

Arman Oganisian

Incoming Assistant Professor of Biostatistics

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Education

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

Appointments/Employment

Academic

2021-pres.	Brown University Assistant Professor, Tenure Track. Department of Biostatistics. Starting July 1, 2021.	Providence, RI
2017-2021	University of Pennsylvania Associate Fellow, Leonard Davis Institute for Health Economics.	Philadelphia, PA

Industry

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

Awards

2021	Saul Winegrad Award for Outstanding Dissertation Awarded by University of Pennsylvania, Biomedical Graduate Studies.
2020	ENAR Distinguished Student Paper Award Awarded by International Biometric Society Eastern North American Region's (ENAR) at 2020 ENAR Spring Meeting in Nashville, TN.
2020	ICHPS Travel Award 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)

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

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)

Professional Memberships

2017-pres. American Statistical Association

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