

Tracy Morrison Sweet

CONTACT INFORMATION University of Maryland
Department of Human Development and Quantitative Methodology
3304 Benjamin Building, College Park, MD 20742
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EDUCATION **Ph.D. Statistics, Carnegie Mellon University, July 2012**
M.S. Statistics, Carnegie Mellon University, May 2008
M.A. Mathematics, Morgan State University, December 2007
B.S. Biology, Bucknell University, May 2000

PROFESSIONAL EXPERIENCE **Assistant Professor** August 2013 – present
University of Maryland
Department of Human Development and and Quantitative Methodology
Postdoctoral Fellow August 2012 – July 2013
Carnegie Mellon University
Department of Statistics

METHODS ARTICLES Sweet, T.M., (in press) Modeling social networks as mediators: A mixed membership stochastic blockmodel for mediation. *Journal of Educational and Behavioral Statistics*.
Sweet, T.M. and Zheng, Q. (2018). Incorporating network-level covariates into hierarchical mixed membership stochastic blockmodels. *Social Networks*, 52(1), 100-114. <https://doi.org/10.1016/j.socnet.2016.08.001>
Sweet, T.M. and Zheng, Q. (2017). A model-based measure for subgroup integration in social networks. *Social Networks*, 48(1), 169-180. <https://doi.org/10.1016/j.socnet.2016.08.001>
Sweet, T.M. (2016). Social network methods for the educational and psychological sciences. *Educational Psychologist*, 51(3), 381-394. <https://doi.org/10.1080/00461520.2016.1208093>
Sweet, T.M. and Junker, B.W. (2016). Power to detect intervention effects on ensembles of social networks. *Journal of Educational and Behavioral Statistics*, 41(2), 180-204.
Sweet, T.M. (2015). Incorporating covariates into stochastic blockmodels. *Journal of Educational and Behavioral Statistics* 40(6), 635-664. <https://doi.org/10.3102/1076998615606110>
Sweet, T.M., Thomas, A.C., & Junker, B.W. (2013). Hierarchical network models for education research: hierarchical latent space models. *Journal of Educational and Behavioral Statistics*, 38(3), 295-318. <https://doi.org/10.3102/1076998612458702>

APPLIED ARTICLES

Spillane, J., Hopkins, M. & Sweet, T.M. (2018). Teachers' instructional beliefs and teachers' interactions about mathematics instruction: school system educational infrastructure and change at scale. *American Education Research Journal*, 55(3), 532-571. <https://doi.org/10.3102>

Spillane, J., Shirrell, M. & Sweet, T.M. (2017). Social geography and work-related intra-organizational ties: Exploring physical proximity and social interactions in the schoolhouse. *Sociology of Education*, 90(2), 149-171. <https://doi.org/10.1177/0038040717696151>

Hopkins, M., Ozimek, D., & Sweet, T.M. (2017). Mathematics coaching and instructional reform: Individual and collective change. *Journal of Mathematical Behavior*, 46, 215-230. <https://doi.org/10.1016/j.jmathb.2016.11.003>

Hopkins, M., Lowenhaupt, R. & Sweet, T.M. (2015). Organizing instruction in new immigrant destinations: District infrastructure and subject-specific school practice. *American Educational Research Journal*, 52(3), 408-439. <https://doi.org/10.3102/000283121558478>

Spillane, J. Hopkins, M. & Sweet, T.M. (2015). Intra- and inter- school interaction about instruction: Exploring the conditions for social capital development. *American Journal of Education*, 122(1), 71-110. <https://doi.org/10.1086/683292>

Korsah, G.A. , Mostow, J., Dias, B.M., Sweet, T.M., Belousov, S.M., Dias, M.F., & Gong, H. (2010). Improving Child Literacy in Africa: Experiments with an Automated Reading Tutor. *Information Technologies & International Development*, 6(2), 1-19.

CHAPTERS

Sweet, T.M. (forthcoming). Social network models. In G. R. Hancock, R.O. Mueller & L. M. Stapleton (Eds.). *The reviewer's guide to quantitative methods in the social sciences. 2nd Edition* New York: Routledge.

Sweet, T.M. (2017). Modeling collaboration with social network models. In A. Von Davier, P.C. Kyllonen, & M. Zhu (Eds.), *Innovative Assessment of Collaboration*. New York, NY: Springer.

