

# W. JAKE THOMPSON

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## Education

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**University of Kansas** May 2018 Lawrence, KS  
*Doctor of Philosophy in Educational Psychology; emphasis in Research, Evaluation, Measurement, and Statistics*

- Dissertation title: “Evaluating Model Estimation Processes for Diagnostic Classification Models”

**University of Kansas** May 2014 Lawrence, KS  
*Bachelor of Science in Behavioral Neuroscience – with Highest Distinction*  
*Minor in Social and Behavioral Sciences Methodology*

- Honors Thesis title: “Dissociating Cognitive and Affective Empathy in Unipolar Depression”

## Professional Experience

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**Accessible Teaching, Learning, and Assessment Systems (ATLAS),**  
**University of Kansas** August 2014-present Lawrence, KS  
*Psychometrician (April 2018-present)*

- Member of the ATLAS psychometric team; work primarily on the Dynamic Learning Maps alternate assessment, an 18-state consortium that uses DLM as their large-scale operational assessment; create and maintain both internal and publicly available R packages for psychometric analysis; manage the continued development of script work for operational delivery of assessment results; lead the research program on psychometric modeling; develop and execute research projects for presentation to national conferences and the technical advisory committee.

*Psychometrician Assistant (January 2016-April 2018)*

- Member of the Dynamic Learning Maps psychometric team; created and maintained an R package for the estimation of the psychometric model and scoring of the assessment; developed R and SQL scripts to create deliverable score report files to state partners; collaborated with other psychometricians and content teams to ensure the quality and accuracy of score reports; executed research projects to be presented at national conferences and to the technical advisory committee.

*Graduate Research Assistant (August 2014-January 2016)*

- Member of the Dynamic Learning Maps psychometric team; created R scripts to rescore technology enhanced items; collaborated with psychometricians to develop R scripts to generate student score reports; prepared research projects for presentation.
- Member of the Dynamic Learning Maps science content team; collaborated with consultants, content experts and educators to develop appropriate test standards; developed materials for educator workshops for item writing; assisted in the implementation of a new assessment for member states.

**Jake Thompson Consulting** January 2015-present Kansas City, KS  
*Statistical Consultant*

- Provide statistical and methodological consultation on a variety of topics to clients.
- Example projects include: developing an instructional course on Bayesian regression modeling for DataCamp; analyzing data for research labs at the University of Kansas Medical Center; providing recommendations for the implementation of evidence centered design to the National Council of State Boards of Nursing; estimating growth projections for JNA Advertising.

- Member of the professional assessment team; collaborated closely with clinicians to ensure that appropriate testing was performed for each assessment; administered neuropsychological assessments and wrote clinical reports on the results; developed and maintained a database to track assessments and keep electronic records.

## Publications & Presentations

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### PUBLICATIONS

- Thompson, W. J.**, Clark, A. K., & Nash, B. (2018). Measuring the reliability of diagnostic mastery classifications at multiple levels of reporting. *Manuscript under review*.
- Nash, B., **Thompson, W. J.**, & Clark, A. K. (2018). Evaluating an initialization tool for student placement into a map-based assessment. *Manuscript in preparation*.
- Thompson, W. J.** (2018). Methods for evaluating model fit for diagnostic classification models. *Manuscript in preparation*.
- Thompson, W. J.** (2018). Construct Irrelevance. In B. B. Frey (Ed.), *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (pp. 375-376). Thousand Oaks, CA: SAGE. <https://doi.org/10.4135/9781506326139.n143>
- Thompson, W. J.** (2017). Visualizing different levels of compensation in multidimensional item response theory models. *Educational Measurement: Issues and Practice*, 36(4), 3.
- Chryssikou, E. G., & **Thompson, W. J.** (2016). Assessing cognitive and affective empathy through the Interpersonal Reactivity Index: An argument against a two-factor model. *Assessment*, 23(6), 769-777. doi:10.1177/1073191115599055
- Thompson, W. J.**, Nash, B., Clark, A., & Karvonen, M. (2016). Dynamic assessment routing. *Educational Measurement: Issues and Practice*, 35(2), 33.

