# Y. Samuel Wang


**Contact Information**

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**Academic positions**

Principal researcher (post-doc) 2018 -
*The University of Chicago; Booth School of Business*
Supervisor: Mladen Kolar

**Education**

Ph.D. in Statistics 2012 - 2018
*University of Washington*
Thesis: *Linear structural equation models with non-Gaussian errors*
Advisor: Mathias Drton
Committee members: Thomas Richardson and Emily Fox

B.A. in Applied Math; Economics 2006 - 2010
*Rice University*
Magna Cum Laude; Phi Beta Kappa

**Publications**

1) Wang, Y. S. and Drton, M. (2020). High-dimensional causal discovery under non-Gaussianity. *Biometrika*, 107(1):41–59

2) Zhao, B., Wang, Y. S., and Kolar, M. (2019). Direct estimation of differential functional graphical models. In *Advances in Neural Information Processing Systems 32: Annual Conference on Neural Information Processing Systems 2019, NeurIPS 2019, 8-14 December 2019, Vancouver, BC, Canada*, pages 2571–2581

3) Chen, W., Drton, M., and Wang, Y. S. (2019). On causal discovery with an equal-variance assumption. *Biometrika*, 106(4):973–980

4) Drton, M., Fox, C., and Wang, Y. S. (2019). Computation of maximum likelihood estimates in cyclic structural equation models. *The Annals of Statistics*, 47(2):663–690

5) Chen, Y.-C., Wang, Y. S., and Erosheva, E. A. (2018). On the use of bootstrap with variational inference: Theory, interpretation, and a two-sample test example. *The Annals of Applied Statistics*, 12(2):846–876

6) Wang, Y. S., Matsueda, R. L., and Erosheva, E. A. (2017). A variational EM method for mixed membership models with multivariate rank data: An analysis of public policy preferences. *The Annals of Applied Statistics*, 11(3):1452–1480

7) Wang, Y. S. and Drton, M. (2017). Empirical likelihood for linear structural equation models with dependent errors. *Stat*, 6(1):434–447

**Submitted preprints**

1) Wang, Y. S., Lee, C., West, J., Bergstrom, C., Erosheva, E.A. "Gender-based homophily in collaborations across a heterogeneous scholarly landscape" [arXiv]

2) Zhao, B., Wang, Y. S., Kolar, M. "FuDGE: Functional differential graph estimation with fully and discretely observed curves" [arXiv]

3) Wang, Y. S., Drton, M. "Causal discovery with unobserved confounding and non-Gaussian data" [arXiv]

## Work in progress

"Confidence sets for causal discovery"
*with Mathias Drton and Mladen Kolar*

"High-dimensional residual randomization inference"
*with Yi Ding, Mladen Kolar, Si Kai Lee, and Panos Toulis*

"Posterior summarization for time varying dynamic Bayesian models"
*with Mladen Kolar, Si Kai Lee, and David Puelz*

"Estimation of functional graphical models via neighborhood selection"
*with Mladen Kolar, Percy Zhai, and Boxin Zhao*

"Non-parametric estimation of the score function"
*with Mladen Kolar*

## Technical reports and software

1) Wang, Y. S., Erosheva, E. A. (2016) "On the relationship between set-based and network-based measures of gender homophily in scholarly publications" [arXiv]
2) Wang, Y. S., Erosheva, E. A. (2015) "Fitting mixed membership models using `mixedmem`" [CRAN]

## Other publications

1) Varshney, A., Wang, Y. S., Watson, R. A., Noll, A., Rossi, J., Shah, P. B., Kaneko, T., Giugliano, R. P., and Adler, D. S. (2018). Abstract 12195: Relationship between transcatheter aortic valve replacement wait time and mortality in patients with symptomatic severe aortic stenosis. *Circulation*, 138(Suppl_1):A12195–A12195

## Presentations

**2019**
JSM, *Topic contributed org. by Maryclare Griffin and David Matteson*
American Sociological Association Annual Meeting, *Regular session*

**2018**
JSM, *Topic contributed org. by John Kolassa*
CMSTAT, *Session org. by Marloes Maathuis*

**2017**
JSM, *Contributed talk*
Wisconsin Institute for Discovery at UW-Madison
Toyota Technical Institute - Chicago

**2015**
JSM, *Contributed talk*

## Teaching

**Statistics Dept Lead TA**, University of Washington 2013, 2016

**Lead Instructor**:

*University of Washington*
STAT 311: Elements of Statistical Methods

**Teaching Assistant**:

*University of Washington*
STAT 220: Principles of Statistical Reasoning
STAT 221: Statistical Concepts for Social Sciences
STAT 311: Elements of Statistical Methods
STAT 421: Applied Statistics and Experimental Design
STAT 534: Statistical Computing
STAT 566: Causal Modeling
STAT 570: Adv Regression Methods for Indep Data
CSSS 589: Multivariate Data Analysis for the Social Sciences

## Statistical consulting

**Statistical consultant**, University of Washington 2017 - 2018
*Center for Statistics and the Social Sciences*

## Professional service

**Journal Referee:** Annals of Applied Statistics; Annals of Statistics; Bernoulli; Biometrika; Biometrics; Electronic Journal of Statistics, International Journal of Approximate Reasoning; Journal of the American Statistical Association; Journal of Machine Learning Research

**Conference Referee:** AISTATS; ICML; NeurIPS; UAI

**Other:** NSF proposal reviewer, JMLR editorial board reviewer

## Non-academic experience

**Susquehanna International Group** 2013
*Assistant Trader Intern*
- Worked on the index/ETF desk; created tools for calculating "robust" beta and bootstrapping portfolio risk

**Deloitte** 2010 – 2012
*Strategy and Operations Consultant*
- Focused on analytic strategy and supply chain risk assessments with heavy manufacturing, technology hardware, and oil and gas clients
- Houston office Business Analyst Action Committee lead