

# IMPS 2025



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**University of Minnesota • Minneapolis, MN, USA**  
July 15-18, 2025 • Short Courses July 14

## Graduate by Hilton Minneapolis

Top of the Escalators Foyer (Second Floor)  
615 Washington Ave SE, Minneapolis, MN 55414

**Monday, July 14:**  
8:00 a.m. - 5:00 p.m.

**Tuesday, July 15:**  
7:30 a.m. - 4:30 p.m.

**Wednesday, July 16:**  
7:30 a.m. - 5:00 p.m.

**Thursday, July 17:**  
7:30 a.m. - 4:30 p.m.

**Friday, July 18:**  
7:30 a.m. - 3:00 p.m.

All Times Listed in  
Central Time

## Monday • July 14

### Room 1

**9:00 a.m. - 5:00 p.m.**

#### Short Course #1:

#### Bayesian Psychometric Modeling and Blavaan

Speakers: Prof. Ed Merkle

9:00 a.m. - 10:30 a.m. • Short Course  
10:30 a.m. - 10:45 a.m. • Refreshment Break  
10:50 a.m. - 12:00 p.m. • Short Course  
12:00 a.m. - 1:30 p.m. • Lunch Break  
1:30 p.m. - 3:00 p.m. • Short Course  
3:00 p.m. - 3:15 p.m. • Refreshment Break  
3:15 p.m. - 4:45 p.m. • Short Course  
4:45 p.m. - 5:00 p.m. • Q&A

### Room 2

**9:00 a.m. - 5:00 p.m.**

#### Short Course #2:

#### Cognitive Diagnosis Models: Theory and Applications in R

Speakers: Dr. Wenchao Ma, Prof. Jimmy de la Torre,  
and Dr. Sangbeak Ye

9:00 a.m. - 10:30 a.m. • Short Course  
10:30 a.m. - 10:50 a.m. • Refreshment Break  
10:50 a.m. - 12:10 p.m. • Short Course  
12:10 p.m. - 1:10 p.m. • Lunch Break  
1:30 p.m. - 3:10 p.m. • Short Course  
3:10 p.m. - 3:30 p.m. • Refreshment Break  
3:30 p.m. - 4:50 p.m. • Short Course  
4:50 p.m. - 5:00 p.m. • Wrap-up

### Room 3

**9:30 a.m. - 12:30 p.m.**

#### Short Course #4:

#### Modeling Item-Level Heterogeneous Treatment Effects: A Tutorial in R

Speakers: Dr. Joshua Gilbert

9:30 a.m. - 11:00 a.m. • Short Course  
11:00 a.m. - 11:15 a.m. • Refreshment Break  
11:15 a.m. - 12:30 p.m. • Short Course

### Room 3

**2:00 p.m. - 5:30 p.m.**

#### Short Course #4:

#### Development of Interactive Shiny Modules for Psychometric Research Dissemination

Speakers: Dr. Patrícia Martinková & Dr. Jan Netík

2:00 p.m. - 3:30 p.m. • Short Course  
3:30 p.m. - 4:00 p.m. • Refreshment Break  
4:00 p.m. - 5:30 p.m. • Short Course

**6:30 p.m. -  
8:30 p.m.**

**Topgolf Swing Suite (In The Graduate Hotel) | Address: 615 Washington Ave SE, Minneapolis, MN 55414**

### Graduate Student Dinner Mixer

This event is exclusively for graduate students and will be hosted by the Psychometric Society.



9:00 a.m. -  
9:15 a.m.

Room 1

Welcome: Prof. Denny Borsboom, Prof. Nidhi Kohli,  
Prof. Michael Rodriguez, and Prof. Anne Foegen

9:15 a.m. -  
10:15 a.m.

Room 1

**Keynote Address: Prof. Steve Marron**  
**Data Integration Via Analysis of Subspaces**  
*Chair: TBA*

10:15 a.m. -  
10:45 a.m.

Meridian Ballroom Foyer

## Refreshment Break

Room 1

**Session: Artificial Intelligence I**  
*Chair: TBA*

**A critical evaluation of similarity indices for psychometric research**  
Mr. Josiah Hunsberger

**Enhancing item parameters prediction with transfer learning**  
Dr. Mingfeng Xue

**Evaluating the capabilities of large language models in evidence synthesis**  
Ms. Yuchen Zhang

**Item evaluation using LLM-respondents: A psychometric analysis with open-source data**  
Ms. Yunting Liu

**Revolutionizing psychometrics through unobtrusive AI measurement (AIM)**  
Dr. Matt Barney

Room 2

**Session: Methods for Aberrant Behaviors**  
*Chair: TBA*

**Item response models with regime-switching for response engagement: A Bayesian approach**  
Dr. Christian Aßmann

**Evaluating rapid guessing as noninformative about respondent proficiency**  
Prof. Daniel Bolt

**Integrating disengagement identification into response style modeling: Response times matter**  
Mr. Jieyuan Dong

**Detecting aberrant responses using a general mixture model for cognitive diagnosis**  
Mr. Joemari Olea

**A beta mixture model for careless respondent detection in visual analogue scale data**  
Ms. Lijin Zhang

Room 3

**Session: Advances in Parameter Estimation**  
*Chair: TBA*

**Higher-order extended variational approximation to estimate latent variable models**  
Prof. Björn Andersson

**Resolving computational challenges of SEMs with big data using a divide-and-conquer approach to Bayesian synthesis**  
Prof. Katerina Marcoulides

**Likelihood ratio tests with marginal maximum likelihood using laplace approximations and adaptive quadrature**  
Ms. Lu Zhang

**An improved Satterthwaite (1941, 1946) effective df Approximation**  
Prof. Matthias von Davier

**Calibrated frequentist inference by stochastic approximation**  
Prof. Yang Liu

Room 4

**Session: Multilevel Modeling**  
*Chair: TBA*

**Careless responding in intensive longitudinal data: Effects on multilevel models**  
Ms. Alicia Gernand

**The use of a multilevel multiple-indicators random-intercept cross-lagged panel model in college student goal pursuit**  
Dr. Hiroki Matsuo

**What if sample size is the confound in multilevel models?**  
Mr. Michael Truong

**Estimating reliability using unbiased variance components in a nested design with group-specific distributions**  
Dr. Siyuan Marco Chen

**Multilevel model ICCs: Issues with reduced-model computation and full-model-based solutions**  
Ms. Yingchi Guo

10:45 a.m. -  
12:00 p.m.

