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**National Council on Measurement in Education**

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**2011 Training Sessions**

April 7-8, 2011

**2011 Annual Meeting**

April 9-11, 2011

New Orleans, Louisiana

# NCME • 2011 Annual Meeting & Training Sessions

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# NCME • 2011 Annual Meeting & Training Sessions

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## Meeting Location

The 2011 Training Sessions, Annual Meeting and Joint Reception will be held at the Westin New Orleans Canal Place Hotel. The NCME Breakfast, Business Meeting and Presidential Address will be held at the Sheraton New Orleans Hotel.

## Future Annual Meetings

### **2012 Annual Meeting**

April 12 - 16

Vancouver, British Columbia, Canada

### **2013 Annual Meeting**

April 10 - 14

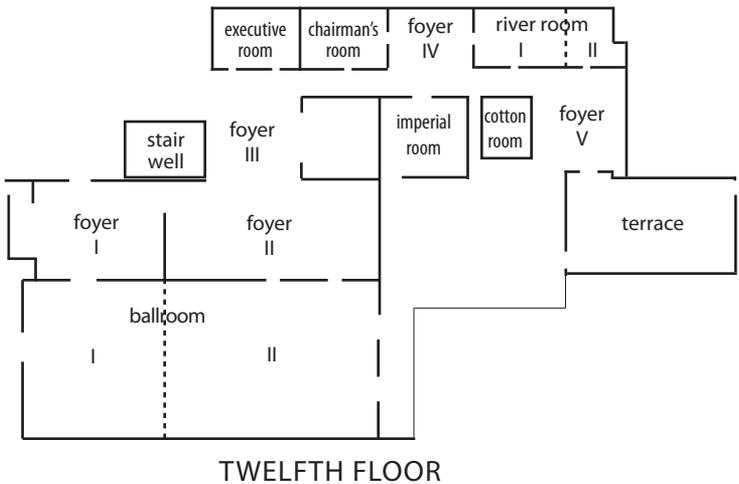
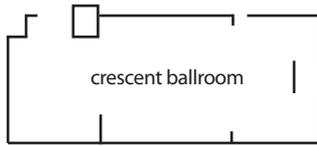
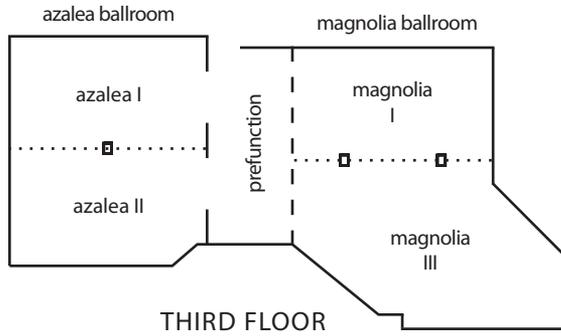
Atlanta, Georgia

### **2014 Annual Meeting**

April 2 - 6

Philadelphia, Pennsylvania

Westin New Orleans Canal Place Floor Plan



## PRE-CONFERENCE TRAINING SESSIONS

The 2011 NCME pre-conference training sessions will be held at the Westin New Orleans Canal Place on Thursday, April 7 and Friday, April 8, 2011. All full-day sessions will be held from 8:00 a.m. to 5:00 p.m. All half-day morning sessions will be held from 8:00 a.m. to 12:00 noon. All half-day afternoon sessions will run from 1:00 p.m. to 5:00 p.m. There will be one pre-conference training session offered on Saturday, April 9.

On-site registration for the pre-conference training sessions will be available at the Westin New Orleans Canal Place Hotel for those workshops that still have availability.

Four of our training sessions will be webcast live to over 25 sites around the world. Several sessions were webcasted last year and were very well received. We are happy to be able to try to improve and expand on this NCME initiative.

### Thursday, April 7, 2011

#### **Thursday, 8:00 a.m. - 12:00 noon, Azalea Ballroom I, AA**

Using R for Everyday Research

*Brian Habing, University of South Carolina; Jessalyn Smith, CTB/McGraw-Hill*

The free statistics package R has become a favorite of statisticians over the past decade – and it offers a large number of benefits to quantitative researchers in all areas of educational research. With you working along through each step on your own laptop computer, this training course will cover some of the most useful aspects of R for any researcher, including: making fully customized graphs (including color, axes, and labels); manipulating data sets in an intuitive way to quickly get the precise subset of subjects and variables that you want; and performing statistical analyses with a single command. The course will end with examples of how R can be used to simulate data sets (with an example perfect for classroom use) and how it can be easily customized to perform functions that aren't built in.

This course is designed for those who have had a two-course sequence in quantitative methods but have no previous experience with R. Participants must bring their own (windows compatible) laptop computer; all required software will be provided.

Intended Audience: Educational researchers who have to produce graphs, manipulate data, and/or perform basic statistical analyses. The course assumes they have completed a basic sequence in quantitative methods, but have no previous experience with R.

**Thursday, April 7, 2011**

**Thursday, 8:00 a.m. - 12:00 noon, Azalea Ballroom II, BB**

Application of Evidence-Centered Design (ECD) in Large-Scale Assessment

*Kristen Huff, Regents Research Fund; Meryl Bertenthal, Indiana University Bloomington; Maureen Ewing, The College Board; Sheryl Packman, The College Board; Jim Pellegrino, University of Illinois-Chicago*

The cornerstone of evidence-centered design (ECD) is an evidentiary argument that requires that each target of measurement (e.g., learning goal) for an assessment be expressed as a claim about an examinee that is relevant to the specific purpose and audience(s) for the assessment. The observable evidence required to warrant each claim is also articulated. The claims and evidence shape the design of assessment opportunities for students to demonstrate what they have learned, whether that opportunity is a classroom activity or a multiple-choice item on a high-stakes assessment. Once identified, the characteristics of these assessment opportunities are referred to as task models, each capable of generating multiple assessment tasks. Taken together, the claims, evidence, and task models constitute the evidentiary argument.

The objectives of the session are to provide participants (1) clear and detailed examples of the processes and outcomes of ECD and (2) an evaluation of the benefits and challenges of using ECD in a large-scale assessment program using examples from The College Board's Advanced Placement. Participants will engage in hands-on work by approximating the development of a hypothetical exam using ECD.

Intended Audience: Measurement professionals and graduate students interested in test design, item writing, and/or design-based validation argument.

**Thursday, 8:00 a.m. - 5:00 p.m., 12th Floor Ballroom I, CC**

Bayesian Analysis of Item Response Models: Theory and Methods

*Yanyan Sheng, Southern Illinois University, Carbondale; Sun-Joo Cho, Vanderbilt University*

Theory and methods of fully Bayesian inference and computation for item response models are discussed. The session will consist of two parts. The first part introduces Bayesian inferences of dichotomous item response models using a Markov chain Monte Carlo (MCMC) simulation technique. Topics include fully Bayesian vs. marginal Bayes estimation, Gibbs sampling procedures for the one-, two-, and three-parameter normal ogive models, and their likelihoods, prior distributions and posterior distributions. Gibbs sampling procedures will be illustrated using MATLAB. The second part illustrates the use of WinBUGS for the implementation of MCMC algorithms. Topics include the basic programming routine (e.g., indexing and looping), the model and prior specification, the initial value setting, the monitoring

**Thursday, April 7, 2011**

convergence, and the output analyses in WinBUGS. Implementation of WinBUGS will be demonstrated for simple and complex item response models and Bayesian estimates will be compared and discussed with maximum likelihood estimates.

Prerequisites include knowledge equivalent to one graduate course in theoretical educational measurement and familiarity with differential and integral calculus treated in undergraduate mathematics courses. Course materials will be distributed as handouts to participants and used as a principle reference in the training session. Participants are encouraged to bring their own laptop computers.

Intended Audience: Upper-level graduate students and new measurement professionals who are interested in learning about Bayesian analysis for item response theory models.

## **Thursday, 8:00 a.m. - 5:00 p.m., Magnolia Ballroom I, DD**

Generalizability Theory and Applications

*Robert Brennan, University of Iowa, CASMA; Won-Chan Lee, University of Iowa, CASMA*

This training session on Generalizability Theory and Applications will be given by Robert L. Brennan (Director) and Won-Chan Lee (Co-Director) who are both faculty members at the University of Iowa and colleagues at the Center for Advanced Studies in Measurement and Assessment (CASMA).

The primary goals of this training session are: (a) to enable participants to understand the basic principles, terminology, and notational conventions of generalizability theory; (b) to conduct relatively straightforward generalizability analyses; and (c) to interpret and use the results of such analyses. Mathematical and statistical foundations will be treated only minimally. Major emphasis will be placed upon quickly enabling participants to conduct and interpret relatively straightforward generalizability analyses, then somewhat more complicated ones. Both synthetic data and real data examples will be used.

Topics to be covered include: (a) an introduction to univariate generalizability theory; (b) single-facet universes and designs; (c) multifacet universes of admissible observations and G study designs; (d) multifacet universes of generalization and D study designs; (e) some applications (e.g., performance assessments); and (f) other topics, if time permits (e.g., an introduction to multivariate generalizability theory; conditional standard errors of measurement; unbalanced designs; variability of statistics in generalizability theory; etc.)

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The GENOVA suite of computer programs (GENOVA, urGENOVA, and mGENOVA) for performing generalizability analyses will be discussed. GENOVA will be illustrated in some detail. These programs are available free of charge on the CASMA website: [www.education.uiowa.edu/casma](http://www.education.uiowa.edu/casma).

Prerequisites for this training session include knowledge equivalent to one course in educational measurement and familiarity with ANOVA at the level treated in introductory graduate courses in education and psychology. A book written by the director, titled *Generalizability Theory*, will be distributed to participants and used as a principle reference in the training session. Participants may wish to bring laptops, but they are not required.

Intended Audience: Upper-level graduate students and new Ph.D.'s with interest in learning about and applying generalizability theory in practical contexts; participants should have one course in measurement and some familiarity with analysis of variance.

### **Thursday, 8:00 a.m. - 5:00 p.m., Magnolia Ballroom III, EE**

An Introduction to Student Growth Percentiles: Concepts, Calculation, and Use  
*Damian Betebenner, National Center for the Improvement of Educational Assessment; Adam Van Iwaarden, University of Colorado*

The proliferation of annual student testing during the last decade has left states and testing organizations with vast amounts of longitudinal assessment data. As a consequence, use of growth analyses to inform discussions about student growth and its relationship to education quality has become much more commonplace. In this training session, participants will be introduced to student growth percentiles (SGPs) and shown how to use the open source R software package together with the SGP package to calculate SGPs and percentile growth trajectories with large (e.g., state-level) longitudinal datasets. Student growth percentiles are currently at various stages of adoption in nearly 20 states. Topics covered will include a conceptual overview of student growth percentiles, data preparation, student growth percentile calculation, percentile growth trajectory calculation and their use with growth standard setting. The session will incorporate real-world examples of how the results of such analyses can be used as part of state and federal accountability systems to inform discussions about educational quality.

Intended Audience: State, District Assessment Coordinators, and graduate students.

**Thursday, April 7, 2011**

**Thursday, 1:00 p.m. - 5:00 p.m., Azalea Ballroom I, FF**

Managing Simulation Studies with R

*Jessalyn Smith, CTB/McGraw-Hill; Brian Habing, University of South Carolina*

Simulation studies to validate various procedures' effectiveness are a major part of quantitative and psychometric research. The R statistical package can be used to easily run and manage simulation studies, including those that need to call pre-existing programs such as BILOG, MPlus, NOHARM, PARSCALE, POLYEQUATE, and TESTFACT. This course will demonstrate how R can be used to easily generate a wide variety of data sets, create the command files and data sets required by other software, run the other software, and read in the output for further analysis

This course assumes that the participants have at least some familiarity with R – programming experience is not assumed. Participants are encouraged to bring their own (windows compatible) laptop computer and any executables that they need to integrate into their own simulation studies.

Intended Audience: Educational researchers who have some familiarity with R and run (or would like to run) their own simulation studies.

**Thursday, 1:00 p.m. - 5:00 p.m., 12th Floor Ballroom II, GG - Webcast**

A Practitioner's Introduction to Linking and Equating

*Joseph Ryan, Arizona State University*

*Webcast Moderator: Luz Bay, Measured Progress*

A variety of activities related to accountability compliance, assessment, validity, and transitions to tests or item banks developed by consortia are substantially supported or challenged by how test forms are linked or equated to each other and to appropriate content and performance standards. The intended audience for the workshop includes policy makers and practitioners whose decisions and activities can be facilitated with a conceptual understanding of linking and equating and also will be useful as a conceptual basis for those pursuing more technical psychometric studies.

The workshop objectives are to provide participants a practical understanding of:

- 1) The basic terms and concepts of equating;
- 2) Common designs used to collect data for equating;
- 3) The procedures applied to perform equating;
- 4) Common and emerging equating issues and challenges; and
- 5) Suggestions for managing assessment RFP's, technical documentation, and linking/equating evaluation criteria.

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The workshop emphasizes the importance of developing items and constructing tests to be parallel if the intent is to equate them. The presentation begins with a brief overview of assessment, validity, linking, and equating concepts. Major components of classical test theory and item response theory as they relate to linking and equating are presented. Equating designs and procedures are presented with examples and illustrations. Throughout the workshop, suggestions are offered for managing the linking and equating aspects of RFP's, contracted work, and technical documentation.

The workshop is presented using non-technical language, figures, and diagrams. Hard copies of the PowerPoint slides will be provided. The workshop follows the basic scope and sequence of *A Practitioner's Introduction to Equating with Primers on Classical Test Theory and Item Response Theory* (Council of Chief State School Officers, 2009). Participants are encouraged to ask questions through the session.

Intended Audience: Measurement practitioners and measurement graduate students.

## Friday, April 8, 2011

### **Friday, 8:00 a.m. - 12:00 noon, 12th Floor Ballroom II, HH - Webcast**

Vertical Scaling Methodologies, Applications, and Research

*Michael J. Kolen, University of Iowa; Ye Tong, Pearson*

The potential need for constructing a vertical scale arises whenever a testing program has multiple grade levels and wishes to have a common scale to compare test scores across these grade levels. Vertical scaling uses statistical process to place test scores that measure similar content domain but at different educational levels onto a common scale. The goals of the session are for attendees to be able to understand the principles of vertical scaling, to conduct vertical scaling and to interpret the results of vertical scaling in reasonable ways. Vertical scaling will be contrasted with related equating and linking processes. Traditional and IRT vertical linking methodologies will be described and practical issues will be discussed.

The focus is on developing a conceptual understanding of vertical scaling through numerical examples and discussion of practical issues. Importance and challenges related to vertical scaling will be included. The text for the session is a chapter in the second edition of Kolen and Brennan's (2004) *Test Equating, Scaling, and Linking: Methods and Practices* (Second Edition).

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Intended Audience: Upper-level graduate students, new Ph.D.'s, testing professionals with operational or oversight responsibility for vertical scaling, and others with interest in learning about methods and practices. Participants should have taken at least two graduate course in measurement and two graduate courses in statistics.

### **Friday, 8:00 a.m. - 12:00 noon, Azalea Ballroom I, II**

Tips for Graduate Students: Advice for Finishing School, Obtaining a Job, and Starting a Career

*Deborah Harris, ACT, Inc.; Julio Sanclemente, CTB/McGraw-Hill; Andrew Ho, Harvard Graduate School of Education*

This training session is targeted toward graduate students in measurement who are unsure about what they should do as students to get ready for the job market, including questions about internships, courses to take, and dissertation topics, as well as those who want to know where measurement jobs are available beyond testing companies and universities, what types of things employers look for in application materials, what types of questions might be asked of an interviewee, what types of questions an interviewee might ask, what are good job talk strategies, and so on. This session will address practical topics graduate students in measurement are concerned about, targeting information to the particular group of attendees to ensure their needs are addressed. The format of the training session is a combination of lecture/discussion, with basic concepts introduced in a lecture format, with discussion and questions actively encouraged. Examples/activities will be used to demonstrate concepts and to provide participants with experience, such as providing participants with several job postings along with two or more sample resumes to illustrate tailoring the resume to a specific job listing, and looking at different styles of letters of recommendation to see which appear most effective. The session is informal, with the presenters interacting with each other, as well as the attendees, to ensure both a comfortable environment for asking questions, and to provide advice from a range of perspectives. Each participant will receive a packet of materials, including hard copy of materials to be used in the session, and a CD of full of reference materials ranging from advice from the presenters to career web sites and helpful articles.

Intended Audience: Graduate students.

### **Friday, 8:00 a.m. - 12:00 noon, Azalea Ballroom II, JJ**

An Introduction to the Application of BMIRT and LinkMIRT: Bayesian Multivariate Item Response Theory Software

*Lihua Yao, Defense Manpower Data Center; Ying Cheng, University of Notre Dame; Yuan Hong, American Institutes for Research*

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This training session is intended to support new users of BMIRT and LinkMIRT. BMIRT (Yao, 2003) is a computer program that uses the Markov Chain Monte Carlo method to estimate item and ability parameters in the multidimensional multi-group IRT framework; exploratory and confirmatory approaches are supported. LinkMIRT (Yao, 2004) is a linking software that links two sets of item parameters onto the same scale in the MIRT frame work.

This session is intended for researchers interested in working with dichotomous or polytomous data that is multidimensional in nature. BMIRTII, the second version of BMIRT, has more enhanced features such as computing test response function, higher-order IRT for domain scores and overall scores, overall scores by the maximum information method, MLE and MAP ability estimates, Classification accuracy and consistency, and DIF, to name a few. The focus of the workshop will be on application as opposed to theory; no programming skills are required.

Participants should bring laptop computers and any data they would like to use; java run time environment should be installed on the computer prior to the workshop. Software and samples should be downloaded prior to the workshop; they are available at [www.BMIRT.com](http://www.BMIRT.com).

The participants will (a) understand appropriate uses of BMIRT and LinkMIRT, (b) understand BMIRT and LinkMIRT data input requirements and formats, (c) be proficient in the application of BMIRT and LinkMIRT, and (d) understand and be able to interpret BMIRT and LinkMIRT output files.

Intended Audience: Researchers who are interested in using software for multidimensional Item Response Theory model.

