

# Jonathan Stewart

## Curriculum Vitae

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📄 [jrstew.github.io](https://github.com/jrstew)

### Employment

Aug 2020–Present **Assistant Professor**, *Department of Statistics*, Florida State University.

### Education

May 2020 **Ph.D.**, *Statistics*, Rice University.

Aug 2018 **M.A.**, *Statistics*, Rice University.

May 2013 **B.A.**, *Statistics*, Rice University.

### Publications

#### *Published papers and papers in press*

1. Babkin, S., **Stewart, J.**, Long, X., and Schweinberger, M. Large-scale estimation of random graph models with local dependence. *Computational Statistics and Data Analysis*, to appear in the December issue (2020).
2. Schweinberger, M., Krivitsky, P. N., Butts, C. T., and **Stewart, J.** Exponential-family models of random graphs: inference in finite, super, and infinite population scenarios, *Statistical Science*, 25 (4) (2020), 627–662.
3. **Stewart, J.** Consistent estimation of high-dimensional random graph models with dependent edge variables, Ph.D. Thesis, *Rice University* (2020).
4. Schweinberger, M., and **Stewart, J.** Concentration and consistency results for canonical and curved exponential-family models of random graphs. *The Annals of Statistics*, 48 (2020), 374–396.
5. **Stewart, J.**, Schweinberger, M., Morris, M., and Bojanowski, M. Multilevel network data facilitate statistical inference for curved ergms with geometrically weighted terms. *Social Networks*, 59 (2019), 98–119.
6. Campbell, I. M., **Stewart, J. R.**, James, R. A., Lupski, J. R., Stankiewicz, P., Olofsson, P., and Shaw, C. A. Parent of origin, mosaicism, and recurrence risk: Probabilistic modeling explains the broken symmetry of transmission genetics. *The American Journal of Human Genetics*, 95 (4) (2014), 345–359

#### *Papers in preparation*

1. **Stewart, J.** and Schweinberger, M. Scalable estimation of random graph models with dependent edges and parameter vectors of increasing dimension, in preparation (2020+).
2. Fujimoto, K., **Stewart, J.**, Westherim, J., Brauchle, N., Hallmark, C., Benbow, N., D'Aquila, R., Schneider, J.A., Schweinberger, M. Characterizing hotspot HIV transmission networks, in preparation (2020+).

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## Software

- mlergm** R package (**creator, author, maintainer**)  
*Multilevel exponential-family random graph models*  
More than 9,000 downloads since December 2018
- hergm** R package (**author**)  
*Hierarchical exponential-family random graph models with local dependence*  
More than 50,000 downloads

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## Presentations

### *Invited talks*

1. 2020 **CMStatistics**, to be delivered virtual  
*Maximum pseudolikelihood estimation for models of social network data*
2. 2020 **Department of Statistics**, Florida State University, Tallahassee, FL  
*Scalable and consistent estimation of random graph models using the pseudolikelihood*
3. 2020 **Joint Statistical Meeting**, delivered virtually  
*A probabilistic framework for models of dependent network data*
4. 2020 **Department of Mathematics**, Tulane University, New Orleans, LA  
*A probabilistic framework for models of dependent network data, with statistical guarantees*
5. 2020 **Department of Statistics and data Science**, Cornell University, Ithaca, NY  
*A probabilistic framework for models of dependent network data, with statistical guarantees*
6. 2020 **Department of Statistical Science**, Southern Methodist University, Dallas, TX  
*A probabilistic framework for models of dependent network data, with statistical guarantees*
7. 2020 **Department of Statistics**, Florida State University, Tallahassee, FL  
*A probabilistic framework for models of dependent network data, with statistical guarantees*
8. 2019 **CMStatistics**, London, UK  
*Generalized  $\beta$ -models with dependent edges and parameter vectors of increasing dimension*

### *Contributed talks*

1. 2019 **International Sunbelt Social Network Conference**, Montreal, CA  
*Multilevel ERGMs with overlapping subsets of nodes: models, methods, and statistical theory*
2. 2012 **Joint Statistical Meeting**, San Diego, CA  
*Graphical inference and the hanging rootogram*

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## Awards and honors

- 2019 **James R. Thompson Student Award**  
Department of Statistics, Rice University  
*Awarded annually to up to two Ph.D. students for excellence in research*
- 2019 **Travel Award**, Department of Statistics, Rice University  
*Funding to attend and present at the 2019 CMStatistics conference*

- 2019 **Travel Award**, International Network for Social Network Analysis  
*Funding to attend and present at the 2019 INSNA Sunbelt conference in Montreal*
- 2019 **Travel Award**, Department of Statistics, Rice University  
*Funding to attend and present at the 2019 INSNA Sunbelt conference in Montreal*

## Research support

- 2018-2019 **Consultant**, NIH / NIMH award 1R01MH100021  
*YMAP: Young Men's Affiliation Project of HIV risk and prevention venue*  
PIs: Kayo Fujimoto, UTHealth Science Center, Houston  
John A. Schneider, University of Chicago

## Teaching

- STA 3032 *Applied Statistics for Engineers and Scientists*  
Calculus based introduction to probability and statistics for engineering and statistics students
- STA 4321/5323 *Introduction to Mathematical Statistics*  
Course teaching the foundations of probability necessary for a first course in mathematical statistics

## Service to profession

- *Journal Referee*
  1. Sankhya: The Indian Journal of Statistics, Series A
  2. Biometrics
  3. Wiley Interdisciplinary Reviews: Computational Statistics
  4. Acta Mathematica Scientia
- A Symposium on Optimal Stopping Time, *Local co-organizer*  
June 25–29, 2018

## Professional memberships

Institute of Mathematical Statistics  
American Statistical Association