Room 5

**Session: Conceptual Issues in Measurement**  
*Chair: TBA*

**A data-driven approach to measurement: Psychologists, let the data speak!**  
Mrs. Claudia Ovalle

**From interval scales to scales with intervals**  
Prof. Derek Briggs

**Tailoring educational assessments for varied student demographics: An initial exploration**  
Dr. Sandip Sinharay

**An update on Jaeger & Hendricks: Publishing in psychological measurement**  
Mrs. Victoria Quirk

Room 6

**Session: Construct Validity, Past and Present: From Meehl and Minnesota to Beyond**  
*Chair: TBA*

Honoring the Minnesota legacy of Paul Meehl, this session features a panel discussion on construct validity with short opening remarks from participants (philosophers and psychometricians), followed by an open conversation with the audience.

Participants include Bennett McNulty, Jessica Flake, Susan Embretson, Noah van Dongen, Alan Love, and Denny Borsboom.

Room 7

**Session: Item Response Theory I**  
*Chair: TBA*

**Classifying respondents' item-specific strengths with an interaction map approach**  
Dr. Jinwen Luo

**Unexplained item-person interactions due to heterogeneous item discriminations across individuals**  
Dr. Nana Kim

**Impact of item locations on parameter recovery with the GGUM**  
Ms. Nicole Bongse

**Exposome burden scores to summarize environmental chemical mixtures: Creating a common scale for cross-study harmonization, report-back and precision environmental health**  
Dr. Shelley Liu

**Integrating multidimensional scaling into the multidimensional generalized graded unfolding model**  
Ms. Zhaoyu Wang

**TUESDAY  
CONTINUED**  
12:00 p.m. -  
1:30 p.m.

**Lunch (On Your Own)**

1:30 p.m. -  
2:15 p.m.

**Room 1**

**Invited Speaker: Prof. Hongyun Liu & Prof. Yueqin Hu**  
**Exploring Intensive Longitudinal Data Analysis: Challenges and  
Advances in Measurement and Modeling**  
*Chair: TBA*

**Room 2**

**Invited Speaker: Prof. Nidhi Kohli**  
**Bayesian Longitudinal Mediation Models**  
*Chair: TBA*

**Room 1**

**Session: Bayesian Methods and Their Applications**  
*Chair: TBA*

**Estimating marginal effects with zero-inflated Poisson models**  
Mr. Chendong Li

**Probabilistic projections of country-level progress to the UN SDG indicator of minimum proficiency in reading and mathematics**  
Prof. David Kaplan

**Fast and efficient robust Bayesian meta-analysis with spike-and-slab priors**  
Mr. František Bartoš

**An innovative way of estimating subgroups mean estimates: SABDB**  
Dr. Sinan Yavuz

**Multilevel heterogeneous factor model with fixed covariates**  
Ms. Meijin Lin

**Room 2**

**Session: Applications of Cognitive Diagnostic Models**  
*Chair: TBA*

**A diagnostic approach to explore mental rotation skills**  
Mr. Andrew Krist

**Estimating a comprehensive general spatial ability using CDM Models**  
Mr. Jujia Li

**Analyzing teacher mathematics skills using cognitive diagnosis modeling**  
Mr. Nuryim Shora

**An empirical comparison of cognitive diagnosis model and multidimensional IRT**  
Prof. Wenchao Ma

**The choice between cognitive diagnosis and item response theory: A case study from medical education**  
Prof. Youn Seon Lim

**Room 3**

**Session: Differential Item Functioning and Measurement Invariance I**  
*Chair: TBA*

**Evaluation of partial measurement invariance under sparse ordinal indicators using induced Dirichlet threshold priors**  
Mr. Fatih Ozkan

**Statistical analysis of large-scale item response data under measurement non-invariance: A new alignment method and its application to PISA 2022**  
Dr. Jing Ouyang

**Machine learning methods for differential item functioning: A systematic review**  
Mr. Mubarak Mojojinola

**Investigating CogAT 7: Intersectional measurement invariance using ASEM**  
Dr. Qingzhou Shi

**Can measurement invariance be established in a non-ergodic situation?**  
Mr. Yeongjin Jo

**Room 4**

**Session: Process Data Analysis**  
*Chair: TBA*

**Advancing behavioral pattern clustering with time-warped longest common subsequence method on process data**  
Dr. Qiwei He

**Understanding the evolution of individual response process: An exploratory approach**  
Ms. Ruiting Shen

**A Copula-based joint model for item responses and response times**  
Mr. Sunbeom Kwon

**Modeling process data using latent space models**  
Dr. Tracy Sweet

**A utility-maximization framework for joint modeling of time and accuracy**  
Dr. Weicong Lyu

2:30 p.m. -  
3:45 p.m.

**Room 5**

**Session: Clustering Analysis**  
*Chair: TBA*

**Thresholding method for identifying anomalies in wellbeing time series data**  
Dr. Marie Turcicova

**Clustering experience sampled time series with deterministic and stochastic trends**  
Dr. Paul Wesley Scott

**Temporal brain process clustering by clusterwise-IVA to unveil patient heterogeneity**  
Dr. Tom Wilderjans

**Comparing three strategies for clustering intensive longitudinal data**  
Dr. Yaqi Li

**Understanding psychological temporal patterns: Clustering time-series data and its challenges**  
Ms. Yuanyuan Ji

**Room 6**

**Session: Dynamic Value Added Models**  
*Chair: TBA*

**Dynamic value-added in school effectiveness: A model-free approach**  
Dr. Sebastien Van Belleghem

**Temporally dynamic, cohort-varying value-added models**  
Dr. Ernesto San Martin

**Bayesian approach to modeling dynamic group membership in nonlinear random effects models**  
Prof. Nidhi Kohli

**Room 7**

**Session: What Can Parameter Moderation do for You?**  
*Chair: TBA*

**Improving the evaluation of construct change over time: Comparing longitudinal moderated nonlinear factor analysis to the conventional first-order growth model**  
Dr. Siyuan Marco Chen

**Advancing a general framework of parameter moderation**  
Dr. Ethan McCormick

**Individual variability as a moderator of latent structural relations**  
Mr. Joshua R. Shulkin

**Generalizing the specification and estimation of item heterogeneity models with parameter moderation**  
Dr. Sanford Student





**TUESDAY  
CONTINUED**  
3:45 p.m. -  
4:15 p.m.

Meridian Ballroom Foyer

## Refreshment Break

4:15 p.m. -  
5:15 p.m.