### **Friday, 8:00 a.m. - 5:00 p.m., 12th Floor Ballroom I, KK**

A Flexible Software Tool for a Generalized Linear Mixed Model Approach to IRT  
*Paul De Boeck, University of Amsterdam; Sun-Joo Cho, Peabody College of Vanderbilt University*

Generalized linear mixed models (GLMM) provide a broad framework for modelling binary data and under certain assumptions also polytomous data. The lmer function of the lme4 package in R (<http://cran.r-project.org/web/packages/lme4/>) is a general purpose tool for the estimation of GLMMs, and therefore also for the estimation of a large class of item response models. Possible modelling features are person and item covariate effects and person-by-item effects (fixed and random), nested (multilevel) and crossed random effects (e.g., for random item effects), and multidimensionality. Also models for differential item functioning (DIF) and local dependence are instantiations of this framework. Learning to use lmer gives a deeper insight in item

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response theory (IRT) and its relationships with classical types of analysis (analysis of variance, regression analysis, factor analysis), as well as with approaches such as multilevel analysis and structural equation modelling.

The training session has two explicit objectives: (1) learning to use the general purpose software, and (2) learning to formulate item response models as generalized linear mixed models, so that one's view on possible item response models is extended and one is no longer limited to model-based software.

The whole session consists of exercises using the `lmer` function for an example dataset included in the `lme4` package in R. The models, their structure, and relationships with other models are explained through estimation exercises.

Participants must bring a laptop with R downloaded, so that the `lme4` library can be used. Advance knowledge of R is not required. A manuscript to be published in the *Journal of Statistical Software* is available as a guide and will be sent to the participants.

Intended Audience: Graduate students and other psychometricians interested in software tools for IRT and/or more generally in the structure of item response models.

## Friday, 8:00 a.m. - 5:00 p.m., Magnolia Ballroom I, LL

### Bayesian Networks in Educational Assessment

*Duanli Yan, Educational Testing Service; Robert J. Mislevy, Educational Testing Service; Russell G. Almond, Florida State University; David M. Williamson, Educational Testing Service*

The Bayesian paradigm provides a convenient mathematical system for reasoning about evidence. Bayesian networks provide a graphical language for describing complex systems, and reasoning about evidence in complex models. This allows assessment designers to build scoring that have fidelity to cognitive theories about the domain and yet are mathematically tractable and can be refined with observational data. Topics covered in this tutorial are evidence-centered assessment design, basic Bayesian network representations and computations, available software for manipulating Bayesian networks, refining Bayesian networks using data, and example systems using Bayesian networks. It is recommended that participants bring a laptop to run sample exercises using the student version of Netica (<http://www.norsys.com/>).

Intended Audience: People interested in educational measurement.

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**Friday, 8:00 a.m. - 5:00 p.m., Magnolia Ballroom III, MM**

Assessing 21st Century Skills

*Patrick Kyllonen, Educational Testing Service; Richard Roberts, Educational Testing Service; Jonas Bertling, Muenster University; Jeremy Burrus, Educational Testing Service*

21st century skills are increasingly recognized as important determinants and reflections of success in education from K-12 through graduate and professional school. 21st century skills include critical thinking communication skills, collaborative problem solving, creativity, leadership, work ethic, cultural sensitivity, lifelong learning orientation, and others. In this training session we will review the process of developing and evaluating new assessments of 21st century skills. The training session will provide background theory and frameworks for developing 21st century skills assessments, and will provide hands-on experience in developing and evaluating such assessments.

We will cover the following topics:

- 21st century skills frameworks, models, and theories
- Developing assessments from construct definitions and item pools
- Various methods for assessing 21st century skills (e.g., self-assessments, others' ratings, situational judgment tests, anchoring vignettes, constructed response, simulations)
- Item writing
- The problem of coaching, faking, and miscalibrating on self- (and other-) assessments (preventing, detecting, and correcting for it)
- Delivery platforms (online and paper-and-pencil)
- Exploratory and confirmatory factor analysis and other data structure exploration methods
- Advanced methods (e.g., IRT, latent class models, unfolding, measurement invariance, multilevel analyses)
- Special topics (rating scale issues, creativity assessment, team assessment, cross-cultural assessment issues)
- Secondary analysis with large-scale assessments
- Example 21st century skills assessments (personal skills development for community college; open-ended collaborative problem solving for large-scale assessments, institutional reporting for K-12; higher education admissions)

Each of these topics will be organized as 10- to 30-minute sessions, with empirical examples provided, Q&A, and some hands-on exercises where appropriate.

Intended Audience: Researchers and practitioners who are interested in developing or using assessments of 21st century skills.

## Friday, April 8, 2011

### Friday, 1:00 p.m. - 5:00 p.m., 12th Floor Ballroom II, NN - Webcast

#### Linking and Aligning Scores and Scales

*Jinghua Liu, Educational Testing Service; Neil J. Dorans, Educational Testing Service; Michael E. Walker, Educational Testing Service; Mary Pommerich, Defense Manpower Data Center*

*Webcast Moderator: Ted Blew, Educational Testing Service*

The communication of linking issues to test score users is a critical component to ensuring the validity of a linkage. This training session seeks to facilitate communication about the appropriate use and interpretation of linked scores by emphasizing the different meanings that can be attached to different linkages, and the necessary requirements to achieve solid linkages. A foundations portion will present a historical perspective on score linking, provide definitions and distinctions between types of linkages, discuss relevant data collection designs, and give an overview of linking methodology and assumptions. A linking scenarios portion will make expanded distinctions between types of linkages and discuss practical issues in equating, tests in transition, concordance, vertical scaling, and linking group assessments to individual assessments. Results of recent studies as well as interactive computer simulations will illustrate the differences among types of linkages. A tools portion will discuss indices that can be used to choose an appropriate linkage type and methods that can be used to evaluate linkage quality. A score interpretation portion will focus on the appropriate usage and interpretation of linked scores, comparing and contrasting across the different linking scenarios.

Intended Audience: Testing professionals who conduct linkages and/or convey the results of linkages to non-practitioners and test score users with a measurement background.

### Friday, 1:00 p.m. - 5:00 p.m., Azalea Ballroom I, OO

#### A Graduate Student's Guide to the Presentation and Publication Process

*Ashleigh Crabtree, University of Iowa; Steven Wise, Northwest Evaluation Association; André Rupp, University of Maryland; Randy Bennett, Educational Testing Service; Susan Brookhart, Duquesne University*

This training session has four main components:

- 1) Choosing the topic, including how to choose research topics that are relevant to the field, aligned with student interests, and likely to contribute to a larger body of research.
- 2) Writing the conference proposal, including tips on how to get proposals accepted and dos and don'ts of the writing process.
- 3) Planning and delivering the presentation, including how to create and give effective presentations.

## Friday, April 8, 2011

- 4) Converting the conference paper into a publication, including how to revise the conference paper in order to target a new audience and tips from an experienced journal editor.

Intended Audience: Graduate students in the measurement field.

### **Friday, 1:00 p.m. - 5:00 p.m., Azalea Ballroom II, PP**

Comprehensive Approaches to Validate Construct Invariance and Test Comparability for Federal and School Accountability Reporting Purposes

*Huynh Huynh, University of South Carolina; Do-Hong Kim, University of North Carolina at Charlotte; Meagan Karvonen (guest instructor for qualitative methods), Western Carolina University*

Large-scale assessment programs oftentimes administer their tests under different modes of test administration. These modes include computer-based testing, paper-and-pencil testing, and oral administration. Under these situations, questions often arise on invariance of the construct being measured and comparability of the test scores. Technical advisory committees, testing agencies, and their contractors use different approaches to handle these issues. These approaches deal with data at the item, subtest, and overall test score levels. At the item level and with emphasis on the correct response, IRT (including Rasch) and DIF (such as MH) can be used. Also at the item level but with emphasis on type of content errors, loglinear models might be appropriate. At the subtest level, structural equation modeling (SEM) is often used. As for comparability of total test scores, procedures based on ANCOVA and HLM might be suitable. This course provides a demonstration of these approaches. Each approach answers a different type of question. As a result of attending the course, the participant is expected to be able to: (a) identify his/her type of invariance study, (b) collect the relevant data, and (c) use appropriate techniques to analyze the data in the light of the research questions. A short discussion about use of qualitative methods for small samples will be provided by the guest instructor at the conclusion of the course. The course is geared to an audience of advanced graduate students, professionals at testing organizations, and practitioners at the state or school district level. Participants are expected to be familiar with basic knowledge of applied statistics and technical aspects of assessment, and a level of awareness of operational and legal issues relating to school accountability and “No-Child-Left-Behind” legislation. Some familiarity with software such as SAS, MPLUS, LISREL, WINSTEPS, and PARSCALE is preferred but not required.

Intended Audience: Advanced graduate students, professionals at testing organizations, and practitioners at the state or school district level.

## Saturday, April 9, 2011

### **Saturday, 8:00 a.m. - 12:00 noon, Terrace Room, QQ - Webcast**

An Introduction to jMetrik: A Free and Open-Source Software Program for Comprehensive Psychometric Analysis

*Patrick Meyer, University of Virginia; Emily Hailey, University of Virginia*

*Webcast Moderator: Christine Hutchinson, University of Virginia*

jMetrik is an innovative tool that combines a variety of psychometric procedures into a single software program with a user-friendly point-and-click interface. It features an integrated database for managing large numbers of data files, a simple graphical user interface, and a variety of statistical methods. Psychometric procedures include classical item analysis; reliability and decision consistency analysis; DIF analysis; nonparametric item characteristic curve estimation; JMLE estimation of Rasch, rating scale, and partial credit model parameters; IRT equating by mean/mean, mean/sigma, Haebara, and Stocking-lord; basic confirmatory factor analysis, and test scaling. As a pure Java application, it runs on windows, Linux, or Mac OSX operating systems using either 32- or 64-bit processors.

Participants will learn to use jMetrik for conducting a comprehensive psychometric analysis. All psychometric procedures will be reviewed and details of their implementation in jMetrik will be described. Participants should bring a laptop computer. Data files will be available but participants are encouraged to bring their own data in a comma delimited format. Software may be downloaded and installed prior to the session. jMetrik is available for free from [www.ItemAnalysis.com](http://www.ItemAnalysis.com).

Participants will learn how to:

- 1) Manage data: Import, export, and organize data
- 2) Graph data: Bar charts, pie charts, histograms, line plots, scatter plots, and kernel density estimates
- 3) Analyze data: Descriptive statistics, classical, and modern psychometric methods

Participants will receive a fully licensed and free copy of jMetrik (it is free software). Participants will receive practice data files, a copy of the presentation slides, and a software user manual draft.

Intended Audience: Measurement practitioners, professors teaching measurement, graduate students, and K-12 teachers.

**Friday, 4:00 p.m. – 7:00 p.m., River Room**

**NCME Board of Directors Meeting**

Members of NCME are invited to attend as observers.

**Saturday, 8:15 a.m. - 10:15 a.m., Azalea Ballroom I, A1**

## **Interpreting Growth on State Assessments – Paper Session**

### **Moderator**

Ye Tong, Pearson

### **Presenters**

Anne Davidson, Nevada Department of Education, Chad Buckendahl, Alpine Testing Solutions, Damian Betebenner, National Center for the Improvement of Educational Assessment

*Developing a Validity Framework for Establishing Expectations for Annual Student Growth*

Derek Briggs, University of Colorado, Nathan Dadey, University of Colorado

*Making Sense of Growth Trends in Academic Achievement among States with Vertically Scaled Assessments*

Yun Xiang, Northwest Evaluation Association, Marty McCall, Northwest Evaluation Association, John Cronin, Northwest Evaluation Association

*An Application of the Cross-Classified Growth Model: How Have High-Achieving Learners Performed and Grown in High-Poverty and Highly Segregated School Settings?*

Adam Wyse, Michigan Department of Education, Ji Zeng, Michigan Department of Education, Joseph Martineau, Michigan Department of Education

*A Graphical Transition Table for Communicating Status and Growth*

Pamela Paek, National Center for the Improvement of Educational Assessment, Chris Domaleski, National Center for the Improvement of Educational Assessment

*Measuring Growth for Students with Disabilities*

Dongmei Li, ACT, Inc., Michael Kolen, University of Iowa

*Relationships between Status, Simple Gain, Residual Gain, and Linear Growth*

**Saturday, 8:15 a.m. - 10:15 a.m., Azalea Ballroom II, A2**

**Computerized Adaptive Tests for Classification: Algorithms and Applications – Coordinated Session**

**Organizer**

Hong Jiao, University of Maryland-College Park

**Moderator**

Robert Lissitz, University of Maryland-College Park

**Presenters**

G. Gage Kingsbury, Northwest Evaluation Association

*Adaptive Testing for State Accountability: Creating Accurate Proficiency Levels and Measuring Student Growth*

Nathan Thompson, Assessment Systems Corporation & University of Cincinnati, Shungwon Ro, Prometric

*Likelihood Ratio Based Computerized Classification Testing*

Robert Smith, Educational Testing Service, Charles Lewis, Fordham University  
*Computerized Mastery Testing: Using Bayesian Sequential Analysis to Make Multiple Classification Decisions*

Hua-Hua Chang, University of Illinois at Urbana-Champaign

*Making Computerized Adaptive Testing a Diagnostic Tool*

Russell Almond, Florida State University

*Utilities and Quasi-Utilities for Classification*

Hong Jiao, University of Maryland-College Park, George Macready, University of Maryland-College Park, Junhui Liu, University of Maryland-College Park, Youngmi Cho, University of Maryland-College Park

*A Mixture Rasch Model Based Computerized Classification Test*

**Discussant**

Robert Mislevy, University of Maryland-College Park

**Saturday, 8:15 a.m. - 10:15 a.m., Magnolia Ballroom I, A3**

## **Factors Affecting the Quality of Equating – Paper Session**

### **Moderator**

Rochelle Michel, Educational Testing Service

### **Presenters**

Liru Zhang, Delaware Department of Education, Allen Lau, Pearson  
*Examine the Effect of Policy Change on Equating*

Sonya Powers, Pearson  
*Impact of Group Differences on Equating Accuracy and the Adequacy of Equating Assumptions*

Chunxin Wang, ACT, Inc., Chunyan Liu, University of Iowa, Timothy Ansley, University of Iowa, Won-Chan Lee, University of Iowa  
*The Effect of Bootstrap Numbers on Estimating Standard Errors of Equating*

Hua Wei, Pearson, Jie Lin, Pearson  
*Equating to the Item Bank or to the Previous Form: Does it Matter?*

Hyeonjoo Oh, Educational Testing Service, Xiaoyu Qian, University of Delaware, Hongwen Guo, Educational Testing Service  
*Effects of Group Ability Differences and Group Variability on Equating Accuracy*

YoungWoo Cho, ACT, Inc., Tawnya Knupp, ACT, Inc., Won-Chan Lee, University of Iowa, Deborah Harris, ACT, Inc.  
*Effects of Test Score Reliability on Linking*

### **Discussant**

Walter Way, Pearson

**Saturday, 8:15 a.m. - 10:15 a.m., Magnolia Ballroom III, A4**

**New IRT Models – Paper Session**

**Moderator**

Su Baldwin, National Board of Medical Examiners

**Presenters**

Laine Bradshaw, University of Georgia, Jonathan Templin, University of Georgia  
*A Nominal Response Model for Scaling Ability and Diagnosing Misconceptions*

Hung-Yu Huang, Hsuan Chuang University, Wen-Chung Wang, The Hong Kong  
Institute of Education  
*Testlet Response Models with Hierarchical Latent Traits*

Nuo Xi, The Ohio State University, Michael Browne, The Ohio State University  
*The Underlying Bivariate Normal Approach for Fitting Factor Analysis Model to Ordinal  
Data*

Yuan Hong, American Institutes for Research, Jimmy de la Torre, Rutgers, The State  
University of New Jersey  
*Improving the Item Parameter Estimation Using a More General Multidimensional Item  
Response Theory Method*

Aijun Wang, University of Georgia, Allan Cohen, University of Georgia  
*A Cross-Classified Multidimensional IRT Model*

**Discussant**

Anton Beguin, CITO

**Saturday, 8:15 a.m. - 10:15 a.m., 12th Floor Ballroom I, A5**

## **Applications of Generalizability Theory in the Measurement of Instructional Practice – Coordinated Session**

### **Organizer/Moderator**

Jose Felipe Martinez, University of California, Los Angeles

### **Presenters**

Charalambos Charalambous, Harvard Graduate School of Education, Matt Kraft, Harvard Graduate School of Education, Heather Hill, Harvard Graduate School of Education

*Using Generalizability Theory to Develop Reliable and Cost-Effective Measures of Instructional Quality: Insights from the Mathematical Quality of Instruction Instrument (MQI)*

Andres Martinez, University of Michigan, Andrew Mashburn, University of Virginia, Jason Downer, University of Virginia, Susan Rivers, Yale University, Marc Brackett, Yale University

*Applying Generalizability Theory to Estimate Variance in Setting-Level Measures*

Jose Felipe Martinez, University of California, Los Angeles, Hilda Borko, Stanford University, Brian Stecher, The RAND Corporation, Rebecca Luskin, University of California, Los Angeles, Matt Kloser, Stanford University

*A Generalizability Study of an Artifact-Based Instrument for Measuring Quality Assessment Practice*

Steven Raudenbush, University of Chicago, Andres Martinez, University of Michigan, Howard Bloom, MDRC, Pei Zhu, MDRC, Fen Lin, City University of Hong Kong

*Studying the Reliability of Group-Level Measures with Implications for Statistical Power*

### **Discussant**

George Marcoulides, University of California, Riverside

**Saturday, 8:15 a.m. - 10:15 a.m., 12th Floor Ballroom II, A6**

**NCME AND THE COUNCIL OF CHIEF STATE SCHOOL OFFICERS  
Implementing Common Core Consortium Assessments with the Existing State  
Accountability Systems – Invited Symposium**

**Organizers**

Anne Howard, The Council of Chief State School Officers  
Wayne J. Camara, The College Board

**Moderator**

Chris Minnich, The Council of Chief State School Officers

**Presenters**

Joseph Willhoft, Smarter-Balanced Consortia

Joseph Martineau, Michigan Department of Education

Laura Slover, Achieve

Scott Norton, Louisiana Department of Education

Mark Reckase, Michigan State University

**Saturday, 10:35 a.m. - 12:05 p.m., Azalea Ballroom I, B1**

**Analyzing the Design and Implementation of Scoring Rubrics for Alternate Assessments – Coordinated Session**

**Organizer/Moderator**

Marianne Perie, National Council for the Improvement of Educational Assessment  
**Presenters**

Marianna Quenemoen, National Alternate Assessment Center, Marianne Perie, National Council for the Improvement of Educational Assessment, Jacqui Kearns, University of Kentucky

*A Proposed Typology of AA-AAS Scoring Approaches*

Arthur Thacker, HumRRO, Andrea Sinclair, HumRRO, Emily Dickinson, HumRRO, Leslie Taylor, HumRRO

*An Investigation of Kentucky's Approach to Scoring the Alternate Assessment Portfolio*

Andrew Roach, Georgia State University, Melissa Fincher, Georgia Department of Education, Kris Varjas, Georgia State University, Namisi Chilungu, Georgia State University

*Exploring Thought Processes Underlying the Scoring of Georgia's Alternate Assessment*

**Discussant**

George Engelhard, Emory University

**Saturday, 10:35 a.m. - 12:05 p.m., Azalea Ballroom II, B2**

**Scale Stability and Scale Drift – Paper Session**

**Moderator**

Robert Smith, Educational Testing Service

**Presenters**

Ben Babcock, American Registry of Radiologic Technologists, Anthony Albano, University of Minnesota

*Rasch Scale Drift Over Time: Examining When to Reset the Scale*

Yu Fang, ACT, Inc., Zhongmin Cui, ACT, Inc.

