

Octavio César Mesner, Ph.D.

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Research & Education

- 2023 – Research Assistant Professor, Brown School, Washington University in St Louis
- 2020 – 2023 Postdoctoral Research Fellow in Statistics, University of Michigan, Ann Arbor
Faculty Mentors: Liza Levina, Ji Zhu
Project: Fair Information Spread on Social Networks with Community Structure
- 2015 – 2020 Joint Ph.D. in Statistics & Data Science and Engineering & Public Policy,
Carnegie Mellon University, Pittsburgh, PA
Dissertation: Non-Parametric Causal Discovery for Discrete and Continuous Data
Advisor: Cosma Shalizi
Funding: 2019 Ford Foundation Dissertation Fellowship
- 2018 – 2017 M.S. in Machine Learning, Carnegie Mellon University, Pittsburgh, PA
- 2010 – 2015 Biostatistician II at Infectious Disease Clinical Research Program, Rockville, MD
- 2008 – 2010 M.S. in Biostatistics, Georgetown University, Washington, DC
- 2005 – 2007 M.S. in Mathematics, John Carroll University, Cleveland, OH
- 2005 – 2001 B.S. in Mathematics and Philosophy, John Carroll University, Cleveland, OH

Publications

1. Octavio César Mesner. Simple, Efficient, Entropy Estimation for Discrete Random Variables. *In preparation*, 2023
2. Octavio César Mesner, Liza Levina, and Ji Zhu. Fair Information Spread on Social Networks with Community Structure. *In preparation*, 2023
3. Octavio César Mesner and Cosma Rohilla Shalizi. Conditional Mutual Information Estimation for Mixed, Discrete and Continuous Data. *IEEE Transactions on Information Theory*, 67(1):464–484, 2020
4. Octavio Mesner, Alex Davis, Elizabeth Casman, Hyagriv Simhan, Cosma Shalizi, Lauren Keenan-Devlin, Ann Borders, and Tamar Krishnamurti. Using Graph Learning to Understand Adverse Pregnancy Outcomes and Stress Pathways. *PLoS one*, 14(9), 2019
5. Robert G Deiss, Octavio Mesner, Brian K Agan, Anuradha Ganesan, Jason F Okulicz, Mary Bavaro, Tahaniyat Lalani, Thomas A O’Bryan, Ionut Bebu, and Grace E Macalino. Characterizing the Association Between Alcohol and HIV Virologic Failure in a Military Cohort on Antiretroviral Therapy. *Alcoholism: Clinical and Experimental Research*, 2016
6. Robert Deiss, Octavio Mesner, Richard Bower, Jose Sanchez, Anuradha Ganesan, Grace E Macalino, Brian Agan, et al. Incidence of Sexually Transmitted Infections (STIs) in the US Military Is Associated With Female Gender, Increasing Length of Service and Non-Deployment. In *Open Forum Infectious Diseases*, volume 2, page 1565. Oxford University Press, 2015

