Dr. Margaret Taub, Dr. Leah Jager  
Section Instructor. Reviewed introductory statistical concepts and R programming skills.
- 2017- **Statistical Methods in Public Health III & IV**, JHSPH (500 MPH students)  
2018 Professor: Dr. Marie Diener-West, Dr. Leah Jager, Dr. Jim Tonascia  
TA. Held weekly office hours for to review regression topics, provided assistance with STATA programming.
- 2013- **Public Health Biostatistics**, JHU (200 undergraduate students)  
2014 Professor: Dr. Scott Zeger, Dr. Margaret Taub, Dr. Leah Jager  
Learning Den Tutor and Guest Lecturer. Held biweekly small group review sessions.

## Technical Skills

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- Languages** *Proficient:* R, SQL  
*Intermediate:* Python, JavaScript, SAS, Stata, SPSS
- Markup**  $\LaTeX$ , knitr, markdown
- Other** Git, Microsoft Office, G Suite