

Dr. Rahul Bhattacharya

Currently: Professor & HOD, Department of Statistics, Calcutta University,

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Awards

J. B. Haldane Memorial Prize, 2007-2008 from Indian Statistical Institute for outstanding research work done on *adaptive allocation of treatments*.

Research & Teaching Interests

Statistical Inference- Parametric & Nonparametric; Distribution Theory; Survey Sampling; Biostatistics- Clinical Trials; Directional Data Analysis, Statistical Computing with C and R.

Professional Associations

Editorial Board member of the Calcutta Statistical Association Bulletin (SAGE Publication).

Recent Academic Activities

1. Acted as a resource person in the One Week Online Workshop on Statistical Inference held during 24-28 August, 2020, organized by the Department of Statistics, Dibrugarh University, Dibrugarh, Assam, India.
2. Invited Speaker in the Mathematics Training for Undergraduate Statistics Students (MTUSS) held in **Amity University, Kolkata, 19th January- 2nd February, 2020.**
3. Invited Speaker in the **Young Statisticians' Meet: Data Science in Action, 2020 Organized by Indian Statistical Institute, Kolkata during January 03-04, 2020.**
4. Invited speaker in the ConSPIC 2019 organized by Indian Association for Statistics in Clinical Trials (IASCT), November 13-15, 2019
5. Session Chair (Topic: **Computer Experiments & Methods**) in the Tenth International Triennial Calcutta Symposium on Probability & Statistics, December 27-30, 2018

6. Delivered a lecture “Statistical Inference-A New look with R” in the MOOC (Annual Refresher Program in Teaching) on Computational Mathematics and Statistics with Data Integration and Analysis (CC: Prof. Asis Kr. Chattyopadhyay, Department of Statistics, Calcutta University)
7. Invited speaker in the Novartis Hyderabad Conference on Statistics for the Pharmaceutical Industry, Novartis Healthcare Pvt. Ltd., Hyderabad, 2018
8. Invited speaker in the Short Term Course/ Workshop on MOOC organized by HRDC- University of Calcutta, for college and university professors, March 19, 2019.
9. Resource person for the workshop "Orientation Training on Data Visualization - DATAVIS 2019", Indian Statistical Institute, Kolkata, March 25-27, 2019.
10. Resource person for the One-week Workshop on “Application of Qualitative & Quantitative Techniques in Sustainable Urban Planning”, organised by Centre For Human Settlement Planning, Department of Architecture , Jadavpur University, September 20-26, 2019.

Other Academic Activities

Worked as a Course Coordinator (CC) in the MOOC “Distribution Free Methods”, offered under SWAYAM Platform for Post Graduate Students from Ministry of Human Resource Development, Govt. of India.

Book Chapters

1. Rahul Bhattacharya, Atanu Biswas: Phase III Clinical Trials with Response-Adaptive Allocation. Encyclopedia of Biopharmaceutical Statistics, Volume III, Fourth Edition, 1727-1734. Edited by Shein-Chung Chow, CRC Press,
2. Rahul Bhattacharya, Atanu Biswas: *Treatment Adaptive Allocations in Randomized Clinical Trials: An Overview*. Handbook of Adaptive Designs in Pharmaceutical and Clinical Development, Edited by Annpey Pong, Shein-Chung Chow, 01/2010: chapter 17: pages 17-1-17-19; CRC Press., ISBN: 1439810176, 9781439810170
3. Atanu Biswas, Uttam Bandyopadhyay, Rahul Bhattacharya: *Response-Adaptive Designs in Phase III Clinical Trials*. Statistical Advances in the Biomedical Sciences: Clinical Trials, Epidemiology, Survival Analysis, and Bioinformatics, 03/2007: pages 33 - 53, ISBN: 9780470181218, DOI:10.1002/9780470181218.ch3
4. Atanu Biswas, Rahul Bhattacharya, Taranga Mukherjee: *An optimal Response Adaptive Design for Multi Treatment Clinical Trials With Circular Responses*. To Appear in Applied Advanced Analytics, Edited by: Arnab Kumar Laha, 2021, Springer Nature.

