

Professional summary: Experienced data scientist interested in using data to accelerate innovation in healthcare • Unique skillset combining data science, software engineering, and epidemiology (study design, research implementation, and statistics) • Expertise in visualizing and communicating insights from complex data

Education

- **PhD in Epidemiology** from [University of Maryland Baltimore](#) (2015)

Dissertation topic: UX research and data presentation optimization for public health information; please see <https://masnick.org/dissertation> for details.

Coursework in: Statistics, study design and epidemiological methods, survey methods, causal inference, clinical trials.

- **BA in Public Policy** from [Duke University](#) (2009)

Focus on: Genome sciences and policy, bioinformatics.

Employment

- **Assistant Professor of Precision Health**
[Geisinger Research](#), 2018 – present

I lead data science and informatics for a research group at Geisinger focusing on large-scale healthy population genomics. I specialize in integrating and deriving insights from large genomic and clinical datasets.

Geisinger is an integrated health system in Pennsylvania and New Jersey. It is known for outstanding patient care, innovation, and research.

- **Lead Data Scientist**
[Hospital IQ](#), 2016 – 2018

I was the first data science hire at Hospital IQ, and subsequently led the growing data science team. My work focused on predictive modeling to increase efficiency and provide better patient care for health systems.

- **Software Engineering & Data Science Consultant**
2012 – present

My consulting work focuses on software engineering and data science for research and product development, with clients including major research universities, non-profits, and startups. More at <https://masnick.org/consulting>.

- **Graduate Research Assistant**
University of Maryland Baltimore, 2012 – 2015 (in conjunction with my PhD)

- **Research Analyst**
Center for Health Policy and Inequalities Research, Duke University, 2009 – 2012

- **Summer Intern**
Laboratory of Virology, Rocky Mountain Labs, National Institutes of Health, 2006 – 2008

Technical skills

- **Data science & statistics:** Python (including [scikit-learn](#) for machine learning and [SciPy](#)), R, SQL, Stata, SAS
- **Software engineering:** Python, Ruby on Rails, JavaScript, git, bash, cloud computing
- More about my data science and software engineering work is available at <https://masnick.org/work>.

Publications

- O'Hara LM, **Masnick M**, Leekha S, Jackson SS, Blanco N, Harris AD. *Indirect Versus Direct Standardization Methods for Reporting Healthcare-Associated Infections: An Analysis of Central Line-Associated Bloodstream Infections in Maryland*. Infect Control Hosp Epidemiol 2017.
- **Masnick M**, Morgan DJ, Sorkin JD, Macek MD, Brown JP, Rheingans P, Harris AD. *Can National Healthcare-Associated Infections (HAIs) Data Differentiate Hospitals in the United States?* Infect Control Hosp Epidemiol 2017.
- **Masnick M**, Morgan DJ, Macek MD, Sorkin JD, Brown JP, Rheingans P, Harris AD. *Improving the Understanding of Publicly Reported Healthcare-Associated Infection (HAI) Data*. Infect Control Hosp Epidemiol 2016.
- **Masnick M**, Morgan DJ, Sorkin JD, Kim E, Brown JP, Rheingans P, Harris AD. *Lack of Patient Understanding of Hospital Acquired Infection Data Published on the Centers for Medicare and Medicaid Services (CMS) Hospital Compare Website*. Infect Control Hosp Epidemiol 2015.
- **Masnick M** and Leekha S. *Frequency and predictors of seasonal influenza vaccination and reasons for refusal among patients at a large tertiary referral hospital*. Infect Control Hosp Epidemiol 2015.
- Pepin CS, Thom KA, Sorkin JD, Leekha S, **Masnick M**, Preas MA, Pineles L, Harris AD. *Risk factors for Central Line-associated Bloodstream Infections: A Focus on Comorbid Conditions*. Infect Control Hosp Epidemiol 2015; 36(04):479-81.
- **Masnick M**, Morgan DJ, Wright MO, Lin MY, Pineles L, Harris AD. *Survey of infection prevention informatics use and practitioner satisfaction in U.S. hospitals*. Infect Control Hosp Epidemiol 2014; 35(7):891-893.
- Rock C, Thom KA, **Masnick M**, Johnson KJ, Harris AD, Morgan DJ. *Frequency of Klebsiella pneumoniae carbapenemase (KPC) and non-KPC-producing Klebsiella contamination of Healthcare workers and the environment*. Infect Control Hosp Epidemiol 2014; 35(4):426-9.
- O'Donnell K, Murphy R, Ostermann J, **Masnick M**, Whetten RA, Madden E, Thielman NM, Whetten K, and The Positive Outcomes for Orphans (POFO) Research Team. *A Brief Assessment of Learning for Orphaned and Abandoned Children in Low and Middle Income Countries*. AIDS Behav 2012; 16(2):480-90.
- Waters RC, Ostermann J, Reeves TD, **Masnick MF**, Thielman NM, Bartlett JA, Crump JA. *A cost-effectiveness analysis of alternative HIV re-testing strategies in sub-Saharan Africa*. J Acquir Immune Defic Syndr 2011; 56(5): 443-52.
- Mitzel DM, Best SM, **Masnick MF**, Porcella SF, Wolfenbarger JB, Bloom ME. *Identification of genetic determinants of a tick-borne flavivirus associated with host-specific adaptation and pathogenicity*. Virology 2008; 381(2): 268-76.
- Mitzel DM, Wolfenbarger JB, Long RD, **Masnick M**, Best SM, Bloom ME. *Tick-borne flavivirus infection in Ixodes scapularis larvae: development of a novel method for synchronous viral infection of ticks.*, Virology 2007; 365(2): 410-8.

