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## National Council on Measurement in Education

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2010 Training Sessions  
April 29-30, 2010

2010 Annual Meeting  
May 1-3, 2010

Denver, Colorado

# NCME • 2010 Annual Meeting & Training Sessions

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Allalouf, Avi	Diao, Qi	Huff, Kristen	Lee, Yoonsun
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Armstrong, Ronald	Dummy, Dummy	Hurtz, Gregory	Li, Feiming
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Betts, Joseph	Finger, Michael	Jodoin, Michael	Liu, Ou Lydia
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Bolt, Daniel	Fortus, Ruth	Johnson, Matthew	Liu, Yuming
Bontempo, Brian	French, Brian	Joldersma, Kevin	Livingston, Samuel
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Chang, Shu-Ren	Grover, Raman	Kim, Jungnam	Mayenga, Charles
Chen, Feng	Gu, Lixiong	Kim, Seock-Ho	Mbella, Kinge
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Childs, Ruth	Hansen, Eric	Kim, YoungKoung	Meng, Huijuan
Chiu, Ting-Wei	Harris, Deborah	Kingston, Neal	Meyer, Patrick
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Cui, Ying	Hochstedt, Kirsten	Lawrence, Ida	Myford, Carol
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Ngudgratoke, Sungworn  
Nhouyvanisvong, Adisack  
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Nozawa, Yuki  
Oh, Hyeon-Joo  
Oliveri, Maria-Elena  
Olmsted, Ruth  
Olsen, James  
Olson, John  
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Smith, Russell  
Smith, Wendy  
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Song, Tian  
Stone, Clement  
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Sukin, Tia  
Sunnassee, Devdass  
Svetina, Dubravka  
Swygert, Kimberly  
Talent-Miller, Eileen  
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Taylor, Melinda  
Templin, Jonathan  
Terada, Takeshi  
Thiessen, Bradley  
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van den Heuvel, Jill  
van der Ploeg, Arie  
Veldkamp, Bernard  
von Davier, Matthias  
Walker, Cindy  
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Wang, Aijun

Wang, Chun  
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Wang, Xuan  
Wang, Yingchen  
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Wells, Craig  
Wendler, Cathy  
Wilson, Daniel  
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Wu, Yi-Chen  
Wyse, Adam  
Xiong, Xinhui  
Xu, Xueli  
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Yao, Lihua  
Ye, Feifei  
Yi, Hyun Sook  
Yi, Qing  
Yin, Liquan  
Yu, Lan  
Yu, Lei  
Zhang, Lilly  
Zhang, Jinming  
Zhang, Liru  
Zhang, Litong  
Zhang, Yanling  
Zhang, Yu  
Zhao, Yu  
Zheng, Xiaohui  
Zheng, Yan  
Zhu, Rongchun  
Zhu, Xiaowen

# **NCME • 2010 Annual Meeting & Training Sessions**

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## **Meeting Locations**

The 2010 Training Sessions and Annual Meeting will be held at the Sheraton Denver Downtown Hotel. The Joint Reception and NCME Breakfast, Business Meeting, and Presidential Address will be held at the Hyatt Regency Denver.

## **Future Annual Meetings**

### **2011 Annual Meeting**

April 7 - 11

New Orleans, Louisiana

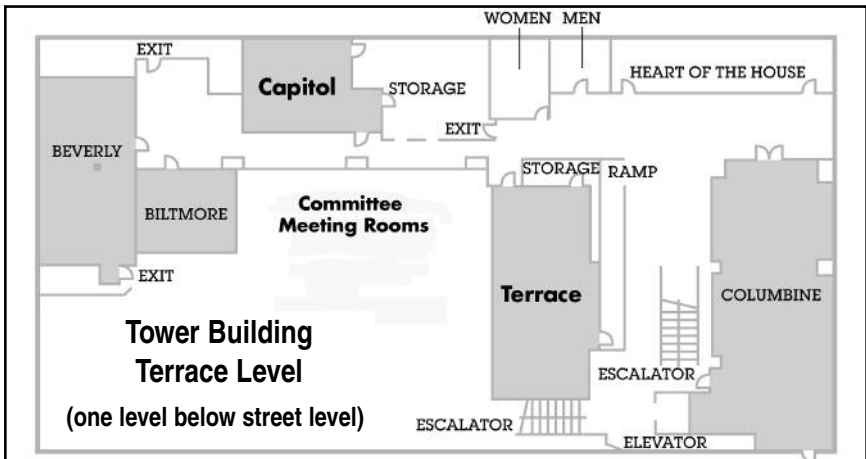
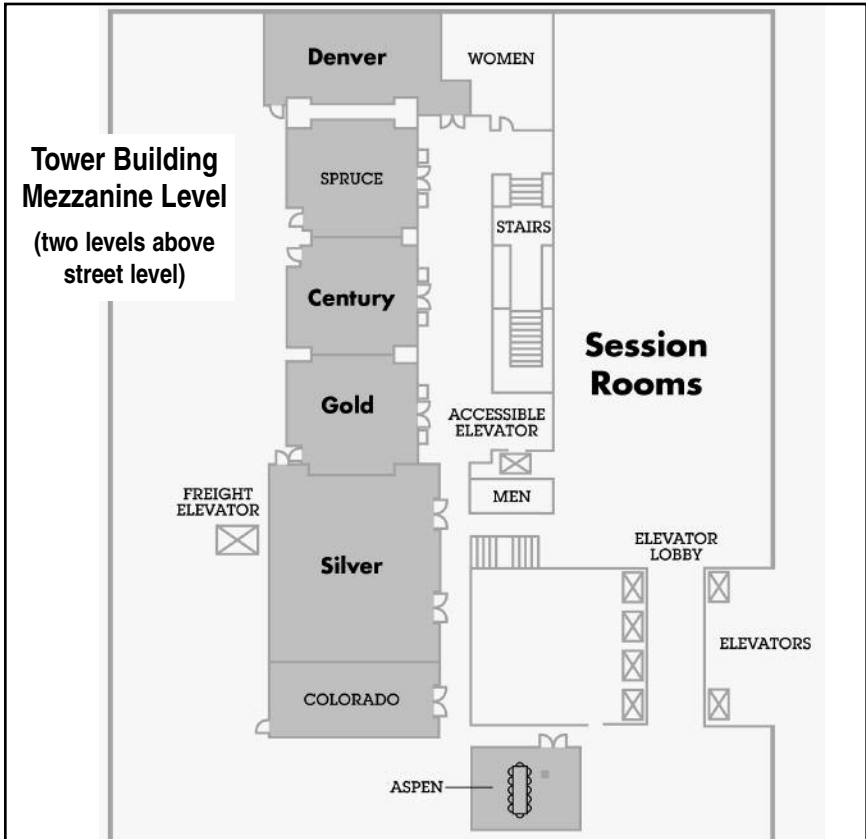
### **2012 Annual Meeting**