Journal Publications

1. Rahul Bhattacharya and Soumyadeep Das: An Optimal Multi-armed Response Adaptive Design for Survival Outcome with Independent Censoring. To Appear in Biometrical Journal, 2021.
2. Rahul Bhattacharya, Uttam Bandyopadhyay and Abhik Sinha, Comparing Two Treatments in Two Period Repeated Measurement Design. Calcutta Statistical Association Bulletin, 2020, 72(1), 58-66.
3. Rahul Bhattacharya, Sudhansu Sekhar Maiti, Mriganka Mouli Choudhury and Dipangsu Mukherjee: Minimum Variance Unbiased Estimation of Reliability Function for a Class of Generalizations of Lindley Distribution. Calcutta Statistical Association Bulletin, 2020, 72(1), 43-57.
4. Atanu Biswas, Rahul Bhattacharya, Soumyadeep Das: *A response adaptive design for ordinal categorical responses weighing the cumulative odds ratios*. Biostatistics & Epidemiology, 2019, 3:1, 109-125.
5. Rahul Bhattacharya, Sudhansu Sekhar Maiti and Mriganka Mouli Choudhury: On estimating reliability function for the family of power series distribution. Communication in Statistics- Theory and Methods, 2019, <https://doi.org/10.1080/03610926.2019.1676446>
6. Uttam Bandyopadhyay, Rahul Bhattacharya: *A Randomized Two Stage Adaptively Censored Design With Application to Testing*. Revista Colombiana de Estadística, 2019, 42(2):209-224.
7. Atanu Biswas, Rahul Bhattacharya, Soumyadeep Das: *A multi-treatment response adaptive design for ordinal categorical responses*. Statistical Methods in Medical Research, 04/2019, DOI: 10.1177/0962280219846152
8. Atanu Biswas, Rahul Bhattacharya, Taranga Mukherjee: *Multi-arm response-adaptive designs for circular responses*. Journal of the Korean Statistical Society, 04/2019; DOI:10.1016/j.jkss.2019.03.005
9. Madhumita Shome, Rahul Bhattacharya: *Adaptive Allocation Designs for Normal and Binary Treatment Responses*. Austrian Journal of Statistics 01/2019, 48(2):43-62.
10. Rahul Bhattacharya, Madhumita Shome: *A two stage adaptive allocation design for survival outcome with informative censoring*. Journal of statistical theory and practice 05/2018; 12(4)., DOI:10.1080/15598608.2018.1479992
11. Uttam Bandyopadhyay, Rahul Bhattacharya: *An Optimal Three Treatment Allocation for Binary Treatment Responses*. Statistics in Biopharmaceutical Research 04/2018;, DOI:10.1080/19466315.2018.1460277

