Shanshan Li

Personal Information

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Education

Ph.D., Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2008-2013
Advisors: Dr. Mei-Cheng Wang and Dr. Brian Caffo

B.S., Applied Mathematics, Fudan University, China, 2004-2008

Honors and Awards

2016	ASA Biometrics Travel Award
2015	IUPUI EMPOWER Grants Award
2015	Simons Foundation Collaboration Grants Award
2013	Margaret Merrell Award for Outstanding Research by a Biostatistics PhD Student
2010-2013	Johns Hopkins Sommer Scholar
2011	June B. Culley Award for Outstanding Achievement on the Schoolwide Exam Paper
2009	Glaxo SmithKline Award for Outstanding Performance on the Comprehensive Exam

Professional Experience

2013-	Assistant Professor Department of Biostatistics, Indiana University Fairbanks School of Public Health
2009-2013	Research Assistant Johns Hopkins University School of Medicine
2011 Oct	Visiting Scholar Department of Biostatistics and Bioinformatics, Emory University
2011 Jun-Aug	Summer Intern Biostatistics Research Branch, National Institute of Allergy and Infectious Disease, National Institute of Health

Publications

1. **Li, S.**, Sun, Y., Huang, C. Y., Follmann, D., and Krause, R. Recurrent Event Data Analysis with Intermittently Observed Time-Varying Covariates. Accepted by *Statistics in Medicine*.
   ***An earlier version won the ASA Biometrics Travel Award**

2. **Li, S.**, Chen, S., Yue, C., and Caffo, B. A Parcellation Based Nonparametric Algorithm for Independent Component Analysis with Application to fMRI Data. Accepted by *Frontiers in Neuroscience*.

3. Tu W, Chu C, **Li, S.**, Liangpunsakul S. (2016) Development and validation of a composite score for excessive alcohol use screening. Accepted by *Journal of Investigative Medicine*.

4. **Li, S.** (2015). Joint Modeling of Recurrent Event Processes and Intermittently Observed Time-Varying Binary Covariate Processes. *Lifetime Data Analysis*, 22(1), 145-160.

5. **Li, S.** and Ning, Y. (2015). Estimation of Covariate-Specific Time-Dependent ROC Curves in the Presence of Missing Biomarkers. *Biometrics*, 71 (3), 666-676.

6. Tu, W. and **Li, S.** (2015). Resampling Methods. Accepted by *Wiley Statistics Reference Online*.

7. Rock, C., Thom, K. A., Harris, A. D., **Li, S.**, Morgan, D., Milstone, A. L., Caffo, B., Joshi M, and Leekha, S. (2015). A Multicenter Longitudinal Study of Hospital-Onset Bacteremia: Time for a New Quality Outcome Measure?. *Infection Control & Hospital Epidemiology*, 1-6.

8. Albert, M., Soldan, A., Gottesman, R., McKhann, G., Sacktor, N., Farrington, L., Grega, M., Turner, RS., Lu, Y., **Li, S.**, Wang, M-C., Selnes, O. and the BIOCARD Research Team. (2014). Cognitive changes preceding clinical symptom onset of mild cognitive impairment and relationship to ApoE genotype. *Current Alzheimer Research*, 11(8), 773-784.

9. Eloyan, A., **Li, S.**, Muschelli, J., Pekar, J., Mostofsky, S., Crainiceanu, C., and Caffo, B. (2014). Analytic Programming with fMRI Data: a Quick-Start Guide for Statisticians using R. *PLoS ONE*. 9 (2), e89470.

10. Thom, K., **Li, S.**, Custer, M., Preas, M. A., Rew, C., Cafeo, C., Leeka, S., Caffo, B., Scalea, T., Lissauer, M. (2014). Successful Implementation of a Unit-based Infection Control Nurse to Reduce Central Line-associated Bloodstream Infections. *American Journal of Infection Control*. 42(2), 139-143.

11. **Li, S**., Okonkwo, O., Albert, M., and Wang, M-C. (2013). Variation in Variables that Predict Progression from MCI to AD Dementia over Duration of Follow-up. *American Journal of Alzheimer's Disease*. 1: 12-28.