April 12 - 16

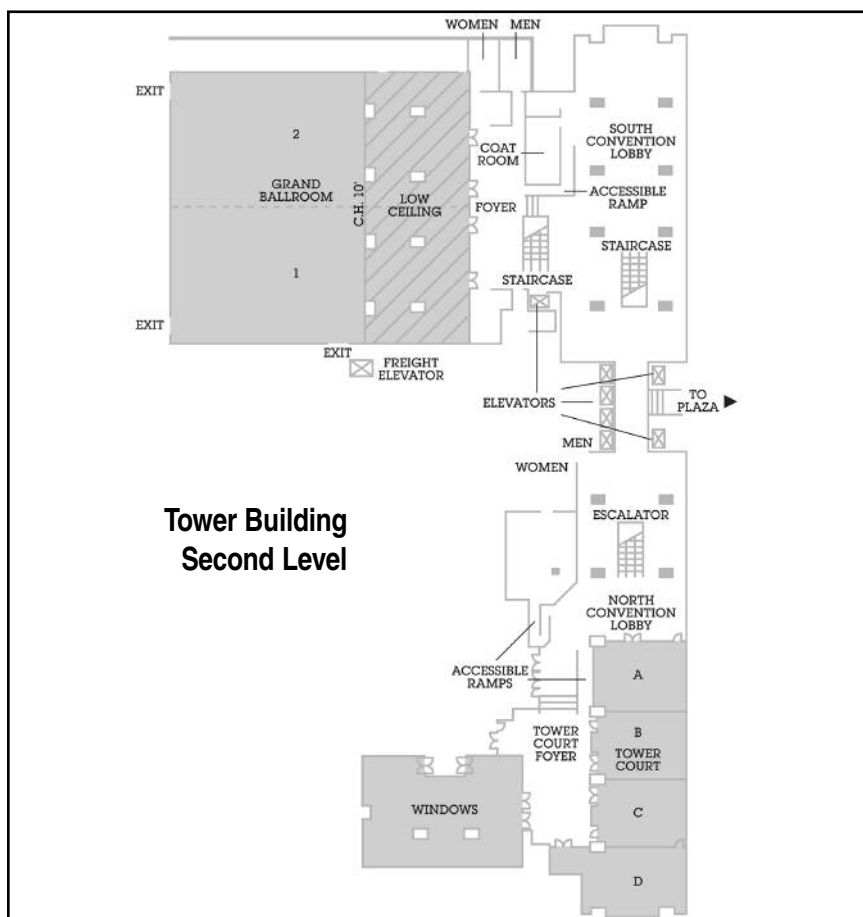
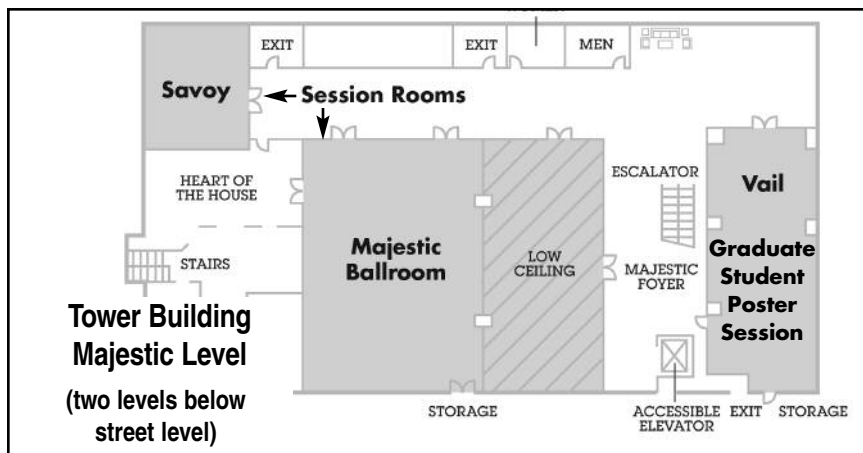
Vancouver, British Columbia, Canada