Room 1

**Dissertation Award Speaker: Dr. Mark Himmelstein**  
**Measuring Persuasion Without Measuring a Prior Belief: A New Application of Planned Missing Data Techniques**  
*Chair: TBA*

Memorial Hall of McNamara Center | Address: 200 SE Oak St, Minneapolis, MN 55455

5:15 p.m. -  
7:15 p.m.

## Welcome Reception

**5:15 p.m. - 7:15 p.m. • Welcome Reception**

**5:30 p.m. • Welcome Remarks**

*Prof. Nidhi Kohli, Prof. LeAnne Johnson, and Prof. Frank Symons (UMN)*

**5:45 p.m. - 7:15 p.m. • Poster Session**

This year's Welcome Reception is in combination with the Poster Session. Enjoy light appetizers, a cash bar, an appearance by Goldy the Gopher - UMN Mascot, all while presenters will be at their posters for attendees to explore a diverse collection of psychometric research.



## Room 1

**Session: Mediation Analysis**  
*Chair: TBA*

**On structural misspecifications in latent variable mediation analysis**  
Mr. Bing Cai Kok

**Advancing multiple-group mediation using Bayesian regularization**  
Ms. Emma Somer

**Nonlinear mediation model with Bayesian p-splines**  
Dr. Qijin Chen

**Investigating the impact of cross-loadings on model fit and mediation inferences in the latent mediator model**  
Ms. Qiulin Lu

**Longitudinal heterogeneous mediation analysis with latent mediators and a time-to-event outcome**  
Dr. Rongqian Sun

## Room 2

**Session: Cognitive Diagnostic Models I**  
*Chair: TBA*

**Development of robust estimation methods for cognitive diagnosis**  
Dr. Daxun Wang

**Bayesian criterion-referenced diagnostic classification models**  
Dr. Jonathan Templin

**Cognitive diagnostic models for measuring 21st century skills**  
Ms. Kristin Lansing

**A Bayesian semi-parametric framework for cognitive diagnostic models**  
Mr. Michel Cordoba

**Model-based differential item functioning detection in cognitive diagnostic assessments**  
Ms. Song Zhili

## Room 3

**Session: Computer Adaptive Testing I**  
*Chair: TBA*

**Variable-length fully Bayesian adaptive testing and its stopping criteria**  
Dr. Luping Niu

**A Two-Level Adaptive Testing with Polytomous Items**  
Prof. Seung Choi

**Item parameter estimates with non-ignorable missing data patterns in CATs**  
Dr. Steven Nydick

**Linear-on-the-Fly Testing (LOFT): Which design to choose?**  
Prof. Susan Embretson

**Efficient online item parameter estimation in small-sample CAT using gradient descent methods**  
Dr. Zichu Liu

## Room 4

**Session: IRT Estimation**  
*Chair: TBA*

**A sensitivity study of likelihood-based estimation of IRT models**  
Dr. Dmitry Belov

**Joint consistency of a multidimensional nonparametric continuous response model**  
Mr. Mauricio Castillo

**Generative adversarial networks for high-dimensional item factor analysis**  
Mr. Nanyu Luo

**Some standard errors of the polytomous item response theory models**  
Prof. Seock-Ho Kim

**Weighted likelihood estimator and its standard errors for sequential IRT models**  
Mr. Yikai Lu

9:00 a.m.  
- 10:15 a.m.

## Room 5

**Session: Network Models I**  
*Chair: TBA*

**Comparing symptom network structure across multiple psychiatric disorders**  
Dr. Hao Luo

**[Degree] distributions in psychological networks**  
Dr. Jonathan Park

**Neighborhood selection in cross-sectional network analysis for ordinal data**  
Mr. Kai Jannik Nehler

**The impact of measurement error in dynamic network models**  
Ms. Reeta Kankaanpää

**The invariance partial pruning approach to the network comparison in longitudinal data**  
Mr. Xinkai Du

## Room 6

**Session: Generative Psychometrics: Advancing Psychological Scale Development Through Large Language Models**  
*Chair: TBA*

**AI-GENIE: A simulation study on the fully automatic scale development methodology**  
Ms. Lara Russell-Lasalandra

**Empirical validation of AI-GENIE**  
Dr. Alexander Christensen

**Optimizing LLM embeddings for automatic item development and validation**  
Dr. Hudson Golino

## Room 7

**Session: Validity**  
*Chair: TBA*

**Decomposing the predictive capacity of a selection test**  
Dr. Eduardo Alarcón-Bustamante

**Psychometric measurement of forecasters using the wisdom of the crowd**  
Ms. Jessica Helmer

**Understanding the predictive capacity of admission test scores across the scale**  
Mr. Pablo Espinoza

**Latent structure discovery in 3D science CAT via matrix factorization**  
Dr. Yi-Fang Wu

10:15 a.m.  
- 10:45 a.m.

Meridian Ballroom Foyer

## Refreshment Break

10:45 a.m. -  
11:45 a.m.

## Room 1

**Career Lifetime Achievement Award: Prof. Shizuhiko Nishisato**  
**Reminiscing Controversies Over Joint Graphical Display in Quantification**  
*Chair: TBA*

11:45 a.m. -  
1:30 p.m.

Lunch (On Your Own)

WEDNESDAY  
CONTINUED  
1:30 p.m. -  
2:45 p.m.

