**Modern Modeling Methods – 2023 Schedule**

**Tuesday, June 27th**

***Continental Breakfast and Registration*** 7:30 – 8:30 am

McHugh Hall Atrium

***Concurrent Paper Session 1* Tuesday 8:30 – 10:00 am**

**Session 1A: Dynamic Fit Index Cutoffs in SEM**

**Room 202**

|  |  |
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| **Paper** | **Authors** |
| *Dynamic Fit Index Cutoffs for Generalizing and Extending Hu & Bentler* | Daniel McNeish  Melissa Wolf  Patrick Manapat |

**Session 1B: Causal Moderation**

**Room 305**

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| **Paper** | **Authors** |
| *Alternative Specifications for Instrumental Variable Analysis in Structural Equation Modeling: First Steps Toward Latent Analysis of Symmetrically Predicted Endogenous Subgroups* | Anthony J. Gambino |
| *Estimating and Interpreting Heterogeneous Treatment Effects in Online Experiments* | Mårten Schultzberg |
| *Causal Language in Evaluating Moderation/Interaction Hypotheses* | Amanda Kay Montoya |

**Session 1C: Latent Variable Modeling as a Vehicle toward Diversity, Equity, and Inclusion**

**Room 307**

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| **Symposium** | **Authors** |
| *Illustrating and Enacting a Critical Quantitative Approach to Measurement with MIMIC Models* | Matthew A. Diemer  Michael B. Frisby  Aixa D. Marchand  Emanuele Bardelli |
| *Using QuantCrit to Advance an Anti-Racist Developmental Science: Applications to Mixture Modeling* | Sara Johnson  Sara Suzuki  Stacy Morris |
| *Critical Action and Ethnic-Racial Identity: Tools of Racial Resistance at the College Transition* | Channing Mathews  Myles Durkee  Elan Hope |
| *Development of the White Critical Consciousness Index* | Michael B. Frisby  Matthew A. Diemer |

***Concurrent Paper Session 1* Tuesday 8:30 – 10:00 am**

**Session 1D: Measurement Invariance**

**Room 306**

|  |  |
| --- | --- |
| **Paper** | **Authors** |
| *Pervasive Differential Item Functioning (DIF)* | Paul De Boeck  William Goette |
| *Examining SEM Trees for Investigating Measurement Invariance Concerning Multiple Violators* | Yuanfang Liu  Mark H. C. Lai |
| *Methods for Intersectional Measurement Invariance Testing* | Dakota Cintron |

**Session 1E: Applications of Spatial and Longitudinal Models**

**Room 108**

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| **Paper** | **Authors** |
| *Subjective Well-being and Social Isolation in the COVID-19 Pandemic: A 3-Wave Longitudinal Study across One Year* | Tingshu Liu  Rodica Ioana Damian  David Francis |
| *Measuring Self-Regulatory Development from Kindergarten to Fifth Grade: Longitudinal Psychometrics with Alignment Optimization* | Emily M. Weiss |
| *Assessing Differences in Medical Debt in CT by Racial/Ethnic Minorities Using Modern Spatial Path Analytic Methods* | Emil Coman  Samuel Bruder  Kelly George  Saachi Shah |

**10:00 – 10:15 am:** Coffee Break in the McHugh Hall Atrium

***Opening Keynote*** – Bengt Muthén 10:15 – 11:45 am

McHugh Hall 102

***Recent Advances in Modeling Short and Long Longitudinal Data***

*Bengt Muthén*

McHugh Hall 102

10:15 – 11:45 am

The first part of this talk considers repeated measures data with a small number of time points (5-10). Recent thoughts on growth modeling and cross-lagged panel models are discussed. The second part of the talk considers intensive longitudinal data with many time points (20-100). Recent analysis issues in multilevel timeseries analysis using dynamic structural equation models (DSEM), residual DSEM (RDSEM), and cross-classified models are discussed.