7. Catherine Troja, Robert Deiss, Octavio Mesner, Jose L Sanchez, Anuradha Ganesan, Grace E Macalino, and Brian Agan. Hepatitis B Virus Infection and Association With Sexually Transmitted Infections Among US Military Personnel. In *Open Forum Infectious Diseases*, volume 2, page 1566. Oxford University Press, 2015
8. Anuradha Ganesan, Octavio Mesner, Robert Deiss, Jason Okulicz, Tahaniyat Lalani, Timothy Whitman, Thomas O'bryan, Tomas Ferguson, Grace Macalino, and Brian Agan. Repeat Syphilis Infections in a Cohort of HIV-Infected Department of Defense Beneficiaries (DoD), A Thirty Year Study (1986–2015). In *Open Forum Infectious Diseases*, volume 2, page 1558. Oxford University Press, 2015
9. Anuradha Ganesan, Octavio Mesner, Jason F Okulicz, Thomas O'Bryan, Robert G Deiss, Tahaniyat Lalani, Timothy J Whitman, Amy C Weintrob, Grace Macalino, Brian K Agan, et al. A single dose of benzathine penicillin G is as effective as multiple doses of benzathine penicillin G for the treatment of HIV-infected persons with early syphilis. *Clinical Infectious Diseases*, 60(4):653–660, 2015
10. Helen M Chun, Octavio Mesner, Chloe L Thio, Ionut Bebu, Grace Macalino, Brian K Agan, William P Bradley, Jennifer Malia, Sheila A Peel, Linda L Jagodzinski, et al. HIV Outcomes in Hepatitis B virus coinfecting individuals on HAART. *Journal of Acquired Immune Deficiency Syndromes (1999)*, 66(2):197, 2014
11. Ionut Bebu, Janet Tate, David Rimland, Octavio Mesner, Grace E Macalino, Anuradha Ganesan, Jason F Okulicz, Mary Bavaro, Amy C Weintrob, Amy C Justice, et al. The VACS Index predicts mortality in a young, healthy HIV population starting highly active antiretroviral therapy. *Journal of Acquired Immune Deficiency Syndromes (1999)*, 65(2):226, 2014
12. Natascha M Minidis, Octavio Mesner, Brian K Agan, and Jason F Okulicz. Delayed-type hypersensitivity (DTH) test anergy does not impact CD4 reconstitution or normalization of DTH responses during antiretroviral therapy. *Journal of the International AIDS Society*, 17(1), 2014
13. Jeffrey E Sherwood, Octavio C Mesner, Amy C Weintrob, Colleen M Hadigan, Kenneth J Wilkins, Nancy F Crum-Cianflone, and Naomi E Aronson. Vitamin D deficiency and its association with low bone mineral density, HIV-related factors, hospitalization, and death in a predominantly black HIV-infected cohort. *Clinical Infectious Diseases*, 55(12):1727–1736, 2012

Teaching & Advising Experience

Lecturer

- Designed and taught Practice and Communication in Applied Statistics, University of Michigan, Fall 2020 – Fall 2022, 30 – 100 Master Students

Teaching Assistant

- Data Mining, Fall 2018, Carnegie Mellon University, undergraduate students
- Policy Analysis, Spring 2019, Carnegie Mellon University, undergraduate students
- Times Series, Fall 2019, Carnegie Mellon University, undergraduate students
- Statistical Modeling II, Spring 2010, Georgetown University, master students
- Statistical Modeling I, Fall 2009, Georgetown University, master students

Math Faculty, Art Institute of Washington, Arlington, VA, 2007 – 2010

- Courses: discrete math, algebra, trigonometry, and geometry, linear algebra, intro statistics, culinary math
- Developed college-level mathematics courses for majority underrepresented art students

Conferences

- 2022 Michigan Institute for Data Science, Future Leader Summit
- 2019 ASA StatFest, Panelist, The Graduate School Experience
- 2019 Joint Statistical Meeting, Talk, Estimating Conditional Mutual Information for Discrete and Continuous Random Variables
- 2017 Society for Medical Decision Making, Poster, A Graphical Approach to Interpretable Modeling of Stress and Adverse Pregnancy Outcomes
- 2012 Infectious Disease Society of America, Poster, CD4 reconstitution for HIV/HBV co-infected individuals on HAART

Fellowships & Awards

- 2019 Ford Foundation Dissertation Fellowship
- 2017 Center for Machine Learning and Health Fellowship
- 2016 Bradford and Diane Smith Graduate Fellowship
- 2015 CIT Dean's Fellowship
- 2003 Congressional Hispanic Caucus Institute Scholarship
- 2003 Hispanic Scholarship Fund Institute Scholarship

Software

- knncmi, python software package for estimating conditional mutual information for discrete and continuous data

Leadership, Service, and Interests

- 2021 ASA StatFest, Planning Committee Member
- 2020 – DEI Committee Member, Department of Statistics, University of Michigan
- 2018 – 2020 Presidential Task Force on Campus Climate, Carnegie Mellon University
- 2018 – 2020 University Leadership Student Advisory Committee, Carnegie Mellon University
- 2016 – 2020 CMQ+, CMU's Graduate LGBTQ+ Organization, Leadership
- 2017 – 2020 CMU Triathlon Club, Founder, President
- 2017 Ironman Maryland, Finisher
- 2015 Ironman Mont Tremblant, Finisher
- 2014 Ironman Lake Placid, Finisher
- 2013 New Triathlete Program, Co-leader, DC Triathlon Club