

# SHRABANTI CHOWDHURY

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## ♦ CONTACT INFORMATION

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## ♦ APPOINTMENTS

- ▶ *Icahn School of Medicine at Mount Sinai*, United States
  - ★ **Research Fellow** (April 2018 - Present) in the Department of Genetics and Genomic Sciences.
- ▶ *Wayne State University school of Medicine at Wayne State University*, United States
  - ★ **Postdoctoral Research Fellow** (August 2016 - March 2018) in the Department of Family Medicine and Public Health Sciences.

## ♦ ACADEMIC DETAILS

- ▶ *University of California, Riverside*, Riverside CA United States
  - ★ **Ph.D** in *Applied Statistics*, June 2016.
    - ✦ Concentration: *Design of Factorial Experiments*
    - ✦ Thesis title: “*Common Variance Fractional Factorial Designs for Model Comparisons*”
    - ✦ Thesis Advisor: Prof. Subir Ghosh
- ▶ *Indian Institute of Technology Kanpur*, Kanpur UP India
  - ★ **Master of Statistics**, *Rank 2*, May 2011.
- ▶ *St. Xavier’s College (Autonomous)*, Kolkata WB India
  - ★ **Bachelor of Statistics**, *Rank 2*, May 2009.

## ♦ AWARDS/ACHIEVEMENTS:

- ▶ Recipient of International Indian Statistical Association (**IISA**) Travel Award (2018).
- ▶ Recipient of Patient Centered Outcome Research Institute (**PCORI**) Trainee Scholarship Award (2016).
- ▶ Recipient of **D.V. Gokhale** Travel Grant (2015).
- ▶ Recipient of prestigious **Dean’s Distinguished Fellowship** Award, University of California, Riverside. (2011-2012).
- ▶ Recipient of **N. Balakrishnan** Award and **Academic excellence** Award, Indian Institute of Technology Kanpur, India (2010).
- ▶ Recipient of **Sangheeta Pradhan** Memorial Award, Indian Institute of Technology Kanpur, India (2010).

## ♦ RESEARCH INTEREST AND EXPERIENCE

- ▶ Network analysis using probabilistic graphical models
- ▶ Multiple imputation
- ▶ High Dimensional Variable Selection
- ▶ Design of Factorial Experiments
- ▶ Adaptive design and Sequential Multiple Assignment Randomized Trial (SMART)
- ▶ Bayesian Non-parametric Modeling

## ♦ PUBLICATIONS AND WORK IN PROGRESS

- ★ **Chowdhury, Shrabanti**, Tiwari, Ram C. and Ghosh, Samiran. *Bayesian Approach for Assessing Non-inferiority in Three-arm Trials for Risk Ratio and Odds Ratio* (**Statistics in Biopharmaceutical Research(2019)**).
- ★ **Chowdhury, Shrabanti**, Tiwari, Ram C. and Ghosh, Samiran. *Approaches for testing non-inferiority in two-arm trials for Risk Ratio and Odds Ratio* (**Journal of Biopharmaceutical Statistics(2019)**).
- ★ Naar, Sylvie et al.. *Improving the Youth HIV Prevention and Care Cascades: Innovative Designs in the Adolescent Trials Network for HIV/AIDS Interventions* (**AIDS Patient care and STDs (2019)**).
- ★ **Chowdhury, Shrabanti**, Chatterjee, Saptarshi, Mallick, Himel, Banerjee, Prithish, Garai, Broti. *Group Regularization for Zero-inflated Count Regression Models with an Application to Insurance Ratemaking* (**Journal of Applied Statistics(2018)**).
- ★ **Chowdhury, Shrabanti**, Tiwari, Ram C. and Ghosh, Samiran. *Non-inferiority Testing for Risk Ratio, Odds Ratio and Number Needed to Treat in Three-arm Trial* (**Computational Statistics and data Analysis(2018)**).
- ★ Chatterjee, Saptarshi, **Chowdhury, Shrabanti**, Mallick, Himel, Banerjee, Prithish, Garai, Broti. *Group Regularization for Zero-inflated Count Regression Models with an Application to Healthcare Demand in Germany* (**Statistics in Medicine(2018)**).
- ★ Banerjee, Prithish, Garai, Broti, Mallick, Himel, **Chowdhury, Shrabanti**, Chatterjee, Saptarshi. *A Note on the Adaptive LASSO for Zero-Inflated Poisson Regression* (**Journal of Probability and Statistics(2018)**).
- ★ Ghosh, Subir and **Chowdhury, Shrabanti**. *CV, ECV, and Robust CV designs for replications under a class of linear models for factorial experiments* (**Journal of Statistical Planning and Inference(2017)**).
- ★ Clark, David et al. *Integrated Proteogenomic Characterization of Clear Cell Renal Cell Carcinoma* (**Under revision in Cell**)

- ★ **Chowdhury, Shrabanti**, Lukemire, Joshua and Mandal, Abhyuday. *A-ComVar: A Flexible Extension of Common Variance Designs* (**Under review in Journal of Statistical Theory and Practice**)
- ★ Chatterjee, Saptarshi, **Chowdhury, Shrabanti** and Basu, Sanjib. *Tests for Association Using Cut Point Based Categorization of Prognostic Variables* (**Under review in JRSS-C**).
- ★ Ma, Weiping, Kim, Sunkyu, **Chowdhury, Shrabanti** and others. *Novel Imputation Strategy of Proteomics Data: DreamAI* (**To be submitted in Nature Methods**).
- ★ Tignor, Nicole, Ma, Weiping, **Chowdhury, Shrabanti** and others. *Objective Measurement of Activity and Sleep in an Observational study of a chronic disease using HealthKit and ResearchKit: The Asthma Mobile Health Study* (**Under review in Nature Biotechnology**).
- ★ Chatterjee, Suvo, **Chowdhury, Shrabanti** and Ryu, Duchwan. *Bayesian Functional Data Analysis over Dependent Regions and Its Application for Identification of Differentially Methylated Regions* (**Near Submission**).
- ★ Jacob et al. including **Chowdhury, Shrabanti**. *Incorporating an expandable multiplexed MRM assay panel focused on normalization of breast cancer microheterogeneity improves the correlation between immuno-MRM-based protein quantification in cancer tissues and prognostic marker classification based on IHC* (**Near Submission**).