***Lunch* Tuesday 11:45 am – 1:00 pm**

Student Union Ballroom

3rd floor, Student Union

***Concurrent Paper Session 2* Tuesday 1:00 – 2:30 pm**

**Session 2A: Penalized Structural Equation Modeling**

**Room 202**

|  |  |
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| **Paper** | **Authors** |
| *Penalized Structural Equation Modeling* | Tihomir Asparouhov |

**Session 2B: Over-dispersion and Extra-zeros in Multilevel Models for Discrete Count Data**

**Room 108**

|  |  |
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| **Paper** | **Authors** |
| *Model Typology and Demonstration for Over-dispersion and Extra-zeros in Multilevel Models for Discrete Count Data* | Ann A. O'Connell  Nivedita Bhaktha  Krisann Stephany  Winifred Wilberforce  Abena Anyidoho |

**Session 2C: Bayesian Approaches**

**Room 305**

|  |  |
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| **Paper** | **Authors** |
| *Bayesian Model Averaging: A Conceptual Introduction* | Tyler Hicks  Graham Rifenbark  Jesse Pace |
| *A Holistic Bayesian Approach to Addressing Measurement Reactivity with a Planned Missing Data Design* | Mark Himmelstein  David V. Budescu |
| *Bayesian Model Evaluation using Marginal Likelihood for Growth Mixture Models* | Xingyao Xiao  Feng Ji  Yihong Cheng |

**Session 2D: SEM Fundamentals**

**Room 307**

|  |  |
| --- | --- |
| **Paper** | **Authors** |
| *Structural Equation Models for Between, Within, and Mixed Factorial Designs* | Alexander M. Schoemann  Stephen D. Short |
| *Reenergizing Lost Modeling Treasures: The 100+ Years Old Path Analytic Tracing Rule* | Emil Coman  Sabrina Uva |

***Concurrent Paper Session 2* Tuesday 1:00 – 2:30 pm**

**Session 2E: Modeling Dynamic Processes I**

**Room 306**

|  |  |
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| **Paper** | **Authors** |
| *Empirical Bayes Derivative Estimates* | Pascal R. Deboeck |
| *Modeling Dynamic Processes with Panel Data: An Application of Continuous Time Models to Prevention Research* | Pascal R. Deboeck  David A. Cole  Kristopher J. Preacher  Rex Forehand  Bruce E. Compas |

**Session 2F: Longitudinal Applications I**

**Room 308**

|  |  |
| --- | --- |
| **Paper** | **Authors** |
| *Longitudinal Prediction of Health Using the Unique Variance in Personal Suffering Assessment Items* | R. Noah Padgett  Richard Cowden  Tyler VanderWeele |
| *Examination of Heterogeneity of Growth Trajectory on Wage with Auxiliary Covariates: Applying BCH Approach in Growth Mixture Modeling* | Hawjeng Chiou  Wenyu Chiou |
| *Do Executive Function and Effortful Control Co-Develop? Evidence from Latent Growth Curves with Structured Residuals and Multivariate Growth Mixture Models* | Emily M. Weiss |

**2:30 – 2:45 pm Break** – McHugh Hall Atrium

***Concurrent Paper Session 3* Tuesday 2:45 – 3:45 pm**

**Session 3B: Dealing with Missing Data**

**Room 305**

|  |  |
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| **Paper** | **Authors** |
| *The Impact of MNAR Dropout on Estimation of Latent Growth Curve Models with Binary Observed Variables* | Jason T. Newsom  Brian T. Keller  Nicholas A. Smith  Mallory R. Kroeck |
| *Estimating Treatment Effects in Partially Clustered Randomized Controlled Trials with Missing Data: Challenges and Solutions* | Manshu Yang |

**Session 3C: Modeling Item-Level Heterogeneous Treatment Effects with Explanatory IRT**

**Room 307**

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| **Paper** | **Authors** |
| *Modeling Item-Level Heterogeneous Treatment Effects with the Explanatory Item Response Model: Leveraging Online Assessments to Pinpoint the Impact of Educational Interventions* | Joshua Gilbert  James Kim  Luke Miratrix |

