College of Science

RESUME: Yu-Bo Wang

PERSONAL DATA

Assistant Professor
School of Mathematical and Statistical Sciences
Clemson University
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EDUCATION

- Ph.D. Statistics, University of Connecticut, 2016
- M.S. Statistics, National Chengchi University, Taipei, Taiwan, 2009
- B.S. Statistics, National Chengchi University, Taipei, Taiwan, 2006

PROFESSIONAL EXPERIENCE

- School of Mathematical and Statistical Sciences, Clemson University, 08/2018-present, Assistant Professor
- Biostatistics and Bioinformatics Branch, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, 2016-2018, Postdoctoral Fellow
- Department of Statistics, University of Connecticut, 2016, Instructor
- Connecticut Institute for Clinical and Translational Science, UConn Health Center, 2012-2016, Graduate Research Assistant
- Department of Statistics, University of Connecticut, 2012-2015, Graduate Research Assistant
- Institute of Statistical Science, Academia Sinica, Taipei, Taiwan, 2010-2011, Research Assistant
- Department of Statistics, National Chengchi University, Taipei, Taiwan, 2005-2009, Graduate Teaching Assistant

PROFESSIONAL ACTIVITIES

- Reviewer: Journal of the American Statistical Association, Journal of Computational and Graphical Statistics, Systematic Biology, Statistics in Medicine, Test, Computational Statistics and Data Analysis, Applied Stochastic Models in Business and Industry, Statistics and Its Interface, BMC Evolutionary Biology, Journal of Statistical Distributions and Applications, The New England Journal of Statistics in Data Science, and Journal of Statistical Computation and Simulation.
- Committee member: Conference on Bayesian Modeling, Computation, and Applications in honor of Professor Lynn Kuo planning committee, 2018
- Committee member: NICHD Division of Intramural Population Health Research 50^{th} Anniversary fellow committee, 2017

- Committee member: NICHD Division of Intramural Population Health Research 50^{th} Anniversary program committee, 2017
- Session moderator: NICHD Division of Intramural Population Health Research 50^{th} Anniversary, 2017
- Session chair: The 10^{th} International Chinese Statistical Association International Conference, 2016
- Committee member: The 29^{th} New England Statistics Symposium IT committee, 2015

PUBLICATIONS

Refereed Journal Publications (†: Corresponding author ;* Graduate student)

1. Liss, Hannah A., **Wang, Y.-B.**, Ford, B., Fiorellini, J., Korostoff, J., and Chang, Y.-C.. Outcomes of Peri-implantitis Treatment in a Dental School Setting: A Retrospective Review. *International Journal of Periodontics & Restorative Dentistry* (submitted).

2. Yang, Y.*, McMahan, C., **Wang, Y.-B.**†, and Ouyang, Y.. Estimation of l_0 Norm Penalized Models: A Statistical Treatment. *Computational Statistics and Data Analysis* (revised).

3. Yang, Y.*, McMahan, C., **Wang, Y.-B.**, Baurley, J.W., and Park, S.S.. SIGHR: Side Information Guided High-dimensional Regression. *Statistical Methods in Medical Research* (accepted).

4. Chang, Y.-C., Choi, M., **Wang, Y.-B.**, Lee, S.-M., Yang, M., Wu, B. H., Fiorellini, J.. Risk Factors Associated with the Survival of Endodontically Treated Teeth: A Retrospective Chart Review. *The Journal of the American Dental Association* (accepted).

5. Alhossan, A., Chang, Y.-C., Wang, T.-J., **Wang, Y.-B.**, Fiorellini, J.. Reliability of the Cone Beam Computed Tomography in Predicting Implant Treatment Outcome on Edentulous Patient. *Diagnostics* (accepted).