# Denver, Colorado

## Sheraton Denver Downtown Hotel



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## PRE-CONFERENCE TRAINING SESSIONS

The 2010 NCME pre-conference training sessions will be held at the Sheraton Denver Downtown Hotel on Thursday, April 29 and Friday, April 30, 2010. 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.

Onsite registration for the pre-conference training sessions will be available at the Sheraton Denver Downtown Hotel for workshops that still have availability.

### Thursday, April 29, 2010

#### **Thursday, 8:00 a.m. – 12:00 noon, Century Room, AA**

Quality Control in Test Development, Scoring and Reporting of Test Scores

*Presenters: Avi Allalouf, National Institute for Testing and Evaluation, Ruth Fortus, National Institute for Testing and Evaluation*

Quality control procedures are required in order to monitor the testing process and to keep mistakes to a minimum. Failure to establish and implement such procedures can have serious consequences: mistakes in test items can have an adverse impact on test reliability and validity; mistakes in scoring can prevent a qualified candidate from gaining acceptance to a particular program; and mistakes in score reporting can lead to legal action taken against the testing agency.

Professional practitioners should be aware of mistakes that could occur during the stages of test development, test scoring, test analysis and the reporting of scores. They should act in accordance with up-to-date standards and have a broad knowledge of quality control practices, as these are critical in the constant battle to prevent errors.

This training session deals with quality control procedures for the main stages of the testing process. In the session, mistakes that might occur at each stage will be presented, followed by examples and quality control procedures for avoiding, detecting or correcting these mistakes. Many of the quality control procedures discussed are also relevant for Internet-delivered and Internet-scored testing. The session will provide realworld examples, and participants will be given hands-on practice in detecting various types of errors. Approaches of various professions to the causes, prediction and reduction of human error will also be presented.

Intended Audience: Individuals involved in writing, administering and scoring tests.

#### **Thursday, 8:00 a.m. – 12:00 noon, Silver Room, BB**

Data Visualization Using R

*Presenter: Damian Betebenner, National Center for the Improvement of Educational Assessment*

The proliferation of data, in general, and education related data, in particular, over the last decade has been dramatic. Researchers and analysts across varied organizations now possess vast amounts of education related data ranging from assessment scores to finance data to GIS data. Turning data into useful informa-

tion requires a transformation turning the raw number into an intelligible “story.” One of the most important ways of accomplishing this transformation is through data visualization. Creating data visualizations capable of communicating the rich stories embedded within the data often requires customization that goes beyond what is available in most point and click statistical graphics applications.

In this training session, participants will be introduced to data visualization using the R software package which is syntax based and geared toward the programmatic visualization of data. Graphics in R are easily made publication quality and are of the highest quality available. Programming one’s drawings (programmatic drawing) opens possibilities for data visualizations not possible with traditional data visualization tools. Through fine tuned customizations using R’s rich palette of drawing tools/packages and data manipulation features, the user is limited by only their imagination as to what is graphically rendered. An online gallery of R figures created by users with source code is available at:  
<http://addictedtor.free.fr/graphiques/>.

Intended Audience: Those interested in data visualization and tools capable of producing high quality custom visualizations.

### **Thursday, 8:00 a.m. – 12:00 noon, Denver Room, CC**

Skills Diagnosis with Latent Variable Models: Theory and Practice, the Theoretical Component

*Presenters: Jimmy de la Torre, Rutgers, The State University of New Jersey, Robert Henson, University of North Carolina at Greensboro, Jonathan Templin, University of Georgia*

The primary aim of skills diagnosis is to develop and analyze tests in ways that reveal information with more diagnostic value, when compared with traditional approaches. In the methods for skills diagnosis that we consider mastery of particular skills or states of knowledge can be represented by a list of binary latent variables, indicating mastery of each of a finite set of skills under diagnosis. The main objective of skills diagnosis is to classify examinees according to this list of skills. This training session aims to provide both the theoretical underpinnings and practical experience necessary for participants to use skills diagnosis modeling in applied settings.

The theoretical component of the training session will provide a comprehensive overview of skills diagnosis modeling, and will include the following topics: what is the skills diagnosis modeling paradigm and how it differs from the traditional unidimensional framework, what steps are involved in attribute identification and validation, what is the Q-matrix and what role does it play in skills diagnosis modeling, what are some of the commonly used skills diagnosis models and how are they related to each other, how are model parameters estimated and how is model data fit evaluated, what procedures are involved in constructing an optimally diagnostic assessment, and how are skills diagnosis models compared and selected.