Conference Oral Presentations

- **Masnick M**, Morgan DM, Sorkin JD, Kim E, Brown JP, Rheingans P, Harris AD. *Lack of Patient Understanding of Hospital Acquired Infection Data on CMS Hospital Compare*. At SHEA Spring 2015 Conference in Orlando, 2015.

Conference Posters

- **Masnick M**, Morgan DM, Sorkin JD, Macek MD, Brown JP, Rheingans P, Harris AD. *Ability of Healthcare-Associated Infection (HAI) Data to Differentiate Hospitals Nationwide*. At SHEA Spring in Atlanta, 2016.
- **Masnick M**, Morgan DM, Macek MD, Sorkin JD, Brown JP, Rheingans P, Harris AD. *Improving Understanding of Publicly Reported Healthcare-Associated Infection (HAI) Data*. At SHEA Spring in Atlanta, 2016.
- **Masnick M**, Morgan DJ, Harris AD. *Apps for ID: A Regularly Updated Database of iPhone and iPad Apps for Infectious Disease Physicians*. At IDWeek in Philadelphia, 2014. Available at: <http://bit.ly/poster744>
- **Masnick M**, Leekha S. *Frequency and Predictors of Refusal of Seasonal Influenza Vaccination among Patients at a Large Tertiary Referral Hospital*. At IDWeek in Philadelphia, 2014. Available at: <http://bit.ly/poster1058>

- Pepin CS, Thom K, **Masnick M**, Preas MA, Pineles L, Harris AD. *Potential for Risk Adjustment for Central Line-Associated Bloodstream Infections Using Comorbidity Measures Derived from Medical Records from a Tertiary Care Hospital*. At IDWeek in Philadelphia, 2014. Available at: <http://bit.ly/poster854>
- Rock C, Thom KA, **Masnick M**, Johnson JK, Harris AD, Morgan DJ. *Frequency of Klebsiella pneumoniae carbapenemase- (KPC-) and non-KPC-producing Klebsiella species contamination of healthcare workers and the environment*. At the Society for Healthcare Epidemiology of America Spring Conference in Denver, 2014.
- Lowery AV, Chui SHJ, Pajoumand M, **Masnick M**, Pepin C, Williams CM. *Evaluation of therapeutic hypothermia following return of spontaneous circulation after cardiac arrest*. At the 43rd Critical Care Congress in San Francisco, 2014.
- **Masnick M**, Morgan DJ, Wright M, Lin M, Pineles L, Harris A. *Infection Control Informatics Use and Satisfaction among SHEA and APIC Members*. At IDWeek in San Francisco, 2013. Available at: <http://bit.ly/poster-1077>.

Teaching

- **Statistical Methods in Epidemiology**, Teaching Assistant, Spring 2014
Instructor: [Dr. Michelle Shardell](#), University of Maryland Baltimore
Topics: treatment of stratified and matched data, detection of interaction, regression models (linear, logistic, Poisson)
- **Principles of Epidemiology**, Teaching Assistant, Summer 2014
Instructor: [Dr. Nancy Elish](#), University of Maryland Baltimore
Topics: measures of disease occurrence and association, study design, bias and causation
- **Infectious Disease Epidemiology: A Global Perspective**, Teaching Assistant, Fall 2014
Instructor: [Dr. Samer El-Kamary](#), University of Maryland Baltimore
Topics: principles of infectious disease epidemiology, including mechanisms of transmission, outbreak investigations, vaccines, and nosocomial infections
- **Clinical Trials and Experimental Epidemiology**, Teaching Assistant, Spring 2015
Instructor: [Dr. Michael L. Terrin](#), University of Maryland Baltimore
Topics: principles of clinical trials, including recruitment, randomization, intervention, blinding, outcome ascertainment, statistical design, informed consent, and ethical concerns
- **Research Practicum**, Teaching Assistant, Spring and Summer 2015
Instructors: [Dr. Surbhi Leekha](#) and [Dr. John D. Sorkin](#), University of Maryland Baltimore
Topics: conducting and presenting epidemiological research
Summary: Students in this course are given a general research question and dataset. They then complete all steps of the research process including hypothesis development, literature review, and statistical analysis. Students present their findings orally and in written assignments throughout the semester to gain experience applicable to presenting at a professional meeting and writing a peer-reviewed manuscript.

Awards

- IDWeek Trainee Travel Grant, Infectious Diseases Society of America (IDSA), 2014
- Outstanding PhD Scholar, University of Maryland School of Medicine, Program in Epidemiology and Human Genetics, 2014

Last updated November 13, 2019