Winter Institute on Structural Equation Modeling

TWO SHORT-COURSES FOR RESEARCH PROFESSIONALS
OFFERED BY
THE DEPARTMENT OF MEASUREMENT, STATISTICS & EVALUATION
UNIVERSITY OF MARYLAND, COLLEGE PARK
and
THE CENTER FOR INTEGRATED LATENT VARIABLE RESEARCH (CILVR)

Dates: January 3-5, 2011 (Monday AM − Wednesday PM), *Introduction to Structural Equation Modeling*
January 6-7, 2011 (Thursday AM − Friday PM), *Advanced Topics in Structural Equation Modeling*

Instructor: Dr. Gregory R. Hancock, University of Maryland, College Park

Location: Stamp Student Union Building (room to be announced)
University of Maryland
College Park, MD 20742

Structural Equation Modeling (SEM)

Structural equation modeling (covariance structure analysis, latent variable analysis, causal modeling), in its fullest form, is a marriage between path analysis and factor analysis, facilitating the investigation of causal relations among both measured and latent variables. The particular advantage of methods involving latent variables is that causal theories may be investigated as they pertain directly to the underlying constructs of interest, rather than to the measured variables whose observed relations are often attenuated by error of measurement. This is not to say that SEM infers causality from correlation; rather, given a priori hypotheses derived on the basis of strong theory, the degree of variables' observed correlation (covariance) is evaluated in relation to that implied by the researcher's theory of latent and observed causality.

Scope of Winter Institute – Two Short-Courses Back-to-Back

Introduction to Structural Equation Modeling: This three-day course assumes no prior experience with SEM, and is intended as both a theoretical and practical introduction. An understanding of SEM will be developed by relating it to participants' previous knowledge of multiple linear regression, and then by expanding it to allow for correlated and causally related latent constructs. We will start with path analysis among measured variables, move into confirmatory factor models, then structural models involving latent causality, and finally into multi-group models and a preview of more advanced topics. Examples from a variety of disciplines will be accompanied by input and output using the SIMPLIS/LISREL software package. Throughout the course participants will be able to do practice exercises using SIMPLIS/LISREL; participants are strongly encouraged to bring their own laptop PCs to do these exercises. (Participants will be instructed on how to download the free student version of SIMPLIS/LISREL prior to the course.)

Advanced Topics in Structural Equation Modeling: This two-day course assumes experience with introductory level SEM, such as that provided in our three-day introductory course (immediately preceding this course, or taken previously) or from a fairly typical university course exposure elsewhere. Topics addressed will draw from such areas as latent means models, latent interactions, latent growth models, categorical data, complex samples / multilevel structural equation models, and power analysis in SEM, as time allows. Although this material is necessarily more complex, it will be presented in an approachable hands-on manner for the applied researcher. Throughout the course participants will be able to do practice exercises using SIMPLIS/LISREL; participants are strongly encouraged to bring their own laptop PCs to do these exercises. (Participants will be instructed on how to download the free student version of SIMPLIS/LISREL prior to the course.)

About the Instructor

Gregory R. Hancock is Professor and Department Chair in the Department of Measurement, Statistics and Evaluation at the University of Maryland, College Park, and Director of the Center for Integrated Latent Variable Research (CILVR). His research has appeared in such journals as *Psychometrika*, *Multivariate Behavioral Research, Structural Equation Modeling: A Multidisciplinary Journal, Psychological Bulletin, British Journal of Mathematical and Statistical Psychology*, *Journal of Educational and Behavioral Statistics, Educational and Psychological Measurement, Review of Educational Research,* and *Communications in Statistics: Simulation and Computation.* He also co-edited with Ralph Mueller the volumes *Structural Equation Modeling: A Second Course* (2006) and *The Reviewer's Guide to Quantitative Methods in the Social Sciences* (2010), and with Karen M. Samuelsen the volume *Advances in Latent Variable Mixture Models* (2008). He is past chair of the SEM special interest group of the American Educational Research Association (three terms), serves on the editorial board of a number of journals including *Psychological Methods* and is Associate Editor of *Structural Equation Modeling: A Multidisciplinary Journal*, and has taught dozens of SEM workshops in the United States, Canada, and abroad. Dr. Hancock holds a Ph.D. from the University of Washington. He can be reached via email at: ghancock@umd.edu.

Course Package A: Introduction to Structural Equation Modeling ($595; for full time students $395)

	Monday, Tuesday, Wednesday (January 3-5, 2011)
Continental breakfast:	8:30 AM to 9:00 AM
Morning session:	9:00 AM to 12:30 PM
Lunch (on your own):	12:30 PM to 1:30 PM
Afternoon session:	1:30 PM to 5:00 PM

Course Package B: Advanced Topics in Structural Equation Modeling ($495; for full time students $345)

	Thursday, Friday (January 6-7, 2011)
Continental breakfast:	8:30 AM to 9:00 AM
Morning session:	9:00 AM to 12:30 PM
Lunch (on your own):	12:30 PM to 1:30 PM
Afternoon session:	1:30 PM to 5:00 PM

Course Package C: Both Short Courses ($995; for full time students $695)

Course fees include course materials and continental breakfasts. Participants are responsible for their lodging, lunches, evening meals, and parking. For general information for visitors to the University, see the web site: www.maryland.edu