Intended Audience: Anyone interested in cognitive or skills diagnosis modeling who has some familiarity with item response theory or classical test theory.

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## **Thursday, 8:00 a.m. – 12:00 noon, Savoy Room, DD**

Bayesian Analysis of Item Response Models: Theory and Methods

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

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 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 measurement professionals.

## **Thursday, 8:00 a.m. – 5:00 p.m., Gold Room, EE**

Beyond NDE: Understanding and Working with National Assessment of Educational Progress (NAEP) Restricted-Use Data

*Presenters: Young Yee Kim, American Institutes for Research, Emmanuel Sikali, National Center for Education Statistics, Andrew Kolstad, National Center for Education Statistics, Linda Hamilton, American Institutes for Research, Alan Vanneman, American Institutes for Research, Burhan Ogut, American Institutes for Research*

The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since NAEP results serve as a common metric for all states and selected urban districts, many researchers are interested in analyzing NAEP data. For this purpose, the NAEP Data Explorer (NDE), the publicly available online NAEP data analysis tool, has served as a convenient tool. With NDE, researchers can create statistical tables, charts, and maps. But there are limitations to the statistical analysis available through NDE. The purpose of this class is to provide researchers interested in more advanced NAEP data analysis with the practical knowledge and tools needed to work with NAEP restricted-use data. This class covers various topics related to restricted-use data analysis, from 'how to obtain a restricted-use data license' to 'writing NAEP data analysis results,' as well as NAEP complex sampling and psychometric design. Participants will

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learn necessary tools to work with NAEP restricted-use data. Participants need to bring their own laptop computer.

Intended Audience: Advanced graduate students and faculty members from colleges and universities and researchers, education practitioners, and policy analysts from state and local education agencies and professional associations.

### **Thursday, 8:00 a.m. – 5:00 p.m., Majestic Ballroom, FF**

#### **Test Equating Methods and Practices**

*Presenters: Michael Kolen, University of Iowa, Robert L. Brennan, University of Iowa*

The need for equating arises whenever a testing program uses multiple forms of a test that are built to the same content and statistical specifications. Equating is used to adjust scores on test forms so that scores can be used interchangeably. The goals of the session are for attendees to be able to understand the principles of equating, to conduct equating, and to interpret the results of equating in reasonable ways. Equating will be contrasted with related linking processes, traditional and IRT equating methodology will be described, and practical issues will be discussed.

The focus is on developing a conceptual understanding of equating through numerical examples and discussion of practical issues. Recent developments in equating and linking performance assessments and computer based tests will be considered. The text for the session will be the co-directors' book, *Test Equating, Scaling, and Linking Methods and Practices* (Second Edition), a copy of which is included as part of the fee for the session. The session is designed for upper level graduate students, new PhD's, testing professionals with operational or oversight responsibility for equating, and others with interest in learning about equating methods and practices. Participants should have at least one graduate course in measurement and two graduate courses in statistics.

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

### **Thursday, 1:00 p.m. – 5:00 p.m., Century Room, GG**

#### **A Practitioner's Introduction to Linking and Equating**

*Presenter: Joseph Ryan, Arizona State University*

A variety of issues related to accountability compliance and assessment validity are substantially supported or corrupted by how test forms are linked or equated to appropriate content and performance standards. The intended audience for the workshop includes educational policy makers and practitioners whose decisions and activities can be better informed through a more thorough understanding of linking and equating.

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

- 1) The basic terms and concepts of equating;
- 2) Common designs used to collected data for equating and the limitations and resource demands of the designs;
- 3) The procedures applied to carry out equating;
- 4) Common issues and challenges faced by practitioners when equating is employed; and
- 5) Tips for what should be included in assessment RFP's, technical documentation, and linking/equating evaluative criteria.

This workshop begins with a brief overview of assessment, linking, and equating concepts. First, the critical distinction between linking scores and actually equating assessments is emphasized, and fundamental classical and IRT measurement terms and concepts are also briefly reviewed. Then, equating designs and procedures are presented and explained. Throughout the workshop, suggestions are provided for managing the linking and equating aspects of RFP's, contracted work, and technical documentation.

Workshop content is delivered through a detailed presentation that follows the basic scope and sequence of material presented in *A Practitioner's Introduction to Equating with Primers on Classical Test Theory and Item Response Theory* (Council of Chief State School Officers, June 2009). Hard copies of this publication and the companion PowerPoint slides will be provided to participants. Non-technical language, figures, and diagrams are used to illustrate major concepts and procedures and participants are encouraged to ask questions through out the workshop.

Intended Audience: Measurement practitioners and policy makers at the district, state and university levels.

## **Thursday, 1:00 p.m. – 5:00 p.m., Denver Room, HH**

Skills Diagnosis with Latent Variable Models: Theory and Practice, the Practical Component

*Presenters: Jimmy de la Torre, Rutgers, The State University of New Jersey, Robert Henson, University of North Carolina at Greensboro, Jonathan Templin, University of Georgia*

The primary aim of skills diagnosis is to develop and analyze tests in ways that reveal information with more diagnostic value, when compared with traditional approaches. In the methods for skills diagnosis that we consider mastery of particular skills or states of knowledge can be represented by a list of binary latent variables, indicating mastery of each of a finite set of skills under diagnosis. The main objective of skills diagnosis is to classify examinees according to this list of skills. This training session aims to provide both the theoretical underpinnings and practical experience necessary for participants to use skills diagnosis modeling in applied settings.

