

# Arman Oganisian

## Assistant Professor of Biostatistics

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🌐 <https://stablemarkets.netlify.app>

## Education

2021	<b>University of Pennsylvania</b> Ph.D. in Biostatistics Advisors: Nandita Mitra and Jason Roy Committee: Russell Shinohara, Dylan Small, Edward I. George	Philadelphia, PA
2018	<b>University of Pennsylvania</b> M.S. in Biostatistics	Philadelphia, PA
2013	<b>Providence College</b> B.A. in Quantitative Economics, <i>summa cum laude</i> Minor in Mathematics Liberal Arts Honors Program.	Providence, RI

## Appointments/Employment

### Academic

2021-pres.	<b>Brown University</b> Assistant Professor, Tenure Track. Department of Biostatistics.	Providence, RI
2017-2021	<b>University of Pennsylvania</b> Associate Fellow, Leonard Davis Institute for Health Economics.	Philadelphia, PA

### Industry

2015-2016	<b>Analysis Group</b> Senior Analyst. Health economics and outcome research (HEOR) practice.	Boston, MA
2013-2015	<b>Analysis Group</b> Analyst. HEOR practice.	Boston, MA

## Awards

2021	<b>Saul Winegrad Award for Outstanding Dissertation</b> Awarded by University of Pennsylvania, Biomedical Graduate Studies.
2020	<b>ENAR Distinguished Student Paper Award</b> Awarded by International Biometric Society Eastern North American Region's (ENAR) at 2020 ENAR Spring Meeting in Nashville, TN.
2020	<b>ICHPS Travel Award</b> Awarded by International Conference on Health Policy Statistics (ICHPS) during the 2020 meeting in San Diego, CA.

## Publications

### Working

- Harrigan, J. J., Abdallah, H., Clarke, E. L., **Oganisian, A.**, Roy, J. A., Lautenbach, E., ... Kelly, B. J. (2020). Respiratory microbiome disruption and risk for ventilator-associated lower respiratory tract infection. *Submitted to Clinical Infectious Diseases*.
- Li, Y., **Oganisian, A.**, Boge, C. L., Hayes, M., Newman, A. & Fisher, B. T. (2020). Marginal structural model to estimate the effect of cytomegalovirus infection on hospitalization among children undergoing allogeneic hematopoietic cell transplantation.
- Oganisian, A.**, Mitra, N., Ko, E. & Roy, J. (2020). Bayesian nonparametric cost-effectiveness analyses: Causal estimation and adaptive subgroup discovery. *Under Revision*. arXiv: 2002.04706 (stat.ME)
- Oganisian, A.**, Mitra, N. & Roy, J. (2020). Hierarchical bayesian bootstrap for heterogeneous treatment effect estimation. *Under Review*. arXiv: 2009.10839 [stat.ME]

### Statistical Methodology

- Oganisian, A.**, Mitra, N. & Roy, J. A. (2021). A bayesian nonparametric model for zero-inflated outcomes: Prediction, clustering, and causal estimation. *Biometrics*, 77(1), 125–135. doi:10.1111/biom.13244
- Oganisian, A.** & Roy, J. A. (2021). A practical introduction to bayesian estimation of causal effects: Parametric and nonparametric approaches. *Statistics in Medicine*, 40(2), 518–551. doi:10.1002/sim.8761
- Oganisian, A.** & Roy, J. A. (2020). Invited discussion - bayesian regression tree models for causal inference: Regularization, confounding, and heterogeneous effect. *Bayesian Analysis*. 998–1006. doi:10.1214/19-BA1195
- Hubbard, R. A., Huang, J., Harton, J., **Oganisian, A.**, Choi, G., Utidjian, L., ... Chen, Y. (2019). A bayesian latent class approach for ehr-based phenotyping. *Statistics in Medicine*, 38(1), 74–87. doi:10.1002/sim.7953
- Oganisian, A.** (2019). Chirp: Chinese restaurant process mixtures for regression and clustering. *The Journal of Open Source Software*, 4, 1287. doi:10.21105/joss.01287#