Spillane, J.P., Hopkins, M., Sweet, T.M., & Shirrell, M. (2017) The social side of capability: Supporting classroom instruction and enabling its improvement. In (Eds.), *Teaching in Context: The Social Side of Education Reform*. Cambridge, MA: Harvard Education Press.

Sweet, T.M. and Zheng, Q. (2015). Multilevel social network models: incorporating network-level covariates into hierarchical latent space models. In J. Haring, L. Stapleton, & S. Beretvas (Eds.), *Advances in Multilevel Modeling for Educational Research: Addressing Practical Issues Found in Real-World Applications*. Charlotte, NC: Information Age Publishing.

Sweet, T. M., Thomas, A. C., & Junker, B. W. (2014). Hierarchical mixed membership stochastic blockmodels for multiple networks and experimental interventions. In E. Airoldi, D. Blei, E. Erosheva, & S. Fienberg (Eds.), *Handbook on Mixed Membership Models and Their Applications*. Boca Raton, FL: Chapman & Hall/CRC.

- BOOK REVIEWS Sweet, T.M. (2017). A review of statistical rethinking: A Bayesian course with examples in R and Stan. *Journal of Educational and Behavioral Statistics*, 42(1), 107-110.
- UNDER REVIEW Sweet, T.M. & Adhikari, S. A latent space model for network influence. Manuscript revision in preparation.
- IN PREP Sweet, T.M., Choi, D., & Flynt, G. Clustering ensembles of social networks. Manuscript in preparation.
- Adhikari, S., Sweet, T.M. & Junker, B. An analysis of longitudinal teacher advice-seeking networks with missingness. Manuscript revision in preparation.
- R PACKAGES Dabbs, B., Junker, B. W., Sweet, T. M., and Thomas, A. C. (2016). CIDnetworks: Generative models for complex networks with conditionally independent dyadic structure. Carnegie Mellon University. R package version 3.0.0.
- Adhikari, S., Junker, B. W., Sweet, T. M., and Thomas, A. C. (2016). HLMSM: Hierarchical latent space network model. Carnegie Mellon University. R package version 3.0.0.
- GRANTS AWARDED *Hierarchical Network Models: Mediation and Influence*. IES (US Dept of ED) Award #305D150045. PI. July 2015 - June 2019. \$ 828,211.
- Hierarchical Network Models for Education Research: Social Networks as Mediating Variables*. University of Maryland Pre-tenure Award: Support Program for Advancing Research and Collaboration. PI. Summer 2014. \$15,000.
- Hierarchical Network Models for Education Research*. IES (US Dept of ED) Award #R305D12004. Collaborator with PI Brian W. Junker and Co-PI Andrew C. Thomas, Carnegie Mellon University. July 2012- June 2015. \$480,986.
- PROFESSIONAL WORKSHOPS *Workshop on Latent Space Models*. Michigan State University, part of CEP991B (a course of social network models), November 2016.??
- Social Network Models in Education Research*. American Educational Research Association, April 2015.
- Social Networks in Education Research*. 79th Annual Meeting of Psychometric Society, July 2014.
- Social Networks in Education Research*. University of Virginia, June 2014.??
- Intervention Effects on Social Networks in Education Research*. Society for Research on Educational Effectiveness, Washington DC, March 2014.

INVITED
SYMPOSIA

Invited Session for Journal of Educational and Behavior Statistics, Joint Statistical Meetings, August 2017.

Invited Session on Social Networks, by Social Statistics Section, Joint Statistical Meetings, August 2016.

Invited Session on Social Networks for Annual Meeting of National Council on Measurement in Education, April 2016.

INVITED TALKS

Incorporating Social Network Models into Evaluation Research. American Institutes for Research, Washington, DC, June 2015.

Modeling Networks as Mediators. Statistics Education Research Group, Dept of Statistics, Carnegie Mellon University, Pittsburgh PA, June 2015.

Hierarchical Social Network Models with Applications in the Social Sciences. Mathematics Department Student Talk Series, Bucknell University, Lewisburg, PA, January 2015.

Hierarchical Network Models for Modeling Ensembles of Social Networks. Social Cognition, Technology and Assessment Seminar Series, Educational Testing Service, Princeton, NJ, September 2014.

