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## Jonathan P Williams

### EDUCATION

- University of North Carolina, Chapel Hill, NC** 2014 - 2019  
Department of Statistics and Operations Research  
PhD Statistics  
Advisors: Dr. Jan Hannig (UNC) and Dr. Curtis Storlie (Mayo Clinic)
- New York University, New York, NY** 2012 - 2014  
Courant Institute of Mathematical Sciences  
MS Mathematics  
Thesis: *Penalized Least Squares Estimation of the Linear Mixed Effect Model*  
Advisor: Dr. Ying Lu
- Eastern Michigan University, Ypsilanti, MI** 2008 - 2012  
Honors College  
BS double major in Economics and Mathematics, minor in Finance  
*Summa Cum Laude*  
Thesis: *Entropy and Related Principles*  
Advisor: Dr. Ovidiu Calin

### PEER-REVIEWED PAPERS

1. **J P Williams**, C B Storlie, T M Therneau, C R Jack Jr, and J Hannig (2019). A Bayesian approach to multi-state hidden Markov models: application to dementia progression. *To appear in the Journal of the American Statistical Association*.
2. **J P Williams** and J Hannig (2019). Non-penalized variable selection in high-dimensional linear model settings via generalized fiducial inference. *The Annals of Statistics* 47 (3), 1723-1753.
3. I Carmichael and **J P Williams** (2018). An exposition of the false confidence theorem. *Stat*, 7 (1), p.e201.
4. **J P Williams** and Y Lu (2015). Covariance Selection in the Linear Mixed Effect Model, *Journal of Machine Learning Research: Workshop and Conference Proceedings*, 44, pp.277-291. (NIPS conference session)
5. E Sechi, E Shosha, **J P Williams**, S J Pittock, B G Weinshenker, A S Lopez-Chiriboga, J Jitprapaikulsan, E P Flanagan (2018). Epidemiology of idiopathic transverse myelitis in the era of glial autoantibodies: a population-based study. *In review*.

### PAPERS IN PREPARATION

1. **J P Williams**, Y Xie, and J Hannig (2018+). Nonpenalized graph selection in multivariate vector autoregressive settings via generalized fiducial inference. *In preparation*.
2. **J P Williams**, C B Storlie, D J Kor, M A Warner, and J Hannig (2018+). Hierarchical Bayesian latent bleeding classification via Gaussian processes regression and natural language processing. *In preparation*.
3. D Ommen, J Hannig, and **J P Williams** (2018+). Generalized fiducial inference for forensic identification of source problems. *In preparation*.

## PRESENTATIONS

1. Non-penalized variable selection in high-dimensional settings via generalized fiducial inference. *Seminar*, Department of Statistics, University of Florida Gainesville, January 2019.
2. Non-penalized variable selection in high-dimensional settings via generalized fiducial inference. *Seminar*, Department of Statistics, Iowa State University, January 2019.
3. Non-penalized variable selection in high-dimensional settings via generalized fiducial inference. *Seminar*, Department of Statistics, University of Illinois Urbana-Champaign, December 2018.
4. Non-penalized variable selection in high-dimensional settings via generalized fiducial inference. *Seminar*, Department of Statistics, North Carolina State University, December 2018.
5. Non-penalized variable selection via generalized fiducial inference. *Graduate Seminar*, Department of Statistics and Operations Research, UNC Chapel Hill, November 2018.
6. Non-penalized variable selection via generalized fiducial inference. *AISC 2018 International Conference on Advances in Interdisciplinary Statistics and Combinatorics*, UNC Greensboro, October 2018.
7. Non-penalized variable selection in high-dimensional settings via generalized fiducial inference. *27th Nordic Conference in Mathematical Statistics*, Tartu, Estonia, June 2018 (**invited**).
8. A Bayesian approach to multi-state hidden Markov models: application to dementia progression. *Graduate Seminar*, Department of Statistics and Operations Research, UNC Chapel Hill, September 2017.
9. Non-penalized variable selection in high-dimensional linear model settings via generalized fiducial inference. *Graduate Seminar*, Department of Statistics and Operations Research, UNC Chapel Hill, February 2017.
10. A Bayesian approach to multi-state hidden Markov models: application to dementia progression. *Tea Time for Science*, Biomedical Statistics and Informatics, Health Sciences Research, Mayo Clinic, Rochester, MN, August 2016.

## POSTER PRESENTATIONS

1. Non-penalized variable selection via generalized fiducial inference. *Fifth Bayesian, Fiducial, and Frequentist Conference*, University of Michigan Ann Arbor, May 2018.
2. Generalized fiducial inference for high dimensional problems. *Invited Poster Session, Joint Statistical Meeting*, Baltimore, MD, July 2017 (**invited** poster with Jan Hannig).
3. Non-penalized variable selection in high-dimensional linear model settings via generalized fiducial inference. *Fourth Bayesian, Fiducial, and Frequentist Conference*, Harvard University, May 2017.
4. Covariance Selection in the Linear Mixed Effect Model. *Feature Extraction: Modern Questions and Challenges, NIPS*, Montreal, Canada, December 2015.

## AWARDS

Graduate Student Travel Grant – 1,000 USD	Summer 2018
Carl M. Erikson Mathematics Department Scholarship	2011 - 2012
Regents Scholarship	2009 - 2012
National Scholars Program Scholarship	2008 - 2012
Leader Award Scholarship	2009 - 2011

## PROFESSIONAL ACTIVITIES

Referee for *Journal of Computational and Graphical Statistics* (once)  
Referee for *Stat* (3 times)

## TEACHING

**STOR-BIOS Dept Boot Camp for incoming stat and biostat grad students** Summer 2017

- Manager of the two-week Boot Camp, and instructor of the real analysis section.

**Teaching Fellow, UNC, Chapel Hill, NC** 2014 - 2016

- Introduction to Statistics (Full teaching responsibilities for a class of 46 and for a class of 83 students).
- Introduction to Statistics (Teaching Assistant).
- Undergraduate Regression Analysis (Teaching Assistant).

## WORK EXPERIENCE

- Research Collaborator, Mayo Clinic, Rochester, MN 2017 - Present
- Biostatistics Intern, Mayo Clinic, Rochester, MN Summer 2016
- Statistical Consultant, Caster Concepts, Inc, Albion, MI 2011 - 2014
- Tutor (economics and mathematics), Eastern Michigan University, Ypsilanti, MI 2009 - 2012

## OTHER ACTIVITIES

Fed Challenge Competition - Chicago Federal Reserve District March 2008, November 2008, 2009, 2010, 2011