### CONFERENCE PRESENTATIONS

- Thompson, W. J.**, & Nash, B. (2019, April). *Empirical Methods for Evaluating Maps: Illustrations and Results*. Paper to be presented at the National Council on Measurement in Education Annual Meeting, Toronto, Canada.
- Thompson, W. J.**, Clark, A. K., & Nash, B. (2018, April). *Measuring Reliability of Student Mastery Classifications at Multiple Levels*. Paper presented at the National Council on Measurement in Education Annual Meeting, New York, NY.
- Nash, B., Clark, A., & **Thompson, W. J.** (2018, April). *Using Simulation to Evaluate Retest Reliability of Assessment Results*. Paper presented at the National Council on Measurement in Education Annual Meeting, New York, NY.
- Brussow, J. A., Skorupski, W. P., & **Thompson, W. J.** (2018, April). *A Hierarchical IRT Model for Identifying Group-Level Aberrant Growth*. Paper presented to the National Council on Measurement in Education Annual Meeting, New York, NY.
- Brussow, J. A., Skorupski, W. P., & **Thompson, W. J.** (2017, September). *A Hierarchical IRT Model for Identifying Group-Level Aberrant Growth*. Poster presented at the Conference on Test Security, Madison, WI.
- Thompson, W. J.** (2017, July). *Creating an R package for a Reproducible Workflow in Educational Assessment*. Poster accepted to the annual useR! Conference, Brussels, Belgium.
- Nash, B., & **Thompson, W. J.** (2017, April). *Evaluating an Initialization Tool for Student Placement Into a Map-Based Assessment*. Paper presented at the National Council on Measurement in Education Annual Meeting, San Antonio, TX.

- Moriarty, P. M., Sponseller, C. A., Backes, J., Ruisinger, J., Sehar, N., Denney, L., **Thompson, W. J.**, & Wick, J. A. (2016, July). *Pitavastatin Lowers Plasma Levels of COQ10 Less Than Equipotent Doses of Rosuvastatin or Atorvastatin*. Poster presented at the European Society of Cardiology Congress, Rome, Italy.
- Moriarty, P. M., Sponseller, C. A., Backes, J., Ruisinger, J., Sehar, N., Denney, L., **Thompson, W. J.**, & Wick, J. A. (2016, June). *Pitavastatin Lowers Plasma Levels of COQ10 Less Than Equipotent Doses of Rosuvastatin or Atorvastatin*. Poster presented at the Symposium of the International Atherosclerosis Society: “Anitschkow” Days, St. Petersburg, Russia.
- Thompson, W. J.**, & Chryssikou, E. G. (2014, May). *Dissociating Cognitive and Affective Empathy*. Poster presented at the University of Kansas Symposium for Undergraduate Psychology Engagement and Research, Lawrence, KS.
- Thompson, W. J.**, & Chryssikou, E. G. (2013, November). *Dissociating Cognitive and Affective Empathy: Implications for Mood Disorders*. Poster presented at the 54<sup>th</sup> Annual Meeting of the Psychonomic Society, Toronto, Canada.
- Ramey, C. H., & **Thompson, W. J.** (2013, November). *Getting Into a Character’s Head: The Role of Reading Fiction vs. Non-Fiction in Empathy*. Poster presented at the 54<sup>th</sup> Annual Meeting of the Psychonomic Society, Toronto, Canada.
- Chryssikou, E. G., **Thompson, W. J.**, Hanson, G. K., Martin, L. E., & Ingram, R. E. (2013, June). *Transcranial Direct Current Stimulation as a Possible Intervention Tool for Emotion Regulation in Depression*. Poster presented at the Integrating Technology in Translational Research Symposium, Kansas City, MO.