### Collaborative

- Takvorian, S. U., **Oganisian, A.**, Mamtani, R., Mitra, N., Shulman, L. N., Bekelman, J. E. & Werner, R. M. (2020). Association of Medicaid Expansion Under the Affordable Care Act With Insurance Status, Cancer Stage, and Timely Treatment Among Patients With Breast, Colon, and Lung Cancer. *JAMA Network Open*, 3(2). doi:10.1001/jamanetworkopen.2019.21653
- Harrison, J. M., **Oganisian, A.**, Grande, D. T., Mitra, N., Chhabra, M. & Chaiyachati, K. H. (2020). Economic outcomes of insurer-led care management for high-cost medicaid patients. *The American journal of managed care*, 26(7), 310–316. doi:10.37765/ajmc.2020.43769
- Singh, P., Forman, H., Adamson, A. S., Mostaghimi, A., Ogdie, A. R., **Oganisian, A.** & Barbieri, J. S. (2019). Impact of industry payments on prescribing patterns for tumor necrosis factor inhibitors among medicare beneficiaries. *Journal of General Internal Medicine*, 34(2), 176–178. doi:10.1007/s11606-018-4698-x
- Grandhi, N., Mohiuddin, J., **Oganisian, A.**, Manjunath, S., Mitra, N., Plastaras, J., ... Wojcieszynski, A. (2019). Association of radiation dose with local failure in hepatocellular carcinoma (hcc). *International Journal of Radiation Oncology\*Biophysics\*Physics*, 105(1, Supplement), E219–E220. doi:10.1016/j.ijrobp.2019.06.1970
- Vekeman, F., Pina-Garza, J. E., Cheng, W. Y., Tuttle, E., Giguere-Duval, P., **Oganisian, A.**, ... Isojarvi, J. (2019). Development of a classifier to identify patients with probable lennox-gastaut syndrome in health insurance claims databases via random forest methodology. *Current Medical Research and Opinion*, 35(8), 1415–1420. doi:10.1080/03007995.2019.1595552

Wan, J., **Oganisian, A.**, Spieker, A. J., Hoffstad, O. J., Mitra, N., Margolis, D. J. & Takeshita, J. (2019). Racial/ethnic variation in use of ambulatory and emergency care for atopic dermatitis among us children. *Journal of Investigative Dermatology*, 139(9), 1906–1913.e1. doi:10.1016/j.jid.2019.02.024

## Presentations

### 2021

- May (Invited) Novartis - Advanced Methods and Data Science Forum. Virtual.  
*Bayesian Estimation of Causal Effects: Parametric and Nonparametric Approaches*
- Jan (Invited) University of Washington, Department of Biostatistics. Virtual.  
*A Bayesian nonparametric model for zero-inflated outcomes: prediction, clustering, and causal inference.*
- Jan (Invited) Brown University, Department of Biostatistics. Virtual.  
*A Bayesian nonparametric model for zero-inflated outcomes: prediction, clustering, and causal inference.*

### 2020

- Nov (Invited) Center for Causal Inference Working Group. Virtual.  
*Hierarchical Bayesian Bootstrap for Heterogeneous Treatment Effect Estimation*
- Aug Joint Statistical Meetings. Virtual.  
*Bayesian Nonparametric Cost-Efficacy Analysis: Causal Estimation and Adaptive Subgroup Discovery*
- Aug International Biometrics Conference. Virtual.  
*Nonparametric Bayesian Causal Inference and Adaptive Subgroup Discovery in Cost-Effectiveness*
- Aug Stan Conference (StanCon). Virtual.  
*Bayesian Causal Inference in Stan: Partial Pooling and Sensitivity Analysis*
- Jun (Invited) I-HDS Seminar Series. Icahn School of Medicine at Mt. Sinai. Virtual.  
*Bayesian Nonparametric Causal Estimation with Zero-Inflated Outcomes*
- Feb (Invited) Causal Inference Learning Group, Department of Biostatistics, Columbia University  
*Bayesian Nonparametric Cost-Effectiveness Analysis: Causal Inference and Adaptive Subgroup Discovery*
- Jan (Invited) International Conference on Health Policy Statistics. San Diego, CA.  
*An all-in-one Bayesian nonparametric model for medical cost prediction, clustering, and causal estimation*

