

Rajarshi Mukherjee

Curriculum Vitae

Department of Biostatistics
Harvard T.H. Chan School of Public Health
✉ rmukherj@hsph.harvard.edu
<https://scholar.harvard.edu/rajarshi>

Employment

- 2018- **Assistant Professor**, *Department of Biostatistics*, Harvard T.H. Chan School of Public Health.
- 2017-2018 **Assistant Professor**, *Biostatistics*, University of California, Berkeley.
- 2014-2017 **Stein Fellow**, *Department of Statistics*, Stanford University.

Education

- 2009-2014 **PhD.**, *Department of Biostatistics*, Harvard University.
-Advisor- Dr. Xihong Lin
- 2007–2009 **M.Stat**, *Indian Statistical Institute, Kolkata, India*.
- Mathematical Statistics and Probability Specialization
- 2004–2007 **B.Stat (Hons)**, *Indian Statistical Institute, Kolkata, India*.

Publications

- 2015 **Hypothesis Testing for High-Dimensional Sparse Binary Regression** .
- Rajarshi Mukherjee, Natesh Pillai and Xihong Lin, *The Annals of Statistics*, 43(1): 352-381, ([Journal Link](#)).
- 2017 **The Generalized Higher Criticism for Testing SNP-sets in Genetic Association Testing**.
- Ian Barnett, Rajarshi Mukherjee, and Xihong Lin, *Journal of American Statistical Association, Applications and Case Studies*, 112(517): 64–76, ([Journal Link](#)).
- 2017 **Asymptotic Normality of Scrambled Geometric Net Quadrature**.
- Kinjal Basu and Rajarshi Mukherjee, *The Annals of Statistics*, 45(4): 1759–1788, ([Journal Link](#)).

- 2017 **Minimax Estimation of a Functional on a Structured High-Dimensional Model.**
- James M. Robins, Lingling Li, Rajarshi Mukherjee, Eric Tchetgen Tchetgen, and Aad van der Vaart, *The Annals of Statistics*, 45(5): 1951–1987, (Journal Link).
- 2018 **Optimal Adaptive Inference in Random Design Binary Regression.**
- Rajarshi Mukherjee and Subhabrata Sen, *Bernoulli*, 24(1): 699–739, (Journal Link).
- 2018 **Detection Thresholds for the β -Model on Sparse Graphs.**
- Rajarshi Mukherjee, Sumit Mukherjee and Subhabrata Sen, *The Annals of Statistics*, 46(3): 1288–1317, (Journal Link).
- 2018 **Global Testing against Sparse Alternatives under Ising Models.**
- Rajarshi Mukherjee,, Sumit Mukherjee and Ming Yuan, *The Annals of Statistics*, 46(5): 2062–2093, (Journal Link).
- 2019 **On Efficiency of the Plug-in Principle for Estimating Smooth Integrated Functionals of a Nonincreasing Density .**
- Rajarshi Mukherjee and Bodhisattva Sen, *Electronic Journal of Statistics*, (To Appear)
- 2020+ **On nearly assumption-free tests of nominal confidence interval coverage for causal parameters estimated by machine learning .**
- Lin Liu, Rajarshi Mukherjee, and James Robins, *Statistical Science*, (To Appear)
- 2020+ **On Estimation of L_r -Norms in Gaussian White Noise Models .**
- Yanjun Han, Jiantao Jiao, and Rajarshi Mukherjee, *Probability Theory and Related Fields*, (To Appear)

Preprints

- 2020 **On Minimax Exponents of Sparse Testing.**
- Rajarshi Mukherjee and Subhabrata Sen (Arxiv).
- 2019 **On Testing for Parameters in Ising Models.**
- with Rajarshi Mukherjee and Gourab Ray (Arxiv).
- 2019 **Testing Degree Corrections in Stochastic Block Models.**
- Rajarshi Mukherjee and Subhabrata Sen (Arxiv).
- 2019 **★ On Adaptive Estimation of Nonparametric Functionals.**
- Lin Liu, Rajarshi Mukherjee, James M. Robins and Eric Tchetgen Tchetgen, (Arxiv).
- 2017 **★ Semiparametric Efficient Empirical Higher Order Influence Function Estimators.**
- Lin Liu, Rajarshi Mukherjee, Whitney K. Newey and James M. Robins (Arxiv).
- 2015 **Lepski’s Method and Adaptive Estimation of Nonlinear Integral Functionals of Density.**
- Rajarshi Mukherjee, James M. Robins, and Eric Tchetgen Tchetgen, (Arxiv).

2015 **Hypothesis Testing Using Penalized Likelihoods for High-Dimensional Data.**

- Rajarshi Mukherjee, Xihong Lin, and Raymond Carroll, *Manuscript*.

