Haben Michael

Contact Information
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Education

Ph.D., Statistics, Stanford University, 2017
Ph.D. Minor, Computer Science
Dissertation: Evaluating Diagnostics Under Dependency Constraints
Advisors: Lu Tian, Ingram Olkin
J.D., Yale Law School, 2010
B.S., Mathematics, Stanford University, 2004

Employment

Department of Mathematics & Statistics, University of Massachusetts
Assistant Professor — Sept. 2019–present
Department of Statistics, The Wharton School, University of Pennsylvania
Post-doctoral Research Associate — Sept. 2017–Sept. 2019
Advisor: Eric Tchetgen Tchetgen
Wachtell, Lipton, Rosen & Katz
Corporate Associate — Sept. 2010–June 2012

Research Interests

Causal inference
Diagnostic assessment
Meta-analysis
Longitudinal data analysis
Applications to HIV drug trials

Publications

Pre-prints and submitted manuscripts

[1] Alexis Doyle-Connolley and Haben Michael. "Nonparametric estimation of the AUC of an index with estimated parameters". Submitted. 2024.

[2] Haben Michael. "Gaffke's Conjecture on an Exact Confidence Interval for a Bounded Mean". In progress. 2024.

[3] Haben Michael. "Testing for a difference in AUCs based on LDA fitted values". Submitted. 2024.

[4] Haben Michael. "Inference on the difference of estimated index AUCs under the null". Submitted. 2024.

[5] Haben Michael. "The effect of screening for publication bias on the outcomes of meta-analyses". Under revision at Scandinavian Journal of Statistics. 2024.

[6] Haben Michael, Angelina Chen, and Lu Tian. "Exact Inference on a Linear Combination of Multinomial Probabilities". Submitted. 2024.

[7] Haben Michael, Yifan Cui, and Eric J. Tchetgen Tchetgen. "Efficient and Robust Estimation of Marginal Structural Models for Time-varying Endogenous Treatments". In progress. 2024.

[8] Haben Michael and Musie Ghebremichael. "Power Analysis of Common Tests for Publication Bias". To appear in Statistica Neerlandica. 2024.

[9] Haben Michael and Lu Tian. "The Population and Personalized AUCs for Clustered Data". Under revision at Statistica Sinica. 2024.

Published

[10] Yifan Cui, Haben Michael, Frank Tanser, and Eric Tchetgen Tchetgen. "Instrumental variable estimation of the marginal structural Cox model for time-varying treatments". In: *Biometrika* 110.1 (2023), pp. 101–118.

[11] Haben Michael, Yifan Cui, Scott Lorch, and Eric Tchetgen Tchetgen. "Instrumental Variable Estimation of Marginal Structural Mean Models for Time-Varying Treatment". In: *Journal of the American Statistical Association* 0.0 (2023), pp. 1–12.

[12] Haben Michael and Musie Ghebremichael. "A correction to Begg's test for publication bias". In: *Communications in Statistics - Theory and Methods* 0.0 (2023), pp. 1–21.

[13] Musie Ghebremichael and Haben Michael. "Comparison of the binormal and Lehman receiver operating characteristic curves". In: *Communications in Statistics - Simulation and Computation* 53.2 (2021), pp. 772–785.

[14] Joseph Makhema et al. "Universal testing, expanded treatment, and incidence of HIV infection in Botswana". In: *New England Journal of Medicine* 381.3 (2019), pp. 230–242.

[15] Haben Michael, Suzanne Thornton, Minge Xie, and Lu Tian. "Exact inference on the random-effects model for meta-analyses with few studies". In: *Biometrics* 75.2 (2019), pp. 485–493.

[16] Haben Michael, Lu Tian, and Musie Ghebremichael. "The ROC curve for regularly measured longitudinal biomarkers". In: *Biostatistics* 20.3 (2019), pp. 433–451.