The practical component of the training session will provide participants a hands-on experience on the different aspects of skills diagnosis modeling through

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various exercises. Focusing on mixed fraction subtraction, participants will learn how to identify attributes, construct appropriate tasks given some attribute specifications, validate attributes and tasks, run software packages to estimates different skills diagnosis models, evaluate the appropriateness of the models and Q-matrix, and construct a test based on a specific set of constraints and given a pool of calibrated items.

Intended Audience: Anyone who has familiarity with the theory of cognitive or skills diagnosis modeling (i.e., previous or current participants of skills diagnosis training sessions).

### **Thursday, 1:00 p.m. – 5:00 p.m., Silver Room, II**

Developing and Sustaining a Campus-Wide Commitment to Assessment of Student Learning in Higher Education

*Presenters: Jeremy Penn, Oklahoma State University, Jessica L. Jonson, University of Nebraska–Lincoln*

The purpose of this session is to provide faculty members, assessment coordinators, and administrators the philosophical foundations and tools needed to develop, implement, and sustain a campus-wide commitment to assessment in higher education.

Using Huba and Freed's (2000) book *Learner-Centered Assessment on College Campuses* as a guide, presenters will first examine the philosophical underpinnings of the modern assessment movement in higher education. Structures and processes for applying these concepts to a variety of different types of campuses will be described based on Peggy Maki's book (2004) *Assessing for Learning* (or 2010 version, if available). Finally, participants will explore measurement issues as relevant to assessment in higher education through examination of the *Standards for Educational and Psychological Testing* (1999).

- Participants will be given a copy of Peggy Maki's book (2004) *Assessing for Learning* (2010 version if available).
- Participants are encouraged to purchase copies of *Learner-Centered Assessment on College Campuses* (2000) and the *Standards for Educational and Psychological Testing* (1999).
- Participants are encouraged to bring current copies of their institution's assessment activities for discussion and sharing.

Intended Audience: This session targets all faculty members, assessment coordinators, and administrators interested in student outcomes assessment in higher education.

### **Thursday, 1:00 p.m. – 5:00 p.m., Savoy Room, JJ**

State Assessment for Students with Disabilities: Getting it Right

*Presenters: Susan Izard, Measured Progress, Sherry Rose-Bond, Columbus City Schools, Rebecca Walk, Measured Progress*

The training session State Assessment for Students with Disabilities: Getting it Right is geared for practitioners involved in the support and guidance of special

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educators at the school, district, university, and state levels. This session will be a practical, interactive coverage of four major components of state assessment for students with disabilities: making the right decisions for participation in assessment, preparing students and teachers for assessment, participating in assessment, and applying assessment results in a meaningful way to inform instruction. Discussions and activities will include the four levels of state assessment in which students with disabilities participate: general assessment without accommodations, general assessment with accommodations, modified assessment and alternate assessment.

Intended Audience: Practitioners involved with supporting and guiding special educators at a school, district, university, or state level.

**Friday, April 30, 2010**

### **Friday, 8:00 a.m. – 12:00 noon, Century Room, KK**

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

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

The training session has three main components:

- (1) Finishing up the PhD including finding a dissertation topic and how to maximize experiences while still a student (classes, internships, work experiences, networking, professional associations);
- (2) Obtaining a job including how to locate where jobs are available (universities, testing companies, school districts, state departments, professional/licensing organizations, etc.), how to apply for jobs (including targeting cover letters, references, and resumes) and the interview process; and
- (3) Beginning a career including job politics, adjusting to the environment, career path, publishing, professional service, being a mentor/finding a mentor, balancing work and life, and what if I hate my job.

Intended Audience: Graduate students in the measurement field.

### **Friday, 8:00 a.m. – 12:00 noon, Gold Room, LL**

A Brief Introduction to IRT Parameter Estimation Techniques

*Presenter: Seock-Ho Kim, University of Georgia*

Theory and methods for the educational and psychological measurement of latent variables using item response theory methodology are discussed. The one-parameter logistic or Rasch, the two-parameter logistic, and the Birnbaum's three-parameter models for dichotomously scored item response data will be reviewed from a theoretical viewpoint with an emphasis on the various estimation techniques of the model parameters. Applications of these models to practical measurement situations will be studied using item response theory computer

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programs. Topics of the course consist of item calibration, scoring, information, and some applications to instrument construction. Models for polytomously scored items are briefly discussed.

Prerequisites include knowledge equivalent to one graduate course in theoretical educational measurement and familiarity with differential and integral calculus treated in undergraduate mathematics courses. A book coauthored by the director with Frank B. Baker titled *Item Response Theory: Parameter Estimation Techniques* will be distributed to participants and used as a principle reference in the training session. Computer programs for performing item response theory analyses will be discussed and illustrated. Participants are encouraged to bring their own laptop computers.