*Practical Issues in Maintaining IRT Scales Using Characteristic Curve Scaling Methods*

Chien-Ming Chen, National Academy of Educational Research Preparatory, Yanlin Jiang, Educational Testing Service, Deping Li, Educational Testing Service

*The Accuracy and Stability of a Chain of IRT Observed Score Equatings Using Various Scale Transformation Methods*

Hongwen Guo, Educational Testing Service, Jinghua Liu, Educational Testing Service, Neil J. Dorans, Educational Testing Service, Miriam Feigenbaum, Educational Testing Service

*Multiple-Linking Equating and Random Scale Drift*

Yanxuan Qu, Educational Testing Service, Lixiong Gu, Educational Testing Service, Bihua Xiang, Educational Testing Service

*Comparison of Frequency Estimation Method or Chained Equipercentile Method in Terms of Scale Stability*

**Discussant**

Robert Smith, Educational Testing Service

**Saturday, 10:35 a.m. - 12:05 p.m., Magnolia Ballroom I, B3**

**Upside Down Grade Inflation: Multiple Perspectives on Minimum Grading Policies – Coordinated Session**

**Organizer**

S.E. Phillips, Consultant

**Moderator**

Michelle Croft, The Brookings Institution

**Presenters**

S.E. Phillips, Consultant

*Presenter: Legal Perspective on Texas Minimum Grading Lawsuit*

Joe Willhoft, Washington Office of Superintendent of Public Instruction

*Reactor 1: Policy Perspective*

Mike Beck, Questar Assessment Inc.

*Reactor 2: Psychometric Perspective*

Cornelia Orr, National Assessment Governing Board

*Reactor 3: School/Student Accountability Perspective*

**Saturday, 10:35 a.m. - 12:05 p.m., Magnolia Ballroom III, B4**

**Item Modeling and Item Generation for the Measurement of Quantitative Skills: Recent Advances and Prospects – Coordinated Session**

**Organizer/Moderator**

Isaac Bejar, Educational Testing Service

**Presenters**

Mark Gierl, University of Alberta, Cecilia Alves, University of Alberta  
*Using Item Models for Test Development and Item Generation with IGOR*

James Fife, Educational Testing Service  
*Integrating Item Generation and Automated Scoring*

Susan Embretson, Georgia Institute of Technology  
*Item Generation and Psychometrics: Overview of Appropriate Models*

Isaac Bejar, Educational Testing Service  
*Item Generation in the Context of a Validity Argument*

**Discussants**

Paul De Boeck, University of Amsterdam  
Mary Pommerich, Defense Manpower Data Center

**Saturday, 10:35 a.m. - 12:05 p.m., 12th Floor Ballroom I, B5**

## **Technical Issues and Students with Disabilities – Paper Session**

### **Moderator**

Edynn Sato, WestEd

### **Presenters**

Ian Hembry, University of Iowa, Catherine Welch, University of Iowa  
*A Generalizability Analysis for an Alternate Assessment Based on Modified Achievement Standards*

Xia Mao, Pearson, Julie Miles, Pearson, James Ingrisone, Pearson  
*An Empirical Evaluation of the Technical Adequacy of a Statewide Alternative Assessment Based on Modified Achievement Standards*

Minji Lee, University of Massachusetts, Amherst, Craig Wells, University of Massachusetts, Amherst, Stephen Sireci, University of Massachusetts, Amherst  
*Assessing Measurement Invariance in the Context of Disparate Sample Sizes and Proficiency Distribution*

Tammie Dickenson, University of South Carolina, Heather Bennett, University of South Carolina, Peter Beddow, Vanderbilt University, Ryan Kettler, Vanderbilt University, Grant Morgan, University of South Carolina, Joanna Gilmore, University of South Carolina  
*Enhancing the Accessibility of High School Science Tests: A Multi-State Experiment on AA-MAS Validity*

Yuk Fai Cheong, Emory University, Jennifer Randall, University of Massachusetts, Amherst, George Engelhard, Emory University  
*Item Analysis by Hierarchical and Cross-Classified Models: An Application to a Statewide Reading Assessment Program*

### **Discussant**

Patricia McDivitt, Data Recognition Corporation

**Saturday, 10:35 a.m. - 12:05 p.m., 12th Floor Ballroom II, B6**

**Panel on Innovative Opportunities and Measurement Challenges in Through-Course Summative Assessments: State RTTT Assessment Consortia Development Plans – Invited Symposium**

**Organizers**

Pat Forgione, Center for K-12 Assessment & Performance Management  
Nancy Doorey, Center for K-12 Assessment & Performance Management

**Moderator**

Pat Forgione, Center for K-12 Assessment & Performance Management

**Overview Presentation**

Nancy Doorey, Center for K-12 Assessment & Performance Management

**Panelists**

Randy Bennett, Educational Testing Service

Andrew Ho, Harvard Graduate School of Education

Michael Kane, Educational Testing Service

Michael Kolen, University of Iowa

Laurie Wise, Human Resources Research Organization

Rebecca Zwick, Educational Testing Service

**Saturday, 12:25 p.m. - 1:55 p.m., Azalea Ballroom I, C1**

**Learning from Innovation: Refining the Practice of Automated Scoring of Essays – Coordinated Session**

**Organizer/Moderator**

David Williamson, Educational Testing Service

**Presenters**

Kirk Becker, Pearson, Joshua Goodman, Pearson, Assessment & Information, John de Jong, Pearson/VU University Amsterdam  
*The Final Score: Constructing Item Scores from Components in an Automated Scoring System*

Mo Zhang, Washington State University, David Williamson, Educational Testing Service, Catherine Trapani, Educational Testing Service, Vincent Weng, Educational Testing Service  
*Comparison of Scoring Model Calibration Methods Based on Distributional Targets*

Catherine Trapani, Educational Testing Service, Brent Bridgeman, Educational Testing Service  
*Using Automated Scoring as a Trend Score: The Implications of Score Separation Over Time*

Brent Bridgeman, Educational Testing Service  
*The Question of Validity and Differentially Valued Evidence*

Chaitanya Ramineni, Educational Testing Service  
*Implications of Subgroup Differences in Agreement Between Automated and Human Scores*

**Discussants**

Mark Shermis, The University of Akron  
Walter Way, Pearson

**Saturday, 12:25 p.m. - 1:55 p.m., Azalea Ballroom II, C2**

**Methodological Issues in the Analysis of Personality in Education –  
Coordinated Session**

**Organizer**

Patrick Kyllonen, Educational Testing Service

**Moderator**

Richard Roberts, Educational Testing Service

**Presenters**

Matthias von Davier, Educational Testing Service, Bobby Naemi, Educational Testing Service, Richard Roberts, Educational Testing Service

*Factorial Versus Typological Models for Data from Personality Tests and Survey Scales*

Stephen Stark, University of South Florida, Oleksandr Chernyshenko, Nanyang Technological University Business School, Fritz Drasgow, University of Illinois at Urbana-Champaign

*Adaptive Testing with the Multi-Unidimensional Pairwise Preference Model*

Carolyn MacCann, The University of Sydney, Richard Roberts, Educational Testing Service

*The Structure of Personality at High and Low Levels of Cognitive Ability*

Duanli Yan, Educational Testing Service

*A New Look at the Structure of Emotional Stability*

**Discussants**

Paul De Boeck, University of Amsterdam

Patrick Kyllonen, Educational Testing Service

**Saturday, 12:25 p.m. - 1:55 p.m., Magnolia Ballroom I, C3**

**To Break Trend or Not, That is the Question – Coordinated Session**

## **Organizers**

Young Yee Kim, American Institutes For Research  
George Bohrnstedt, American Institutes for Research

## **Moderator**

George Bohrnstedt, American Institutes for Research

## **Presenters**

Jeffrey Nellhaus, Achieve, Peter Behuniak, University of Connecticut, Frances Stancavage, American Institutes for Research  
*Principles and Research Studies to Guide Decisions About Whether to Maintain or Break Trend When a New Assessment Framework is Introduced*

Kim Gattis, American Institutes for Research, Young Yee Kim, American Institutes for Research, George Bohrnstedt, American Institutes for Research, Peter Ward, Windwalker/American Institutes for Research  
*To Break or Continue Trend: The Role of Content Comparisons of Old and New Assessment Frameworks*

Rebecca Moran, Educational Testing Service, Meng Wu, Educational Testing Service  
*To Break or Continue Trend: The Role of Psychometric Studies of Old and New Items*

Young Yee Kim, American Institutes for Research, Sharyn Rosenberg, American Institutes for Research, Teresa Neidorf, American Institutes for Research  
*To Break or Continue Trend: The Role of Cross-Assessment Item Pool Variation*

## **Discussants**

Peggy Carr, National Center for Education Statistics  
Lorrie Shepard, University of Colorado at Boulder

**Saturday, 12:25 p.m. - 1:55 p.m., Magnolia Ballroom III, C4**

**Innovations in Measurement 1 – Paper Session**

**Moderator**

Tia Sukin, Measured Progress

**Presenters**

Matthew Johnson, Teachers College, Columbia University  
*A Bayesian Approach to Equivalent Groups Equating*

Eduardo Cascallar, Catholic University Leuven, Mariel Musso, Catholic University Leuven / CONICET, Eva Kyndt, Catholic University Leuven, Monique Boekaerts, Leiden University  
*Assessment Without Testing: A Neural Networks Approach*

Mark Raymond, National Board of Medical Examiners, Irina Grabovsky, National Board of Medical Examiners  
*Conditional Standard Errors of Measurement for Performance Ratings from Least Squares Regression*

Rianne Janssen, University of Leuven  
*General Framework for Modeling Item-Order Effects*

Lingling Ma, Northwest Evaluation Association, Steven Wise, Northwest Evaluation Association, Yeow Meng Thum, Northwest Evaluation Association, Gage Kingsbury, Northwest Evaluation Association  
*An Innovative Method of Detecting Item Response Time Threshold*

**Discussant**

Hariharan Swaminathan, University of Connecticut

**Saturday, 12:25 p.m. - 1:55 p.m., 12th Floor Ballroom I, C5**

## **Assessing the Fit of Item Response Theory Models – Paper Session**

### **Moderator**

Venessa Lall, Educational Testing Service

### **Presenters**

Kyong Hee Chon, Western Kentucky University

*The Effect of Model-Data Misfit on IRT Equating in Constructed-Response Tests*

Ying Li, University of Maryland-College Park, André Rupp, University of Maryland-College Park

*Performance of the S-X2 Statistic for Full-Information Bifactor Models*

Lei Wan, Pearson, Hua Wei, Pearson

*An Empirical Examination of Two Item Model-Fit Indices Using Real Data*

Su Zhang, Ontario Educational Quality & Accountability Office, Kathryn Cowles, University of Iowa, Steve Dunbar, University of Iowa

*Prior Predictive Checking of Item Response Theory Models*

### **Discussant**

Roy Levy, Arizona State University

**Saturday, 12:25 p.m. - 1:55 p.m., 12th Floor Ballroom II, C6**

**NATIONAL ASSOCIATION OF TEST DIRECTORS**

**Measuring Teacher Effectiveness in a Comprehensive Teacher Evaluation System: Accurate, Equitable, and Legally Defensible? – Invited Symposium**

**Organizer/Moderator**

Vickie Cartwright, Orange County Public Schools

**Presenters**

Daniel McCaffrey, The RAND Corporation

Damian Betebenner, National Center for the Improvement of Educational Assessment

Peter Goldschmidt, University of California, Los Angeles

**Discussants**

Margaret Heritage, University of California, Los Angeles

Steve Cantrell, Bill & Melinda Gates Foundation

**Saturday, 2:15 p.m. - 3:45 p.m., Azalea Ballroom I, D1**

**A Look at Our Psychometric History: Contributions of Cronbach, Lord, Novick, and Tucker – Invited Symposium**

## **Organizers**

Ronald Hambleton, University of Massachusetts, Amherst  
Sandip Sinharay, Educational Testing Service

## **Moderator**

Linda Cook, Educational Testing Service

## **Presenters**

Robert Linn, University of Colorado  
*Contributions of Ledyard Tucker*

Ronald Hambleton, University of Massachusetts, Amherst  
*Contributions of Frederic Lord*

Robert Brennan, University of Iowa  
*Contributions of Lee Cronbach*

Nancy Petersen, ACT, Inc.  
*Contributions of Melvin Novick*

**Saturday, 2:15 p.m. - 3:45 p.m., Azalea Ballroom II, D2**

**College Readiness, Career Readiness: Same or Different? – Coordinated Session**

**Organizer/Moderator**

David Conley, University of Oregon

**Presenters**

David Conley, Educational Policy Improvement Center  
*Mapping the Domains of College Readiness and Career Readiness*

Susan Loomis, National Assessment Governing Board  
*Overview of NAGB Studies Designed to Compare Workplace and College Preparedness*

Richard Brown, University of Southern California  
*Aligning College Readiness and Career Readiness Standards: Technical Issues*

**Discussant**

Wayne J. Camara, The College Board

**Saturday, 2:15 p.m. - 3:45 p.m., Magnolia Ballroom I, D3**

## **Recent Advances in Equating – Paper Session**

### **Moderator**

Qing Yi, Pearson

### **Presenters**

Anne Huggins, University of Miami, Randall Penfield, University of Miami, Karina Gattamorta, University of Miami

*Test Accommodations and Equating Invariance on a Fifth Grade Science Exam*

Peng Lin, Educational Testing Service, Neil J. Dorans, Educational Testing Service

*Assessing Invariance of Vertical Linking Functions*

Zhan Shu, University of North Carolina at Greensboro, Robert Henson, University of North Carolina at Greensboro, Devdass Sunnasse, University of North Carolina at Greensboro, Andrew Dallas, University of North Carolina at Greensboro

*Ellipse-Arc Equating Method for Small Sample Size Tests*

Jinghua Liu, Educational Testing Service, Paul Holland, Paul Holland Consulting Corporation, Edward Curley, Educational Testing Service, Miriam Feigenbaum, Educational Testing Service

*Test Score Equating Using a Mini-Version Anchor and an Anchor with Less Spread of Difficulty: A Case Study Using Operational Data*

### **Discussant**

Ourania Rotou, Educational Testing Service

**Saturday, 2:15 p.m. - 3:45 p.m., Magnolia Ballroom III, D4**

**Application of Bayesian Methods to Item Response Theory – Paper Session**

**Moderator**

Jonathan Templin, University of Georgia

**Presenters**

Yanyan Sheng, Southern Illinois University  
*A Gibbs Sampler for the Compensatory Multidimensional Model*

Yue Liu, Beijing Normal University, Hongyun Liu, Beijing Normal University, Meijuan Li, Beijing Normal University  
*When Should we Use Testlet Model? A Comparison Study of Bayesian Testlet Model and Standard Bayesian Model*

Leslie Hendrix, University of South Carolina, Brian Habing, University of South Carolina  
*Comparison of EM+E Method to MCMC Including PPMC Checks*

Hye-Jeong Choi, University of Georgia, Karen Samuelsen, University of Georgia  
*On Sensitivity of Bayesian Estimator to the Priors in Mixture 3-PL Models*

**Discussant**

Russell Almond, Florida State University

**Saturday, 2:15 p.m. - 3:45 p.m., Terrace Room, D5**

## **Computerized Adaptive Testing for Accountability – Invited Debate**

Recently there has been a move towards exploring and implementing adaptive testing options for K12 accountability assessments. This debate will examine the pros and cons (from policy, psychometric, and logistical perspectives) of moving from linear-based assessments to item level adaptive assessments.