12. Rahul Bhattacharya, Madhumita Shome: *A Multi-Treatment Two Stage Adaptive Allocation for Survival Outcomes*. Communication in Statistics- Theory and Methods 03/2018;, DOI:10.1080/03610926.2018.1440599
13. Atanu Biswas, Rahul Bhattacharya, Soumyadeep Das: *A response adaptive design for ordinal categorical responses*. Journal of Biopharmaceutical Statistics 03/2018;, DOI:10.1080/10543406.2018.1439053
14. Rahul Bhattacharya, Atanu Biswas: *A class of Covariate-Adjusted Response-Adaptive Allocation Designs for Multi-treatment Binary Response Trials*. Journal of Biopharmaceutical Statistics 02/2018; 28(5)., DOI:10.1080/10543406.2018.1485683
15. Rahul Bhattacharya, Uttam Bandyopadhyay: *Testing Equality of Treatment Effects in a Two Stage Censored Allocation Design*. Calcutta Statistical Association Bulletin, 06/2017; 69(2):132, DOI:10.1177/0008068317722279
16. Atanu Biswas, Rahul Bhattacharya, Taranga Mukherjee: *An Adaptive Allocation Design for Circular Treatment Outcome*. Journal of statistical theory and practice 03/2017; 11(4). DOI:10.1080/15598608.2017.1307147
17. Rahul Bhattacharya, Soumyadeep Das: *Simultaneous Estimation of normal means under simple order*. Journal of Turkish Statistical Association 12/2017, 10(3), 72-83.
18. Rahul Bhattacharya, Asis Kr. Chatterjee, Tuli De: *Classification under non-Gaussian set up: An Astrostatistical problem*. Journal of Applied Probability and Statistics 11/2016; 11(2):29-47.
19. Atanu Biswas, Rahul Bhattacharya: *A covariate adjusted response adaptive allocation for a general class of continuous responses*. Journal of statistical theory and practice 09/2016; 10(4)., DOI:10.1080/15598608.2016.1232207
20. Rahul Bhattacharya: *Characterizing Non-nesting for the Neyman-Pearson Family of Tests*. 01/2016; 15(4):400., DOI:10.2991/jsta.2016.15.4.7
21. Uttam Bandyopadhyay, Rahul Bhattacharya: *An invariant allocation function for multi-treatment clinical trials*. Statistics and its interface 01/2016; 9(1):1-10., DOI:10.4310/SII.2016.v9.n1.a1
22. Rahul Bhattacharya, Uttam Bandyopadhyay: *On a Class of Optimal Type Covariate Adjusted Response Adaptive Allocations for Normal Treatment Responses*. DOI:10.17713/ajs.v44i4.69
23. Rahul Bhattacharya, Madhumita Shome: *A randomized two stage allocation for continuous response clinical trials*. Statistical Methods and Applications 05/2014; 24(3)., DOI:10.1007/s10260-014-0267-6
24. Atanu Biswas, Rahul Bhattacharya, Eunsik Park: *On a class of optimal covariate-adjusted response adaptive designs for survival outcomes*. Statistical Methods in Medical Research 03/2014; 25(6)., DOI:10.1177/0962280214524177
25. Uttam Bandyopadhyay, Rahul Bhattacharya: *A covariate-adjusted response-adaptive allocation in clinical trials for a general class of responses*. Statistics in Medicine 12/2013; 32(29)., DOI:10.1002/sim.5900
26. Atanu Biswas, Rahul Bhattacharya: *Near efficient target allocations in response-adaptive randomization*. Statistical Methods in Medical Research 12/2012; 25(2)., DOI:10.1177/0962280212468378
27. Atanu Biswas, Rahul Bhattacharya: *Response-adaptive designs for continuous treatment responses in phase III clinical trials: A review*. Statistical Methods in Medical Research 03/2012; 141(7)., DOI:10.1177/0962280212441424

