

## TOMNET University Transportation Center Presents a Two-Part Bootcamp

# Data Modeling for Behavioral Research

May/June 2021 (Exact Dates TBD)

**Start Time:** May/June 2021 TBD  
**End Time:** May/June 2021 TBD  
**Location:** Arizona State University, Tempe Campus: CAVC Room 559  
([College Avenue Commons, 660 S College Avenue, Tempe, AZ 85281](#))  
**Instructor:** Professor Kevin J. Grimm, [kjgrimm@asu.edu](mailto:kjgrimm@asu.edu)

[Click Here for Details and to Register](#)

### About the Workshop

This two-part five-day bootcamp includes three days of theory and application of machine learning (data mining, statistical learning) and followed by two days of structural equations modeling. Attendees may register for either part or both. In contrast to traditional hypothesis-driven approaches to analysis, machine learning enables investigators to assess the predictive value of various combinations of variables in a data set. The goals of this workshop are to provide attendees an understanding of various machine learning approaches, how to assess the utility of each approach, how to evaluate the predictive power of each approach, and how to tailor models to obtain replicable results. The workshop will include both theoretical and practical hands-on exercises using R. Topics covered include k-fold cross-validation, linear and nonlinear regression models, splines and smoothing splines, advanced variable selection approaches in multiple regression (e.g., regularized regression, multivariate adaptive regression splines), logistic regression and decision theory, classification and regression trees, and ensemble methods (bagging, random forests, and boosting). The second part of the bootcamp constitutes a two-day workshop on Structural Equation Modeling (SEM). SEM has emerged as a powerful modeling tool for analyzing multiple dependent variables within a simultaneous equations framework. The method is particularly valuable for developing latent constructs and exploring relationships that connect latent constructs and behavioral outcomes of interest. Attendees will use R to specify and estimate structural equation models.

Attendees may register for either part of the bootcamp or both parts combined. Seats are limited; Register today!

### About the Instructor

The primary instructor of the workshop is Dr. Kevin J. Grimm, Professor in the Department of Psychology at Arizona State University since 2014. Dr. Grimm is an internationally renowned expert and authority in statistical modeling for behavioral research. Between 2007 and 2014, Dr. Grimm served on the faculty of the Department of Psychology at the University of California at Davis. Grimm's research focuses primarily on longitudinal methods for the study of change at the individual and group-level, including research into nonlinear change models, growth mixture models, and latent change score models. His current research focuses on data integration, the specification of growth models for binary and ordinal outcomes, model selection in finite mixture modeling, and the development and application of machine learning techniques for psychological science. He is the author of *Growth Modeling: Structural Equation and Multilevel Modeling Approaches* (2017; Guilford) and has a book titled *Exploratory Data Mining for Social and Behavioral Scientists* (with Ross Jacobucci) that is under contract with Guilford. He is the 2017 recipient of the Cattell Award from the Society of Multivariate Experimental Psychology for early career contributions to multivariate experimental psychology.

**School of Sustainable Engineering and the Built Environment**

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