Joshua **Rosenberg**

Assistant Professor, STEM Education

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Highlights

- Experienced computational social scientist and data scientist
- Develop of open-source software, including three R packages on CRAN
- Manager of an educational data science research group with three NSF grants

Experience

University of Tennessee — *Knoxville, TN*

Assistant Professor, STEM Education — *2018-2020*

Education

Michigan State University — *East Lansing, MI*

PhD, Educational Psychology and Educational Technology — *2018*

Michigan State University — *East Lansing, MI*

MA, Education — *2014*

University of North Carolina, Asheville — *Asheville, NC*

BS, Biology — *2012*

External Funding

Grants

2019-2021, Principle Investigator (PI), *Understanding the development of interest in computer science: An experience sampling approach* ($346,688). National Science Foundation [NSF]. `http://picsul.utk.edu/` (NSF Grant No. 1937700)

2019-2021, Co-PI, *CS for Appalachia: A research-practice partnership for integrating computer science into East Tennessee schools* ($252,453; *PI*: Lynn Hodge, University of Tennessee, Knoxville). NSF. (NSF Grant No. 1923509)

2019-2022, Co-PI, *Advancing computational grounded theory for audiovisual data from STEM classrooms* ($1,313,855; *PI*: Christina Krist, University of Illinois Urbana-Champaign; University of Tennessee, Knoxville subcontract: $101,469). NSF. `https://tca2.education.illinois.edu/` (NSF Grant No. 1920796)

2019-2020, PI, *Planting the seeds for computer science education in East Tennessee through a research-practice partnership* ($13,200). Community Engaged Research Seed Program, University of Tennessee, Knoxville.

Select Publications

Estrellado, R. A., Freer, E. A., Mostipak, J., Rosenberg, J. M., & Velásquez, I. C. (in press). Data science in education using R. London, England: Routledge. Nb. All authors contributed equally. `http://www.datascienceineducation.com/`

Rosenberg, J. M., Reid, J., Dyer, E., Koehler, M. J., Fischer, C., & McKenna, T. J. (in press). Idle chatter or compelling conversation? The potential of the social media-based #NGSSchat network as a support for science education reform efforts. *Journal of Research in Science Teaching*.

Anderson, D. J., Rowley, B., Stegenga, S., Irvin, P. S., & Rosenberg, J. M. (advance online publication). Evaluating content-related validity evidence using a text-based, machine learning procedure. Educational Measurement:

Issues and Practice. https://onlinelibrary.wiley.com/doi/abs/10.1111/emip.12314

Greenhalgh, S. P., Rosenberg, J. M., Koehler, M. J., Akcaoglu, M., & Staudt Willet, K. B. (2020). Identifying multiple learning spaces within a single teacher-focused Twitter hashtag. Computers & Education, 148(4). https://doi.org/10.1016/j.compedu.2020.103809

Xu, R., Frank, K. A., Maroulis, S., & Rosenberg, J. M. (2019). konfound: Command to quantify robustness of causal inferences. The Stata Journal, 19(3), 523-550.

Rosenberg, J. M., van Lissa, C. J., Beymer, P. N., Anderson, D. J., Schell, M. J. & Schmidt, J. A. (2019). tidyLPA: Easily carry out Latent Profile Analysis (LPA) using open-source or commercial software [R package]. https://data-edu.github.io/tidyLPA/

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Select Presentations

Rosenberg, J. M., Qinyun, L., Xu, R., Maroulis, S., & Frank, K. A. (July, 2020). *The konfound R package and Shiny app for robustness analysis*. Presentation at the useR conference, St. Louis, MO.

Rosenberg, J. M., Beymer, P. N., Phun, V., Schmidt, J. A. (2020, April). Sources of variability for students' engagement in science: Findings from a cross-classified, multivariate modeling approach. In P. N. Beymer, D. K. Benden, & M. L. Bernacki (Chairs), *Affordances and modeling of intensive data*. Symposium conducted at the American Educational Research Association Annual Meeting, San Francisco, CA.

Rosenberg, J. M, Beymer, P. N., Houslay, T. M., & Schmidt, J. A. (2019, April). Using a multivariate, multi-level model to understand how youths' in-the-moment engagement predicts changes in youths' interest. In M. Bernacki, A. Kaplan, and L. Linnenbrink-Garcia (Chairs), *Embracing and modeling the complex dynamics of motivation and engagement: Contextual, temporal, dynamic, and systematic*. Symposium conducted at the Annual Meeting of the American Educational Research Association, Toronto, CA.

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Software Developed

R packages on the Comprehensive R Archive Network (CRAN)

Rosenberg, J. M., van Lissa, C. J., Beymer, P. N., Anderson, D. J., Schell, M. J. & Schmidt, J. A. (2019). *tidyLPA: Easily carry out Latent Profile Analysis (LPA) using open-source or commercial software* [R package]. https://data-edu.github.io/tidyLPA/

Rosenberg, J. M., Xu, R., & Frank, K. A. (2019). *konfound: Quantify the robustness of causal inferences* [R package]. https://jrosen48.github.io/konfound/

Rosenberg, J. M., Schmidt, J. A., Beymer, P. N., & Steingut, R. (2018). *prcr: Person-Centered Analysis* [R package]. https://CRAN.R-project.org/package=prcr

R packages on GitHub

Estrellado, R. A., Bovee, E. A., Mostipak, J., Rosenberg, J. M., & Velásquez, I. C. (2019). *dataedu: Package for Data Science in Education Using R*. https://github.com/data-edu/dataedu

Anderson, D. Heiss, A., and Rosenberg, J. M. (2019). *equatiomatic: Transform Models into LaTeX Equations.* https://github.com/datalorax/equatiomatic

Interactive Web Application

Rosenberg, J. M., Xu, R., & Frank, K. A. (2019). *Konfound-It!: Quantify the robustness of causal inferences.* http://konfound-it.com.

Web Application

Lishinski, A., & Rosenberg, J. M. (2019). *Short message survey: An open-source, text-message based application for the experience sampling method.* https://github.com/picsul/short-message-survey