### **Organizer/Moderator**

Cara Cahalan Laitusis, Educational Testing Service

### **Presenters**

Tony Alpert, Oregon Department of Education

Stanley Rabinowitz, WestEd

**vs.**

Rachel Quenemoen, National Center on Educational Outcomes

Brian Gong, The National Center for the Improvement of Educational Assessment

**Saturday, 2:15 p.m. - 3:45 p.m., River Room, D6**

**Modeling and Estimation with Multistage Testing – Paper Session**

**Moderator**

Michael Jodoin, National Board of Medical Examiners

**Presenters**

Duanli Yan, Educational Testing Service  
*A Tree-Based Approach for Multi-Stage Testing*

Lynn Chen, University of Texas at Austin, Barbara Dodd, University of Texas at Austin  
*The Effects of Test Structure, Routing Testing Length, and Total Test Length on Multistage Testing Using the Generalized Partial Credit Model*

Ru Lu, Educational Testing Service, Hong Jiao, University of Maryland-College Park  
*Modeling the Local Item Dependence with Multistage Tests*

Steffi Pohl, Otto-Friedrich-University Bamberg, NEPS, Norman Rose, Friedrich-Schiller-University Jena, Claus Carstensen, Otto-Friedrich-University Bamberg  
*Multi-Stage Testing in Longitudinal Designs – Estimation of Item Parameters, Person Parameters, and Change Scores*

**Discussant**

Jerry Gorham, Pearson

**Saturday, 4:05 p.m. - 6:05 p.m., Azalea Ballroom I, E1**

## **Policy and Performance Assessments – Paper Session**

### **Moderator**

James Ingrisone, Pearson

### **Presenters**

William Roberts, National Board of Osteopathic Medical Examiners, Inc., Caitlin Dyer, National Board of Osteopathic Medical Examiners, Inc., Erik Langenau, National Board of Osteopathic Medical Examiners, Inc.  
*Multivariate Generalizability Analysis of a High-Stakes Medical Licensure Clinical Skills Examination*

Ross Brown, Measurement Incorporated, Carol Myford, University of Illinois, Chicago  
*Investigating Method Effects in Performance Assessments*

David Carless, University of Hong Kong  
*Formative Assessment as a Continuum of Enacted Practices*

Susan Davis-Becker, Alpine Testing Solutions, Chad Buckendahl, Alpine Testing Solutions  
*An Empirical Evaluation of Using Domain Critical Errors in a Performance Assessment*

Aminah F. Perkins, Emory University, Tawnya Knupp, ACT, Inc., Yi Cao, ACT, Inc.  
*The Effect of Weighting on Decision Consistency Indices for Mixed Format Assessments*

Brett Foley, Alpine Testing Solutions  
*Realistic Expectations: State-Level Changes in the Percentage of Proficient Students, 2002-2008*

**Saturday, 4:05 p.m. - 6:05 p.m., Azalea Ballroom II, E2**

**DIVERSITY ISSUES AND TESTING COMMITTEE**

**Opportunities and Challenges to Meeting Diverse Needs Through Technology-Based Testing – Invited Symposium**

**Organizer/Moderator**

Edynn Sato, WestEd

**Presenters**

Bob Dolan, Pearson

*How Not to be Overly Accommodating: Supporting Diversity Through Inherent Flexibility*

Michael Russell, Measured Progress

*The Accessible Portable Item Profile Standards: What They Mean for Students with Disabilities and Special Needs*

Rebecca Kopriva, Wisconsin Center for Education Research

*The Promise of Computer-Interactive Test Task Environments for English Learners and Others with Language Challenges*

Holly Spurlock, U.S. Department of Education, National Center for Education Statistics

*Reaching Diverse Learners Using Technology-Based Assessment: A National Perspective*

Tony Alpert, Oregon Department of Education

*Universal Design via Embedding Accommodations into Computer-Based Testing Applications*

**Saturday, 4:05 p.m. - 6:05 p.m., Magnolia Ballroom I, E3**

## **Item Parameter Drift – Paper Session**

### **Moderator**

Anthony Albano, University of Minnesota

### **Presenters**

Alvaro Arce-Ferrer, Pearson, C. Allen Lau, Pearson

*Statistical Properties of 3PL Robust Z: An Investigation with Real and Simulated Data Sets*

Robert Cook, University of Massachusetts, Robert Keller, Measured Progress, Lisa Keller, University of Massachusetts, Amherst

*An Investigation into the Long-Term Consequences of Pre-Equating Under Item Response Scaling Techniques*

Tammy Trierweiler, Educational Testing Service, Jaime Cid, Educational Testing Service

*The Effect of B-Parameter Drift and C-Parameter on Test Score Equating Over Multiple Testing Administrations*

Yanmei Li, Educational Testing Service

*Examining the Impact of Drifted Polytomous Anchor Items on TCC Linking*

Patrick Meyer, University of Virginia

*The Influence of Model Misspecification on Item Parameter Drift Statistics*

Craig Wells, University of Massachusetts, Amherst, Kyung Han, Graduate

Management Admission Council, Lisa Keller, University of Massachusetts, Amherst

*Minimizing the Effect of Model Misfit on the Invariance Property for the Three-Parameter Logistic Model*

### **Discussant**

Deping Li, Educational Testing Service

**Saturday, 4:05 p.m. - 6:05 p.m., Magnolia Ballroom III, E4**

**GRADUATE STUDENT ISSUES COMMITTEE**

**Translating Technical Material for Lay Audiences – Invited Symposium**

**Organizer**

Chad Gotch, Washington State University

**Moderator**

Todd Rogers, University of Alberta

**Presenters**

Mary Pommerich, Defense Manpower Data Center

Leslie Lukin, Lincoln (NE) Public Schools

Roy Levy, Arizona State University

Damian Betebenner, National Center for the Improvement of Educational Assessment

**Saturday, 4:05 p.m. - 6:05 p.m., Terrace Room, E5**

## **Test Security Issues in the Modern Era of Assessment – Coordinated Session**

### **Organizers**

Karla Egan, CTB/McGraw-Hill  
William Skorupski, University of Kansas

### **Moderator**

Karla Egan, CTB/McGraw-Hill

### **Presenters**

Marc Julian, CTB/McGraw-Hill, Gary Schaeffer, CTB/McGraw-Hill, Steve Ferrara, CTB/McGraw-Hill, Wim van der Linden, CTB/McGraw-Hill  
*Using Erasure Analyses to Address Potential Cheating*

Zhan Shu, University of North Carolina at Greensboro, Ric Luecht, University of North Carolina at Greensboro, Robert Henson, University of North Carolina at Greensboro  
*Using the Deterministic, Gated IRT Model to Monitor Item Over-Exposure*

Jessalyn Smith, CTB/McGraw-Hill, Zhan Shu, University of North Carolina at Greensboro  
*The Comparison Between the Deterministic, Gated IRT model with the I<sub>z</sub> Index ECI4 Indices*

William Skorupski, University of Kansas, Karla Egan, CTB/McGraw-Hill  
*The Detection of Cheating through Hierarchical Growth Models*

Wim van der Linden, CTB/McGraw-Hill, Charles Lewis, Fordham University  
*Bayesian Checks on Cheating on Tests*

### **Discussants**

James Wollack, University of Wisconsin-Madison  
Bernard Veldkamp, University of Twente

**Saturday, 4:05 p.m. - 6:05 p.m., River Room, E6**

**Item Selection and Item Calibration in Computer-Based Testing– Paper Session**

**Moderator**

Usama Ali, University of Illinois at Urbana-Champaign

**Presenters**

Andreas Frey, Leibniz Institute for Science and Mathematics Education (IPN), Ying Cheng, University of Notre Dame, Nicki Seitz, Leibniz Institute for Science and Mathematics Education (IPN)

*Content Control with the Maximum Priority Index Method in Multidimensional Adaptive Testing*

Haiyan Lin, University of Illinois at Urbana-Champaign, Feiming Li, National Board of Osteopathic Medical Examiners, Inc., Linjun Shen, National Board of Osteopathic Medical Examiners, Inc., Hua-Hua Chang, University of Illinois at Urbana-Champaign

*Adaptive Pretest Approaches and Online Calibration Methods For Linear Fixed-Length Computer-Based Tests*

Lihua Yao, Defense Manpower Data Center

*Multidimensional CAT Item Selection Methods for Domain Scores and Composite Scores*

Tsung-Han Ho, Educational Testing Service

*Item and Testlet Selection Procedures for Mixed-Format CAT Based on the Testlet Response Theory Model*

Wei He, Northwest Evaluation Association, Marty McCall, Northwest Evaluation Association, Yeow Meng Thum, Northwest Evaluation Association, Carl Hauser, Northwest Evaluation Association

*Pretest Item Calibration for Computerized Adaptive Test*

Yuling Feng, University of South Carolina, Alan Huebner, ACT, Inc., Bruce Williams, ACT, Inc.

*Online Pretest Item Calibration for Cognitive Diagnostic Computer Adaptive Testing*

**Discussant**

Kirk Becker, Pearson VUE

**Saturday, 6:15 p.m. – 7:30 p.m., Westin New Orleans Canal Place,  
12th Floor Ballroom**

## **NCME and AERA Division D Joint Welcome Reception for Current and New Members**

Members of NCME and AERA Division D are invited to attend the NCME and AERA Division D Joint Welcome Reception for Current and New Members. Hors d'oeuvres and a cash bar will be available.

One free drink ticket for graduate students and new members of AERA Division D and NCME will be available at the desk near the entrance to the room. New members will wear blue ribbons on their conference badges. Please extend a welcome to them.

The reception is sponsored by:

**ACT, Inc.**

**American Institutes for Research**

**Applied Measurement Professionals, Inc.**

**Buros**

**CTB/McGraw-Hill**

**Educational Testing Service**

**Graduate Management Admission Council**

**HumRRO**

**Law School Admission Council**

**Measured Progress Inc.**

**MetaMetrics**

**National Council of State Boards of Nursing, Inc.**

**Pacific Metrics**

**Pearson**

**Pearson VUE**

**Riverside Publishing**

**The College Board**

**Westat**

**Sunday, 8:00 a.m. – 9:30 a.m., Sheraton New Orleans Hotel,  
Armstrong Ballroom**

**NCME Breakfast and Business Meeting**

Theater style seating will be available for those who did not purchase a breakfast ticket.

# NCME • 2011 Annual Meeting & Training Sessions

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**Sunday, 9:30 a.m. – 10:15 a.m., Sheraton Hotel,  
Armstrong Ballroom**

**NCME Presidential Address: Uncovering Educational Measurement and  
Assessment Professionals: Demographics, Education, Expertise, and  
Engagement**

**Presenter**

Wayne J. Camara, The College Board

**Sunday, 10:35 a.m. - 12:05 p.m., Azalea Ballroom I, F1**

**What's New from the "Educational Measurement: Issues and Practice" - A Sample of Recently Published Papers – Invited Symposium**

**Organizer/Moderator**

Jacqueline Leighton, University of Alberta

**Presenters**

Susan Brookhart, Duquesne University  
*Educational Assessment Knowledge and Skills for Teachers*

Xin Wei, SRI International, Edward Haertel, Stanford University  
*The Effect of Ignoring Classroom-Level Variance in Estimating the Generalizability of School Mean Scores*

Lynne Hollingshead, Ontario Institute for Studies in Education, University of Toronto,  
Ruth Childs, Ontario Institute for Studies in Education, University of Toronto  
*Reporting the Percentage of Students Above a Cut Score: The Effect of Group Size*

Gautam Puhan, Educational Testing Service, Longjuan Liang, Educational Testing Service  
*Equating Subscores Under the Non Equivalent Anchor Test (NEAT) Design*

**Discussant**

Jacqueline Leighton, University of Alberta

**Sunday, 10:35 a.m. - 12:05 p.m., Azalea Ballroom II, F2**

## **Best Practices in Common Core Assessments: Psychometric Challenges for Mixed Format Tests – Coordinated Session**

### **Organizer**

J.P. Kim, ACT, Inc.

### **Moderator**

Deborah Harris, ACT, Inc.

### **Presenters**

Yi Cao, ACT, Inc., Tawnya Knupp, ACT, Inc.

*The Effect of Weighting on Reliability and Classification for Mixed Format Tests*

J.P. Kim, ACT, Inc., YoungWoo Cho, ACT, Inc.

*Comparative Study of Concurrent and Separate Equipercentile Equating Methods for Mixed Formats under the Random Groups Design*

Tianli Li, ACT, Inc., J.P. Kim, ACT, Inc.

*Investigation of IRT Parameter Estimation and Scale Transformation Methods for Linking a Mixed Format Test to a Multiple Choice Item Test*

Nathan Wall, University of Iowa, Tawnya Knupp, ACT, Inc.

*The Effects of Multidimensionality Due to Item Format on IRT True and Observed Score Equating*

### **Discussants**

Mark Reckase, Michigan State University

Michael Kolen, University of Iowa

**Sunday, 10:35 a.m. - 12:05 p.m., Magnolia Ballroom I, F3**

**Rater Issues – Paper Session**

**Moderator**

Jilliam Joe, Educational Testing Service

**Presenters**

Mayuko Simon, Data Recognition Corporation, Xiaowen Zhu, Data Recognition Corporation, N. Scott Bishop, Data Recognition Corporation, Adisack Nhouyvanisvong, Naiku  
*An Empirical Comparison of Different Rater-Effects Adjustment Methods when Equating Mixed-Format Large-Scale State Assessments*

Lawrence DeCarlo, Teachers College, Columbia University  
*Implications of a Signal Detection Rater Model for the Study of Rater Drift*

YoungKoung Kim, The College Board, Lawrence DeCarlo, Teachers College, Columbia University, Won-Chan Lee, University of Iowa  
*On Implications of a Hierarchical Rater/Signal Detection Model for Linking with Constructed Response Items*

Lihshing Leigh Wang, University of Cincinnati, Shuyan Sun, University of Cincinnati  
*Multi-Faceted Rasch Modeling of Rater-Mediated Evaluation Data for Dichotomous Classification Decisions*

Zhen (Jane) Wang, Educational Testing Service, Lihua Yao, Defense Manpower Data Center  
*The Effects of Scoring Designs and Rater Severity on Students' Ability Estimation for Constructed Response Items*

**Discussant**

Jilliam Joe, Educational Testing Service

**Sunday, 10:35 a.m. - 12:05 p.m., Magnolia Ballroom III, F4**

## **Multidimensional Item Response Theory Models – Paper Session**

### **Moderator**

Saba Rizavi, Consultant

### **Presenters**

Tan Li, University of South Carolina, Brian Habing, University of South Carolina  
*The Influence of the Variable Compensation IRT Model on Conditional Covariances*

Yang Lu, ACT, Inc., Mark Reckase, Michigan State University  
*The Comparison of Common Item Selection Methods in Vertical Scaling Under Multidimensional Item Response Theory*

Ting Zhang, University of Maryland-College Park, Matthias von Davier, Educational Testing Service, Xueli Xu, Educational Testing Service  
*Examine Consistency of MIRT Ability Distribution Estimates in an International Large-Scale Assessment*

Youngsoon So, University of California  
*The Usefulness of the Bifactor Model in a Second-Language Reading Comprehension Assessment*

Tawnya Knupp, ACT, Inc., Won-Chan Lee, CASMA/University of Iowa  
*An Investigation into the Behavior of Estimated Decision Indices Based on the Multidimensional IRT Method of Estimation*

### **Discussant**

Paul De Boeck, University of Amsterdam

**Sunday, 10:35 a.m. - 12:05 p.m., 12th Floor Ballroom II, F5**

**Career Award Address: The Contestant Perspective on Taking Tests**

**Moderator**

Paul Holland, Paul Holland Consulting Corporation

**Presenter**

Neil J. Dorans, Educational Testing Service

**Discussant**

Mary Pommerich, Defense Manpower Data Center

**Sunday, 10:35 a.m. - 12:05 p.m., 12th Floor Ballroom I, F6**

**Four Studies on the Use of Performance Data in Angoff-Style Standard Setting: Impact, Procedural Considerations and a Possible Alternative – Coordinated Session**

## **Organizer/Moderator**

Brian Clauser, National Board of Medical Examiners

## **Presenters**

Melissa Margolis, National Board of Medical Examiners

*The Impact of Examinee Performance Data on Angoff Study Outcomes*

Janet Mee, National Board of Medical Examiners, Brian Clauser, National Board of Medical Examiners, Melissa Margolis, National Board of Medical Examiners

*The Impact of Process Instructions on Judges' Use of Examinee Performance Data*

Brian Clauser, National Board of Medical Examiners, Janet Mee, National Board of Medical Examiners, Melissa Margolis, National Board of Medical Examiners

*The Effect of Data Format on Integration of Performance Data into Angoff Judgments*

Jerome Clauser, University of Massachusetts, Amherst, Ronald Hambleton, University of Massachusetts, Amherst, Brian Clauser, National Board of Medical Examiners

*An Investigation of Judge Variability in Making Angoff Judgments*

## **Discussants**

Michael Kane, Educational Testing Service

Stephen Sireci, University of Massachusetts, Amherst

**Sunday, 12:25 p.m. - 1:55 p.m., Azalea Ballroom I, G1**

**Innovations in Test and Item Design Using Item Difficulty Modeling –  
Coordinated Session**

**Organizer/Moderator**

Maria Martiniello, Educational Testing Service

**Presenters**

Kristen Huff, Regents Research Fund, Steve Ferrara, CTB/McGraw-Hill, Cynthia Hamen, The College Board, Christopher Lazzaro, The College Board  
*Identifying Sources of Cognitive Complexity in Science Assessment: A Case Study*

Kathleen Sheehan, Educational Testing Service, Irene Kostin, Educational Testing Service, Yoko Futagi, Educational Testing Service  
*An Automated Approach for Modeling the Passage Complexity Component of Reading Item Difficulty*

Maria Martiniello, Educational Testing Service, Paula Elosua, Universidad del Pais Vasco  
*Examining Sources of DIF for Language-Minority Groups in K-12 Mathematics Assessments*

Joanna Gorin, Arizona State University  
*Novel IDM Applications: Special Test Populations and Uses*

**Discussants**

André Rupp, University of Maryland-College Park  
Jacqueline Leighton, University of Alberta

**Sunday, 12:25 p.m. - 1:55 p.m., Azalea Ballroom II, G2**

## **Innovations in Measurement 2 – Paper Session**

### **Moderator**

Irina Grabovsky, National Board of Medical Examiners

### **Presenters**

William Schafer, University of Maryland, Bradley Coverdale, University of Maryland, Harlan Luxenberg, University of Maryland, Ying Jin, American Institutes for Research

*Quality Control Charts in Large-Scale Assessment Programs*

Matthew Burke, University of North Carolina at Greensboro, Zhan Shu, University of North Carolina at Greensboro

*A Modification of the CUSUM Technique to Assess Convergence in MCMC Estimation*

Kristen Burmester, University of California, Berkeley

*Triangulating Validity Evidence: Classroom Discussions, Written Assessments, and Cognitive Interviews*

Ping Chen, Beijing Normal University, Tao Xin, Beijing Normal University, Shu-Liang Ding, Jiangxi Normal University, Hua-Hua Chang, University of Illinois at Urbana-Champaign

*Item Replenishing in Cognitive Diagnostic Computerized Adaptive Testing*

Minjeong Jeon, University of California, Berkeley, Frank Rijmen, Educational Testing Service

*Variational Approximate Inference for Item Response Models with Crossed Random Effects*