28. Uttam Bandyopadhyay, Rahul Bhattacharya: *An urn based covariate adjusted response adaptive allocation design*. *Statistical Methods in Medical Research* 01/2012; 21(2):135-48., DOI:10.1177/0962280212437479
29. Atanu Biswas, Rahul Bhattacharya: *Optimal response-adaptive allocation designs in phase III clinical trials: Incorporating ethics in optimality*. *Statistics & Probability Letters* 08/2011; 81(8):1155-1160., DOI:10.1016/j.spl.2011.03.011
30. Atanu Biswas, Saumen Mandal, Rahul Bhattacharya: *Multi-treatment optimal response-adaptive designs for phase III clinical trials*. *Journal of the Korean Statistical Society* 03/2011; 40(1-40):33-44., DOI:10.1016/j.jkss.2010.04.004
31. Rahul Bhattacharya, Uttam Bandyopadhyay, Atanu Biswas: *A new response-adaptive design for continuous treatment responses for phase III clinical trial*. *Journal of Statistical Planning and Inference* 01/2011; 141:2256-2265.
32. Atanu Biswas, Eunsik Park, Rahul Bhattacharya: *Covariate-adjusted response-adaptive designs for longitudinal treatment responses: PEMF trial revisited*. *Statistical Methods in Medical Research* 10/2010; 21(4):379-92., DOI:10.1177/0962280210385866
33. Uttam Bandyopadhyay, Atanu Biswas, Rahul Bhattacharya: *A covariate-adjusted adaptive design for two-stage clinical trials with survival data*. *Statistica Neerlandica* 05/2010; 64(2):202-226., DOI:10.1111/j.1467-9574.2010.00451.x
34. Atanu Biswas, Rahul Bhattacharya: *An optimal response-adaptive design with dual constraints*. *Statistics & Probability Letters* 02/2010; 80(3-4):177-185., DOI:10.1016/j.spl.2009.10.004
35. Atanu Biswas, Rahul Bhattacharya: *Reduction of Variability of Response-Adaptive Designs for Continuous Treatment Responses in Phase 3 Clinical Trials*. *Therapeutic Innovation and Regulatory Science* 01/2010; 44(1):9-19., DOI:10.1177/009286151004400102
36. Uttam Bandyopadhyay, Atanu Biswas, Rahul Bhattacharya: *A Bayesian adaptive design for two-stage clinical trials with survival data*. *Lifetime Data Analysis* 11/2009; 15(4):468-92., DOI:10.1007/s10985-009-9134-4
37. Uttam Bandyopadhyay, Atanu Biswas, Rahul Bhattacharya: *Kernel-Based Response-Adaptive Design for Continuous Responses*. *Communication in Statistics- Theory and Methods* 10/2009; 38(16-17-16-17):2691-2705., DOI:10.1080/03610910902936216
38. Uttam Bandyopadhyay, Rahul Bhattacharya: *Response adaptive procedures with dual optimality*. *Statistica Neerlandica* 08/2009; 63(3):353-367., DOI:10.1111/j.1467-9574.2009.00428.x
39. Uttam Bandyopadhyay, Atanu Biswas, Rahul Bhattacharya: *Drop-the-loser design in the presence of covariates*. *Metrika* 02/2009; 69(1):1-15., DOI:10.1007/s00184-008-0170-y
40. Atanu Biswas, Rahul Bhattacharya: *Optimal Response-Adaptive Designs for Normal Responses*. *Biometrical Journal* 02/2009; 51(1):193-202., DOI:10.1002/bimj.200810500
41. Rahul Bhattacharya: *Urn-Based Response Adaptive Procedures and Optimality*. *Therapeutic Innovation and Regulatory Science* 01/2008; 42(5):441-448., DOI:10.1177/009286150804200504
42. Uttam Bandyopadhyay, Rahul Bhattacharya: *On an ethical cum optimal adaptive allocation design*. *Statistics: A Journal of Theoretical and Applied Statistics* 12/2007; 41(6-6):471-483., DOI:10.1080/02331880701529589
43. Uttam Bandyopadhyay, Atanu Biswas, Rahul Bhattacharya: *A covariate adjusted two-stage allocation design for binary responses in randomized clinical trials*. *Statistics in Medicine* 10/2007; 26(24):4386-99., DOI:10.1002/sim.2869

44. Atanu Biswas, Rahul Bhattachary, Lanju Zhang: *Optimal Response-Adaptive Designs for Continuous Responses in Phase III Trials*. Biometrical Journal 06/2007; 49(6):928-40., DOI:10.1002/bimj.200610358
45. Atanu Biswas, Wen-Tao Huang, Rahul Bhattacharya: *An Adaptive Design for Categorical Responses in Phase III Clinical Trials*. International Journal of Information and Management Sciences 03/2007; 18(1).
46. Rahul Bhattacharya, Uttam Bandyopadhyay: *An optimal sequential procedure in ethical allocation*. Journal of Statistical Planning and Inference 02/2006; 136(2):430-446., DOI:10.1016/j.jspi.2004.07.006
47. Uttam Bandyopadhyay, Rahul Bhattacharya: *Adaptive Allocation and Failure Saving in Randomised Clinical Trials*. Journal of Biopharmaceutical Statistics 02/2006; 16(6):817-29., DOI:10.1080/10543400600762947
48. Uttam Bandyopadhyay, Rahul Bhattacharya: *Estimation in a Two-Stage Procedure for Failure Censored Model*. Calcutta Statistical Association Bulletin (2001); 51(203)., DOI:10.1177/0008068320010302