## R PACKAGES

- Thompson, W. J.** (2018). *jayhawkdown: A bookdown template for University of Kansas dissertations and theses*. R package version 1.0.0. <https://github.com/wjakethompson/jayhawkdown>
- Thompson, W. J.** (2018). *dlnr: The Dynamic Learning Maps psychometric operational workflow*. Internal R package for ATLAS/DLM.
- Thompson, W. J.** & Pablo, N. (2018). *ratlas: Custom Report Formatting for the Center for Accessible Teaching, Learning, and Assessment Systems*. Internal R package for ATLAS/DLM.
- Thompson, W. J.** (2018). *rstandlrm: Bayesian estimation of the DLM psychometric model via interface with Stan*. Internal R package for ATLAS/DLM.

## INVITED TALKS

- Thompson, W. J.** (2015, October). *Statistical Analysis in Sports*. Talk given to the Research, Evaluation, Measurement, and Statistics graduate seminar, University of Kansas, Lawrence, KS.
- Thompson, W. J.** & Chryssikou, E. G. (2014, April). *Dissociating Cognitive and Affective Empathy*. Talk given at the 17<sup>th</sup> Annual Undergraduate Research Symposium, University of Kansas, Lawrence, KS.
- Thompson, W. J.** (2013, November). *Using Transcranial Direct Current Stimulation for the Treatment of Mood Disorders*. Talk given to the Hoglund Brain Imaging Center Neuroimaging Journal Club, University of Kansas Medical Center, Kansas City, MO.

## WORKSHOPS

- Thompson, W. J.** (2016, October). *Data visualization using ggplot2*. Talk given to the Research, Evaluation, Measurement, and Statistics graduate seminar, University of Kansas, Lawrence, KS.
- Thompson, W. J.** (2015, October). *Data Manipulation in R: Using and Transforming Your Data*. Talk given at the Center for Educational Testing and Evaluation Lunch & Learn, University of Kansas, Lawrence KS.

**Thompson, W. J.** (2015, September). *Data Mining in R: Answering Questions About Your Data*. Talk given at the Center for Educational Testing and Evaluation Lunch & Learn, University of Kansas, Lawrence, KS.

## Relevant Coursework and Technical Knowledge

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### GRADUATE COURSES COMPLETED

- Bayesian Statistics
- Diagnostic Classification Models
- Generalized Linear Mixed Models
- Item Response Theory
- Linear Regression
- Meta-Analysis
- Missing Data Analysis
- Multilevel Modeling
- Multivariate Analysis
- Statistical Computing Foundations (Audit)
- Structural Equation Modeling
- Theory and Applications of Educational Measurement

### TECHNICAL KNOWLEDGE

*Exceptional Proficiency:* R, rmarkdown, Microsoft Office

*Proficiency:* Git/Github, Stan, JAGS, BUGS/OpenBUGS, SPSS, Mplus

*Growing Proficiency:* SQL, C++, HTML, CSS

## Awards

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- *Educational Measurement: Issues and Practice* Cover Showcase Winner (2017)
- *Educational Measurement: Issues and Practice* Cover Showcase Top 10 (2016)
- Chancellor's Doctoral Fellowship (2014-2016)
- University of Kansas Department of Psychology Best Honors Thesis (2014)
- Outstanding Research by an Undergraduate in Psychology (2014)
- Dane G. Hansen Leader of Tomorrow Scholarship (2010-2014)
- Summerfield Scholarship (2010-2014)
- Kansas Governor's Scholar (2010)
- Kansas Honor's Scholar (2010)

## Service

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### MEMBERSHIPS

- American Educational Research Association (Division D: Measurement and Research Methodology)
- American Psychological Association (Division 5: Evaluation, Measurement, and Statistics)
- National Council on Measurement in Education
  - Student Representative, Diversity and Testing Committee (2015)

### REVIEWER

- National Council on Measurement in Education Annual Meeting (2019)
- Behaviormetrika (2019-present)

## Funding

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### PENDING

**Thompson, W. J. (PI)**, Almond, R. (Mentor). (2018, August). *Improving software and methods for estimating diagnostic classification models and evaluating model fit*. Submitted to Institute of Education Sciences.