### **Discussant**

Irina Grabovsky, National Board of Medical Examiners

**Sunday, 12:25 p.m. - 1:55 p.m., Magnolia Ballroom I, G3**

**Linking and Equating – Paper Session**

**Moderator**

Jonathan Weeks, University of Colorado at Boulder

**Presenters**

Won-Chan Lee, University of Iowa, Robert Brennan, University of Iowa, Eunjung Lee, University of Iowa

*Measurement Error and Equating Error: A Synthesis*

Jiyun Zu, Educational Testing Service

*Standard Error of Linear Equating for the NEAT Design with Nonnormality Distributed Data*

Yi He, University of Iowa, Michael Kolen, University of Iowa

*A Comparison of Mixed-Format Equating Methods Using Equating Properties*

Judit Antal, The College Board, YoungKoung Kim, The College Board, Won-Chan Lee, University of Iowa

*A Comparison of Presmoothing and Postsmoothing Methods for the Nonequivalent Groups with Anchor Test (NEAT) Design*

**Discussant**

Dan Eignor, Educational Testing Service

**Sunday, 12:25 p.m. - 1:55 p.m., Magnolia Ballroom III, G4**

## **Estimating Parameters of Multidimensional Item Response Theory Models – Paper Session**

### **Moderator**

Zhushan Li, Boston College

### **Presenters**

Chanho Park, ACT, Inc., Won-Chan Lee, University of Iowa  
*Fixed Parameter Calibration for Multidimensional IRT*

Meng Wu, Educational Testing Service, Adrienne Sgammato, Educational Testing Service, Yue Jia, Educational Testing Service  
*Unidimensional and Composite Scaling Comparisons for NAEP*

Shudong Wang, Northwest Evaluation Association, Hong Jiao, University of Maryland  
*Incorporating Person Covariates and Response Times as Collateral Information to Improve Person and Item Parameter Estimations*

Junhui Liu, University of Maryland, Hong Jiao, University of Maryland  
*A Comparison of Estimation Methods for an Explanatory IRT Model with Person Covariates in Generalized (Non)Linear Mixed Model Framework*

Litong Zhang, CTB/McGraw Hill, Jessalyn Smith, CTB/McGraw Hill, Craig Wheatley, University of South Carolina  
*Comparing the Accuracy of Parameter Estimates for Multidimensional Item Response Theory Models with SAS, Mplus, and NOHARM*

### **Discussant**

Mark Davison, University of Minnesota

**Sunday, 12:25 p.m. - 1:55 p.m., 12th Floor Ballroom I, G5**

**Improving Assessment with Item Response Time Data – Coordinated Session**

**Organizer/Moderator**

Brad Ching-Chao Wu, Pearson

**Presenters**

Xin Li, Pearson

*Assessing Drift in Item Parameters and Item Response Times in CAT*

Brad Ching-Chao Wu, Pearson

*Incorporating Response Time to Improve Computer-Based Test Form Construction*

Ming Lei, The College Board

*How Much can Effect-Moderated IRT Model Improve Model Fit and Parameter Estimation in a Highly Speeded Test?*

Hui-Juan Meng, Pearson

*Detecting Aberrant Responses in Computer-Based Testing*

**Discussants**

Kathleen Gialluca, Pearson

Steven Wise, Northwest Evaluation Association

**Sunday, 12:25 p.m. - 1:55 p.m., 12th Floor Ballroom II, G6**

## **Advanced Psychometric Models – Paper Session**

### **Moderator**

Mark Albanese, National Conference of Bar Examiners

### **Presenters**

Alan Socha, Western Carolina University, Ellen Sigler, Western Carolina University  
*Profile Analysis via Multidimensional Scaling for the Revised Two-Factor Learning  
Process Questionnaire*

Dong Gi Seo, University of Minnesota, David Weiss, University of Minnesota  
*The Bifactor Model and Its Application to Multidimensional Computerized Adaptive Test*

### **Discussant**

William Skorupski, University of Kansas

**Sunday, 12:25 p.m. - 1:55 p.m., Terrace Room, G7**

**Mixture Item Response Theory Models – Paper Session**

**Moderator**

Krista Breithaupt, Medical Council of Canada

**Presenters**

John Willse, University of North Carolina at Greensboro  
*Confirmatory Mixture Rasch Models for Diagnostic Classification*

Yi-Hsin Chen, University of South Florida, Douglas Lunsford, University of South Florida  
*Latent Class Analysis of Test Anxiety Inventory: A Mixed Rasch Model*

Natalia Alexeev, University of Georgia, Allan Cohen, University of Georgia, Noel Gregg, University of Georgia, Christy Jenkins, University of Georgia  
*Factors Affecting the Formation of Latent Classes in Mixture IRT Models*

Daniel Van Nijlen, Katholieke Universiteit Leuven, Rianne Janssen, Katholieke Universiteit Leuven  
*Detecting Examinee Non-Effort with Mixture IRT Models*

Yoon Soo Park, Teachers College, Columbia University, Young-Sun Lee, Teachers College, Columbia University  
*Investigating Item Parameter Drift Using Mixture IRT: An Application from TIMSS*

**Discussant**

Matthias von Davier, Educational Testing Service

**Sunday, 2:15 p.m. - 3:45 p.m., Azalea Ballroom I, H1**

**Possibilities and Limitations in Drawing Inferences from Large Scale Survey Assessments – Coordinated Session**

**Organizer/Moderator**

Patrick Kyllonen, Educational Testing Service

**Presenters**

Eckhard Klieme, German Institute for International Educational Research (DIPF),  
Jan Hochweber, German Institute for International Educational Research (DIPF),  
Johannes Hartig, German Institute for International Educational Research (DIPF)  
*Measuring Efficacy, Efficiency, and Equity in Educational Systems and Institutions: The Case of PISA*

Svenja Vieluf, German Institute for International Educational Research (DIPF)  
*Higher Order Measurement Invariance in PISA Questionnaires*

David Kaplan, University of Wisconsin-Madison, Sarah Depaoli, University of Wisconsin-Madison  
*Bayesian Multilevel SEM for Predicting Student Achievement: An Application to PISA*

**Discussant**

Andreas Oranje, Educational Testing Service

**Sunday, 2:15 p.m. - 3:45 p.m., Azalea Ballroom II, H2**

**Modeling Growth – Paper Session**

**Moderator**

Anne Davidson, Nevada Department of Education

**Presenters**

Feifei Ye, University of Pittsburgh, Wenyi You, Pearson

*Multilevel Two-Parameter Item Response Model for Assessing the Effect of Student- and School-Level Predictors on Student Growth*

Heather Buzick, Educational Testing Service

*A Comparison of Regression-Based Growth Models for Students with Disabilities Taking a State General Accountability Assessment*

Ye Tong, Pearson, Sz-Shyan Wu, New York State Education Department, Kimberly

O'Malley, Pearson, Ming Xu, New York State Education Department

*Growth Models and Their Extension*

Katherine Furgol, University of Iowa

*Contrasting OLS and Quantile Regression Approaches to Student Growth Percentiles*

Maciej Jakubowski, OECD / WNE UW, Artur Pokropek, IFiS PAN / IBE

*Assessing Achievement Growth Across Countries (International Value-Added)*

**Discussant**

Shu Jing Yen, Center for Applied Linguistics

**Sunday, 2:15 p.m. - 3:45 p.m., Magnolia Ballroom I, H3**

## **Estimating Parameters of Unidimensional Item Response Theory Models – Paper Session**

### **Moderator**

Matthew Burke, University of North Carolina at Greensboro

### **Presenters**

James Gambrell, University of Iowa, Chunyan Liu, University of Iowa  
*WinBUGS vs. BILOG-MG for 3PL IRT Parameter Estimation*

Tianshu Pan, Pearson  
*Estimating the Rasch Model as a Logistic Regression Model to Reduce Bias of Maximum Likelihood Estimate*

Edward Wolfe, Pearson Measurement  
*Investigation of Precision in Rasch Ability Estimation*

Youngsuk Suh, University of Texas at Austin, Sun-Joo Cho, Vanderbilt University,  
James Wollack, University of Wisconsin-Madison  
*A Comparison of Item Calibration Procedures in the Presence of Test Speededness*

### **Discussant**

H. Jane Rogers, University of Connecticut

**Sunday, 2:15 p.m. - 3:45 p.m., Magnolia Ballroom III, H4**

**DIF Methodology – Paper Session**

**Moderator**

Jill van den Heuvel, CTB/McGraw-Hill

**Presenters**

Hueying Tzou, National University of Tainan, Pei-Ming Chiang, National University of Tainan, Yuan-Sung Wang, National University of Tainan  
*The Effect of Linking Procedures on the Detection of Multidimensional Differential Item Functioning*

Daniel Bowen, Measurement Incorporated, Kevin Joldersma, Measurement Incorporated  
*The Effects of Controlling for Distributional Differences on the Mantel-Haenszel Procedure in DIF Studies for Test Translations*

Guo-Wei Sun, National Sun Yat-sen University, Graduate Institute of Education, Ching-Lin Shih, National Sun Yat-sen University, Graduate Institute of Education, Wen-Chung Wang, The Hong Kong Institute of Education, Assessment Research Centre  
*The Effect of DIF-free-then-DIF Strategy on Likelihood Ratio Test Method in Assessing Differential Item Functioning*

Jyun-Hong Chen, National Chung Cheng University, Cheng-Te Chen, National Tsing Hua University, Ching-Lin Shih, National Sun Yat-sen University  
*Applying DIF-free-then-DIF Strategy on Hierarchical Generalized Linear Models for Differential Item Functioning Assessment*

Rebecca Zwick, Educational Testing Service, Lei Ye, Educational Testing Service, Steven Isham, Educational Testing Service  
*Improving Mantel-Haenszel DIF Estimation Through Bayesian Updating*

**Discussant**

Randall Penfield, University of Miami

**Sunday, 2:15 p.m. - 3:45 p.m., 12th Floor Ballroom I, H5**

**Perspectives on the History of Testing in the United States –  
Coordinated Session**

**Organizer/Moderator**

Thanos Patelis, The College Board

**Presenters**

H.D. Hoover, University of Iowa  
*The Iowa Testing Programs*

Richard Sawyer, ACT, Inc.  
*ACT: Fifty Years of Growth*

Kurt Geisinger, The Buros Center for Testing  
*History of the Buros Center for Testing*

Ida Lawrence, Educational Testing Service, Ed Shea, Educational Testing Service  
*A Brief History of Educational Testing Service as a Scientific Organization*

Thanos Patelis, The College Board  
*The Formation of The College Board and the Context of Today*

**Discussant**

Suzanne Lane, University of Pittsburgh

**Sunday, 2:15 p.m. - 3:45 p.m., 12th Floor Ballroom II, H6**

**Invited Open Hearing for NCME Members: Comments on the Revision of the Standards for Educational and Psychological Testing**

**Organizer**

Wayne J. Camara, The College Board

**Moderators**

David Frisbie, University of Iowa

Wayne J. Camara, The College Board

**Panelists**

Steve Ferrara, CTB/McGraw-Hill

Amanda Ferster, University of Georgia

**Sunday, 2:15 p.m. - 3:45 p.m., Terrace Room, H7**

## **Test Design and Assembly – Paper Session**

### **Moderator**

William Schafer, University of Maryland

### **Presenters**

Michael Walker, Educational Testing Service, Sooyeon Kim, Educational Testing Service

*Evaluating the Psychometric Properties of a Redesigned Test Without a Field Trial*

Siang Chee Chuah, American Institute of Certified Public Accountants, Matthew Burke, American Institute of Certified Public Accountants

*Predicting Item Difficulty: An Attempt to Simplify the Process*

Changjiang Wang, Pearson, Luis Perea, Pearson

*Automated Passage Selection for Reading Assessment*

Pui Chi Chiu, University of Kansas, Patrick Irwin, University of Kansas

*Chronological Item Ordering: Does It Make a Difference on a State History and Government Assessment?*

Robert Lissitz, University of Maryland, Xiaodong Hou, University of Maryland, Sharon Slater, Educational Testing Service

*The Contribution of Constructed Response Items to Large Scale Assessment: Measuring and Understanding Their Impact*

### **Discussant**

Cathy Wendler, Educational Testing Service

**Sunday, 4:05 p.m. - 6:05 p.m., Azalea Ballroom I, I1**

**Standard Setting in an International Context: Issues and Practice – Coordinated Session**

**Organizer**

Chad Buckendahl, Alpine Testing Solutions

**Moderator**

Yoonsun Lee, Seoul Women's University, South Korea

**Presenters**

Michael Rodriguez, University of Minnesota  
*Standard Setting Issues and Practice in Latin America*

Abdullah Ferdous, American Institutes for Research, Chad Buckendahl, Alpine Testing Solutions  
*Evaluating Panelists Standard Setting Perceptions in Developing Nations*

Mary Pitoniak, Educational Testing Service, Nan Yeld, University of Cape Town  
*Standard Setting Lessons Learned in the South African Context*

Ardeshir Geranpayeh, University of Cambridge ESOL Examinations, Gad Lim, University of Cambridge ESOL Examinations  
*Post hoc Standard Setting to an International Language Framework: Findings and Challenges*

Susan Davis-Becker, Alpine Testing Solutions, Chad Buckendahl, Alpine Testing Solutions  
*Using the Results of Multiple Standard Setting Methods to Inform Policy*

**Discussant**

Greg J. Cizek, University of North Carolina at Chapel Hill

**Sunday, 4:05 p.m. - 6:05 p.m., Azalea Ballroom II, I2**

## **Scoring and Score Reporting – Paper Session**

### **Moderator**

Alvaro Arce-Ferrer, Pearson

### **Presenters**

Adrienne Sgammato, Educational Testing Service  
*Performance of Reliability Measures for NAEP*

Neil J. Dorans, Educational Testing Service, Jinghua Liu, Educational Testing Service  
*Assessing the Practical Equivalence of Conversions*

Jisung Cha, Teachers College, Columbia University, Matthew S. Johnson, Teachers College, Columbia University  
*Application of Ordered Latent Class Regression Models in Educational Assessment Applied to TIMSS*

John Denbleyker, Minnesota Department of Education, Shuqin Tao, Data Recognition Corporation  
*Diagnostic Item Analysis Using the Beta-Binomial Model and Common Language Effect Size*

Youhua Wei, Educational Testing Service, Chi-Wen Liao, Educational Testing Service  
*A Study on Different Weighting Methods for Tests with Constructed Response Items*

### **Discussant**

Peter Baldwin, National Board of Medical Examiners

**Sunday, 4:05 p.m. - 6:05 p.m., Magnolia Ballroom I, I3**

**Innovations in Standard Setting: Externally Benchmarked Performance Standards and the Uses of Achievement Level Descriptors – Coordinated Session**

**Organizers**

Christina Schneider, CTB/McGraw-Hill  
Kristen Huff, Regents Research Fund

**Moderator**

Karla Egan, CTB/McGraw-Hill

**Presenters**

Pamela Kaliski, The College Board, Kristen Huff, Regents Research Fund, Carol Barry, The College Board  
*Aligning Items and Achievement Levels: A Study Comparing Expert Judgments*

Christina Schneider, CTB/McGraw-Hill, Karla Egan, CTB/McGraw-Hill, Kristen Huff, Regents Research Fund, Margie Tully, CTB/McGraw-Hill  
*Developing and Validating Range ALDs for Item Development: A Prediction Study*

Steve Ferrara, CTB/McGraw-Hill, Dan Lewis, CTB/McGraw-Hill, Rick Mercado, CTB/McGraw-Hill, Juan D'Brot, West Virginia Department of Education, Jan Barth, CTB/McGraw-Hill, Karla Egan, CTB/McGraw-Hill  
*A Method for Setting Benchmarked Performance Standards: Workshop Procedures, Panelist Judgments, and Empirical Results*

Wayne J. Camara, The College Board  
*Integrating Empirical Evidence in Standard Setting*

**Discussants**

Barbara Plake, University of Nebraska Emeritus  
Paul Nichols, National Center for the Improvement of Educational Assessment

**Sunday, 4:05 p.m. - 6:05 p.m., Magnolia Ballroom III, I4**

## **Validity and Fidelity: Assessing Practice Skills of Physicians – Coordinated Session**

### **Organizers**

Krista Breithaupt, Medical Council of Canada  
Timothy Wood, Medical Council of Canada

### **Moderator**

Krista Breithaupt, Medical Council of Canada

### **Presenters**

Ilona Bartman, Medical Council of Canada, Sydney Smee, Medical Council of Canada, Marguerite Roy, Medical Council of Canada  
*Catching the Hawks and the Doves – Physician Examiner Leniency on Objective Structured Clinical Examinations*

Krista Breithaupt, Medical Council of Canada, Timothy Wood, Medical Council of Canada  
*National Standards for International Medical Graduates – Evidence of the Validity of Clinical Skill Assessment Results*

Marc Gessaroli, National Board of Medical Examiners  
*Using Structural Equation Modeling to Account for Rater Differences in a Standardized Patient Examination*

Claire Touchie, University of Ottawa, Marty Friedlich, University of Ottawa  
*Direct Observations of Procedural Skills in an Objective Structured Clinical Exam (OSCE) Format*

### **Discussant**

John Boulet, FAIMER

**Sunday, 4:05 p.m. - 6:05 p.m., 12th Floor Ballroom I, IS**

**Choice of the Anchor Test in Equating – Paper Session**

**Moderator**

Michael Walker, Educational Testing Service

**Presenters**

Shuqin Tao, Data Recognition Corporation, Yi Du, Data Recognition Corporation, Christie Plackner, Data Recognition Corporation  
*The Effects of Anchor Characteristics on Equating for Multidimensional Tests with Mixed Formats*

Lin Wang, Educational Testing Service, Jiahe Qian, Educational Testing Service, Yi-Hsuan Lee, Educational Testing Service  
*Exploring Alternative Designs Using Reduced Equating Samples and Anchors*

Ourania Rotou, Educational Testing Service, Michael Walker, Educational Testing Service, Neil J. Dorans, Educational Testing Service  
*The Impact of Non-Representative Anchor Sets on the comparability of Test Scores for Mixed-Format Exams*

Sarah Hagge, National Council of State Boards of Nursing, Michael Kolen, University of Iowa  
*The Impact of Equating Method and Format Representation of Common Items on the Adequacy of Mixed-Format Test Equating Using Nonequivalent Groups*

Sooyeon Kim, Educational Testing Service, Michael Walker, Educational Testing Service  
*Does Linking Mixed-Format Tests Using a Multiple-Choice Anchor Produce Comparable Results for Male and Female Subgroups*

Yuki Nozawa, ACT, Inc.  
*A Study on the Selection of an Old Form for Linear Equating Under the Common-Item Nonequivalent Groups Design*

**Discussant**

Anne Fitzpatrick, Willow Farm

**Sunday, 4:05 p.m. - 6:05 p.m., 12th Floor Ballroom II, I6**

**Will Common Core State Standards and Assessment Consortia Ensure Comparability of Assessment Results Across Students, Schools, Districts, and States? – Invited Symposium**

## **Organizers/Moderators**

Scott Marion, The National Center for the Improvement of Educational Assessment  
Kristen Huff, Regents Research Fund

## **Presenters**

Michael Kolen, University of Iowa

Suzanne Lane, University of Pittsburgh

Joseph Martineau, Michigan Department of Education

## **Discussants**

Robert Brennan, University of Iowa  
Deborah Harris, ACT, Inc.