### Room 1

**Session: Artificial Intelligence II**  
*Chair: TBA*

**Neural language modeling of higher-order survey response patterns**  
Dr. Björn Hommel

**Artificial neural networks excel in predicting missingness in psychometric data**  
Mr. Longfei Zhang

**Using knowledge graphs to better understand test construction**  
Dr. Magdalen Beiting-Parrish

**Enhancing model generalizability for understanding CPS behaviors across different tasks: A large language model-based approach**  
Prof. Mengxiao Zhu

**Enhancing citation accuracy: Leveraging the NCBI API to verify and correct AI-generated references**  
Dr. Ting Wang

### Room 2

**Session: Cognitive Diagnostic Models II**  
*Chair: TBA*

**Evaluating the classification accuracy of an adaptive diagnostic test**  
Mr. Ahmed Bediwy

**A Hamiltonian-Gibbs sampler with monotonicity constraints for diagnostic classification models**  
Dr. Alfonso Martinez

**Consistency theory of general nonparametric classification methods in cognitive diagnosis**  
Mr. Chengyu Cui

**Increasing the flexibility of the MC-DINA model**  
Prof. Jimmy de la Torre

**Examining the occurrence of paradoxical scoring in cognitive diagnostic models**  
Mr. Tsuyoshi Kato

### Room 3

**Session: Methods for Dynamic and Complex Data**  
*Chair: TBA*

**The hidden journey of affect dynamics: Bridging physiological and behavioral states through Markovian processes**  
Dr. Francesca Borghesi

**Optimizing ESM prompt timing with mobile sensing: Predicting non-compliance using behavioral and contextual data**  
Dr. Koen Niemeijer

**Interpreting parameters of dynamic regression models**  
Dr. Sigert Ariens

**Accounting for interindividual differences in intensive longitudinal data from new samples using pre-learned embeddings in machine learning models**  
Dr. Sy-Miin Chow

### Room 4

**Session: Item Response Theory II**  
*Chair: TBA*

**Comparing fit indices for predicting difficulty of automatically generated items**  
Mr. Haoyang Yu

**Optimal designs for Thurstonian IRT models based on linear paired comparisons**  
Prof. Heinz Holling

**Estimating the primary dimensional correlations of nested-dimensionality data structures**  
Dr. Ken Fujimoto

**Bayesian nonparametric multiple imputation for handling missing data in multidimensional item response theory**  
Dr. Meng Qiu

**Asymptotic standard errors for reliability coefficients in item response theory**  
Ms. Youjin Sung

### Room 5

**Session: Longitudinal Data Analysis I**  
*Chair: TBA*

**Using recency to improve scoring in longitudinal assessments**  
Mr. Aaron Myers

**Cost-effective ESM studies: Integrating budget constraints into sample size decisions**  
Mr. Jordan Revol

**Matrix decomposition SEM tree**  
Dr. Naoya Todo

**Condense interval-based determinations for optimal sample sizes and designs in a random intercept panel model**  
Dr. Satoshi Usami

**Examining item discrimination in growth measurement: A multilevel perspective**  
Prof. Xiangyi Liao

### Room 6

**Session: Perspectives from the Inaugural Meeting of the Society for the Study of Measurement**  
*Chair: TBA*

**Mapping out the Hexagon Measurement Framework in the Human Sciences**  
Prof. Mark Wilson

**How uncertainty allows measurement to produce useful results**  
Dr. Kent Staley

**Re-interpreting the Weber-Fechner law as a probabilistic measurement model**  
Dr. William Fisher

### Room 7

**Session: Structural Equation Modeling I**  
*Chair: TBA*

**Statistical curvature and algorithmic convergence in factor models**  
Dr. Francis Tuerlinckx

**A empirical Bayesian solution to the estimation of the covariance matrix of sample covariances in SEM**  
Dr. Hao Wu

**Robust estimation of structural equation models**  
Dr. Max Welz

**Bayesian item factor analysis when indicator variables have skewed marginal distributions**  
Dr. Noah Padgett

**Regularized exploratory structural equation modeling for multiblock data**  
Ms. Tra Le

Meridian Ballroom Foyer

## Refreshment Break

2:45 p.m. -  
3:15 p.m.





WEDNESDAY  
CONTINUED  
3:15 p.m. -  
4:30 p.m.