In Preparation

- On the Effect of Dependence in Global Testing against Sparse Alternatives: Structured Sparsity, with Sumit Mukherjee and Ming Yuan.
- Optimal Detection of Number of Spikes in GOE, with Soumendu Sundar Mukherjee
- Property Testing with High Dimensional Discrete Distributions against Sparse Alternatives, with Bhaswar Bikram Bhattacharya

Teaching Experience

Harvard University

2018-2020 **BST 235**, *Advanced Regression and Statistical Learning*, (Course Instructor).

UC Berkeley

2018 **PH 240A/Stats 245A**, *Introduction to Modern Biostatistical Theory and Practice*, (Course Instructor).

Stanford University

2017 **Stats 204**, *Survey Sampling*, (Course Instructor).

2016 **Stats 314B**, *Topics in Minimax Inference of Nonparametric Functionals*, (Course Instructor).

2014-2016 **Stats 141/ Bio 141**, *Biostatistics*, (Course Instructor).

2015 **Stats 60/ Psych 10**, *Introduction to Statistical Methods, Precalculus*, (Course Instructor).

Harvard University

2011,2012 **Introductory Probability**, (Course Instructor).

2013 **Operational Mathematics**, (Course Instructor).

2011,2012 **Bio 251**, *Inference II*, (Teaching Assistant).

2013,2014 **Bio 250**, *Probability Theory and Applications II*, (Teaching Assistant).

Administrative Service

2020- **Assistant Director of Graduate Studies**, *Department of Biostatistics*.

2019- **PhD curriculum Committee**, *Department of Biostatistics*.

2018- **PhD Admissions Committee**, *Department of Biostatistics*.

Grants Awarded

2020-2021 **NSF EAGER**, *Causal Inference and Machine Learning Methods*, (PI).

Invited Talks

- 2020 **Biostatistics Seminar**, *Boston University*.
- 2019 **Statistics and Probability Seminar**, *University of Massachusetts, Amherst*.
- 2019 **EcoSta 2019**, *National Chung Hsing University, Taichung, Taiwan*.
- 2019 **Biostatistics Seminar**, *University of Michigan, Ann Arbor*.
- 2019 **Young Statistician's Meet**, *Indian Statistical Institute, Kolkata, India*.
- 2018 **Meetings in Mathematical Statistics**, *Frejus, France*.
- 2017 **Statistics Seminar**, *UC Berkeley*.
- 2018 **CISS 2018**, *Princeton University*.
- 2018 **Statistics Seminar**, *ENSAE-CREST, France*.
- 2017 **Statistics Seminar**, *Columbia University*.
- 2017 **Statistics Seminar**, *Academia Sinica, Taipei, Taiwan*.
- 2017 **Biostatistics and Epidemiology Seminar**, *National Taiwan University, Taipei, Taiwan*.
- 2017 **CM Statistics 2017**, *London, UK*.
- 2017 **Asilomar Conference on Signals, Systems, and Computers**, *Asilomar*.
- 2017 **Statistical Foundations Workshop 2017**, *Cambridge University, Cambridge, UK*.
- 2016 **Meeting in Mathematical Statistics 2016**, *Frejus, France*.
- 2016 **ICSA Conference 2016**, *Shanghai, China*.
- 2016 **IISA Conference 2016**, *Corvallis*.
- 2016 **IBC Conference 2016**, *Victoria, Canada*.
- 2016 **Big Data Seminar**, *Harvard University*.
- 2016 **IISA Conference 2015**, *Pune, India*.
- 2014 **Statistics Seminar**, *Stanford University*.

Awards and Honours

- 2014 **IMS Travel Award**.
- 2006-2009 **Award for Outstanding Performance in 4 Semesters at Indian Statistical Institute**.

Journal Reviewing

Annals of Statistics, Bernoulli, Journal of Royal Statistical Society C, Journal of American

Statistical Association, Electronic Journal of Statistics, Journal of Applied Statistics, Mathematical Reviews/MathSciNet.

———— Computer skills

Software Packages Matlab, R, Mathematica

Programming Languages C

———— References

Dr. Xihong Lin
Professor, Department of Biostatistics
Harvard University
Email: xlin@hsph.harvard.edu

Dr. James Robins
Professor, Department of Biostatistics
Harvard University
Email: robins@hsph.harvard.edu

Dr. Whitney Newey
Professor, Department of Economics
Massachusetts Institute of Technology
Email: wnewey@mit.edu

Dr. Eric Tchetgen Tchetgen
Professor, Department of Statistics
Wharton, University of Pennsylvania
Email: ett@wharton.upenn.edu