### 2019

- Jul (Invited) Joint Statistical Meetings. Denver, CO.  
*Bayesian nonparametric model for zero-inflated outcomes.*

### 2018

- Jul Joint Statistical Meetings. Vancouver, BC, Canada.  
*A Bayesian Nonparametric Method for Zero-Inflated Data with Applications to Medical Costs*

### 2017

- Jul Joint Statistical Meetings. Baltimore, MD.  
*A Parametric Bayesian Approach to Estimating Causal Treatment Effect on Medical Costs.*

## Teaching

### Summer Institutes and Short Courses

- 2019 Center for Causal Inference Summer Institute (UPenn)  
Taught instrumental variables computing session at annual summer institute hosted by Center for Causal Inference.
- 2018 Short course at JSM 2018: Introduction to Bayesian Nonparametric Methods for Causal Inference. Interactive Dirichlet Process tutorial with R Shiny. <https://stablemarkets.shinyapps.io/dpmixapp/>.

## Teaching (continued)

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### Guest Lectures

- 2020 BSTA790 Causal Inference in Biomedical Research, UPenn  
PhD-level biostatistics course. Lecture title: Overview of Bayesian Methods for Causal Inference.
- 2020 BSTA670 Programming and Computation for Biomedical Data Science, UPenn  
PhD-level biostatistics course. Lecture title: Bayesian Computation: Metropolis Hastings Samplers and Monte Carlo Integration.
- 2019 BSTA670 Programming and Computation for Biomedical Data Science, UPenn  
PhD-level biostatistics course. Lecture title: Bayesian Computation: MCMC Sampling, Integration, and Approximation Methods.
- 2018 BSTA622 Statistical Inference II, UPenn  
PhD-level biostatistics course. Lecture title: Bayesian Motivations of Penalized Regression and the EM Algorithm.

### Teaching Assistantships

- 2018 HPR604 - Introduction to Statistics for Health Policy, UPenn  
Masters in Health Policy course, Perelman School of Medicine, University of Pennsylvania
- 2018 BSTA660 - Design of Observational Studies, UPenn  
PhD-level biostatistics course, Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania

## Academic Service

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### Referee

*Biometrics*  
*Biostatistics*  
*Statistics in Medicine*  
*Journal of the Royal Statistical Society: Series C*  
*American Journal of Epidemiology*  
*International Journal of Biostatistics*  
*Observational Studies*

### Conferences

- 2021 Program Committee, ICML2021 Workshop "The Neglected Assumptions In Causal Inference"
- 2021 Co-organizer. Frontiers of Causal Inference in Data Science: Perspectives from Leaders in Tech and Academia. University of Pennsylvania.
- 2021 Session Organizer. Causal inference challenges in health policy decision making. CMStatistics.
- 2020 Program Committee, NeurIPS2020 Workshop "Consequential Decision Making in Dynamic Environments"
- 2020 Session Chair, Causal Inference Methods for Health Policy Research. International Conference on Health Policy Statistics. San Diego, CA.
- 2019 Session Chair, Bayesian Approaches to High Dimensional Data. Contributed Papers. Eastern North American Region. Philadelphia, PA.
- 2017 Session Chair, New Ideas in Causal Inference. Poster Session. Eastern North American Region. Washington, D.C.

### Committee and Board Memberships

- 2021-2022 Stan Governing Body (elected to 1-year term). <https://mc-stan.org/>.
- 2017-2019 Student representative, biostatistics PhD/MS curriculum committee, UPenn.

## Academic Service (continued)

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### Professional Memberships

2017-pres.	American Statistical Association
2017-pres.	International Biometric Society, Eastern North American Region (ENAR)