

**NAME**

Rui Wang

**PHOTO****[PRESENT POSITIONS]**

Director, the Biostatistics Division

Harvard Pilgrim Health Care Institute

Associate Professor of Population Medicine

Harvard Medical School

Associate Professor in the Department of Biostatistics

Harvard T. H. Chan School of Public Health

**[DEGREES]**

PhD in Biostatistics, Harvard University

MS in Mathematics and Mathematical Statistics, Purdue University

BS in Mathematics, Peking University

**[FIELDS OF MAJOR STATISTICAL ACTIVITIES]**

Design, monitoring, and analysis of randomized clinical trials, development and application of statistical methods for complex data in biomedical applications.

## [SELECTED PUBLICATIONS]

1. **Wang R**, Lagakos SW, Ware JH, Hunter DJ, Drazen JM. Statistics in medicine - reporting of subgroup analyses in clinical trials. *New England Journal of Medicine* 2007; 357:2189-94.
2. **Wang R**, Lagakos SW. Inference after variable selection using restricted permutation methods. *Canadian Journal of Statistics*, 2009; 37(4), 625-644.
3. **Wang R**, Tian L, Cai T, Wei LJ. Nonparametric inference procedure for percentiles of the random effects distribution in meta analysis. *The Annals of Applied Statistics*, 2010; 4(1): 520-532.
4. **Wang R**, Lagakos SW, Gray BJ. Testing and interval estimation of 2-sample survival comparisons with small sizes and unequal censoring. *Biostatistics*, 2010; 11(4): 676-692.
5. **Wang R**, Lagakos SW. Augmented cross-sectional prevalence testing for estimating HIV incidence. *Biometrics*, 2010; 66(3): 864-874.
6. Finkelstein DM, **Wang R**, Ficociello LH, Schoenfeld DA. A score test for association of a longitudinal marker and an event with missing data. *Biometrics*, 2010; 66(3): 726-732.
7. Tian L, **Wang R**, Cai T, Wei LJ. The highest confidence density region and its applications to joint inferences about constrained parameters. *Biometrics*, 2011, 67(2): 604-610.
8. Claggett B, Lagakos SW, **Wang R**. Augmented cross-sectional studies with abbreviated follow-up for estimating HIV incidence. *Biometrics* 2012, 68(1): 62-74.
9. **Wang R**, Ware JH. Detecting moderator effects using subgroup analyses. *Prevention Science* 2013, 14(2): 111-120.
10. **Wang R**, Goyal R, Lei Q, Essex M, De Gruttola V. Sample size considerations in the design of cluster randomized trials of combination HIV prevention. *Clinical Trials*, 2014; 11:309-318.
11. **Wang R**, Schoenfeld DA, Hoepfner B, Evins AE. Detecting treatment-covariate interactions using permutation methods. *Statistics in Medicine*, 2015; 34(12): 2035-2047.
12. Prague M, **Wang R**, Alisa Stephens, Tchetgen Tchetgen E, DeGruttola V. Accounting for interactions and complex inter-subject dependency in estimating treatment effect in cluster randomized trials with missing outcomes. *Biometrics* 2016; 72(4): 1066-1077.
13. **Wang R**, DeGruttola V. The use of permutation tests for the analysis of parallel and stepped-wedge cluster-randomized trials. *Statistics in Medicine* 2017, 36(18): 2831-2843.
14. Xu Y, Laeyendecker O, **Wang R**. Cross-sectional HIV incidence estimation accounting for heterogeneity across communities. *Biometrics* 2019, 75(3):1017-1028.
15. Harrison L, Chen T, **Wang R**. Power calculation for cross-sectional stepped-wedge cluster randomized trials with variable cluster sizes. *Biometrics* 2019 Oct 18. Doi:10.1111/biom.13164.

16. Chen T, Tchetgen Tchetgen E, **Wang R**. A stochastic second-order generalized estimating equations approach for estimating association parameters. *Journal of Computational and Graphical Statistics* 2020, DOI: 10.1080/10618600.2019.1710156.
17. Rabideau D, **Wang R**. Randomized-based confidence intervals for cluster randomized trials. *Biostatistics* 2020, 2020 Feb 29. pii: kxaa007. doi: 10.1093/biostatistics/kxaa007.
18. **Wang R**, Bakker JP, Chervin R, Garetz S, Fauziya H, Ishman SL, Mitchell R, Morrical M, Naqvi K, Rueschman M, Radcliffe J, Riggan EI, Rosen C, Ross KR, Tapia IE, Taylor HG, Zopf DA, Redline S. Pediatric Adenotonsillectomy Trial for Snoring (PATS): Protocol for a Randomized Control Trial to Evaluate the Effect of Adenotonsillectomy in Treating Mild Obstructive Sleep-Disordered Breathing. *BMJ Open* 2020, Mar 15;10(3):e033889. doi: 10.1136/bmjopen-2019-033889.
19. **Wang R**, Bing A, Wang C, Bosch R, De Gruttola V. Flexible nonlinear mixed effects model for viral rebound after antiretroviral treatment interruption. *Statistics in Medicine*, 2020 Apr 15. doi: 10.1002/sim.8529.
20. Song Y, Sun F, Redline S, **Wang R**. Random-effects Meta-analysis of combined outcomes based on reconstructions of individual patient data. *Research Synthesis Methods* 2020, Apr 9. doi: 10.1002/jrsm.1406.