12. Wang, M-C. and **Li, S**. (2013). ROC Analysis for Multiple Markers with Tree-based Classification. *Lifetime Data Analysis*. 19(1): 79-99.

13. Leekha, S., **Li, S.**, Thom, K., Preas, M. A., Caffo, B., Morgan, D. J., Harris, A. D. (2013). Comparison of total hospital-acquired bloodstream infections to central line-associated bloodstream infections and implications for outcome measures in infection control. *Infection Control and Hospital Epidemilogy*. 34(9): 984-986.

14. Moghekar, A., **Li, S.**, Lu, Y., Li, M., Wang, M-C., Albert, M., O'Brien, R. and the BIOCARD Research Team. (2013). CSF biomarker changes precede symptom onset of mild cognitive impairment. *Neurology*. 81(20), 1753-1758.

15. Soldan, A., Pettigrew, C., **Li, S.**, Wang, M-C., Moghekar, A., O'Brien, R., Selnes, O., and Albert, M. (2013). Relationship of cognitive reserve and cerebrospinal fluid biomarkers to the emergence of clinical symptoms in preclinical Alzheimer's disease. *Neurobiology of Aging.* 34(12): 2827-2834.

16. Pettigrew, C., Soldan, A., **Li, S.**, Lu, Y., Wang, M-C., Selnesa, O., Moghekara, A., OBrien, R., Albert, M. and the BIOCARD Research Team. (2013). Relationship of Cognitive Reserve and APOE Status to the Emergence of Clinical Symptoms in Preclinical Alzheimer's Disease. *Cognitive Neuroscience.* 4: 136-142.

17. Wang, M-C. and **Li, S**. (2012). Bivariate marker measurements and ROC analysis. *Biometrics.* 68(4): 1207-18.

18. **Li, S.**, Eloyan, A., Joel, S., Mostofsky, S., Pekar, J., Spear-Bassett, S. and Caffo, B. (2012). Population Functional Data Analysis of Group ICA-based Connectivity Measures from fMRI. *PLoS ONE* 7(11): e49340. doi: 10.1371/journal.pone.0049340.

Proceeding Papers

Wang, M-C. and **Li, S.** (2013). "Risk Assessment and Evaluation of Predictions". Proceeding of 2011 Conference on Risk Assessment and Evaluation of Predictions. Springer. ISBN-10: 1461489806.

Research Support

2015- NIHR01 HS024108-01, Agency for Healthcare Research and Quality, Thom (PI)
Role: Co-Investigator

In this grant, we investigate and mitigate potential barriers to hand hygiene and glove compliance using novel time-efficient interventions. In Aim 1, we perform a multi-centered, randomized cluster trial to evaluate the efficacy of direct gloving compared to standard practice of hand hygiene prior to glove use to improve compliance with infection prevention practices including hand hygiene and appropriate glove use. In Aim 2, we perform a multi-centered, randomized non-inferiority trial to determine if using an alcohol-based hand rub to clean gloved hands when an indication for hand hygiene arises during a single patient encounter is as effective as the current recommendation. In Aim 3, we will use qualitative research methods to identify facilitators and barriers perceived by healthcare providers and infection prevention staff to hand hygiene compliance under the conditions of Aim 1 and 2.

2013 - NIH U01-4688354, East Africa IEDEA Regional Consortium, Wools-Kaloustian (PI)
Role: Biostatistician

This consortium will fulfill the following functions: 1) identify contextual, program-level and patient-level factors associated with time from antiretroviral therapy (ART) initiation to first-line failure 2) identify contextual, program-level and patient-level factors associated with time from ART first-line failure to second-line initiation.

2013 - Regenstrief Institute, Regenstrief Argus Grant, Murray (PI)
Role: Biostatistician

The grant covers two research projects: 1) we study whether topical glucocorticosteroids applied to treat inflammatory disorders of the skin is associated with cataracts or glaucoma; 2) we compare different definitions of diabetes in relation to patient characteristics, medical cost and mortality.