6. **Wang, Y.-B.**, Milkey, A., Li, A., Chen, M.-H., Kuo, L., Lewis, P.O. (2023). LoRaD: Marginal Likelihood Estimation with Haste (but No Waste). *Systematic Biology*, 72(3): 639-648. DOI:10.1093/sysbio/syad007

7. Chuang, P.-N., Kim, T., **Wang, Y.-B.**, Fiorellini, J., Chang, Y.-C. (2023). Laser-Assisted Minimally Invasive Non-surgical Therapy in Treating Severe Periodontal Compromised Teeth – A Case Series. *International Journal of Periodontics & Restorative Dentistry* (online ahead of print). DOI:10.11607/prd.6295

8. Liu, Z.*, Sun, X., Liu, L., and **Wang, Y.-B.**† (2022). Bayesian Poisson Log-normal Model with Regularized Time Structure for Multi-population Mortality Projection. *Journal of Econometrics and Statistics*, 2(2): 149-185. DOI:10.47509/JES.2022.v02i02.02

9. He, L.*, **Wang, Y.-B.**†, Bridges, W.C., and He, Z. (2022). Bayesian Framework for Causal Inference with Principal Stratification and Clusters. *Statistics in Biosciences*, 15: 114-140. DOI:10.1007/s12561-022-09351-9

10. Gong, R., Sun, X., Liu, L., and **Wang, Y.-B.**† (2022). Bayesian Poisson Mortality Projections with Incomplete Data. *Journal of Econometrics and Statistics*, 2(1): 1-20. DOI:10.46791/jes.2022.v02i01.01

11. Huang, W.-K., Chung, Y.-M., **Wang, Y.-B.**, Mandel, J.E., and Wu, H.-T. (2022). Airflow Recovery from Thoracic and Abdominal Movements Using Synchrosqueezing Transform and Locally Stationary Gaussian Process Regression. *Computational Statistics and Data Analysis*, 174: 107384. DOI:10.1016/j.csda.2021.107384

12. **Wang, Y.-B.**, Zhang, C., and Chen, Z. (2021). Intergenerational Associations between Maternal Diet and Childhood Adiposity: A Bayesian Regularized Mediation Analysis. *Statistics in Biosciences*, 13: 524–542. DOI:10.1007/s12561-021-09305-7

13. **Wang, Y.-B.**, Chen, M.-H., Shi, W., Lewis, P.O., and Kuo, L. (2020). Inflated Density Ratio and its Variation and Generalization for Computing Marginal Likelihoods. *Journal of the Korean Statistical Society*, 49(1): 244-263. DOI:10.1007/s42952-019-00013-z

14. **Wang, Y.-B.**, Chen, Z., Goldstein, J.M., Buck Louis, G.M. and Gilman, S.E. (2019). A Bayesian Regularized Mediation Analysis with Multiple Exposures. *Statistics in Medicine*, 38(5): 828-843. DOI:10.1002/sim.8020

15. Choi, G., **Wang, Y.-B.**, Sundaram, R., Chen, Z., Boyd Barr, D., Buck Louis, G.M., and Smarr, M.M. (2019). Polybrominated Diphenyl Ethers and Incident Pregnancy Loss: The LIFE Study. *Environmental Research*, 168: 375-381. DOI:10.1016/j.envres.2018.09.018

16. **Wang, Y.-B.**, Chen, M.-H., Kuo, L., and Lewis, P.O. (2019). Partition Weighted Approach for Estimating the Marginal Posterior Density With Applications. *Journal of Computational and Graphical Statistics*, 28(2): 334-349. DOI:10.1080/10618600.2018.1529600

Refereed Journal Publications (*Prior to Clemson*)

1. **Wang, Y.-B.**, Chen, M.-H., Kuo, L., and Lewis, P.O. (2018). A New Monte Carlo Method for Estimating Marginal Likelihoods. *Bayesian Analysis*, 13(2): 311-333. DOI:10.1214/17-BA1049

2. Salber, G., **Wang, Y.-B.**, Lynch, J., Pasquale, K., Rajan, T.V., Stevens, R., Grady, J., and Kenny, A.M. (2017). Metformin Use in Practice: Compliance with Guidelines for Patients with Diabetes and Preserved Renal Function. *Clinical Diabetes*, 35(3): 154-161. DOI:10.2337/cd15-0045

3. Roy, B., McCullough, L.D., Dhar, R., Grady, J., **Wang, Y.-B.**, and Brown, R.J. (2017). Comparison of Initial Vasopressors Used for Delayed Cerebral Ischemia after Aneurysmal Subarachnoid Hemorrhage. *Cerebrovascular Diseases*, 43: 266-271. DOI:10.1159/000458536

4. Huang, C., Byrne, T.B., Ouimet, W., Fei, L.-Y., Lin, C.-W., Hu, J.-C., and **Wang, Y.-B.** (2016). Tectonic Foliation and the Distribution of Landslides in the Southern Central Range, Taiwan. *Tectonophysics*, 692: 203-212. DOI:10.1016/j.tecto.2016.06.004