### Room 1

**Session: Adaptive Assessment and Learning**  
*Chair: TBA*

**Tool usage on three-dimensional science assessments**

Dr. Allison Ames

**Latent propensity modeling of hint-seeking behavior in intelligent tutoring systems**

Dr. Hyeon-Ah Kang

**Bayesian adaptive learning assessment for efficient skill acquisition**

Dr. Sangbeak Ye

**Personalized adaptive, dynamic, and formative assessment in statistics education**

Dr. Wilco Emons

**Integrating cognitive diagnosis and generative AI for personalized learning**

Mr. Yuxiao Zhang

### Room 2

**Session: Differential Item Functioning and Measurement Invariance II**  
*Chair: TBA*

**Machine learning approaches to item-level bias detection**

Dr. Brandon LeBeau

**Detecting differential item functioning in forced-choice models with misspecification**

Dr. Jacob Plantz

**A two-step method for detecting differential item functioning**

Ms. Qing Zeng

**Guidelines for the interpretation of NCDIF as an effect size measure**

Dr. Victor H Cervantes

**A neural network approach to small sample intersectional DIF detection**

Mr. Yale Quan

### Room 3

**Session: Missing Data**  
*Chair: TBA*

**DSEM with missing not at random intensive longitudinal data**

Dr. Daniel McNeish

**Using factor scores estimated with missing data**

Dr. Ehri Ryu

**Methods for pooling K-means clustering results in multiply imputed data**

Dr. Joost Van Ginkel

**Evaluating the efficacy of missing data handling techniques on multiple choice item pattern scoring analysis**

Dr. Musa Adekunle Ayanwale

**Optimal approaches for treating item-level missing data in composite-level models**

Dr. Victoria Savalei

### Room 4

**Session: Practical Issues in Testing: Norming, Equating, ATA and fairness**  
*Chair: TBA*

**Vectorizing test constraints for faster automated test assembly**

Dr. Anthony Shiver

**Integrating latent variables into test equating methods**

Ms. Inés Varas

**Analyzing identifiability in statistical models for test equating**

Prof. Jorge Gonzalez

**Regression-Based Norming of tests with small sample sizes**

Dr. Nicolas Sander

**Bayesian augmentation for real-time fairness monitoring in assessments**

Mr. Shea Valentine

### Room 5

**Session: Machine Learning**  
*Chair: TBA*

**Use factor-augmented regularized latent regression to analyze complex large-scale assessment**

Mr. He Ren

**Personalized predictive modeling with Bayesian nonparametric ensemble learning**

Ms. Mingya Huang

**A two-step imputation approach combining IRT and deep-learning methods in large-scale survey assessments**

Dr. Usama Ali

**Generalized grade-of-membership estimation for high-dimensional locally dependent data**

Dr. Yuqi Gu

**MI-random rPQL: a regularization approach for variable selection in GLMMs with incomplete clustered data**

Dr. Yutian Thompson

### Room 6

**Session: Making Sense of High-Dimensional Data in the Psychological Sciences**  
*Chair: TBA*

**Multiple linked tensor factorization**

Prof. Eric Lock

**Classifying alcoholism from electroencephalography data using high-dimensional logistic regression**

Mr. Jong Won Lee

**Capturing fluctuations in high-dimensional intensive longitudinal data**

Prof. Katerina Marcoulides

**Predicting attention problems from brain connectivity using high-dimensional Poisson regression**

Dr. Kelly Duffy

**High-dimensional regression and classification of psychological data**

Prof. Nathaniel Helwig

### Room 7

**Session: Latest Developments in Bayesian and Frequentists Approaches for Analyzing Ranks, Grades and Pairwise Comparisons**  
*Chair: TBA*

**Sequential Rank Aggregation: An Optimal Active Estimation Approach**

Prof. Xiaou Li

**Unfolding the Network of Peer Grades: A Latent Variable Approach**

Prof. Irini Moustaki

**Pairwise Comparisons without Stochastic Transitivity: Model, Theory and Applications**

Dr. Yunxiao Chen

**Bayesian Rank-Clustering**

Prof. Elena Erosheva

### Room 1

**Invited Speaker: Dr. Matthew Madison**  
**Diagnostic Classification Models: Advancement Through Simplicity**  
*Chair: TBA*

### Room 2

**Invited Speaker: Dr. Jessica Flake**  
**Methodological Research for the Open Science Era**  
*Chair: TBA*



9:00 a.m. -  
10:15 a.m.

## Room 1

**Session: Automated Scoring**  
Chair: TBA

**Comparison of rating accuracy and rationales between AI ratings and human ratings of AP Chinese essays**  
Mr. Haowei Hua

**Evaluating the accuracy, reliability, and applicability of multiple large language models in automated scoring for writing assessments**  
Mr. Henry S. Makinde

**Improving automated scoring in reading assessments: Compress first, score next**  
Dr. Ji Yoon Jung

**Investigation of NLP and ML-based algorithms for automated essay scoring**  
Prof. JiHoon Ryoo

**Rationale and patterns of misclassified text in automated scoring systems**  
Mr. Jiayu Yao

## Room 2

**Session: Longitudinal Cognitive Diagnostic Models**  
Chair: TBA

**Evaluation of the effectiveness of validation methods on Q-matrix misspecifications with longitudinal diagnostic classification models**  
Ms. Hyunjee Oh

**Development and application of the random effect diagnostic classification multilevel growth curve model**  
Dr. Kazuhiro Yamaguchi

**Modeling item responses to understand change over time and diagnostic needs in tandem**  
Mr. Stephen Tavares

**Longitudinal designs for diagnostic models: Identification and estimation**  
Mr. Trung Le

**A statistical framework for dynamic cognitive diagnosis in digital environments**  
Ms. Yawen Ma

## Room 3

**Session: Computer Adaptive Testing II**  
Chair: TBA

**Leveraging computerized adaptive testing (CAT) to overcome teaching and learning challenges in gateway STEM courses at U.S. universities**  
Dr. Hua-Hua Chang

**You can't tuna fish, but can you tune a CAT?**  
Mr. Joseph DeWeese

**Incorporating omission behaviors into computerized adaptive testing: A psychometric evaluation using IRTree models**  
Ms. Lixin (Lizzy) Wu

**Post-hoc multiple comparison tests in adaptive measurement of change**  
Mr. Raj Wahlquist

## Room 4

**Session: Causal Inference I**  
Chair: TBA

**Between-case incidence rate ratio: A design comparable effect size for count outcomes in single case experimental designs**  
Dr. Wen Luo

**Between-case incidence rate ratio for count outcomes in single case experimental designs: A Monte Carlo simulation**  
Dr. Haoran Li

**Using regression discontinuity to evaluate language learner reclassification**  
Dr. Hirotaka Fukuhara

**Causal inference in high dimensional settings via sparse autoencoders for improved propensity scores estimation.**  
Mr. Roberto Faleh

**Causal decomposition analysis with synergistic interventions: A triply-robust machine learning approach to addressing multiple dimensions of social disparities**  
Ms. Su Yeon Kim

## Room 5

**Session: Novel IRT Models**  
Chair: TBA

**Defining asymmetric item response theory**  
Dr. Leah Feuerstahler

**Bayesian IRT for continuous measurement of student proficiency**  
Dr. Logan Rome

**Extending the Quasi-Poisson IRT model: On choosing latent structure**  
Dr. Nelis Potgieter

**Modeling dynamic test-taking behavior: a response time based HMM-IRT approach**  
Dr. Rehab AlHakmani

**The two-parameter Quasi-Poisson item response theory model**  
Dr. Xin Qiao

## Room 6

**Session: Revision of the 2014 Standards for Educational & Psychological Testing: Updates and Input**  
Chair: TBA

Members of the committee tasked with the revision of the Standards for Educational and Psychological Testing will provide an overview of the revision process, followed by an open conversation with the audience.