**Session 3D: Comparing Latent and Composite Constructs with Nested Equivalence Testing**

**Room 306**

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| **Symposium** | **Authors** |
| *Comparing Latent and Composite Constructs with Nested Equivalence Testing* | Danielle Siegel  Mijke Rhemtulla |

***Concurrent Paper Session 3* Tuesday 2:45 – 3:45 pm**

**Session 3E: Latent Class Analysis**

**Room 108**

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| **Paper** | **Authors** |
| *Modeling Careless Responding in Ambulatory Assessment Studies Using Multilevel Latent Class Analysis: Factors Influencing Careless Responding* | Kilian Hasselhorn  Charlotte Ottenstein  Tanja Lischetzke |
| *Using Latent Class Models to Derive Subtypes for the Enneagram Personality Typology* | Jay Magidson |

**Session 3F: Bifactor Measurement Models**

**Room 202 (*NOTE ROOM CHANGE*)**

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| **Paper** | **Authors** |
| *Confirmatory Bifactor Measurement Models: Their Utility in Scale Development, Psychometric Modeling and Research with Latent Variables and/or Multidimensional Constructs* | Rafael Ramirez |
| *Investigating the Factor Structure of Sense of Social and Academic Fit Scale: A Multilevel Bifactor Study* | Lizzy Wu  Gabriella Jiang  Nidia Ruedas-Gracia  Taiylor Rayford  Shiyu Sun |

**3:45 – 4:00 pm Break**

***Concurrent Paper Session 4* Tuesday 4:00 – 5:00 pm**

**Session 4A: Partially Nested Designs**

**Room 202**

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| **Paper** | **Authors** |
| *Statistical Power for Multisite Partially Nested Regression Discontinuity Designs* | Fangxing Bai  Benjamin Kelcey |
| *Estimation, Statistical Power in Partially Nested Multisite Clustered-Randomized Trials* | Kyle Cox  Yanli Xie  Benjamin Kelcey |

**Session 4B: Longitudinal Causal Effect Estimation**

**Room 305**

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| **Paper** | **Authors** |
| *Estimating Longitudinal Causal Effects: A Comparison of Marginal Structural Models, and Structural Equation Modeling Approaches* | Jeroen D. Mulder |
| *Asking and Answering Causal Questions Using Longitudinal Data* | Rafael Quintana |

**Session 4C: Characterisation and Identification of Multivariate Latent Manifolds: Analytically Resolving Factor Score Indeterminacy**

**Room 307**

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| **Paper** | **Authors** |
| *Characterisation and Identification of Multivariate Latent Manifolds: Analytically Resolving Factor Score Indeterminacy* | Landon Hurley |

**Session 4D: Latent Variable Models for Location, Shape, and Scale Parameters**

**Room 306**

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| **Paper** | **Authors** |
| *Latent Variable Models for Location, Shape, and Scale Parameters* | Camilo Cardenas-Hurtado  Irini Moustaki  Giampiero Marra  Yunxiao Chen |

***Concurrent Paper Session 4* Tuesday 4:00 – 5:00 pm**

**Session 4E: Interactive, Automated, and Dynamic SEMs for Maximal Productivity**

**Room 308**

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| **Paper** | **Authors** |
| *Interactive, Automated, and Dynamic SEMs for Maximal Productivity* | Laura Castro-Schilo |

**Session 4F: Mixed Effect Location Scale Models: Methodological and Substantive Considerations**

**Room 108**

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| **Paper** | **Authors** |
| *Mixed Effect Location Scale Models: Methodological and Substantive Considerations* | Jennifer Richardson  D. Betsy McCoach |