**Sunday, 4:05 p.m. - 6:05 p.m., Terrace Room, I7**

**Recent Advances in Computer-Based Testing – Paper Session**

**Moderator**

HuiQin Hu, Data Recognition Corporation

**Presenters**

HuiQin Hu, Data Recognition Corporation, David Chayer, Data Recognition Corporation, Kei Bishop, Data Recognition Corporation, Pamela Hermann, Data Recognition Corporation

*Investigation of Mode Effects on a Field Test: A Confirmatory Differential Item Functioning Analysis*

Juan R. Barrada, Universidad Autonoma de Barcelona, Francisco J. Abad, Universidad Autonoma de Madrid, Julio Olea, Universidad Autonoma de Madrid  
*Optimal Number of Strata in the Maximum-Information-Stratified Method in Computerized Adaptive Testing*

Leah Kaira, University of Massachusetts, Amherst, Wonsuk Kim, Measured Progress, Robert Keller, Measured Progress

*Interpreting Effect Sizes in Comparability Studies: Does One Size Fit All?*

Kyung (Chris) T. Han, Graduate Management Admission Council  
*Item Pocket Approach to Allow Response Review and Change in Computerized Adaptive Testing*

Robert Semmes, University of Minnesota, Mark Davison, University of Minnesota, Lan Huang, University of Minnesota, Catherine Close, University of Minnesota  
*On the Reliability and Validity of a Numerical Reasoning Speed Dimension Derived from Response Times Collected in Computerized Testing*

Hsiu-Yi Chao, National Chung Cheng University, Jyun-Hong Chen, National Chung Cheng University  
*Using New Stratification Strategies with General Test Overlap Control in Computerized Adaptive Testing*

**Discussant**

Hua-Hua Chang, University of Illinois at Urbana-Champaign

**Sunday, 4:05 p.m. – 6:05 p.m., Crescent Ballroom, 18**

## **Graduate Student Poster Session**

Sponsored by the Graduate Student Issues Committee

### **Organizers**

Chad Gotch, Washington State University  
Ying Li, University of Maryland-College Park  
George MacDonald, University of South Florida  
Aminah Perkins, Emory University  
Chia-Lin Tsai, University of Missouri-Columbia  
Robert Zwisser, Cito/University of Amsterdam

### **Presenters**

Louise M. Bahry, University of Alberta, Andrea Gotzmann, University of Alberta  
*The Effect of Levels of Skewness on Item Parameter Recovery*

Ying-Fang Chen, University of Maryland-College Park, Hong Jiao, University of Maryland-College Park  
*Explanation of Latent Differential Item Functioning Based on a Mixture Rasch Model: Characterizing Latent Classes by Linking with Background and Cognitive-Related Variables*

Youn-jeng Choi, University of Georgia, Allan S. Cohen, University of Georgia, Seock-Ho Kim, University of Georgia  
*Detection of Differential Item Functioning in Multiple Groups*

Jenna M. Copella, University of Massachusetts, Amherst, Craig S. Wells, University of Massachusetts, Amherst, Lisa A. Keller, University of Massachusetts, Amherst  
*Considerations for Interpreting Residuals in IRT Analyses*

Yuling Feng, University of South Carolina, Brian Habing, University of South Carolina, Alan Huebner, ACT, Inc.  
*Parameter Estimation of the rRUM Using the E-M Algorithm*

Jennifer Frey, Vanderbilt University, Stephen N. Elliott, Arizona State University  
*Social Skills Intervention Planning for Young Children: An Investigation of Parent and Teacher Social Behavior Importance Ratings*

**Sunday, 4:05 p.m. – 6:05 p.m., Crescent Ballroom, I8**

Diane Gifford, Southern Methodist University

*An Analytic Framework for Developing and Operationalizing a Test to Measure Higher-Order Processing of Text in Children*

Chad M. Gotch, Washington State University, Brian F. French, Washington State University

*Development of and Validity Evidence for the Teacher Educational Measurement Literacy Scale*

Claudia Güerere, University of South Florida, Richard Brummer, University of South Florida, Yi-Hsin Chen, University of South Florida

*Distinguishing Latent Classes of Mathematics Performance: A Comparison Between the Eastern and Western Countries*

Matthew Gushta, University of Maryland-College Park & Wireless Generation

*Evaluating Fit of the C-RUM Under Conditions of Q-Matrix Misspecification*

Alexandra Henchy, University of Kentucky

*An Investigation of Latino Students' Growth in Mathematics Achievement During the Elementary School Years*

Maria Ilich, University of Washington

*English Language Learners and Differential Item Functioning on Mathematics Items*

Karoline Jarr, University of Iowa, Meridith Brand, University of Iowa, Catherine Welch, University of Iowa

*Content and Response Process Validity Evidence: Relationships Between Prewriting Strategies and Performance on Timed Writing Assessments*

Hyo Jeong Shin, University of California, Berkeley, Jinnie Choi, University of California, Berkeley

*Detecting Rater Effects: Comparison of Many-Facet Rasch Model, Rater Bundle Model, and Hierarchical Rater Model*

Dane Joseph, Pacific University, Michael S. Trevisan, Washington State University, Brian F. French, Washington State University, Andrew Storfer, Washington State University

*A Comparison of Three Methods for Varying the Position of Correct Answers in Classroom Multiple-Choice Tests*

## Sunday, 4:05 p.m. – 6:05 p.m., Crescent Ballroom, 18

HeaWon Jun, Georgia Institute of Technology, Susan Embretson, Georgia Institute of Technology

*Multidimensionality and Diagnosis in Mathematics Test for 8th Grade*

Daniel Jurich, James Madison University, James R. Koepfler, James Madison University, Christine DeMars, James Madison University

*Applying Missing Data Techniques to the Treatment of Rapid Responding*

Jason P. Kopp, James Madison University, Daniel Jurich, James Madison University, Josh T. Goodman, Pearson, Kirk Becker, Pearson

*An Application of Assessment Engineering Methods to Item Families*

Sohee Kim, Sungshin Women's University, Myung-Yeon Kim, Sungshin Women's University, Taehoon Kang, Sungshin Women's University

*A Comparison of MCMC and MMLE/EM Algorithms for Fixed Item Parameter Calibration*

Jihye Kim, Georgia State University, Chris T. Oshima, Georgia State University

*Controlling Type I Error Rate in Evaluating Differential Item Functioning for Raju's DFIT Framework and Lord's Chi-square Test: Use of Adjustment of Multiple Item Testing*

Esra Kocyigit, Florida State University, Faith Orcan, Florida State University

*An Application of Growth Mixture Modeling Using Math Achievement Data from a Large-Scale Assessment*

Yi Li, Purdue University, Qiu Wang, Purdue University, Brandon Vaughn, University of Texas at Austin

*Compare Model Performance of Decision Tree with Logistic Regression, Mantel-Haenszel, IRT Likelihood Ratio, and MIMIC for Detecting DIF with Simulated Dichotomous Data*

Yeongyu Lim, Georgia Institute of Technology, Susan Embretson, Georgia Institute of Technology

*Relative Diagnosticity: The Rule Space Model versus Normative Method*

King Luu, Queen's University

*A Universal Design Approach to Computer-Based Testing in a Higher Education Context*

Juliette Lyons-Thomas, University of British Columbia

*Validity Evidence in the Area of Accountability and Value-Added*

**Sunday, 4:05 p.m. – 6:05 p.m., Crescent Ballroom, I8**

George MacDonald, University of South Florida, Thanh Pham, University of South Florida, Yi Hsin Chen, University of South Florida, John Ferron, University of South Florida, Chunchua Cao, University of South Florida

*Exploring and Validating the Cognitive Load for Mathematics Items: Comparing Canadian, Japanese, Taiwanese, and United States Students*

Kimberly R. Marsh, James Madison University, Sara J. Finney, James Madison University, Robin D. Anderson, James Madison University, Anna Zilberberg, James Madison University

*The Role of Students' Attitudes on the Validity of Institutional Accountability Test Scores: A Path Model*

Youngshil Paek, University of Illinois at Urbana-Champaign

*Computerized Adaptive Testing: Item Exposure Control Methods and Item Pool Characteristics*

Ryoungsun Park, University of Texas at Austin, Jiseon Kim, University of Washington, Barbara G. Dodd, University of Texas at Austin, Hyewon Chung, John Jay College/CUNY

*Automated Test Assembly of Multistage Testing Based on Mixed-Format Tests Using Linear Programming*

JungYeon Park, Columbia University, Minsun Cho, Columbia University, Yoon Soo Park, Columbia University

*Investigating Polytomous Mixture IRT Models Using the Children's Strengths and Difficulties Questionnaire*

Chalie Patarapichayatham, University of Oregon, Akihito Kamata, University of Oregon, Hong Jiao, University of Maryland-College Park

*Evaluation of the Ability Estimates Under the Bi-Factor Testlet Model*

Jaime Peterson, University of Wisconsin-Milwaukee, Cindy Walker, University of Wisconsin-Milwaukee

*An Investigation of Several Plausible Forms of Differential Item Functioning in Polytomous Items Using Poly-SIBTEST*

Jongmin Ra, University of Georgia, Jaechul Kim, Hannam University

*Impact of Direct Effect and Estimation Methods on SEM Fit Indices*

## Sunday, 4:05 p.m. – 6:05 p.m., Crescent Ballroom, 18

Stefano Rainelli, University of Miami, Rebecca J. Bulotsky-Shearer, University of Miami, Randall D. Penfield, University of Miami, Veronica A. Fernandez, University of Miami

*Developing an Empirically Derived Cut-Score for the PreLAS 2000 for Low-Income Spanish Speaking Bilingual Children*

Qi Guo, University of Alberta, Alex Riedel, University of Alberta

*A Comparison of Logistic Regression, CSIBTEST, and Combined Decision Rule for Detection of Uniform and Nonuniform DIF Items Using Real Data*

Joseph Rios, University of California, Riverside

*Evaluating the Psychometric Properties of a Working Memory Measure for English Language Learners*

Jacob Seybert, University of South Florida, Stephen Stark, University of South Florida, Sasha Chernyshenko, Nanyang Technological University, Alan Mead, Illinois Institute of Technology

*Generalized Graded Unfolding Model DIF Detection Based on the Differential Functioning of Items and Tests Framework*

MinJeong Shin, Yonsei University, Eujin Lim, Yonsei University, Guemin Lee, Yonsei University

*Estimating Domain Scores for Mixed-Format Tests Under G-Theory and IRT Approaches*

Whitney Smiley, James Madison University, Robin D. Anderson, James Madison University

*A Scale Validation Study on a Short Form of the Cognitive Engagement Scale*

Yu-Lan Su, University of Iowa/ACT, Inc., Rongchun Zhu, ACT, Inc., Xiaohong Gao, ACT, Inc.

*An Empirical Study of the Influence of Different Test Modes on IRT Item Parameter Estimation and IRT Equating: Statistical Control on Samples and Linking Items*

Ihui Su, University of Missouri-Columbia, Yong He, University of Missouri-Columbia

*Detecting Differential Item Functioning: A Comparison Between Hierarchical Generalized Linear Modeling and Structural Equation Modeling Approaches*

Devdass Sunnassee, University of North Carolina at Greensboro, Thomas P. Proctor, The College Board, Kelly E. Godfrey, The College Board

*A Method to Detect Answer-Copying from a Test Center Perspective*

**Sunday, 4:05 p.m. – 6:05 p.m., Crescent Ballroom, I8**

Yun Tang, University of Pittsburgh, Clement Stone, University of Pittsburgh  
*Evaluating Student Achievement from Large-Scale Assessments: A Case Illustration Using Propensity Scoring Methods*

Wei Wang, University of Iowa, Chunyan Liu, University of Iowa, Won-Chan Lee, University of Iowa, Michael Kolen, University of Iowa  
*An Investigation of Item Fit for Large-Scale Mixed Format Tests*

Xinrui Wang, University of North Carolina at Greensboro, Robert A. Henson, University of North Carolina at Greensboro  
*The Attribute Reliability for General CDM Models*

Yao Wen, University of Wisconsin-Milwaukee, Bo Zhang, University of Wisconsin-Milwaukee  
*The Impact of Missing Data on Non-Normal Person Trait Estimation*

Seo Young Lee, University of Wisconsin-Madison, Michelle Langer, National Conference of Bar Examiners, Mark Albanese, National Conference of Bar Examiners  
*Exploring the Structure of the MBE Using Exploratory and Confirmatory Factor Analysis*

Hülya Yürekli, Florida State University, Akihito Kamata, University of Oregon  
*The Relationship Between Parameters From Two Polytomous Item Response Theory Models*

Ou Zhang, University of Florida, M. David Miller, University of Florida  
*A Model Evaluation When Association Exists Between Testlets Under Small Testlet Size Situations*

Xuechun Zhou, Michigan State University  
*Assessing Equating Results of Three IRT Methods*

**Monday, 5:45 a.m. – 7:30 a.m., Westin New Orleans Canal Place Lobby, 11th Floor**

## **NCME Fitness Run/Walk**

### **Organizers**

Brian F. French, Washington State University  
Jill van den Heuvel, CTB/McGraw-Hill

Run a 5K or walk a 2.5K course in downtown New Orleans.  
Meet in the lobby at 5:45 a.m. Pre-registration is required.

The event is made possible through the sponsorship of:

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**Monday, 8:15 a.m. - 10:15 a.m., Azalea Ballroom I, J1**

**Maintaining the Stability of the Reported Scale Scores: Issue and Methods – Coordinated Session**

**Organizer/Moderator**

Alina von Davier, Educational Testing Service

**Presenters**

Alina von Davier, Educational Testing Service, Minh Q. Duong, Michigan State University

*Observed Score Equating with a Heterogeneous Target Population*

Shelby Haberman, Educational Testing Service, Zhiming Yang, Educational Testing Service

*Linking Parameter Estimates Derived From an Item Response Model Through Separate Calibrations*

Jiahe Qian, Educational Testing Service, Yanming Jiang, Educational Testing Service, Alina von Davier, Educational Testing Service

*Effects of Weighting Examinee Samples in TBLT IRT Linking*

Yuming Liu, Educational Testing Service, Rick Morgan, Educational Testing Service, Brad Moulder, Educational Testing Service

*Evaluating Equating Results from Uncertain Samples for Reasonableness*

**Discussants**

Mark Reckase, Michigan State University

Bruno Zumbo, University of British Columbia

**Monday, 8:15 a.m. - 10:15 a.m., Azalea Ballroom II, J2**

## **Validity Issues – Paper Session**

### **Moderator**

Thanos Patelis, The College Board

### **Presenters**

Brent Bridgeman, Educational Testing Service, Catherine Trapani, Educational Testing Service, Jennifer Bivens-Tatum, Educational Testing Service  
*Comparability of Essay Question Variants*

Hsiang-Feng Chen, University of Kansas, John Poggio, University of Kansas, Aaron Gates, University of Kansas, Doug Glasnapp, University of Kansas, Linette McJunkin, University of Kansas  
*Addressing Issues of Fairness and Validity in the Program for International Student Assessment (PISA): An Examination of Cross-Cultural Patterns of Incorrect Responses to Multiple Choice Items*

Katrina Crotts, University of Massachusetts, Amherst, April Zenisky, University of Massachusetts, Amherst  
*Evaluating Content Validity in a Multistage Adaptive Test*

Paula Cunningham, University of Iowa, Anthony Fina, University of Iowa, William Adams, University of Iowa, Catherine Welch, University of Iowa  
*Impact of End-of-Course Tests on Accountability Decisions in Mathematics and Science*

Tamar Kennet-Cohen, National Institute for Testing and Evaluation, Shmuel Bronner, National Institute for Testing and Evaluation, Carmel Oren, National Institute for Testing and Evaluation  
*The Consequences of Using the Highest Section Scores Across Test Dates for University Admissions*

Gregory J. Cizek, University of North Carolina at Chapel Hill  
*Reconceptualizing Validity and the Place of Consequences*

### **Discussant**

Michael Kane, Educational Testing Service

**Monday, 8:15 a.m. - 10:15 a.m., Magnolia Ballroom I, J3**

**Recent Advances in Diagnostic Classification Models – Paper Session**

**Moderator**

André Rupp, University of Maryland-College Park

**Presenters**

Jimmy de la Torre, Rutgers, The State University of New Jersey, Jinsong Chen, Rutgers, The State University of New Jersey  
*Estimating Different Reduced Cognitive Diagnosis Models Using a General Framework*

Zhimei Gu, Ontario Institute for Studies in Education of the University of Toronto, Eunice Jang, Ontario Institute for Studies in Education of the University of Toronto, Jimmy de la Torre, Rutgers, The State University of New Jersey  
*Evaluating the Diagnostic Potential of Distractors in Multiple-Choice Test Items Using the MC-DINA Model*

Xiaomin Huang, University of Maryland-College Park  
*Cluster Sampling in the Mixture General Diagnostic Model*

Yan Cai, Jiangxi Normal University, Shuliang Ding, Jiangxi Normal University, Dongbo Tu, Jiangxi Normal University  
*Developing A New Group-Level Cognitive Diagnosis Model*

Ying Cui, University of Alberta, Mark Gierl, University of Alberta  
*Statistical Classification for Cognitive Diagnostic Assessment: An Artificial Neural Network Approach*

Chun Wang, University of Illinois at Urbana-Champaign, Bo Wang, The College Board, Hua-Hua Chang, University of Illinois at Urbana-Champaign  
*An Enhanced Approach to Combine Item Response Theory with Cognitive Diagnosis in Adaptive Tests*