[17] Eric J. Tchetgen Tchetgen, Haben Michael, and Yifan Cui. *Marginal Structural Models for Time-varying Endogenous Treatments: A Time-Varying Instrumental Variable Approach*. Tech. rep. arXiv:1809.05422. Department of Statistics, The Wharton School, Sept. 2018.

[18] Haben Michael and Lu Tian. "Discussion of "A risk-based measure of time-varying prognostic discrimination for survival models," by C. Jason Liang and Patrick J. Heagerty"". In: *Biometrics* 73.3 (2017).

[19] Abraar Karan, Prashanth Somasundaram, Haben Michael, Aryan Shayegani, and Hylton Mayer. "The effect of multimedia interventions on the informed consent process for cataract surgery in rural South India". In: *Indian Journal of Ophthalmology* 62.2 (2014), p. 171.

Work on publications [14]–[19] was all or primarily completed prior to my employment at the University of Massachusetts.

Invited Presentations

New England Statistics Symposium, Boston, MA, June, 2023
London School of Economics Joint Econometrics and Statistics Seminar, London, UK, February 2023
Pan-African Scientific Research Council, Abuja, Nigeria (virtual), Dec. 2022
UConn Statistics Seminar, Storrs, CT, Oct. 2022
UMass Amherst, Applied Math Seminar, Amherst, MA, Oct. 2021
UMass Amherst, Biostatistics Seminar, Amherst, MA, Nov. 2019
UCLA Biostatistics Seminar, Los Angeles, CA, April 2019
Eastern Northeast Regional Spring Meeting, Philadelphia, PA, March 2019
Penn Center for Causal Inference Seminar, Philadelphia, PA, March 2019
University of Florida Biostatistics Seminar, Gainesville, FL, Feb. 2019
Meta-Research Innovation Center at Stanford Forum, Stanford, CA, Apr. 2016

Teaching

University of Massachusetts, Department of Mathematics and Statistics

Stat 310: Fundamental Concepts of Statistics	Fall 2023 (2 sections), Fall 2021
Stat 516: Statistics II	Fall 2022 (2 sections), Spring 2021 (2 sections), Fall 2021, Fall 2019 (2 sections)
Stat 639: Time Series Analysis	Fall 2023

Stanford University, Statistics Department

Statistics 195: Statistical Computing	1 quarter per year, 2013–2017

300/500-numbered courses are regular upper-undergraduate level; 600-numbered courses are graduate topics courses.

Mentoring

Post-doctoral

Budhinath Padhy, Statistics VAP currently at the Dept. of Defense	2020–21
Shixiao Zhang, Statistics VAP (co-advisor)	2021–22

Doctoral

Alexis Doyle-Connolley (committee chair)	2022–present
Rui Hu (committee member)	2022–present
Zhou Tang (committee member)	2021–2023

Masters and below

Nina Roche (Computer Science, thesis committee member)	2021–22
Gregory Lederer (faculty supervisor for externship)	Spring 2023, Fall 2023
Project supervisor for Stat 197SC, intro stats for 15-20 high school and freshmen students	Summer 2022
10-–15 math major advisees	2020–present

Department Service	Climate Committee, member	2023–24, 2021–22, 2020–21
	Statistics and Probability Seminar Series, co-chair	2021–22, 2020–21, 2019–20
	Statistics Graduate Admissions, chair	2023–24
	Statistics Graduate Admissions, member	2021–22
	Tenure–track Faculty Search Committee, member	2022–23
	Permanent Lecturer Search Committee, member	2021–22
	VAP Search, Statistics subcommittee chair	2022–23
	Liaison to the Five Colleges Statistics Group	2019–2023

Professional Service	Student Award Committee, New England Statistics Society	2024
	Organizer, Special Session on Recent Advances in Causal Inference I, II, and III, AMS Sectional Meeting, Amherst, MA	2022
	Ad-hoc Reviewer for *The American Statistician, Journal of the Royal Statistical Society Series B and C, Biometrics, Electronic Journal of Statistics, Statistics in Medicine, Statistical Methods in Medical Research, Biometrical Journal*	