

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

ASSISTANT PROFESSOR, STEM EDUCATION

Knoxville, TN

2018-2020

Education

Michigan State University

PHD, EDUCATIONAL PSYCHOLOGY AND EDUCATIONAL TECHNOLOGY

East Lansing, MI

2018

Michigan State University

MA, EDUCATION

East Lansing, MI

2014

University of North Carolina, Asheville

BS, BIOLOGY

Asheville, NC

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 userR 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>