

Stats Camp Staff:



Todd Little, Ph.D.
Stats Camp Director



Instructor: Todd D. Little Ph.D.

Todd D. Little, PhD is a Professor and director of the Institute for Measurement, Methodology, Analysis and Policy at Texas Tech University. He is widely recognized for his quantitative work on various aspects of applied SEM (e.g., modern missing data treatments, indicator selection, parceling, modeling developmental processes) as well as his substantive developmental research (e.g., action-control processes and motivation, coping, and self-regulation). His work has garnered over 34,000 citations with an h-index of 878 and an i10-index of 211. In 2001, he was elected to membership in the Society for Multivariate Experimental Psychology, and in 2009, he was elected President of APA's Division 5 (Evaluation, Measurement, and Statistics). He is a fellow in APA, APS, and AAAS. In 2013, he received the Cohen award from Division 5 of APA for distinguished contributions to teaching and mentoring and in 2015 he received the inaugural distinguished contributions award for mentoring developmental scientists from the Society for Research in Child Development. Both awards cited his founding of Stats Camp (Statscamp.org) in 2003 and its ongoing impact on shaping the quality of scientific inquiry for both past and future generations of researchers.

3-Day Topics Include:

- Fitting measurement models
- Three methods of scale setting - including effects coding!
- Using rescaling constructs (aka Phantom Constructs)
- Updated recommendations for Scale Validation/Evaluation
- Multiple-Group Comparisons with applications for experimental and observational groups!
- Factorial/Measurement Invariance - *Are you measuring the same construct?*
- Extended Applications Such as Parceling and Missing Data



Statistics Seminar Objectives

The three-day training institute on Structural Equation Modeling will enable participants to:

- Gain a basic understanding of structural equation modeling techniques as applied in the social and behavioral sciences.
- Develop a clear understanding of the conceptual basis of SEM and an appreciation of its mathematical basis.
- Gain knowledge of the ways in which one should formulate models, test alternative models, and evaluate models with regard to statistical and practical significance.
- Introduce the use of SEM program(s) with example scripts for LISREL, Mplus and Laavan.

Seminar Audience

If you need to analyze the covariance structure of multivariate data and have a basic statistical background, this seminar is for you. You should have a good working knowledge of the principles and practice of multiple regression and elementary statistical inference. You do not need to know matrix algebra, calculus, or likelihood theory (although that knowledge would be beneficial). Participants from a variety of fields, including sociology, psychology, education, human development, marketing, business, biology, medicine, political science, and communication, will benefit from the seminar.

The seminar will support LISREL, Mplus or Laavan. No previous knowledge of LISREL, Mplus or Laavan is assumed. Furthermore, nearly all the techniques taught in the seminar can be translated fairly easily to most other packages.

Syllabus:

SEM Foundations	
Monday	January 20, 2020
9:00 am	Welcome and Introductions. Philosophy and Theory Construction
10:15-10:30	Snack and Refreshment Break Foundations and Scale setting
12:00 - 1:00	Lunch Break Defining Constructs and Identification
2:30 - 2:45	Snack and Refreshment Break Confirmatory Factor Analysis I - Introduction to CFA
5:00 pm	End daily
Tuesday	January 21, 2020
9:00 am	Missing Data
10:15-10:30	Snack and Refreshment Break Confirmatory Factor Analysis II - Comparing Models, Model fit
12:00 - 1:00	Lunch Break CFA: The foundation of any SEM model, continued
2:30 - 2:45	Snack and Refreshment Break Parcels and Parceling; Start of Individual Consultations
Wednesday	January 22, 2020
9:00 am	Multiple-Group CFA - Testing for configural and weak invariance
10:15-10:30	Snack and Refreshment Break Multiple-Group CFA - Testing for Strong Invariance
12:00 - 1:00	Lunch Break Multiple-Group CFA - Tests and comparing latent parameters
2:30 - 2:45	Snack and Refreshment Break Wrap-up then Individual Consultations

Seminar Prerequisites

Required:

- Proficiency in multiple linear regression.
- At least limited experience with continuous latent variable models, e.g., exploratory and confirmatory factor analysis (EFA; CFA) and structural equation modeling (SEM).
- Beginner-level exposure with at least one statistical software package (e.g., SPSS, Stata, SAS, R, LISREL, Mplus, etc.).

Not required but advantageous:

- At least limited experience (e.g., graduate-level course) with multivariate data analysis.

No level of proficiency beyond basic awareness is assumed for skills related to:

- Modern missing data treatments
- Parceling procedures
- Multiple group SEM
- Advanced mathematical or statistical topics such as matrix algebra or likelihood theory.

Software and Computer Support

Participants need to bring a laptop computer with Wi-Fi capabilities. We strongly recommend that you also bring an extension cord or power strip

All statistical software used at Stats Camp will be available, free to participants, on our [SMORS](#) (statistical modeling on remote servers) system for the duration of camp.

The course will support LISREL, Mplus and laavan. Previous knowledge of LISREL, Mplus or laavan is preferred but not required.

Seminar Files

Seminar files and downloads will be posted on the first day of class. Please download these files onto your computer at the beginning of the first day. The files are password protected to respect the intellectual property rights of the instructors. By using your login information, you agree not to share login information or the content protected by it.

Seminar Certificate

Upon completion of the course you may request an official Stats Camp print-ready PDF certificate. Please [contact us here](#) to request a digital copy.

Why Should You Attend?

- Get 1 on 1 Consultation With Instructor
- Professional Networking
- Peer Socializing
- Collaboration
- All Course Resources
- Lunches & Snacks Daily