Participants include Michael Rodriguez, Kristen Huff, Fred Oswald, Andy De Los Reyes, Ye Tong, and other members of the committee.

## Room 7

**Session: Bayesian Methods and Their Applications**  
Chair: TBA

**Evaluating strategies for handling label switching in Bayesian latent variable models**  
Dr. Lihan Chen

**Prior sensitivity in Bayesian structure learning of Gaussian graphical models**  
Mr. Marwin Carmo

**Infinitesimal Jackknife standard errors for Bayesian quantile regression and other misspecified models**  
Dr. Sophia Rabe-Hesketh

**Are Bayesian regularization methods a must for multilevel dynamic latent variables models?**  
Mr. Vivato Vahatriniaina Andriamiarana

**Bayesian graphical models for factorial correlation estimation**  
Ms. Yifan Zhang

10:15 a.m.  
- 10:45 a.m.

Meridian Ballroom Foyer

## Refreshment Break

10:45 a.m. -  
11:45 a.m.

## Room 1

**Keynote Speaker: Prof. Carolyn Anderson**  
**Association and Measurement Models for Categorical Data**  
Chair: TBA



THURSDAY  
CONTINUED  
11:45 a.m. -  
1:30 p.m.

## Lunch (On Your Own)

### Room 1

**Session: Artificial Intelligence III**  
*Chair: TBA*

**Adapting transformers to wording-based item difficulty prediction**  
Mr. Jan Netik

**Automated cognitive feature generation: LLM applications in item difficulty modeling**  
Mr. Mubarak Mojoyinola

**Differential embedding dimension functioning in natural language processing for psychological assessment**  
Mr. Pengda Wang

**Using a psychometric approach to design AI agents with personality under different scale formats**  
Dr. Xijuan Zhang

**Enhancing systematic review efficiency: A generative AI-powered data extraction pipeline**  
Ms. Xiyu Wang

### Room 2

**Session: Computer Adaptive Testing III**  
*Chair: TBA*

**Adaptive tests and questionnaires using online survey tools**  
Dr. Andries Van der Ark

**Issues in calibrating post operational CAT data**  
Dr. Eric Loken

**Directionally-weighted loss functions for shaping multistage adaptive testing item modules**  
Dr. Matthew Naveiras

**Baseline scores and testing mode influence responder thresholds: A comparison of coefficients of repeatability between PROMIS computer adaptive tests and short forms**  
Dr. Minji Lee

**Computer adaptive testing for ecological momentary assessment: Considerations and evaluations**  
Dr. Teague Henry

### Room 3

**Session: Model-Data Fit**  
*Chair: TBA*

**Recent developments in dynamic fit index cutoffs for latent variable models**  
Dr. Daniel McNeish

**Cut-off for the deleted-one-covariance-residual case influence measure in the covariance structure analysis**  
Dr. Fathima Jaffari

**Robust methods for computing structural fit indices: A Monte Carlo investigation**  
Dr. Graham Rifenbark

**Can we rely on reliable parameter estimates?**  
Dr. Niels Vanhasbroeck

**A comparison of IRT model fit indices under different misfitting conditions**  
Mr. Xinyu Liu

### Room 4

**Session: Moderation and Mediation Analysis**  
*Chair: TBA*

**Assumptions in latent moderation: The role of measurement (non)-invariance**  
Dr. Kaylee Litson

**MNLFA with three or more latent dimensions**  
Dr. Noah Padgett

**Bayesian nonparametric nonlinear moderation model**  
Dr. Siyi Wang

**Handling nonignorable dropouts in Bayesian (non)linear longitudinal mediation analysis**  
Dr. Ziwei Zhang

**Cost-efficient sampling strategies for experiments detecting moderation and main effects**  
Dr. Zuchao Shen

### Room 5

**Session: Network Models**  
*Chair: TBA*

**Exploring link prediction in social networks**  
Ms. Apoorva Verma

**Psychological networks as scale-free and small-world networks: Insights from large-scale survey data**  
Dr. Guangyu Zhu

**Estimating causal effects on psychological networks using item response theory**  
Mr. Joshua Gilbert

**Item pool maintenance in computer adaptive tests: A network approach**  
Dr. Klint Kanopka

**Using social network analysis to detect and interpret network collusion**  
Dr. Richard Feinberg

### Room 6

**Session: Computational Modeling of Psychological Systems**  
*Chair: TBA*

**Toward a psychologist's guide to computational modeling: An interdisciplinary scoping review of modeling roadmaps**  
Ms. Jill de Ron

**Mapping the dynamics of idiographic network models to the network theory of psychopathology using stability landscapes**  
Dr. Ria Hoekstra

**Unraveling symptom dynamics: A mechanistic approach to feedback loops and causal discovery**  
Ms. Kyuri Park

### Room 7

**Session: Tools and Techniques for Quantitative methods and Psychometrics**  
*Chair: TBA*

**Reminiscing controversies over joint graphical display in quantification**  
Prof. Shizuhiko Nishisato

**Bayesian evaluation of latent variable models: A practical tutorial with the R package beval**  
Ms. Xiaohui Luo

**ILSAmerge and ILSAstats: Two new R packages for international large-scale assessments**  
Dr. Andrés Christiansen

**ShinyFORC: A shiny app for Bayesian probabilistic forecasting**  
Ms. Kjorte Harra

1:30 p.m. -  
2:45 p.m.