5. Lewis, P.O., Chen, M.-H., Kuo, L., Lewis, L.A., Fučíková, K., Neupane, S., **Wang, Y.-B.**, and Shi, D. (2016). Estimating Bayesian Phylogenetic Information Content. *Systematic Biology*, 65(6): 1009-1023. DOI:10.1093/sysbio/syw042

6. Pozdnyakov, V., Meyer, T.H., **Wang, Y.-B.**, and Yan, J. (2014). On Modeling Animal Movements Using Brownian Motion with Measurement Error. *Ecology*, 95: 247-253. DOI:10.1890/13-0532.1/full

In Preparation

1. **Wang, Y.-B.**, Li, A., Milkey, A., Chen, M.-H., Kuo, L., Lewis, P.O.. PWK: Theory, Refinement, and Applications.

2. Li, A., **Wang, Y.-B.**, Milkey, A., Chen, M.-H., Kuo, L., Lewis, P.O.. Leveraging Historical Data via the Marginal Likelihood Criterion.

3. He, L.*, Bridges, W.C., **Wang, Y.-B.**, and He, Z.. Bayesian Estimation of Causal Effects Using a Generalized Skewed Link Function for Observational Studies with Clustering and Unequal Sample Sizes.

4. Milkey, A., Chen, M.-H., **Wang, Y.-B.**, Li, A., Lewis, P.O.. The sequential multi-species coalescent.

PRESENTATIONS

Invited

1. PWK: Theory, Improvements, and New Applications. (2022) The 6^{th} EAC-ISBA Conference, Taichung, Taiwan.

2. Leveraging Historical Data via the Marginal Likelihood Criterion. (2022) The 2022 ISBA World Meeting, Montreal, Canada.

3. Airflow recovery using synchrosqueezing transform and locally stationary Gaussian process regression. (2022) The 5^{th} International Conference on Econometrics and Statistics, Kyoto, Japan.

4. SIGHR: Side information guided high-dimensional regression. (2021) The 5^{th} EAC-ISBA Conference (hybrid).

5. An Exploration of the Effects of Multiple Exposures on Birth Outcomes: A Bayesian Regularized Mediation Analysis. (2020) JSM, virtual conference.

6. Inflated Density Ratio and its Variation and Generalization for Computing Marginal Likelihoods. (2019) The 4^{th} EAC-ISBA Conference, Kobe, Japan.

7. Inflated Density Ratio and its Variation and Generalization for Computing Marginal Likelihoods. (2019) The 3^{rd} International Conference on Econometrics and Statistics, Taichung, Taiwan.

8. A Regularized Causal Mediation Analysis with Applications to Human Reproduction. (2019) Academia Sinica, Taipei, Taiwan.

9. A Regularized Causal Mediation Analysis with Applications to Human Reproduction. (2019) National Chengchi University, Taipei, Taiwan.

10. Bayesian Assessment of the Joint, Marginal and Conditional Information Gains with Applications. (2019) The 33^{rd} New England Statistical Symposium, Hartford, Connecticut.

11. Partition Weighted Approach for Estimating Marginal Posterior Density with Applications. (2018) Department of Mathematics and Statistics, Mississippi State University, Mississippi.

12. New Partition Weighted Kernel Approach for Marginal Likelihood Estimation in Variable Tree Topology. (2018) Department of Genetics and Biochemistry, Clemson University, South Carolina.

Invited (*Prior to Clemson*)

1. A Bayesian Regularized Mediation Analysis with Multiple Exposures. (2018) Conference on Bayesian Modeling, Computation, and Applications, University of Connecticut, Connecticut.

2. Partition Weighted Methods for Marginal Likelihood and A Regularized Difference-of-coefficient Approach in Mediation Analysis. (2018) Department of Family and Preventive Medicine, University of Utah, Utah.

3. Partition Weighted Methods for Marginal Likelihood and A Regularized Difference-of-coefficient Approach in Mediation Analysis. (2018) Department of Mathematical Sciences, Clemson University, South Carolina.

4. Adaptive Partition Weighted Approach for Estimating Marginal Posterior Density with Applications. (2016) Academia Sinica, Taipei, Taiwan.

