

# Arman Oganisian

## Biostatistics PhD Candidate

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🌐 <https://stablemarkets.netlify.app>

🌐 <https://github.com/stablemarkets>

## Education

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2021 (Exp.)	<b>PhD, Biostatistics</b> University of Pennsylvania Co-advisors: Nandita Mitra and Jason Roy Committee: Dylan Small, Edward I. George, Russell Taki Shinohara (chair)	Philadelphia, PA
2018	<b>MS, Biostatistics</b> University of Pennsylvania	Philadelphia, PA
2013	<b>BA, Quantitative Economics</b> Providence College Minor: Mathematics; Liberal Arts Honors Program; <i>summa cum laude</i>	Providence, RI

## Appointments

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2016 – Pres.	<b>Associate Fellow</b> Leonard Davis Institute for Health Economics, University of Pennsylvania.
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## Employment

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2015-2016	<b>Senior Analyst</b> Analysis Group Worked primarily in the health economics and outcome research (HEOR) practice. Led team of analysts conducting statistical and econometric analyses. Supervised analysts, lead client calls, drafted study designs and manuscripts. Extensive experience with causal methods for observational data (matching, regression adjustment, propensity scores, etc).	Boston, MA
2013-2015	<b>Analyst</b> Analysis Group	Boston, MA

## Computing Skills

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Statistical	R, Matlab, SAS.
General Purpose	C++/Rcpp, Python.
Other	Git/GitHub, Bash, MySQL, L <sup>A</sup> T <sub>E</sub> X.

## Awards

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2020	<b>ENAR Distinguished Student Paper Award</b> International Biometric Society Eastern North American Region's (ENAR) Distinguished Student Paper Award for the 2020 ENAR Spring Meeting in Nashville, TN.
2020	<b>ICHPS Travel Award</b> International Conference on Health Policy Statistics (ICHPS) travel award for 2020 meeting in San Diego, CA.

## Publications

### Working

- 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 Review*. 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. (2020). A bayesian nonparametric model for zero-inflated outcomes: Prediction, clustering, and causal estimation. *Biometrics*. doi:10.1111/biom.13244
- Oganisian, A.** & Roy, J. A. (2020a). A practical introduction to bayesian estimation of causal effects: Parametric and nonparametric approaches. *Statistics in Medicine*, 1–34. doi:10.1002/sim.8761
- Oganisian, A.** & Roy, J. A. (2020b). 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

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### 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. Seoul, South Korea. 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. New York, NY.  
*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

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### Summer Institutes and Short Courses

- 2019 CCI Causal Inference Summer Institute  
Invited to teach computing session on instrumental variables at annual summer institute. Hosted by Center for Causal Inference run jointly by University of Pennsylvania and Rutgers University.
- 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/>.

### Guest Lectures

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

## Teaching (continued)

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### Teaching Assistantships

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

## Academic Service

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### Referee

*Biometrics*

*Statistics in Medicine*

*American Journal of Epidemiology*

*International Journal of Biostatistics*

*Observational Studies*

### Conference Activities

- 2020 Program Committee member, NeurIPS 2020 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.

### Committees

- 2017-19 Student representative, biostatistics PhD/MS curriculum committee.