THURSDAY CONTINUED 3:00 p.m. - 4:15 p.m.	<div>Room 1</div> <div>Session: Differential Item Functioning and Measurement Invariance III Chair: TBA</div> <div>From the roots: Likelihood ratio DIF testing for IRTrees Dr. Anne Thissen-Roe</div> <div>Does calculator availability introduce DIF in mathematics assessments? Dr. Hye-Jeong Choi</div> <div>Mental flexibility in young learners: Evaluating the impact of distractors Dr. Maisaa Alahamdi</div> <div>Testing and correcting for differential test functioning Prof. Peter Halpin</div> <div>Detecting uniform differential item functioning with the permutation test Mr. Walton Ferguson</div>	<div>Room 2</div> <div>Session: Reliability Chair: TBA</div> <div>Item-level heterogeneity in value added models: Implications for reliability, cross-study comparability, and effect sizes Mr. Joshua Gilbert</div> <div>An intrarater reliability index of modified-Angoff ratings Dr. Luz Bay</div> <div>Discretization error in psychological science Dr. Mathias Berggren</div> <div>Reliability of unidimensional ordinal scores: Insights from two simulation studies Prof. Sebastien Beland</div> <div>A new reliability framework for cognitive diagnosis models Prof. Youn Seon Lim</div>	<div>Room 3</div> <div>Session: Latent Class and Mixture Models Chair: TBA</div> <div>Finite mixture models for an underlying zero-one inflated Beta distribution Prof. Jang Schiltz</div> <div>Measuring effort with a multi-level non-hierarchical Gaussian mixture model Dr. Kirk Vanacore</div> <div>A mixture multidimensional nominal response model to account for different faking strategies Mr. Timo Seitz</div> <div>Bayesian and frequentist model evaluation for growth mixture modeling Ms. Xingyao Xiao</div> <div>Reading proficiency trajectories before and after pandemic (Covid-19): A latent transition Dr. Xinyu Ni</div>	<div>Room 4</div> <div>Session: Natural Language Processing Chair: TBA</div> <div>Uncovering cognitive strategies in tower of London using n-gram analysis Dr. Alexandre Serpa</div> <div>Predicting reading passage grades: Text features vs. contextual embeddings Dr. Ann Hu</div> <div>Documents are people and words are items: A psychometric approach to textual data with contextual embeddings Prof. Jinsong Chen</div> <div>Use of axillary information in NLP for standard alignment study Dr. Meng Fan</div> <div>A joint factor-topic model for multimodal survey data analysis Mr. Yuxiao Zhang</div>
	<div>Room 5</div> <div>Session: Item Response Theory III Chair: TBA</div> <div>Rethinking discrimination: A marginal effects approach to IRT Dr. Brooke Magnus</div> <div>Item response models for rating relational data Dr. Chih-Han Leng</div> <div>A generalization of multidimensional item response theory parameters Dr. Daniel Morillo</div> <div>An informative index for evaluating equiprecision in IRT-based assessments Mr. Jesus Delgado</div> <div>Adapting fisher information-based difficulty and discrimination IRT measures to handle multimodality Mr. Peter Johnson</div>	<div>Room 6</div> <div>Session: Bridging Exploratory Graph Analysis and Complexity Science: Advancing the Understanding of Psychological Structures and Dynamics Chair: TBA</div> <div>Damped linear oscillators in emotion dynamics: Influence of fundamental parameters on dynamic EGA structures Dr. Aleksandar Tomašević</div> <div>Taxonomic graph analysis Dr. Alexander Christensen</div> <div>The ergodicity information index: Bridging dynamic exploratory graph analysis with complexity science Dr. Hudson Golino</div>	<div>Room 7</div> <div>Session: Advances in Experimental Design, Measurement, and Predictive Inference Chair: TBA</div> <div>Best treatment from a set of options: An optimal sequential method for principled experimentation Dr. Ken Kelley</div> <div>The psychometrics of uncertainty elicitation for real world forecasting problems Dr. Mark Himmelstein</div> <div>Application of conformal prediction in language sample analysis Mrs. Youmin Hong</div> <div>Optimal design and analysis strategies for equivalence testing Dr. Zuchao Shen</div> <div>Don't let your likert scales grow up to be visual analog scales: Understanding the relationship between number of response categories and measurement error Ms. Siqi Sun</div>	
	Memorial Hall			
	Group Photo			
	4:15 p.m. - 4:30 p.m.			
4:30 p.m. - 4:45 p.m.	Meridian Ballroom Foyer			
Refreshment Break				
4:45 p.m. - 5:45 p.m.	Room 1			
Early Career Award: Dr. Maria Bolsinova Psychometrics for Adaptive Learning: Challenges and Solutions Chair: TBA				



9:00 a.m. -  
10:15 a.m.

## Room 1

**Session: Automated Item Generation**  
*Chair: TBA*

**Automated generation of creativity test items using large language models**

Dr. Antonio Laverghetta Jr.

**Automatic item generation for figure reasoning tests using generative AI**

Ms. Jing Huang

**Generating quantitatively grounded free-text using large language models**

Ms. Lindley Slipetz

**Evaluating Cut Score Consistency in Standard Setting Procedures for Automatic Item Generation Testing**

Dr. Stella Kim

**AI-driven item generation for PIRLS**

Dr. Ummugul Bezirhan

## Room 2

**Session: IRT Applications**  
*Chair: TBA*

**Measuring forecasting proficiency: An item response theory approach**

Mr. Fabio Setti

**Demographic influences on spatial ability: A 2PL and Rasch tree analysis**

Mr. Justice Dadzie

**Desirability-matched Thurstonian IRT scale construction leveraging sentiment analysis**

Dr. Kensuke Okada

**Resource usage and its influence on ability estimation – exploring different IRTree models in the context of PISA-LDW data**

Dr. Leonard Tetzlaff

**Measuring print exposure using a bifactor unipolar IRT model**

Prof. Qi (Helen) Huang

## Room 3

**Session: Structural Equation Modeling II**  
*Chair: TBA*

**Confidence intervals based on scaled difference tests in SEM**

Prof. Carl Falk

**Bayesian fit measures in detecting misspecified multilevel structural equation modeling**

Dr. Chunhua Cao

**A priori distributions in Bayesian structural equation modeling: A scoping review protocol**

Dr. Jorge Sinval

**The influence of informative priors in the estimation of MIMIC model parameters with small sample sizes and outliers**

Ms. Nancy Alila

**Advancing contingent paradigms evaluating model fit in structural equation modeling**

Prof. Thomas Niemand

## Room 4

**Session: Cognitive Diagnostic Models III**  
*Chair: TBA*

**Uncovering attribute hierarchies using an additive bayesian network model**

Dr. Constanza Mardones-Segovia

**DIF detection and explanation using the IRT-C and E-CDM**

Dr. Kevin Krost

**An approach that can validate both Q-Matrices and attribute hierarchies in cognitive diagnosis models**

Dr. Lingling Wang

**The Influence of Q Matrix Mis-specified on The Classification of Nonparametric Cognitive Diagnosis Based on Hamming Distance**

