Jonathan Stewart

CONTACT INFORMATION

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EDUCATION

Ph.D. in Statistics (2020), *Rice University*

Thesis: Consistent estimation of high-dimensional random graph models with dependent edge variables.

Advised by: Dr. Michael Schweinberger.

M.A. in Statistics (2018), *Rice University*

B.A. in Statistics (2013), *Rice University*

PUBLISHED PAPERS AND PAPERS IN PRESS

1. 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*, to appear (2020+). [PDF]

2. **Stewart, J.** Consistent estimation of high-dimensional random graph models with dependent edge variables, Ph.D. Thesis, *Rice University* (2020).

3. 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. [PDF]

4. **Stewart, J.**, Schweinberger, M., Morris, M., and Bojanowski, M. Multi-level network data facilitate statistical inference for curved ergms with geometrically weighted terms. *Social Networks*, 59 (2019), 98–119. [PDF]

5. 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. [PDF]

PAPERS UNDER REIVEW

6. Babkin, S., **Stewart, J.**, Long, X., and Schweinberger, M. Large-scale estimation of random graph models with local dependence. *Computational Statistics and Data Analysis*, invited revision (2020+).

PAPERS IN PREPARATION

7. **Stewart, J.** AND SCHWEINBERGER, M. Scalable estimation of random graphs with dependent edges in high-dimensional settings, in preparation (2020+).

8. 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+).

SOFTWARE

`R` **package** `mlergm` (*Creator, author, maintainer*)
Exponential-family random graph models for multilevel network data with known structure
More than 8,000 downloads since December, 2018

`R` **package** `hergm` (*Author*)
Hierarchical exponential-family random graph models with local dependence
More than 48,000 downloads

INVITED PRESENTATIONS

2020 Joint Statistical Meetings, Philadelphia, PA
A Probabilistic Framework for Models of Dependent Network Data, with applications to brokerage in social networks

2020 Department of Mathematics, Tulane University
A Probabilistic Framework for Models of Dependent Network Data, with Statistical Guarantees

2020 Department of Statistics and Data Science, Cornell University
A Probabilistic Framework for Models of Dependent Network Data, with Statistical Guarantees

2020 Department of Statistical Science, Southern Methodist University
A Probabilistic Framework for Models of Dependent Network Data, with Statistical Guarantees

2020 Department of Statistics, Florida State University
A Probabilistic Framework for Models of Dependent Network Data, with Statistical Guarantees

CONTRIBUTED PRESENTATIONS

2019 CMStatistics, London, UK
Generalized β-models with dependent edges and parameter vectors of increasing dimension

2019 International Sunbelt Social Network Conference, Montreal, CA
Multilevel ERGMs with overlapping subsets of nodes: models, methods, and statistical theory

2012 Joint Statistical Meetings, San Diego, CA
Graphical inference and the hanging rootogram

WORKSHOPS

2020 Co-organizer, Workshop on Multilevel and Hierarchical Exponential-Family Random Random Graph Models With Local Dependence
International Sunbelt Social Networks Conference, Paris, France
(required by NSF award DMS-1812119)

AWARDS

2019 Recipient of the James R. Thompson Student Award
Awarded annually to up to two PhD students in the Department of Statistics at Rice University for excellence in research

Travel Award, Department of Statistics, Rice University
Funding to attend and present at the 2019 CMStatistics conference

Travel Award, International Network for Social Network Analysis
Funding to attend and present at the 2019 INSNA Sunbelt conference in Montreal

Travel Award, Department of Statistics, Rice University
Funding to attend and present at the 2019 INSNA Sunbelt conference in Montreal

2012 Duncan College Master's Service Award, Rice University
Awarded once annually for outstanding service to the university and Duncan College

RESEARCH GRANTS

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 and John A. Schneider, University of Chicago

SERVICE TO DEPARTMENT

Local co-organizer
A Symposium on Optimal Stopping Time, June 25–29, 2018
http://www.optimalstopping.com

Department Representative to the Graduate Student Association
Statistics department voting representative (Academic years 2014–2015 and 2015–2016)

SERVICE TO PROFESSION

Reviewer for WIREs Computational Statistics

PROFESSIONAL MEMBERSHIPS

Institute of Mathematical Statistics

American Statistical Association

SKILLS

Languages	English (fluent)
Programming	R and C/C++