## [ICSA ACTIVITIES]

Presented at 8<sup>th</sup> ICSA International Conference: Frontiers of Interdisciplinary and Methodological Statistical Research in Guangzhou, China, the 2012 ICSA Applied Statistics Symposium in Boston, MA, the 10<sup>th</sup> ICSA International Conference: Global Growth of Modern Statistics in the 21<sup>st</sup> Century in Shanghai, China. Scheduled to give a talk at the 2020 ICSA Applied Statistics Symposium in May and the 2020 ICSA China Conference in Wuhan in June (both are cancelled due to COVID-19 pandemic).

## [PROFESSIONAL COMMITTEES]

The American Statistical Association (ASA)

2005-2007	Treasurer, the Boston Chapter of the ASA
2010	Session Chair, the Joint Statistical Meeting
	Chair for a topic-contributed session entitled “Innovations in Substance Use Data Analysis: Marginal Structural Models, Multilevel Models and Latent Class Analysis”
2020	Scientific Program Committee
	LiDS Conference 2021

The International Biometrics Society (IBS)

2009	Session Chair, for an invited session entitled “Clinical Trials – Nonparametric Methods – Sample Survey Methodology – Missing Data Methods”, at the Biennial Meeting of the Eastern Mediterranean of the IBS
2010-2012	Appointed Member, Regional Advisory Board, the Eastern North American Region of the IBS
2012-2013	Member, Poster Award Committee, the Eastern North American Region of the IBS

**[HONORS AND AWARDS]**

2005	Robert B. Reed Prize for Excellence in Biostatistical Science	Harvard School of Public Health
2006-	Mu Sigma Rho (Honorary Statistical Society)	American Statistical Association
2007	Thomas Chalmers Student Scholarship	The Society for Clinical Trials
2007	Outstanding Teaching Assistant Award	Harvard School of Public Health
2007	Certificate of Distinction in Teaching	Harvard School of Public Health
2008	Student Paper Award	ASA Biopharmaceutical Section
2008-2009	Science Program for Excellence in Science	AAAS
2009	Student Poster Presentation Travel Award	Drug Information Association
2009	Student Paper Award	ASA Health Policy & Statistics Section
2017	Robert H. Ebert Career Development Award	Harvard Medical School

**[STATEMENT]**

I am an Associate Professor of Population Medicine and Director of the Division of Biostatistics in the Department of Population Medicine at Harvard Medical School and the Harvard Pilgrim Health Care Institute. I am also an Associate Professor in the Department of Biostatistics at Harvard T.H. Chan School of Public Health.

My current research interests include the design, monitoring, and analysis of parallel and stepped-wedge cluster randomized trials, where a group of subjects, as opposed to individuals, are randomized to each of the treatment arms in the trial. The particular questions I am addressing include the investigation of how the complex correlation structure within clusters affects the sample size and power of the trial, and how to analyze data from such trials efficiently, taking into account the correlation structure and the issue of missing data. I have also been developing improved statistical techniques for a cross-sectional approach that, when combined with modern HIV screening methods, can substantially reduce the cost and increase the accuracy of HIV incidence estimation. My research interests also include longitudinal modeling of non-linear trajectories and model selection, as well as addressing missing data issues in distributed data networks.

I have been a member of the American Statistical Association since 1999. I served as the treasurer of the Boston Chapter of the ASA from 2005-2007. During 2010-2012, I served as a member of the Regional Advisory Board for the Eastern American Region (ENAR) of the International Biometrics Society. From 2012-2013, I also served as a member of the poster award committee of the ENAR meetings. I chaired sessions and presented at various statistical conferences, including the 8<sup>th</sup> and the 10<sup>th</sup> ICSA International Conference, and the 2012 ICSA Applied Statistics Symposium. I am scheduled to present at the 2020 ICSA Applied Statistics Symposium in May and the 2020 ICSA China Conference in Wuhan in June (both are cancelled due to COVID-19 pandemic). I am also serving as a member of the Scientific Program Committee for the 2021 Lifetime Data Science (LiDS) Conference. I have extensive manuscript review experience with multiple statistical, epidemiology, and medical journals. I have also reviewed grants for the National Science Foundation and National Institutes of Health. I have served as an Associate Editor for the *Annals of Applied Statistics* since 2012 and joined the editorial board of *Statistical Communications in Infectious Diseases* in 2015.

I look forward to continuing contributing to our professional societies, and to the ICSA. I believe my experience and expertise have prepared me well for this role. I look forward to working with you all to accomplish the goals of our association to promote the theory and applications of statistical disciplines through scholarly activities, and to promote better understanding by and

communication with the general public, and to foster collaborations among educational, research, industrial, and governmental personnel.