***Poster Session and Reception***

Student Union Ballroom

5:00 – 7:00 pm

Tuesday, June 27th

Third Floor, Student Union

**Wednesday, June 28th**

***Continental Breakfast***

7:30 – 8:00 am

McHugh Hall Atrium

***Concurrent Paper Session 5* Wednesday 8:00 – 9:00 am**

**Session 5A: A Two-Step Robust Estimation Approach for Inferring Within-Person Relations in Longitudinal Design**

**Room 102**

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| **Paper** | **Authors** |
| *A Two-Step Robust Estimation Approach for Inferring Within-Person Relations in Longitudinal Design* | Satoshi Usami |

**Session 5B: Model Fit Issues in Measurement Models**

**Room 202**

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| **Paper** | **Authors** |
| *ESEM, CFA, and Somewhere In-Between: The Effect of Measurement Quality on Model Fit Sensitivity* | Tim Konold  Elizabeth Sanders |
| *Performance of Model Fit Indices in Confirmatory Factor Analysis on Misspecified Item Response Models with Local Dependence* | Jiangqiong Li  Dubravka Svetina Valdivia |

**Session 5C: Causal Inference I**

**Room 305**

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| **Paper** | **Authors** |
| *Synthetic Control Models for Causal Inference in Observational Social and Behavioral Sciences* | John M. Felt  Zachary Fisher  Chad Shenk |
| *A Tutorial on Propensity Score Analysis with Semi-Continuous Treatment* | Huibin Zhang  Walter L. Leite |

***Concurrent Paper Session 5* Wednesday 8:00 – 9:00 am**

**Session 5D: Partially/Disparately Nested Structures**

**Room 306**

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| **Paper** | **Authors** |
| *Croon's Estimation of Multilevel Structural Equation Models with Partially Nested Data* | Kyle Cox  Benjamin Kelcey |
| *Structural After Measurement Estimation of Disparately Nested Structures* | Fangxing Bai  Ben Kelcey  Yanli Xie  Kyle Cox |

**Session 5E: Difference-in-Differences: A Methodological Illustration**

**Room 107**

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| **Paper** | **Authors** |
| *Difference-in-Differences: A Methodological Illustration* | Meghan Cain |

**Session 5F: Designing Against Bias: Identifying and Mitigating Bias in Machine Learning and AI**

**Room 108**

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| **Paper** | **Authors** |
| *Designing Against Bias: Identifying and Mitigating Bias in Machine Learning and AI* | David J. Corliss |

**9:00 – 9:15 am Break** –McHugh Hall Atrium

***Keynote – Ellen Hamaker* Wednesday 9:15 – 10:30 am**

***Opportunities and Challenges of Intensive Longitudinal Data***

*Ellen Hamaker*

McHugh Hall 102

9:15 am – 10:30 am

Technological developments like smart phones and activity trackers have made it relatively easy to obtain many repeated measures from large samples of people while they are living their daily life. Measures may include self-report on affect, behaviors, cognitions, and the environment, but also physiological and/or non-intrusive measurements throughout the day. Such intensive longitudinal data offer new opportunities for studying the dynamics of everyday processes, and allow researchers to pose new research questions. However, with these new opportunities also come new challenges: How should we measure a process—e.g., how often and at what rate should we measure it—and what model should we use to analyze the data—e.g., how can we link our model to our research question? In this talk I will discuss opportunities and challenges associated with this exciting new methodology and sketch various ways in which we may move forward.

**10:30 – 10:45 am Break** –McHugh Hall Atrium

***Concurrent Paper Session 6* Wednesday 10:45 am – 12:15 pm**

**Session 6A: Transparency, Reproducibility, and Replicability of Modeling Methods: Problems and Solutions**

**Room 102**

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| **Symposium** | **Authors** |
| Transparency, Reproducibility, and Replicability of Modeling Methods: Problems and Solutions | Jessica Kay Flake  D. Betsy McCoach  Andrea Howard  Amanda Montoya |