5. A New Monte Carlo Method for Computing Marginal Likelihoods. (2016) National Chengchi University, Taipei, Taiwan.

6. Adaptive Partition Weighted Approach for Estimating Marginal Posterior Density with Applications. (2016) The 10^{th} ICSA International Conference, Shanghai, China.

Contributed (*Prior to Clemson*)

1. A Bayesian Regularized Mediation Analysis with Multiple Exposures. (2018) ENAR, Atlanta, Georgia.

2. A Regularized Bayesian Approach to Direct and Indirect Effects when both Exposure and Mediator are High Dimensional. (2017) JSM, Baltimore, Maryland.

HONORS AND AWARDS

- ICSA Young Researcher Travel Award, the 10^{th} International Chinese Statistical Association International Conference (2016).

- NESS IBM Student Paper Award, the 29^{th} New England Statistics Symposium (2015).
- Graduate Fellowship, National Chengchi University (2008).
- Graduate Fellowship, National Chengchi University (2006).
- First Place Graduation and Department Representative, National Chengchi University (2006).
- Presidential Award, Department of Statistics, National Chengchi University (2005).
- Presidential Award, Department of Statistics, National Chengchi University (2004).
- Presidential Award, Department of Statistics, National Chengchi University (2003).

UNIVERSITY AND PUBLIC SERVICE

Current Graduate Advising

Committee Member

- Javad Alavi, Ph.D. (Department of Environmental Engineering and Earth Sciences)
- Lauren Juliana Todd, M.S. (Department of Environmental Engineering and Earth Sciences)

Previous Graduate Advising

Doctoral Graduate Advising

- Li He, Ph.D. (Co-advising with Dr. William Bridges)
- Zhen Liu, Ph.D. (Co-advising with Dr. Xiaoqian Sun)
- Yuan Yang, Ph.D. (Co-advising with Dr. Chris McMahan)

Committee Member

- Paul Cubre, Ph.D.
- Tiantian Yang, Ph.D.
- Rui Gong, Ph.D.
- Stefani Mokalled, Ph.D.
- Xueheng Shi, Ph.D.
- Jiajing Niu, Ph.D.
- Shanshan Jia, M.S.
- Michael Wierzbicki, M.S.
- Cheng Yang, M.S.
- Alena Turner, M.S.
- Sha Wan, M.S.

Internship

- Giehae Choi, Ph.D. (Co-mentoring summer intern at NICHD, 2017 (*Prior to Clemson*))

Department

- Member, Mathematical Sciences Statistics and Probability Research Seminar Series Committee, 2018-2019
- Graduate advisor, 2018

FUNDING

Submitted

1. Retail Food Environment Trajectories in Early Life and Body Mass Index in Young Adulthood; Agency: NIH; Roll: Co-PI.

Awarded

1. Advancing Methods for the Diagnosis of Adverse Developmental Programming; Agency: Prisma; Roll: Co-PI.
2. Exposure Risk, Social Networks, and Well-Being: Community-Level Inference from CLIA-Lab Sampling. Agency: CUSHR COVID Launch Seed Grant Program, Clemson; Roll: Co-PI.

Unfunded

1. Early Indicators of Developmental Programming. Agency: NIH/DHHS; Roll: Co-PI.
2. Telemetrically adjustable shunt graft banding as a novel therapeutic solution for single ventricle neonates. Agency: NIH; Roll: Statistician. (submitted on 7/1/2019, and revised and resubmitted on 10/2/2019)
3. A general framework for Bayesian weakly semi-supervised learning. Agency: NSF; Roll: Co-PI.

TEACHING

Courses Taught

1. STAT 4110, Statistical Methods for Process Development and Control: 2 Sections F19; 1 Section Summer20; 2 Sections F20; 1 Section Summer21; 1 Section F21; 1 Section Summer22; 1 Section F23.
2. MATH 3020, Stat for Science & Engineering: 1 Section Summer20; 1 Section Summer21.
3. STAT 8010, Statistical Methods I: 2 Sections F18; 1 Section S19; 1 Section S20; 1 Section S21; 2 Sections F22.
4. STAT 8020, Statistical Methods II: 1 Section F21.
5. STAT 8030, Regression & Least Squares Analysis: 1 Section S22; 1 Section S23; 1 Section F23.
6. MATH 8050, Data Analysis: 1 Section Summer23.
7. STAT 3025Q, Statistical Methods (Calculus Level I): 1 Section S16. (*Prior to Clemson*)

Updated September 23, 2023.