#### ♦ **R PACKAGES DEVELOPED**

- ▶ **DreamAI**: Novel Imputation Strategy for Proteomics Data (available in Github)
- ▶ **Googole**: Group Regularization of Zero Inflated Count Regression Models (available in Github)

#### ♦ **SERVICES:**

- ▶ **Current Editorial Board Membership**: Biostatistics and Epidemiology International Journal
- ▶ **Review Responsibility**: Refereed research papers for journals: Plos One, Pharmaceutical Statistics, Statistics & Probability Letters, Computational Statistics & Data Analysis, Journal of Probability and Statistics (Verified reviewer at Publons).
- ▶ **Other Synergistic Services**:
  - ★ **Organizer** of a topic contributed session in Mental Health Section at JSM 2017, Baltimore, MD, USA.
  - ★ **Chair** of an invited session at International Indian Statistical Association 2019, Mumbai, India.
  - ★ **Chair** of an invited session at International Indian Statistical Association 2018, Gainesville, Florida, USA
  - ★ **Chair** of a topic contributed session in Biometrics Section at JSM 2017, Baltimore, MD, USA.

## ♦ TEACHING EXPERIENCE

- ▶ **Instructor** (at the *University of California, Riverside* during Summer 2015)
  - ★ **Course:** *Statistics for Business* (40 students), which covers
    - ✱ descriptive statistics
    - ✱ probability, discrete and continuous distributions, Bayes' theorem
    - ✱ random variables, estimation and confidence intervals, hypothesis testing
    - ✱ analysis of variance and simple linear regression.
  - ★ **Responsibilities:** Planning and designing the course, Delivering lectures, Holding office hours, Assigning homeworks, and Writing quizzes and exams.
- ▶ **Teaching Assistant** (at the *Dept. of Statistics of University of California, Riverside*)
  - ★ **Courses:** “*Sample Surveys*”, “*Statistics for Business*”, “*Introduction to Statistics*”
  - ★ **Responsibilities:** Class discussion, Laboratory instruction, Holding office hours, Grading, and Proctoring.

## ♦ PROGRAMMING SKILLS: Proficiency in R, MATLAB, SAS, WinBUG, JAGS, C.

## ♦ WORKSHOP ATTENDED (COMPETETIVELY SELECTED)

- ▶ **Industrial Mathematics and Statistics Workshop** (Summer 2014) at **SAMSI** Raleigh NC United States
  - ★ Project Title: *Analysis of Self-Reported Health Outcomes Data from Web Based Media Sources.*
  - ★ Responsibilities include:
    - ✱ Using text mining tools to gather, analyze and validate the health related text data,
    - ✱ considering methods to generate features including interactions among post authors, trending topics and sentiment analysis in web-forum posts.
    - ✱ analyzing and clustering posts related to self-reported health outcomes.

## ♦ SELECTED TALKS

### ► Invited Talks

- ★ International Indian Statistical Association at Indian Institute of Technology Mumbai, Mumbai, India, December 2019
- ★ Frontiers in Single-cell Technology, Applications and Data Analysis, Banff International Research Station, Canada, February 2019
- ★ International Indian Statistical Association at University of Florida, Florida, USA, May 2018
- ★ International Conference on Advances in Interdisciplinary Statistics and Combinatorics at Greensboro, North Carolina, USA, October 2018 (Session: Advances in Biostatistics and Epidemiology)
- ★ International Conference on Advances in Interdisciplinary Statistics and Combinatorics at Greensboro, North Carolina, USA, October 2018 (Session: Design of Experiments: Recent Advances)
- ★ Statistics Seminar, Dept. of Statistics, University of California, Riverside, October 2015

### ► Other Contributed Talks

- ★ 2018 Joint Statistical Meeting Conference at Vancouver, British Columbia, Canada, July 2018.
- ★ 2018 Eastern Northern American Region Spring Meeting at Atlanta, Georgia, USA, March 2018.
- 2017 Wayne State University Researchers of Biobehavioral Health in Urban Settings Today (RoBUST) Symposium, September 2017 (competetively selected).
- ★ 2017 Joint Statistical Meeting Conference at Baltimore, Maryland, USA, July 2017.
- ★ 2017 Eastern Northern American Region Spring Meeting at Washington, DC, USA, March 2017.
- ★ 2015 Joint Statistical Meeting Conference at Washington Seattle, USA, August 2015.

## ♦ SELECTED POSTERS

- 2019 NCI-CPTAC Annual Meeting at NIH, Washington, DC, USA, April 2019
- 2018 NCI-CPTAC Annual Meeting at NIH, Washington, DC, October 2018
- 2017 Michigan Regional Postdoctoral Symposium, Detroit, MI, September 2017.
- 2016 Patient Centered Outcome Research Institute (PCORI) Annual Meeting Workshop, Maryland, November 2016.