Presentations

2016 "Estimation of Covariate-Specific Time-Dependent ROC Curves in the Presence of Missing Biomarkers." The 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Hong Kong, *topic contributed*.

2015 "Recurrent Event Data Analysis with Intermittently Observed Time-Varying Covariates". Joint Statistical Meetings, Seattle, *topic contributed*.

2015 "ROC Analysis for Multiple Markers with Tree-Based Classification". Joint 24th ICSA Applied Statistics Symposium and 13th Graybill Conference, Fort Collins, *invited*.

2014 "Analysis of Group ICA-based Connectivity Measures from fMRI: Application to Alzheimer's Disease". The 3rd Institute of Mathematical Statistics Asia Pacific Rim Meeting, Taiwan, *invited*.

2014 "Estimating Diagnostic Accuracy of Biomarkers using Data under Outcome-Dependent Sampling". Eastern North American Region Meetings, Baltimore, *invited*.

2013 "Estimating Diagnostic Accuracy of Biomarkers using Data under Outcome-Dependent Sampling". Fred Hutchinson Cancer Research Center. *invited.*

2013 "Estimating Diagnostic Accuracy of Biomarkers using Data under Outcome-Dependent Sampling". Department of Biostatistics, Indiana University School of Medicine. *invited.*

2013 "Estimating Diagnostic Accuracy of Biomarkers using Data under Outcome-Dependent Sampling". Department of Biostatistics & Epidemiology, University of Pennsylvania, *invited*.

2012 "Change-Point Model for the Analysis of Longitudinal Biomarker in Relation to Progression of Alzheimer's Disease". BIOCARD Study Scientific Advisory Board Meeting, Baltimore.

2012 "Bivariate Markers and ROC Analysis". Joint Statistical Meetings, San Diego, *contributed*.

2011 "Recurrent Event Data Analysis with Time-Varying Covariates: The Impact of Streptococcus on Pharyngitis in Indian School Children". NIH, Bethesda, *invited*.

2011 "Two-stage Decompositions for Analysis of fMRI Data". Joint Statistical Meetings, Miami, *topic contributed*.

Peer Review Activities

Referee for: Biometrics, Statistics in Medicine, Statistica Sinica, International Journal of Biostatistics, Journal of the Royal Statistical Society, Lifetime Data Analysis, Australian & New Zealand Journal of Statistics, Journal of Alzheimer's Disease & Parkinsonism, Journal of General Internal Medicine, Psychosomatic Medicine: Journal of Biobehavioral Medicine, Journal of Neuroscience Methods, Statistics in Biopharmaceutical Research, PLoS ONE, Frontiers in Psychology, The Journal of Clinical Psychiatry, Alzheimer Disease & Association Disorder, BMC Medical Research Methodology, Pharmacoepidemiology and Drug Safety, Nutrients

Teaching Experience

Fall,	2015-2016	Instructor, Applied Survival Data Analysis
Spring,	2015-2016	Instructor, Introduction to Biostatistics I
Fall,	2014-2015	Instructor, Introduction to Biostatistics I
Spring,	2013-2014	Instructor, Introduction to Biostatistics I

Advising Experience

Xiaowei Ren, PhD student (co-advising with Dr. Zhangsheng Yu)

Academic Services

2014-2016	Chair of the IU Department of Biostatistics PhD Qualifying Exam Committee
2014-2016	Member of the IU Department of Biostatistics MS Competency Exam Committee
2014-2016	Member of the IU Department of Biostatistics PhD Admission Committee
2016	Organizer of the 4th IMS-APRM Topic Invited Session
2014-2016	Administer of the Department Social Media Accounts
2014	Objective Reviewer for the ASPPH/CDC Public Health Fellowship Program
2014	Organizer of an Eastern North American Region Meetings (ENAR) Invited Session
2011, 2012	Coordinator of the Hopkins Biostatistics TA Training Day
2012	Organizer of the Hopkins Department of Biostatistics Journal Club
2012	Volunteer of the Eastern North American Region Meetings

Professional Development

Computer Skills: R, Matlab, Stata, SAS, MRIcro, Python

Memberships: American Statistical Association, International Biometric Society, International Chinese Statistical Association