Tien-yu Hsieh, Graduate Institute of Educational Measurement and Statistics, National Taichung University, Bor-chen Kuo, Graduate Institute of Educational Measurement and Statistics, National Taichung University, Chia-hua Lin, Graduate Institute of Educational Measurement and Statistics, National Taichung University  
*The Concurrent Calibration Method of High-Order Item Response Theory*

**Discussant**

André Rupp, University of Maryland-College Park

**Monday, 8:15 a.m. - 10:15 a.m., Magnolia Ballroom III, J4**

## **Fairness Across Novel Item Types – Paper Session**

### **Moderator**

Carole Gallagher, WestEd

### **Presenters**

Chao Wang, University of Colorado at Boulder, Guillermo Solano-Flores, University of Colorado at Boulder

*Illustrations with Graphic Devices in Large-Scale Science Assessments: An Exploratory Cross-Cultural Study on Students, Perception, and Interpretation*

Guillermo Solano-Flores, University of Colorado at Boulder, Chao Wang, University of Colorado at Boulder

*Conceptual Framework for Analyzing and Designing Illustrations in Science Assessment: Development and Use in the Testing of Linguistically and Culturally Diverse Populations*

Joni Lakin, Educational Testing Service

*Innovations in Test Directions for Novel Item Formats and Culturally and Linguistically Diverse Students*

Timothy Muckle, NBCRNA, Kirk Becker, Pearson VUE, Brad Wu, Pearson VUE

*Investigating the Multiple Answer Multiple Choice Item Format*

Maureen Kavanaugh, Boston College, Apryl Holder, Boston College

*Recommendations for Improving the Accessibility of a Virtual Performance Assessment of Middle School Science Inquiry Skills*

Teresa King, Educational Testing Service

*Identifying Sources of Construct-Irrelevant Variance of Scenario-Based Computer-Delivered Mathematics Items for Students with Disabilities and English Language Learners*

### **Discussant**

Michael Rodriguez, University of Minnesota

**Monday, 8:15 a.m. - 10:15 a.m., 12th Floor Ballroom I, J5**

**Fairness, DIF and Language Impact – Paper Session**

**Moderator**

John W. Young, Educational Testing Service

**Presenters**

Tia M. Sukin, Measured Progress, Lisa Keller, University of Massachusetts, Amherst  
*Item Parameter Drift as an Indication of Differential Opportunity to Learn: An  
Exploration of Item Flagging Methods & Accurate Classification of Examinees*

Debra Sandilands, University of British Columbia, Maria Elena Oliveri, University of  
British Columbia, Bruno D. Zumbo, University of British Columbia, Kadriye Ercikan,  
University of British Columbia  
*Investigating Sources of Differential Item Functioning in International Large-Scale  
Assessments Using a Confirmatory Approach*

Daeryong Seo, Pearson, Husein Taherbhai, Pearson, Roger Frantz, Pearson  
*Exploring Different Item Profiles in English Language Proficiency (ELP) Listening  
Assessment Using Latent Mixture Distribution Analysis*

Jaime Cid, Educational Testing Service, Jiyun Zu, Educational Testing Service,  
Gautam Puhan, Educational Testing Service  
*Examining the Effect of Primary Language on Equating Functions in MC and CR Tests*

**Discussant**

John W. Young, Educational Testing Service

**Monday, 8:15 a.m. - 10:15 a.m., 12th Floor Ballroom II, J6**

## **Innovations in Scoring - Paper Session**

### **Moderator**

John Denbleyker, Minnesota Department of Education

### **Presenters**

Carl Hauser, Northwest Evaluation Association, G. Gage Kingsbury, Northwest Evaluation Association, Ronald Houser, Northwest Evaluation Association  
*Individual Score Validity: Using the Wariness Index to Identify Test Performance to Treat with Caution*

Leah Kaira, University of Massachusetts, Amherst, Stephen Sireci, University of Massachusetts, Amherst  
*Using Item Mapping to Evaluate Alignment between Curriculum and Assessment*

Leslie Keng, Pearson, Laurie Davis, Pearson, Shelley Ragland, Pearson  
*An Evaluation of the Distributed Performance Scoring Model*

Mark Shermis, The University of Akron, Michael S. Finger, American Institute of Certified Public Accountants, Doug Jones, University of Florida, Lindsey Tropf, University of Florida, Krista Breithaupt, Medical Research Council of Canada  
*e-rater® Feature and Holistic Score Correlates*

Hao Song, American Board of Internal Medicine, Timothy Sares, American Board of Internal Medicine, Renbang Zhu, American Board of Internal Medicine, Rebecca Lipner, American Board of Internal Medicine  
*Assessing Decision Accuracy and Consistency of a Medical Certification Examination*

Peter Foltz, Pearson Knowledge Technologies, Karen Lochbaum, Pearson Knowledge Technologies  
*Automated Scoring of Essays in the K-12 English Language Arts*

Yigal Attali, Educational Testing Service  
*The Use of Automated Essay Scores in Graduate Admissions Putting the Innovation of Automated Essay Scoring into Operational Practice*

### **Discussant**

David Williamson, Educational Testing Service

**Monday, 8:15 a.m. - 10:15 a.m., Terrace Room, J7**

**Equating Using Item Response Theory Models – Paper Session**

**Moderator**

Feifei Li, Educational Testing Service

**Presenters**

Peter Baldwin, National Board of Medical Examiners

*On Mean-Sigma Estimators and Bias*

Daniel Jurich, James Madison University, Christine DeMars, James Madison University, Joshua Goodman, Pearson

*Investigating the Impact of Cheating on IRT Equating under the Non-Equivalent Anchor Test Design*

Wei Tao, ACT, Inc., Yi Cao, ACT, Inc., Ru Lu, Educational Testing Service

*The Effect of IRT Model Selection on Testlet-Based Test Equating*

Yanming Jiang, Educational Testing Service, Alina Von Davier, Educational Testing Service, Jiahe Qian, Educational Testing Service

*Effects of Empirical Distributions on the Robustness of IRT Calibration and True Score Equating*

Robert Smith, Educational Testing Service, Charles Lewis, Fordham University

*IRT Median Equating Function to Achieve (Approximate) Median Equity*

Teresa Dawber, Educational Testing Service, Liane Patsula, Educational Testing Service, Feifei Li, Educational Testing Service, Maxwell Wise, Educational Testing Service

*The Effect of Total Test and Anchor Test Difficulty Differences on IRT Equating under the Common-Item Nonequivalent Groups Design*

**Discussant**

Michael Walker, Educational Testing Service

**Monday, 10:35 a.m. - 12:05 p.m., Azalea Ballroom I, K1**

**AWARDS COMMITTEE**

**Award Winning Research from the NCME 2010 Award Recipients – Invited Symposium**

**Organizer/Moderator**

Kadriye Ercikan, University of British Columbia

**Presenters**

Chia-Yi Chiu, Rutgers, The State University of New Jersey

Andrew Ho, Harvard Graduate School of Education

Joseph Patrick Meyer, University of Virginia

Damian Betebenner, National Center for the Improvement of Educational Assessment

Richard J. Wenning, Colorado Department of Education

**Monday, 10:35 a.m. - 12:05 p.m., Azalea Ballroom II, K2**

**English Language Learners – Paper Session**

**Moderator**

Teresa King, Educational Testing Service

**Presenters**

Fang Chen, University of North Carolina at Greensboro, Micheline Chalhoub-Deville, University of North Carolina at Greensboro  
*Differential Language Impact on Math Achievement: Overcoming the Limitations of Mean Regression Modeling*

Maria Martiniello, Educational Testing Service  
*Exploring a Linguistically Simple Designated Anchor for Estimating IRT DIF for English Language Learners in Mathematics Assessments*

Edynn Sato, WestEd, Stanley Rabinowitz, WestEd, Carole Gallagher, WestEd, Chun-Wei Huang, WestEd  
*Linguistic Modification: Construct Validity and Considerations of Interactions Among Student, Content, and Language Characteristics*

Stanley Rabinowitz, WestEd, Edynn Sato, WestEd, Carole Gallagher, WestEd, Chun-Wei Huang, WestEd  
*Examining the Impact of Linguistic Modification: Implications of Using Different Scoring and Analysis Approaches*

**Discussant**

Jamal Abedi, University of California, Davis

**Monday, 10:35 a.m. - 12:05 p.m., Magnolia Ballroom I, K3**

**Erasure Analysis: Descriptives, Covariates, and Modeling Options from Multiple States – Coordinated Session**

**Organizer**

N. Scott Bishop, Data Recognition Corporation

**Moderator**

Ronald Mead, Data Recognition Corporation

**Presenters**

Julie Korts, Data Recognition Corporation, Ronald Mead, Data Recognition Corporation, N. Scott Bishop, Data Recognition Corporation  
*Introduction and Background*

Vincent Primoli, Data Recognition Corporation, Djibril Liassou, Data Recognition Corporation, Adisack Nhouyvanisvong, Naiku, N. Scott Bishop, Data Recognition Corporation  
*Erasure Descriptive Statistics and Covariates*

N. Scott Bishop, Data Recognition Corporation, Djibril Liassou, Data Recognition Corporation, Okan Bulut, University of Minnesota, Dong Gi Seo, Michigan Department of Education, Kyoungwon Bishop, Data Recognition Corporation  
*Modeling Erasure Behavior*

N. Scott Bishop, Data Recognition Corporation, Djibril Liassou, Data Recognition Corporation, Okan Bulut, University of Minnesota, Dong Gi Seo, Michigan Department of Education, Matthew Stearns, Data Recognition Corporation  
*Application and Comparison of Alternative Procedures*

Ronald Mead, Data Recognition Corporation, Katie Andersen, Data Recognition Corporation, Julie Korts, Data Recognition Corporation  
*Erasure Behavior and Rasch Residuals*

N. Scott Bishop, Data Recognition Corporation, Ronald Mead, Data Recognition Corporation  
*Closing Thoughts*

**Discussants**

Gregory J. Cizek, University of North Carolina at Chapel Hill  
James Wollack, University of Wisconsin-Madison

**Monday, 10:35 a.m. - 12:05 p.m., Magnolia Ballroom III, K4**

**Analysis of Missing Data – Paper Session**

**Moderator**

Ting Zhang, University of Maryland-College Park

**Presenters**

Michael Culbertson, University of Illinois at Urbana-Champaign  
*Is It Wrong? Handling Missing Responses in IRT*

Taehoon Kang, Sungshin Women's University, Troy T. Chen, ACT, Inc.  
*Effect of Non-Ignorable Missing Data on the Accuracy of IRT Ability Estimation*

Amanda Wolkowitz, Assessment Technologies Institute, William Skorupski,  
University of Kansas  
*A Method for Imputing Response Options for Missing Data on Multiple-Choice Assessments*

Kuan-Yu Jin, The Hong Kong Institute of Education, Xuelan Qiu, The Hong Kong  
Institute of Education, Lei Wang, National Education Examinations Authority, China  
*Item Response Models for Examinee-Selected Items*

Ben Domingue, University of Colorado at Boulder, Ed Wiley, University of Colorado  
at Boulder  
*The Impact of Missing Data in the Colorado Growth Model*

**Discussant**

Holmes Finch, Ball State University

**Monday, 10:35 a.m. - 12:05 p.m., 12th Floor Ballroom I, K5**

**Revising the Standards to Meet our Evolving Conceptions of Student Assessment – Coordinated Session**

**Organizers**

Patricia McDivitt, Data Recognition Corporation  
Don Klinger, Queen's University

**Moderator**

Don Yarbrough, University of Iowa

**Presenters**

Don Klinger, Queen's University

Don Yarbrough, University of Iowa

Patricia McDivitt, Data Recognition Corporation

**Discussant**

Todd Rogers, University of Alberta

**Monday, 10:35 a.m. - 12:05 p.m., 12th Floor Ballroom II, K6**

**Understanding Teaching Quality in Algebra Classrooms – Invited Symposium**

**Organizer**

Drew Gitomer, Educational Testing Service

**Presenters**

Drew Gitomer, Educational Testing Service

*How Do We Study Teaching Quality in Algebra Classrooms? An Overview*

Daniel McCaffrey, The RAND Corporation

*Design Issues in Classroom Observation Studies - Negotiating Design Amidst the Reality of Schools*

Courtney Bell, Educational Testing Service

*What are We Learning About Teaching Quality?*

**Monday, 10:35 a.m. - 12:05 p.m., Terrace Room, K7**

## **Item Response Theory – Paper Session**

### **Moderator**

Jodi Casabianca, Fordham University

### **Presenters**

Yi-Hung Lin, University of California, Berkeley, Mark Wilson, University of California, Berkeley

*Can We Rely Too Much on Testlet? The Influence of Testlet Effect on Parameter Estimation*

Jinming Zhang, University of Illinois at Urbana-Champaign, Ting Lu, University of Illinois at Urbana-Champaign

*The Role of Standard Errors of Item Parameter Estimators in IRT-Based Data Analysis*

Angela Grima, Consultant, Lihua Yao, DoD Data Center, Pentagon

*Classification Consistency and Accuracy for Test of Mixed Item Types: Unidimensional Versus Multidimensional IRT Procedures*

Shun-Wen Chang, National Taiwan Normal University, Shin Teng, National Yang-Ming University, Chia-Feng Lu, National Yang-Ming University

*Effects of Score Transformation on the Composite Scores Under the Multivariate Proficiency Distribution Using IRT*

Jodi Casabianca, Fordham University, Charles Lewis, Fordham University

*The Impact of IRT Item Parameter Estimation Error on IRT True Score Equating Functions and CSEMs: A Robustness Study*

### **Discussant**

Liru Zhang, Delaware Department of Education

**Monday, 12:25 p.m. - 1:55 p.m., Azalea Ballroom I, L1**

**Next Generation Performance Assessments and the Assessment of College Readiness – Coordinated Session**

**Organizer**

Scott Marion, National Center for the Improvement of Educational Assessment

**Moderator**

Brian Gong, National Center for the Improvement of Educational Assessment

**Presenters**

Scott Marion, National Center for the Improvement of Educational Assessment  
*But is it Worth the Time? Addressing the Information Value Concerns of Performance Assessments*

Laurie Wise, Human Resources Research Organization (HumRRO)  
*Situating Generalizability Issues and Concerns of Performance Assessments within a Validity Framework*

Derek Briggs, University of Colorado at Boulder  
*Linking Performance Assessments: Learning from the Past, Looking to the Future*

Randy Bennett, Educational Testing Service  
*The Role of Technology in Performance Assessment*

**Discussant**

Brian Gong, National Center for the Improvement of Educational Assessment

**Monday, 12:25 p.m. - 1:55 p.m., Azalea Ballroom II, L2**

## **Issues with Multistage Testing – Paper Session**

### **Moderator**

Duanli Yan, Educational Testing Service

### **Presenters**

Xueli Xu, Educational Testing Service, Andreas Oranje, Educational Testing Service, Emmanuel Sikali, National Center for Education Statistics, Ed Kulick, Educational Testing Service

*Multi-Stage Testing in Educational Survey Assessments*

Yi Zheng, University of Illinois at Urbana-Champaign, Hua-Hua Chang, University of Illinois at Urbana-Champaign

*Automatic On-the-Fly Assembly for Computer Adaptive Multistage Testing*

Robin Guille, American Board of Internal Medicine, Kirk Becker, Pearson, Renbang Zhu, American Board of Internal Medicine, Yanling Zhang, American Board of Internal Medicine, Hao Song, American Board of Internal Medicine, Linan Sun, Pearson

*Comparison of Asymmetric Early Termination Ca-MST with Linear Testing*

Elizabeth Stone, Educational Testing Service, Linda Cook, Educational Testing Service

*Designing an Adaptive Test of Reading Comprehension for Students with Learning Disabilities: Exploring the Quality of a Routing Test*

### **Discussant**

Neal Kingston, University of Kansas

**Monday, 12:25 p.m. - 1:55 p.m., Magnolia Ballroom I, L3**

**Assessing the Quality of Inference from Diagnostic Classification Models – Paper Session**

**Moderator**

Deanna Morgan, The College Board

**Presenters**

Olga Kunina-Habenicht, J.W. Goethe University Frankfurt, André Rupp, University of Maryland-College Park, Oliver Wilhelm, University of Duisburg-Essen  
*Detection of Model Misspecification and its Impact on Parameter Estimation Accuracy in Diagnostic Classification Models*

Olga Kunina-Habenicht, Max-Planck Institute for Educational Research, André Rupp, University of Maryland-College Park, Oliver Wilhelm, Humboldt University Berlin  
*A Comprehensive Investigation of the Structure of a Diagnostic Assessment for Mathematics in Elementary School using Multidimensional Measurement Models for Cognitively Diagnostic Inferences*

Robert Henson, University of North Carolina at Greensboro  
*Dimensionality for Diagnostic Classification Models: Computing a “Scree Plot”*

Tzu-Yun Chin, Buros, Kurt Geisinger, Buros, Yongwei Yang, Gallup  
*Classification Accuracy of Diagnostic Methods: A Simulation Study*

Jonathan Templin, University of Georgia, Laine Bradshaw, University of Georgia  
*A Hypothesis Test for Attribute Hierarchies in Diagnostic Classification Models*

**Discussant**

Brian Habing, University of South Carolina

**Monday, 12:25 p.m. - 1:55 p.m., Magnolia Ballroom III, L4**

## **Use of Timing Data – Paper Session**

### **Moderator**

Jodi Casabianca, Fordham University

### **Presenters**

Nilufer Kahraman, National Board of Medical Examiners, Polina Harik, National Board of Medical Examiners, Monica Cuddy, National Board of Medical Examiners, Brian Clauser, National Board of Medical Examiners  
*Modeling Response Times and Examinees' Pacing Behavior Using Latent Growth Curve Models*

Chi-wen Liao, Educational Testing Service, Yanxuan Qu, Educational Testing Service, Rick Morgan, Educational Testing Service  
*Differential Speededness and its Impact on the Observed Score Equating of a Reading Test*

Eileen Talento-Miller, Graduate Management Admission Council, Fanmin Guo, Graduate Management Admission Council, Kyung Han, Graduate Management Admission Council  
*Examining Test Speededness by Native Language*