Latent Space Social Network Models for Interventions in Education. The 2011 Classification Society Meeting, Carnegie Mellon University, Pittsburgh, PA., June 2011.

INVITED PANELS

Invited participant, CMART Conversations: A Workshop on on Postdoctoral Training, Pittsburgh PA. June 22-23, 2015.

Hierarchical models for social networks. Innovative Assessment of Collaboration Working Meeting, Educational Testing Service, Arlington, VA, October 2014.

PRESENTATIONS

Sweet, T.M. (2018, July). A latent space model for network influence. Paper to be presented at the 2018 International Meeting of the Psychometric Society, New York, NY.

Zheng, Y., Zheng, Q., & Sweet, T.M. (2018, July). Model fit for conditionally independent dyad (CID) network models. Paper to be presented at the 2018 International Meeting of the Psychometric Society, New York, NY.

Sweet, T.M. (2018, March). Modeling social networks as mediators. Paper presented at the spring meeting of the Society for Research on Educational Effectiveness, Washington, DC.

Shirrell, M., Spillane, J.P., & Sweet, T.M. (2018, March). Understanding the building blocks of on-the-job teacher education: The role of physical proximity in work-related social ties among school staff. Paper presented at the spring meeting of the Society for Research on Educational Effectiveness, Washington, DC.

Sweet, T.M. (2017). *Modeling Network-level Effects on Subgroup Insularity.* The 1st North American Social Networks Conference, Washington, DC.

Sweet, T.M., Choi, D., & Flynt, A. (2016). *Using Feature Vectors to Cluster Social Networks*. Joint Statistical Meetings, Chicago, IL.

Sales, A., Sweet, T.M. & Adhikari, S. (2016). *Causal Mediation Analysis of Social Networks*. Joint Statistical Meetings, Chicago, IL.

Sweet, T.M. (2016). *Modeling Networks as Mediators*. XXXVI Sunbelt Conference of the International Networks for Social Network Analysis, Newport Beach, CA.

Zheng, Z. & Sweet, T.M. (2016). *Hierarchical Mixed Membership Stochastic Blockmodel with Network-level Covariates*. Annual Meeting of the National Council on Measurement in Education.

Sweet, T.M. (2016). *A Hierarchical Latent Space Model for Influence*. Annual Meeting of the Society for Research on Educational Effectiveness.

Sweet, T.M. (2015). *Incorporating Covariates into Hierarchical Mixed Membership Stochastic Blockmodels*. Joint Statistical Meetings, Seattle, WA, August, 2015.

Sweet, T.M. (2015). *Hierarchical Network Models for Interventions on Social Networks*. American Educational Research Association, Chicago, IL, April 2015.

Sweet, T.M. (2014). *Hierarchical Mixed Membership Stochastic Blockmodels with Network-level Covariates*. Advances in Multilevel Modeling for Educational Research: Addressing Practice Issues Found in Real-World Applications, University of Maryland, College Park.

Sweet, T.M. (2014). *Power to Detect Intervention Effects on Ensembles of Social Networks*. Joint Statistical Meetings, Boston, MA.

Zheng, Q. & Sweet, T.M. (2014). *Hierarchical Mixed Membership Stochastic Blockmodels with Network-level Covariates*. 79th Annual Meeting of Psychometric Society, Madison, WI.

Sweet, T.M. (2014). *Power to Detect Intervention Effects on Ensembles of Social Networks*. 79th Annual Meeting of Psychometric Society, Madison, WI.

Sweet, T.M. (2014). *Hierarchical Network Models*. Frontiers of Hierarchical Modeling in Observational Studies, Complex Surveys and Big Data: A Conference Honoring Professor Malay Ghosh, College Park, MD.

Sweet, T.M. (2014) *Hierarchical Network Models*. Sunbelt XXXIV Conference, St. Petersburg, FL.

Sweet, T.M. (2013) *Hierarchical Mixed Membership Stochastic Blockmodels for Education Research*. National Council on Research in Education, San Francisco CA.

Sweet, T.M. & Junker, B.W. (2013) *Sample Size Calculations for Interventions on Social Networks*. Society for Research on Educational Effectiveness, Washington, DC.