Dr. Sun Rui

**Bayesian estimation of the Q-matrix and attribute hierarchy in DINA model**

Dr. Xue Wang

## Room 5

**Session: Longitudinal Data Analysis II**  
*Chair: TBA*

**Perfect timing: An algorithm for leveraging optimal temporal design to enhance statistical power**

Ms. Anne-Charlotte Beloeil

**Person-specific updating of EWMA control limits in sparse in-control data scenarios**

Dr. Evelien Schat

**Lowering participant burden in long-term ESM studies through variable sample size EWMA**

Ms. Fien De Pauw

**Nonparametric estimation of latent growth parameters and heterogeneity**

Mr. Graham Buhrman

**Estimating non-normal random effects in nonlinear random effects models**

Ms. Yue Zhao

## Room 6

**Session: Advances in the Evaluation of Statistical Model Complexity**  
*Chair: TBA*

**Fitting propensity analysis in R**

Dr. Sonja Winter

**The fitting propensity of 1-parameter item response theory models**

Dr. Hyejin Shim

**The fitting propensity of multilevel models**

Ms. Yun-Kyung Kim

**The fitting propensity of factor analysis models**

Dr. Wes Bonifay

10:15 a.m. -  
10:45 a.m.

Meridian Ballroom Foyer

## Refreshment Break

## Room 1

**Invited Speaker: Dr. Aleksandar Tomašević**  
**Capturing Emotional Dynamics: Integrating Transformer Models with Dynamic Exploratory Graph Analysis**

*Chair: TBA*

## Room 2

**Invited Speaker: Dr. Keith Markus**  
**Four Takes on Construct Validity: From Logical Empiricism to Varieties of Scientific Realism**

*Chair: TBA*

10:45 a.m. -  
11:30 a.m.



<div> FRIDAY  CONTINUED  11:45 a.m. -  1:00 p.m. </div>	<div>Room 1</div> <div> Session: Factor Analysis  Chair: TBA </div> <div> <p>Factor score indeterminacy of sum score and common factor score Mr. Hoang Nguyen</p> <p>Integration of latent space and confirmatory factor analysis to explain unexplained person-item interactions Dr. Inhan Kang</p> <p>A GLLAMM approach for measuring child-teacher interaction quality Dr. JoonHo Lee</p> <p>A new representation of factor score and its theoretical properties Dr. Naoto Yamashita</p> <p>Development and validation of a renyuan measurement scale: Exploring social self-perception in chinese cultural contexts Ms. Ching Yi Chiang</p> </div>	<div>Room 2</div> <div> Session: Multivariate Analysis  Chair: TBA </div> <div> <p>Generalized structured component analysis accommodating convex components: A knowledge-based multivariate method with interpretable composite indexes Dr. Gyeongcheol Cho</p> <p>A multivariate generalization of the glass delta effect size Prof. Jay Verkuilen</p> <p>Comparison of missing data techniques in generalized structured component analysis Ms. Luqi He</p> <p>Evaluating assumption violations in latent APIM: Implications for effect estimation Ms. Shiyao Wang</p> <p>Evaluating statistical power in generalized structured component analysis Ms. Zhiyuan Shen</p> </div>	<div>Room 3</div> <div> Session: Causal Inference II  Chair: TBA </div> <div> <p>The impact of latent confounder distribution statistics on direction dependence analysis Ms. Guyin Zhang</p> <p>Examining heterogeneity in causal mediation effects Prof. Hanna Kim</p> <p>A taxonomy of heterogeneity in causal effects Prof. Jee-Seon Kim</p> <p>Item-level heterogeneous treatment effects in instrumental variables regression: Fixed- and random-item approaches Dr. Sanford Student</p> <p>Estimation of individual treatment effect with transfer learning Ms. Şeyda Aydın</p> </div>
	<div>Room 4</div> <div> Session: Theory Construction Methodology  Chair: TBA </div> <div> <p>Characterisations of phenomena Mr. Jason Nak</p> <p>The boundaries between assumptions and phenomena in formal modeling: A case study of a computational model of addiction Mr. Jesse Boot</p> <p>sdbuildR: Building system dynamics models in R Ms. Kyra Evers</p> <p>How cause-effect reasoning impedes theory development: Why we should focus on mechanisms and functions instead Dr. Noah van Dongen</p> <p>AI-assisted theory construction with theorazer: Do LLMs and humans agree on causal relationships? Ms. Meike Waaijers</p> </div>	<div>Room 5</div> <div> Datathon  Chair: TBA </div> <div> <p>In this session, the three finalist teams of the IMPS 2025 Student Datathon will present their work. The Datathon is a collaborative competition designed to engage participants in the analysis of an innovative dataset using state-of-the-art psychometric methods.</p> </div>	<div>Room 6</div> <div> Symposium: Remembering John Nesselroade  Chair: TBA </div> <div> <p>This session celebrates the life and career of John Nesselroade through a series of brief, personal reflections by former students, colleagues, and collaborators.</p> </div>





FRIDAY  
CONTINUED  
1:00 p.m. -  
2:30 p.m.

## Lunch (On Your Own)

2:30 p.m. -  
3:30 p.m.

Room 1

**Presidential Address: Prof. Denny Borsboom**  
*Chair: TBA*

3:30 p.m. -  
4:00 p.m.

Room 1

## Members Meeting

4:00 p.m. -  
5:00 p.m.

Room 1

## Awards and Closing Ceremony

6:00 p.m. -  
10:00 p.m.

Nicollet Island Pavilion | Address: 40 Power Street, Minneapolis, MN 55401

## Closing Banquet Reception



- Thank you to **Meet Minneapolis** for the images used in this document. -