**Session 6B: Complex Designs which Stretch the Boundaries of Conventional IRT**

**Room**

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| **Symposium** | **Authors** |
| *Scoring the Complexities of Alphabet Knowledge* | Jason Anthony  Janelle J. Montroy  Jeffrey M. Williams |
| *Multinomial Models for Unpacking Linguistically Informative Response Choices: Test Structure and Item Function* | Lee Branum-Martin  Julie A. Washington  Katherine Rhodes |
| *Picturing the Impossible: Pictures, Repetitions, and Item-Set Card Effects in Measuring Vocabulary* | Eleanor Fang Yan  Lee Branum-Martin |
| *Assessment of Children with Autism Using Eye Gaze and Generalized Additive Logistic Regression* | Ryan P. Bowles  Emily Lorang  Courtney E. Venker  Madeline Klotz |

**Session 6C: Reconsidering Lord's Paradox**

**Room 202**

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| **Paper** | **Authors** |
| *Robust and Pseudo-Robust Solutions to Lord's Paradox* | Robert E. Larzelere  Hua Lin |
| *Does Group-Mean Centering Always Inflate Type I Error Rates in Multiple Regression Analyses?* | Robert E. Larzelere  Hua Lin |
| *Dual Centered-ANCOVA with interaction, a Solution for Lord's paradox with Implications for Valid Causal Inferences in Longitudinal Analyses* | Hua Lin  Robert E. Larzelere |

***Concurrent Paper Session 6* Wednesday 10:45 am – 12:15 pm**

**Session 6D: Modeling Dynamic Processes II**

**Room 305**

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| **Paper** | **Authors** |
| *Consequences of Sampling Frequency on the Estimated Dynamics of AR Processes using Continuous Time Models* | Rohit Batra  Simran Johal  Meng Chen  Emilio Ferrer |
| *Summing the up and downs of life: The Bayesian Reservoir Model of Psychological Regulation* | Mirinda M. Whitaker  Cindy S. Bergeman  Pascal R. Deboeck |

**Session 6E: Dyadic and Group Applications**

**Room 306**

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| **Paper** | **Authors** |
| *The Dynamics of Opinion Expression During Group Discussion* | Joseph A. Bonito  Stephen A. Rains |
| *Boosting Powers by Combining Spatial Econometrics with Dyadic Analysis and SEM: Racial/Ethnic Differences in Life Expectancy across the US States* | Emil Coman  Peter Xiang Chen  Sandro Steinbach  Adrian-Gabriel Enescu  Monica Raileanu Szeles |

***Lunch* Wednesday 12:15 – 1:15 pm**

Student Union

***Please be sure to return your lunch card!***

***Concurrent Paper Session 7* Wednesday 1:15 – 2:15 pm**

**Session 7A: Tutorial: Methods for Sensitivity Analysis to Omitted Confounders in SEM**

**Room 102**

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| **Paper** | **Authors** |
| *A Tutorial on Methods for Sensitivity Analysis to Omitted Confounders in Structural Equation Modeling* | Walter L. Leite  Zuchao Shen  Charles L. Fisk  Eric A. Wright  Jeffrey Harring  Katerina M. Marcoulides |

**Session 7C: Modeling Single Subject Data**

**Room 305**

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| **Paper** | **Authors** |
| *GLMMs for Overdispersed Count Data in SCED Studies: Does Autocorrelation Matter?* | Haoran Li  Wen Luo  Eunkyeng Baek  Kwok Hap Lam  Wenyi Du  Noah Koehler |
| *Individual Participant Data Meta-Analysis Including Moderators: Empirical Validation* | Mariola Moeyaert  Yukang Xue  Panpan Yang |

**Session 7D: Enacting Critical Quantitative Methodology: Leveraging IRT to Advance Critical Consciousness Measurement**

**Room 202 (*NOTE ROOM CHANGE*)**

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| **Paper** | **Authors** |
| *Enacting Critical Quantitative Methodology: Leveraging IRT to Advance Critical Consciousness Measurement* | Matthew Diemer  Michael B. Frisby  Andres Pinedo  Emanuele Bardelli  Elise Wilkerson  Sara McAlister |