Intended Audience: Upper-level graduate students and new measurement professionals.

### **Friday, 8:00 a.m. – 5:00 p.m., Silver Room, MM**

#### **Assessing New Constructs Using New Measures**

*Presenters: Patrick C. Kyllonen, Educational Testing Service, Richard D. Roberts, Educational Testing Service*

Personal attributes or non-cognitive factors are increasingly recognized as important determinants and reflections of success in education from K-12 through graduate and professional school. In this training session we will review the process of developing and evaluating new assessments of new constructs.

We will cover the following topics:

- New construct frameworks, models, and theories (personality, attitudes, values, beliefs, and other constructs)
- Developing assessments from construct definitions and item pools, including the international personality item pool (IPIP)
- Various methods for assessing new constructs (self-assessments, others' ratings, situational judgment tests, conditional reasoning, implicit association tests)
- Item writing do's and don'ts
- The problem of taking on self-assessments (preventing, detecting and correcting for it)
- Delivery platforms (web and paper-and-pencil)
- Exploratory factor analysis and other data structure exploration methods
- Confirmatory factor analysis
- Advanced methods (IRT, latent class models, unfolding models)
- Special topics (rating scale issues [optimal number of points; presence of neutral point, "do not know"], reverse key items)
- Indirect measures (e.g., from school records)
- Example new constructs assessments (self-help for community college; institutional reporting for K-12; high stakes for graduate school)



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

Intended Audience: Researchers and practitioners interested in non-cognitive assessment.

## **Friday, 8:00 a.m. – 5:00 p.m., Denver Room, NN**

**Score Drift: Why District and State Achievement Results Unexpectedly Bounce Up and Down from Year to Year**

*Presenters: Douglas Rindone, Council of Chief State School Officers, Gary Phillips, American Institutes for Research, Gilbert Andrada, Connecticut State Department of Education, Dianne Henderson-Montero, Educational Testing Service*

Every year many School Districts and State Departments of Education are confronted with reporting annual results that are unexpectedly high or low. When they are high they take credit for success and when they are low they look to find who is at fault. When the results spike up or down the department usually hires consultants to try to find out what happened. Often, the results of the evaluation are inconclusive and it is never really understood what went wrong. In this training session it will be argued that these unexpected results are caused by school districts and state departments underestimating the error in their annual data. This underestimation of error occurs when reporting mean results as well as when reporting Adequate Yearly Progress (AYP). The net effect of this is misinterpreting random fluctuations as statistically significant increases and decreases in achievement. The two main sources of error that are almost always at play are related to design effects and equating error. The training session will show how ignoring these sources of error can give a completely misleading picture of district and state educational progress. The training session will suggest ways to minimize these unexpected bouncing up and down of annual results.

Intended Audience: School district and state department of education testing staff, technical staff from testing vendors, and professors of tests and measurement at the university level.

## **Friday, 8:00 a.m. – 5:00 p.m., Majestic Ballroom, OO**

**Moving from Art to Science: An Item-Writing Course for Test Developers, Researchers and Teachers**

*Presenters: Michael C. Rodriguez, University of Minnesota, Thomas Haladyna, Measurement Consultant, Anthony Albano, University of Minnesota*

This course will introduce/review item-writing guidelines and principles of universal design, including lecture format, and individual, small and whole-group work. Participants will review and suggest revisions to a variety of sample items. Participants will be expected to generate and critique their own items during the session. Challenges and quality criteria in developing and selecting items to measure various constructs will be addressed. Principles of item accessibility for students with disabilities and English language learners will also be addressed. Given recent efforts to create modified assessments for students with disabilities

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(the 2% group), principles of item modification for this population will be addressed. The focus will be on multiple choice items, but principles related to constructed-response and essay items will be included. If time permits, we will extend some of the core item writing principles to other areas, including survey research.

Intended Audience: Item writers, teachers, assessment developers/researchers.

### **Friday, 8:00 a.m. – 5:00 p.m., Savoy Room, PP**

Bayesian Networks in Educational Assessment

*Presenters: Duanli Yan, Education Testing Service, Russell G. Almond, Educational Testing Service, Robert J. Mislevy, University of Maryland, David M. Williamson, Educational Testing Service*

This course will provide the background information on Bayesian networks, Graphical Models and related inference and representation methods and provide examples of their use in educational assessment. Although the course will review the Evidence Centered Design framework for representing measurement models in educational assessments using graphs, the primary goal is to review the work done in other communities for psychometricians and psychologists. Then, after a brief overview of the most commonly used Bayesian network tools, it will provide a well-received interactive hands-on session on using Bayesian network tool on small examples for Bayesian inference, manipulating graphical models and applications in educational assessment. It will also review the existing body of literature on graphical models from other disciplines (in particular, the Uncertainty in Artificial Intelligence literature).

Intended Audience: People interested in educational measurement.