Sweet, T.M. (2012) *Modeling Intervention Effects on Subgroup Structure Across Social Networks*. Society for Research on Educational Effectiveness, Washington, D.C.

Sweet, T.M. (2012) *Hierarchical Network Models for Education Research: Hierarchical Latent Space Models*. Joint Statistical Meetings, San Diego, CA.

Sweet, T.M. & Junker, B.W. (2011). Social network models for educational interventions. Paper presented at the 2011 International Meeting of the Psychometric Society, Hong Kong.

PROFESSIONAL SERVICE Software Editor for Journal of Educational and Behavioral Statistics (2014-present)
Editorial board for Contemporary Educational Psychology (2014-2015)

Ad-hoc Reviewer for

Journal of Educational and Behavioral Statistics	American Journal of Education
Social Networks	Language Learning
Biometrika	Contemporary Educational Psychology
Evaluation Review	Pyschometrika
Multivariate Behavioral Research	Design Science

Conference Reviewer for

American Educational Research Association Division D
American Educational Research Association Multilevel SIG
Society for Research on Educational Effectiveness

Memberships: *American Statistical Association, American Educational Research Association, Society for Research on Educational Effectiveness*

UNIVERSITY SERVICE College of Education Awards Committee (2013– 2014)
EDMS Admissions Committee (2013 – present)
HDQM Committee on Fellowships (2013 – present)
College of Education Senate (2014 – present)
HDQM Chair Search Committee (2014–present)

ADVISING PhD Students:
• Qiwen Zheng (co-chair)
• Kylie Goodell (co-chair)
• Austin Fossey (co-chair)

MA Students:
• Josh Kazman
• Jenessa Malin (2015)

Dissertation Committees:
• Dan McNeish, University of Maryland, 2015
• Melissa Kochanowski, University of Maryland, 2015
• Samrachana Adhikari, Carnegie Mellon University, 2016
• Beau Dabbs, Carnegie Mellon University, 2016
• Kathy Stepien, University of Maryland
• Tiago Calico, University of Maryland

TEACHING 76-303 Sampling Survey and Society, Carnegie Mellon University, Spring 2013
EDMS-645 Quantitative Research Methods I, University of Maryland, Fall 2013-2015
EDMS-787 Bayesian Inference and Analysis, University of Maryland, Spring 2015, 2016

CONSULTING	<p>Racial Disparities in Surgical Outcomes 2017 University of Maryland Baltimore Medical School Statistical consultant for modeling racial differences in cardiac surgery outcomes</p> <p>Jim Spillane and Researcher-Practitioner Partnership Project 2012 - present Northwestern University, School of Education and Social Policy Statistical consultant for social network analyses</p> <p>Ruth Neild and Successful Transitions to Algebra 2009–2010 Johns Hopkins University, Center for Social Organization of Schools Analysis of curricular intervention: student outcomes, student and teacher surveys, and teacher observations</p> <p>Lindsay Matsumura and Content Focused Coaching 2008 University of Pittsburgh, School of Education Analysis of teacher surveys and observational data</p> <p>Jack Mostow and Project Listen 2008 Carnegie Mellon University, Department of Robotics Analysis of online reading tutor experimental data</p>
AWARDS	<p>University of Maryland College of Education Pre-tenure Scholarship Award 2016</p> <p>Joint Statistical Meetings Student Paper Award 2012 Social Statistics, Government Statistics, and Survey Research Methods Sections</p> <p>Institute of Education Sciences Graduate Fellowship 2008–2012 Carnegie Mellon University Program for Interdisciplinary Education Research (PIER; pre-doctoral training program), tuition, stipend and travel funds.</p> <p>National Science Foundation Fellowship 2007–2008 Carnegie Mellon University Vertical InteGration of Research and Education (VIGRE), tuition and stipend.</p> <p>Tuition Award 2005–2007 Morgan State University Student Award, tuition.</p> <p>Wheeler Award 2006 Towson High School Teaching Award</p> <p>Phi Beta Kappa 2000</p> <p>Presidential Fellowship 1996–2000 Bucknell University Student Award, tuition and work study opportunities.</p> <p>Undergraduate Research Fellowship 1998, 1999 Bucknell University Summer Research Award, summer stipend.</p>

COMPUTING R/S-Plus, SPSS, SAS, BUGS, Stan, C, L^AT_EX.
SKILLS