**Session 7E: The Construction and Estimation of Multidimensional Linear Factor Models without Parametric Assumptions**

**Room 306**

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| **Paper** | **Authors** |
| *The Construction and Estimation of Multidimensional Linear Factor Models without Parametric Assumptions* | Landon Hurley |

**2:15 – 2:30 pm Break** – Refreshments in McHugh Atrium

***Concurrent Paper Session 8* Wednesday 2:30 – 4:00 pm**

**Session 8A: Dyadic and Group Designs**

**Room 102**

|  |  |
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| **Paper** | **Authors** |
| *Understanding Group Effects Using the Co-Partner Design* | David A. Kenny |
| *Sample Considerations for Detecting Person, Dyad, and Contextual Effects Using the Common Fate Model for Dyadic Analysis* | Robert E. Wickham |

**Session 8B: Optimal Design and Cost Considerations**

**Room 202**

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| **Paper** | **Authors** |
| *Power Analysis and Sample Size Planning in the Design of Two-Level Randomized Cost-Effectiveness Trials* | Wei Li  Nianbo Dong  Rebecca Maynard  Benjamin Kelcey  Jessaca Spybrook  Yue Xu |
| *Optimal Design of Experimental Studies Under Condition- and Unit-Specific Cost Structures* | Zuchao Shen  Benjamin Kelcey |
| *Optimal Design of Multisite-Randomized Trials Investigating Mediation Effects Under Unequal Costs* | Zuchao Shen  Wei Li  Benjamin Kelcey  Walter Leite  Huibin Zhang |

**Session 8C: Longitudinal Applications II**

**Room 108**

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| **Paper** | **Authors** |
| *An Application of Random Changepoint Models to Cognitive Aging Research* | Zachary J. Kunicki  Yi Feng  Douglas Tommet  Sharon K. Inouye  Richard N. Jones |
| *Application of a Novel Model for Analyzing Data from Randomized Pretest, Posttest, Follow-up Designs: Results from a Pediatric Randomized Behavioral Clinical Trial* | Constance Mara |
| *Health in All Polices Approach: A Dynamic Modelling of Social Policies' Effect on Mental Health* | Ekaterina Melianova |

***Concurrent Paper Session 8* Wednesday 2:30 – 4:00 pm**

**Session 8D: Sample Heterogeneity in Dynamic Psychological Processes**

**Room 305**

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| **Symposium** | **Authors** |
| *A Bayesian Multilevel Mixture Autoregressive Model* | Xingyao Xiao  Feng Ji |
| *Identifying and Explaining Sample Heterogeneity in Dynamic Psychological Processes Using ml-VARTree* | D. Jody Zhou  Emilio Ferrer  Siwei Liu |
| *Impact of Temporal Order Selection on Clustering Intensive Longitudinal Data Based on Vector Autoregressive Models* | Hairong Song  Yaqi Li |
| *Penalized Subgrouping of Heterogeneous Time Series* | Christopher Crawford  Jonathan Park  Sy-Miin Chow  Zachary Fisher |
| *Clustering Analysis of Time Series of Affect in Dyadic Interactions* | Samuel D. Aragones  Emilio Ferrer |

**Session 8E: Modeling COVID-19**

**Room 306**

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| **Paper** | **Authors** |
| *Unobserved Components Models: Applications in Post-COVID Analysis* | David J. Corliss |
| *Using Cross-classified Multi-level Modeling to Identify COVID-19 Period Effects on Race and Gender Differences in Training Effectiveness* | Youngmin Kim  Bridget McHugh  Rebecca Berenbon  Abena Anyidoho |
| *Daily Associations of Emotion and Fatigue in College Students during the Early Stages of the COVID-19 Pandemic: An Application of Dynamic Structural Equation Modeling* | Parisa Rafiee  Elizabeth Pauley  Melissa Rothstein  Amy L. Stamates  Manshu Yang |