### **Friday, 1:00 p.m. – 5:00 p.m., Century Room, QQ**

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

*Presenters: Huynh Huynh, University of South Carolina, Do Hong Kim, University of North Carolina at Charlotte*

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 under measurement 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 and with emphasis on the correct response, IRT (including Rasch) and DIF (MH) can be used. Also at the item level but with emphasis on type of errors, log-linear models might be appropriate. At the subtest level, of course, 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

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a demonstration of these approaches. Data from a large-scale state assessment program are be used as a case study. Participants are expected to be familiar with standard software such as SAS, M-Plus, LISREL, WINSTEPS, and PARSCALE.

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

### **Friday, 1:00 p.m. – 5:00 p.m., Gold Room, RR**

Impacting Learning Through the Use of Formative Assessment

*Presenters: Julia Payne-Lewis, Measured Progress, Stuart R. Kahl, Measured Progress*

During this half-day research-based workshop you will:

- View formative assessment within the larger framework of a comprehensive assessment system.
- Take a look at the research about formative assessment from a practical vantage point.
- Learn to transform theory into real-world practice.
- Work with professionals who will model formative assessment in order to strengthen your formative assessment skills.
- Augment your skills in transforming common classroom practices into powerful tools for maximizing student achievement.
- Investigate the relationship between the standards and formative assessment.
- Prepare to take these skills and ideas back to schools and districts, in order to further discussions about how to put them into practice, and share them with colleagues.

Intended Audience: Teachers and administrators.

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Friday, 4:00 p.m. – 7:00 p.m., Spruce Room

## **NCME Board of Directors Meeting**

Members of NCME are invited to attend as observers.

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Saturday, 8:15 a.m. – 10:15 a.m., Denver Room, A1

## **The Influence and Impact of Technology on Educational Measurement (Graduate Student Issues Committee) – Invited Symposium**

### **Organizer**

*Mary Roduta Roberts, University of Alberta*

### **Moderator**

*Kimberly Swygert, National Board of Medical Examiners*

### **Presenters**

*Lisa Harris, Winthrop University*

*Richard Luecht, The University of North Carolina at Greensboro*

*Kathleen Scalise, University of Oregon*

*Joe Willhoft, Office of the Superintendent of Public Instruction,  
State of Washington*

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Saturday, 8:15 a.m. – 10:15 a.m., Century Room, A2

## Bayesian Modeling Approaches – Paper Session

### Moderator

*Richard Sudweeks, Brigham Young University*

### Presenters

Chi-Ming Su, National Chung Cheng University, Wen-Chung Wang, Hong Kong Institute of Education

*Item Response Models with Hierarchical Multidimensionality*

Xiaowen Zhu, Data Recognition Corporation, Clement Stone, University of Pittsburgh

*Bayesian Comparison of Alternative Graded Response (GR) Models for Performance Assessments*

Na Yang, University of South Carolina, Brian Habing, University of South Carolina

*Bayesian MML for Estimating Mixed Unfolding/Monotone Item Exams*

Leslie Hendrix, University of South Carolina, Brian Habing, University of South Carolina

*Using PPMC Methodology without MCMC to Assess Model Fit in IRT*

Junhui Liu, University of Maryland

*Applications of Skewed Item Response Models in a Science Assessment Data Using Bayesian Estimation*

### Discussant

*Sandip Sinharay, Educational Testing Service*

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Saturday, 8:15 a.m. – 10:15 a.m., Gold Room, A3

## Technical Issues in Benchmark Assessment – Coordinated Session

### Organizer/Moderator

*Daniel Lewis, CTB/McGraw-Hill*

### Presenters

Lou DiBello, University of Illinois at Chicago, William Stout, University of Illinois at Chicago

*An Overview of Technical Issues in Benchmark Assessment*

Keith Boughton, CTB/McGraw-Hill, Furong Gao, CTB/McGraw-Hill, Daniel Lewis, CTB/McGraw-Hill, Dong-In Kim, CTB/McGraw-Hill

*Technical Issues in the Vertical Scaling of Benchmark Assessments*

Dong-In Kim, CTB/McGraw-Hill, Furong Gao, CTB/McGraw-Hill, Daniel Lewis, CTB/McGraw-Hill, Keith Boughton, CTB/McGraw-Hill

*A Comparison of Prediction Methods for Benchmark Assessments*

Matthew Grady, University of Texas at Austin, Daniel Lewis, CTB/McGraw-Hill, Furong Gao, CTB/McGraw-Hill

*The Effect of Sample Size on Student Growth Percentiles*

### Discussants

*Jonathan Dings, Boulder Valley School District*

*Liru Zhang, Delaware Department of Education*

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Saturday, 8:15 a.m. – 10:15 a.m., Silver Room, A4

## **Large Scale Assessments in China: Challenges and Practices – Invited Symposium**

### **Organizers/Moderators**

*Hua-Hua Chang, University of Illinois*

*Ying Cheng, University of Notre Dame*

### **Presenters**

Xin-Yong Lei, Shanghai Municipal Educational Examinations Authority, Qun Zhou, Shanghai Municipal Educational Examinations Authority

*An Anchoring-Test-Developers Based Method for Estimating Item Difficulty Parameters for Geographic Tests of the University Entrance Examination in Shanghai*