Branin Bowe, University of Oregon, G. Gage Kingsbury, Northwest Evaluation Association, Steve Wise, Northwest Evaluation Association, Lingling Ma, Northwest Evaluation Association  
*The Utility of the Effort-Moderated IRT Model in Reducing Negative Score Bias Associated with Unmotivated Examinees*

### **Discussant**

Brent Bridgeman, Educational Testing Service

**Monday, 12:25 p.m. - 1:55 p.m., 12th Floor Ballroom I, L5**

**Measuring a Learning Progression for Data Modeling: Psychometric Modeling and Issues – Coordinated Session**

**Organizer/Moderator**

Elizabeth Ayers, University of California, Berkeley

**Presenters**

Rich Lehrer, Vanderbilt University, Mark Wilson, University of California, Berkeley  
*Developing Assessments of Data Modeling: Construct Maps as Boundary Objects*

Robert Schwartz, University of California, Berkeley, Shih-Ying Yao, University of California, Berkeley, Elizabeth Ayers, University of California, Berkeley  
*Mapping a Learning Progression Using Unidimensional and Multidimensional Item Response Modeling*

Ronli Diakow, University of California, Berkeley, David Torres Iribarra, University of California, Berkeley  
*Analyzing the Complex Structure of a Learning Progression: Structural Construct Models*

Elizabeth Ayers, University of California, Berkeley, Mark Wilson, University of California, Berkeley  
*Pre-Post Analysis Using a 2-Dimensional IRT Model*

**Discussants**

Doug Clements, University at Buffalo, The State University of New York  
Frank Rijmen, Educational Testing Service

**Monday, 12:25 p.m. - 1:55 p.m., 12th Floor Ballroom II, L6**

## **Battling Test Cheaters: How Are We Doing? – Invited Symposium**

### **Organizer**

John Fremer, Caveon Test Security

### **Presenters**

John Fremer, Caveon Test Security

*Best Practices in Test Security in National and International Testing Programs*

Wim J. van der Linden, CTB/McGraw-Hill, Minjeong Jeon, University of California, Berkeley

*Detecting Suspicious Erasures on Answer Sheets*

James A. Wollack, University of Wisconsin-Madison

*Answer Copying Detection: Yesterday, Today, and Tomorrow*

Gregory J. Cizek, University of North Carolina at Chapel Hill

*Test Security Concerns for K-12 Testing Programs: What Has Changed and What Hasn't*

**Monday, 12:25 p.m. - 1:55 p.m., Terrace Room, L7**

**Curriculum Based Measurement and Response to Intervention –  
Paper Session**

**Moderator**

Cara Cahalan Laitusis, Educational Testing Service

**Presenters**

Minjung Kim, University of Kansas, Neal Kingston, University of Kansas  
*The Efficacy of Curriculum-Based Measurement: A Meta-Analysis*

Joseph Nese, University of Oregon, Bitnara Park, University of Oregon, Akihito  
Kamata, University of Oregon, Julie Alonzo, University of Oregon, Gerald Tindal,  
University of Oregon  
*The Reliability of CBM Reading Growth Estimates for Different Student Groups*

Susan Barnes, James Madison University, Melinda Burchard, James Madison  
University  
*Examining Characteristics of the Response to Intervention Self-Efficacy Scale*

**Discussants**

Gerald Tindal, University of Oregon  
Susan Loomis, National Assessment Governing Board

**Monday, 2:15 p.m. - 3:45 p.m., Azalea Ballroom I, M1**

**Measuring College and Career Readiness: Validity Evidence and Frameworks for Interpretation and Use – Invited Symposium**

**Presenters**

Paul Nichols, Pearson

*The Role of Audience in Validity Arguments for College and Career-Readiness Measures*

Catherine Welch, University of Iowa, Stephen Dunbar, University of Iowa

*K-12 Assessments and College Readiness: Necessary Validity Evidence for Educators, Teachers, and Parents*

Wayne J. Camara, The College Board, Andrew Wiley, The College Board, Jeffrey Wyatt, The College Board

*College Readiness and Success: Bridging the Gap Between Judgment and Predictive Evidence*

Susan Loomis, National Assessment Governing Board

*A Validity Framework for Reporting Preparedness of 12th Graders for Post-Secondary College and Career Courses*

**Discussant**

Barbara Dodd, University of Texas at Austin

**Monday, 2:15 p.m. - 3:45 p.m., Azalea Ballroom II, M2**

**What's New from the *Journal of Educational Measurement*: A Sample of Recently Accepted Papers – Invited Symposium**

**Organizer/Moderator**

Brian Clauser, National Board of Medical Examiners

**Presenters**

Leslie Rutkowski, Indiana University

*The Impact of Missing Background Data on Subpopulation Estimation*

Sandip Sinharay, Educational Testing Service, Shelby J. Haberman, Educational Testing Service

*Equating of Augmented Subscores*

Youngsuk Suh, University of Texas at Austin

*A Nested Logit Approach for Investigating Distractors as Causes of Differential Item Functioning*

Lisa Keller, University of Massachusetts, Amherst

*Considering Criteria: An Investigation of New Criteria Used to Evaluate Equating Methods*

**Discussant**

Brian Clauser, National Board of Medical Examiners

**Monday, 2:15 p.m. - 3:45 p.m., Magnolia Ballroom I, M3**

## **Test Scores for Prediction – Paper Session**

### **Moderator**

Susan Davis-Becker, Alpine Testing Solutions

### **Presenters**

Hao Ren, Michigan State University, Dong-In Kim, CTB/McGraw-Hill, Furong Gao, CTB/McGraw-Hill

*Benchmark Assessment Result as a Performance Predictor on Summative Assessment: Evaluation of Statistical Approaches*

Gretchen Anderson, Center for Educational Testing and Evaluation, Neal Kingston, Center for Educational Testing and Evaluation

*The Efficacy of Using State Standards-Based Assessments for Predicting Student Success in Community College Classes*

Steven Culpepper, University of Colorado at Denver

*Is Over-Prediction Real? How Likely Are You to Find Differential Prediction?*

Krista D. Mattern, The College Board, Brian F. Patterson, The College Board

*Test of Slope and Intercept Bias in College Admissions*

### **Discussant**

Kadriye Ercikan, University of British Columbia

**Monday, 2:15 p.m. - 3:45 p.m., Magnolia Ballroom III, M4**

**Standard Setting – Paper Session**

**Moderator**

Leslie Keng, Pearson

**Presenters**

Ying Lu, Educational Testing Service, Lixiong Gu, Educational Testing Service  
*The Impact of Scoring Method on Performance Data Using Cutscores from Bookmark Standard Setting*

Mary Hansen, Robert Morris University, Peter Heh, University of Pittsburgh, Nancy Harayama, Boston University, Steven Lyon, University of Pittsburgh, Naomi Zigmond, University of Pittsburgh  
*Informing Test Design through Comparisons of Student Response Data and Performance Level Descriptors (PLDs)*

Deanna Morgan, The College Board, Chad Buckendahl, Alpine Testing Solutions  
*Evaluating a Strategy for Setting Cut Scores on a Computer Adaptive Test*

N. Scott Bishop, Data Recognition Corporation, Adisack Nhouyvanisvong, Naiku, Xiaowen Zhu, Data Recognition Corporation, Djibril Liassou, Data Recognition Corporation  
*Establishing Cut Scores on a Modified Assessment for NCLB Using an Ordered-Item Angoff Standard Setting Methodology*

Yeow Meng Thum, Northwest Evaluation Association  
*Standard Setting as a Scaling Problem: A Compound Likelihood Approach*

**Discussant**

Patricia Baron, Educational Testing Service

**Monday, 2:15 p.m. - 3:45 p.m., 12th Floor Ballroom I, M5**

**Rasch Scaling in an Accountability Context: Consideration for the Accuracy and Consistency of Test Results – Coordinated Session**

**Organizer**

Venessa Lall, Educational Testing Service

**Moderator**

Dianne Henderson-Montero, Educational Testing Service

**Presenters**

Lora Monfils, Educational Testing Service, Weiling Deng, Educational Testing Service  
*The Impact of Anchor Difficulty Distribution on Maintaining Scale Stability over Time*

Venessa Lall, Educational Testing Service, Lixiong Gu, Educational Testing Service  
*Different Methods of Adjusting for Form Difficulty Under the Rasch Model: Impact on Consistency of Assessment Results*

Zhiming Yang, Educational Testing Service, Shameem Gaj, Educational Testing Service  
*The Impact of Different WINSTEPS Control Options on Raw-to-Scale-Score Conversion Tables*

Edward Wolfe, Pearson, Mike McGill, Iowa State University  
*A Comparison of Asymptotic and Bootstrap Item Fit Indices in Identifying Misfit to the Rasch Model*

**Discussants**

Joseph Ryan, Arizona State University  
Richard Patz, CTB/McGraw-Hill

**Monday, 2:15 p.m. - 3:45 p.m., 12th Floor Ballroom II, M6**

**Innovations in the Automated Scoring of Spoken Responses –  
Coordinated Session**

**Organizer/Moderator**

David Williamson, Educational Testing Service

**Presenters**

Carol Chapelle, Iowa State University

*Technological Innovation in Speaking Assessment: Validity Considerations at the Design Stage*

Alistair VanMoere, Knowledge Technologies, Pearson

*Evaluating the Constructs and Automated Scoring Performance for Speaking Tasks in the Versant Tests and PTE Academic*

Xiaoming Xi, Educational Testing Service

*Adapting the SpeechRater Capability to the Development of Automated Scoring for Heterogeneous Speaking Tasks*

Eva Baker, University of California, Los Angeles/CRESST, Marcus Iseli, University of California, Los Angeles/CRESST

*Automated Scoring of Complex Performance*

Derrick Higgins, Educational Testing Service

*The Impact of Automated Speech Recognition System Accuracy on the Performance of an Automated Scoring Engine for Spoken Responses*

**Discussants**

Craig DeVille, Measurement Incorporated

Lyle Bachman, University of California, Los Angeles

**Monday, 2:15 p.m. - 3:45 p.m., Terrace Room, M7**

## **Test Security – Paper Session**

### **Moderator**

Michelle Langer, National Board of Medical Examiners

### **Presenters**

Dmitry Belov, Law School Admission Council

*Detection of Answer Copying Based on the Structure of a High-Stakes Test*

James Wollack, University of Wisconsin-Madison, Dennis Maynes, Caveon  
Test Security

*Detection of Test Collusion Using Item Response Data*

Mabel Kung, California State University, Fullerton, Ronald Armstrong, Rutgers, The  
State University of New Jersey

*CUSUM Methods for Polytomous and Continuous Item Response Models*

Russell Smith, Alpine Testing, Susan Davis-Becker, Alpine Testing

*Detecting Suspect Examinees: An Application of Differential Person  
Functioning Analysis*

Yu Zhang, Federation of State Boards of Physical Therapy, Cynthia Searcy,  
Federation of State Boards of Physical Therapy, Lindsay Hawkins, Federation of  
State Boards of Physical Therapy

*Mapping Clusters of Aberrant Test Response Patterns*

### **Discussant**

Karla Egan, CTB/McGraw-Hill

**Monday, 4:05 p.m. - 6:05 p.m., Azalea Ballroom I, N1**

**Assessing Dimensionality Using Factor Analysis and Other Techniques – Paper Session**

**Moderator**

Jaime Cid, Educational Testing Service

**Presenters**

Ze Wang, University of Missouri

*Assessing Measurement Invariance of Complex Data with Presence of Ordinal Indicators*

Brandon Loudermilk, University of South Carolina, Frank Igou, Louisiana Tech University

*Investigation of Multidimensionality in a Statewide Music Assessment*

Angela Tombari, University of Kentucky, Michael Toland, University of Kentucky, Elizabeth Sparks, University of Kentucky

*Parallel Analysis with Ordinal Data Under Complex Structure*

Hanwook Yoo, University of Massachusetts, Amherst, Jianbin Fu, Educational Testing Service, Maxwell Wise, Educational Testing Service, Seungchee Chung, Educational Testing Service

*Dimensionality Analysis of Cognitively Based Assessment of, for, and as Learning (CBAL) Reading Tests*

**Discussant**

Edward Wolfe, Pearson

**Monday, 4:05 p.m. - 6:05 p.m., Azalea Ballroom II, N2**

**Comparability Issues with “Common” and Uncommon Assessments – Coordinated Session**

**Organizer/Moderator**

Scott Marion, National Center For the Improvement of Educational Assessment

**Presenters**

Marianne Perie, National Center for the Improvement of Educational Assessment  
*What Do We Want to Compare and Why? Policymakers’ Interests in Comparing Performance Across States, Consortia, and Nations*

Scott Marion, National Center for the Improvement of Educational Assessment  
*An Overview of Comparability Challenges Faced by the Assessment Consortia*

Katie Buckley, Harvard University, Pamela Paek, National Center for the Improvement of Educational Assessment  
*Approaches for Maintaining and Evaluating Comparability across Assessments: Lessons from England*

**Discussants**

Howard Everson, City University of New York  
Phoebe Winter, Pacific Metrics

**Monday, 4:05 p.m. - 6:05 p.m., Magnolia Ballroom I, N3**

**Vertical Equating and Academic Growth – Paper Session**

**Moderator**

Dena Pastor, James Madison University

**Presenters**

Marc Johnson, Pearson, Qing Yi, Pearson

*Investigating Common-Item Screening Procedures in Developing a Vertical Scale*

Shu Jing Yen, Center for Applied Linguistics, Litong Zhang, CTB/McGraw-Hill,  
Joanna Tomkowicz, CTB/McGraw-Hill

*The Impact of Vertical Scaling Anchor Sets Decisions on Student Growth*

Ou Zhang, University of Florida, Charles Depascale, National Center for the  
Improvement of Educational Assessment, M. David Miller, University of Florida  
*How Subgroup Characteristics Effect Equating Methods' Academic Growth Detection?*

Assunta Hardy, Brigham Young University, Michael Young, Pearson, Qing Yi,  
Pearson, Richard Sudweeks, Brigham Young University, Damon Bahr, Brigham  
Young University

*Investigating the Content and Construct Representation of a Common-Item Design  
when Creating a Vertical Scale*

Weiling Deng, Educational Testing Service, Lora Monfils, Educational Testing Service  
*Long-Term Effects of Valid Case Inclusion Criteria on Capturing Growth Under IRT  
Equating*

**Discussant**

Lihua Yao, DoD Data Center

**Monday, 4:05 p.m. - 6:05 p.m., 12th Floor Ballroom I, N4**

**Innovations in Measurement in Early Childhood Early Literacy –  
Coordinated Session**

**Organizers**

Michael Rodriguez, University of Minnesota  
Scott McConnell, University of Minnesota

**Moderator**

Michael Rodriguez, University of Minnesota

**Presenters**

Alisha Wackerle-Hollman, University of Minnesota  
*Construct Identification to Support Early Literacy Measurement*

Tracy Bradfield, University of Minnesota  
*Task Development and Item Analyses in Innovative Measures of Early Literacy*

Anthony Albano, University of Minnesota  
*Scaling Individual Growth and Development Indicators: Early Literacy Measurement*

Michael Rodriguez, University of Minnesota  
*Standard Setting with Innovative Measures of Early Literacy*

**Monday, 4:05 p.m. - 6:05 p.m., Magnolia Ballroom III, N5**

**Detecting DIF – Paper Session**

**Moderator**

Andrea Gotzmann, University of Alberta

**Presenters**

Muhammad Naveed Khalid, University of Cambridge, Ardeshir Geranpayeh,  
University of Cambridge

*Detection of Differential Item Functioning and Scale Purification*

Brian French, Washington State University, Holmes Finch, Ball State University  
*The Accuracy of Crossing SIBTEST for Detecting Uniform and Non-Uniform DIF in a  
Single Analysis*

Randall D. Penfield, University of Miami

*Can a Single Differential Distractor Functioning Effect Lead to a Large DIF Effect?*

Holmes Finch, Ball State University, Brian French, Washington State University  
*The Impact of Group Pseudo-Guessing Parameter Differences on the Detection of  
Uniform and Nonuniform DIF*

Ronna Turner, University of Arkansas, Wallace Gitchele, West Virginia University  
*Comparing Type I Error and Power Rates in DIF Analyses when Combining Significance  
Tests with Effect Size Criteria*

Cindy M. Walker, University of Wisconsin-Milwaukee, Bo Zhang, University of  
Wisconsin-Milwaukee, Kathleen Banks, University of Iowa, Kevin Cappaert,  
University of Wisconsin-Milwaukee

*An New Perspective on Effect Size Guidelines for SIBTEST*

**Discussant**

Kimberly Swygert, National Board of Medical Examiners

**Monday, 4:05 p.m. - 6:05 p.m., 12th Floor Ballroom II, N6**

## **Issues with Computer-Based Testing – Paper Session**

### **Moderator**

Angela Grima, Consultant

### **Presenters**

Alan Huebner, ACT, Inc., Yuling Feng, University of South Carolina, Chun Wang, University of Illinois at Urbana-Champaign  
*Strategies for Controlling Item Exposure Rates in Cognitive Diagnostic Computerized Adaptive Testing*

Hui Deng, The College Board  
*The Effects of Item Pool Characteristics on Accuracy of Ability Estimation and Classification in CAT*

Joyce Wang, CTB/McGraw-Hill, Bokhee Yoon, American Institute for Research  
*Comparability Between Computer Adaptive and Paper-and-Pencil Administration of a Norm Referenced Test – Establish Links to Norm Scores in CAT Mode*

Tian Song, Pearson, Mark Reckase, Michigan State University  
*The Effect of Fitting a Unidimensional IRT Model to Multidimensional Data in Content-Balanced Computerized Adaptive Testing*

Kyoko Ito, Human Resources Research Organization, Daniel Segall, Defense Manpower Data Center  
*A Comparison of Four Procedures for Obtaining Information Functions for Scores from Computerized Adaptive Tests Using an Optimally Distributed Item Pool*

Shalini Kapoor, University of Iowa, Catherine Welch, University of Iowa  
*Comparability of Paper and Computer Administrations in Terms of Proficiency Interpretations*

### **Discussant**

Michael S. Finger, American Institute of Certified Public Accountants

**Monday, 4:00 p.m. – 7:00 p.m., River Room**

**NCME Board of Directors Meeting**

Members of NCME are invited to attend as observers.

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