Hong-Yun Liu, Beijing Normal University, Xiao-Feng You, Foreign Language Teaching and Research Press, Wen-Yi Wang, Jiangxi Normal University, Shu-Liang Ding, Jiangxi Normal University, Hua-Hua Chang, University of Illinois  
*Large-Scale Applications of Cognitive Diagnostic Computerized Adaptive Testing in China*

Kit-Tai Hau, The Chinese University of Hong Kong  
*High-Stake Examinations in Hong Kong: Issues and Practices*

Shu-Liang Ding, Jiangxi Normal University, Qing Chen, Jiangxi Normal University, Long-Yin Zhu, Gannan Normal College, Zhi-Yong Xu, Tianjin Educational Examinations Authority  
*A Three-Parameter Graded Response Model and Its Applications in Large Scale Assessments in China*

Bo Wang, The College Board  
*College Entrance Examinations in China: History, System, Culture and People*

### **Discussant**

*Terry A. Ackerman, University of North Carolina at Greensboro*



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Saturday, 8:15 a.m. – 10:15 a.m., Savoy Room, A5

## **A Partnership Waiting to Happen? SEA Measurement Challenges and NCME Expertise – Invited Symposium**

### **Moderator**

*Robert (Bob) M. Olsen, Council of Chief State School Officers*

### **Presenters**

*Joe Willhoft, Washington Superintendent of Public Instruction Office*

*Pat Roschewski, Nebraska Department of Education*

*Joseph Martineau, Michigan Department of Education*

*Wendy Pickett, Delaware Department of Education*

### **Discussants**

*Douglas Rindone, Council of Chief State School Officers*

*Duncan MacQuarrie, Council of Chief State School Officers*

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Saturday, 8:15 a.m. – 10:15 a.m., Majestic Ballroom, A6

## **Exhibition on Testing and Measurement – Coordinated Session**

### **Organizers**

*Avi Allalouf, National Institute for Testing and Evaluation*  
*Diana Alderoqui Pinus, Bloomfield Science Museum Jerusalem*

### **Moderators**

*Avi Allalouf, National Institute for Testing and Evaluation*  
*Yoav Cohen, National Institute for Testing and Evaluation*  
*Randy Bennett, Educational Testing Service*

### **Presenters**

Yoav Cohen, National Institute for Testing and Evaluation  
*Participant 1*

Randy Bennett, Educational Testing Service  
*Participant 2*

Henry Braun, Boston College  
*Participant 3*

Ronald Hambleton, University of Massachusetts  
*Participant 4*

Thanos Patelis, The College Board  
*Participant 5*

Wim van der Linden, CTB/McGraw-Hill  
*Participant 6*

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Saturday, 10:35 a.m. – 12:05 p.m., Denver Room, B1

## Performance or Alternate Assessment – Paper Session

### Moderator

*Chad Buckendahl, Alpine Testing Solutions*

### Presenters

Ou Lydia Liu, Educational Testing Service, Hee-Sun Lee, Tufts University, Marcia Linn, University of California–Berkeley

*A Comparison among Multiple-Choice, Constructed-Response and Explanation Multiple-Choice Items*

Melinda Taylor, North Carolina Department of Public Instruction, Dena Pastor, James Madison University

*An Application of Generalizability Theory to Evaluate the Technical Quality of an Alternate Assessment*

Stacy Sculthorp, Capella University, Jeff Grann, Capella University

*Leveraging the Assessment Triangle to Measure Learning Outcomes in Higher Education*

Meagan Karvonen, Western Carolina University, Patricia Almond, University of Oregon, Shawnee Wakeman, University of North Carolina at Charlotte, Sue Bechard, Measured Progress

*A Synthesis of Ten Alignment Studies of Alternate Assessment Systems Based on Alternate Achievement Standards (1%): Implications for Assessment System Design and Policy*

### Discussant

*Ellen Forte, edCount, LLC*

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Saturday, 10:35 a.m. – 12:05 p.m., Century Room, B2

## **An Application of Assessment Engineering to Multidimensional Diagnostic Testing in an Educational Setting – Invited Symposium**

### **Organizer/Moderator**

*Richard Luecht, The University of North Carolina at Greensboro*

### **Presenters**

Mark Gierl, University of Alberta, Jacqueline Leighton, University of Alberta  
*Developing Cognitive Models and Constructed Maps to Promote Assessment Engineering*

Richard Luecht, University of North Carolina at Greensboro, Andrew Dallas, University of North Carolina at Greensboro, Teneka Steed, University of North Carolina at Greensboro  
*Developing Assessment Engineering Task Models: A New Way to Develop Test Specifications*

Hollis Lai, University of Alberta, Mark Gierl, University of Alberta  
*Using Item Templates and Automated Item Generation Principles for Assessment Engineering*

Zhan Shu, University of North Carolina at Greensboro, Matthew Burke, University of North Carolina at Greensboro, Richard Luecht, University of North Carolina at Greensboro  
*Some Quality Control Results of Using a Hierarchical Bayesian Calibration System for Assessment Engineering Task Models, Templates, and Items*

### **Discussants**

*Steve Ferrara, CTB/McGraw-Hill*  
*Kristen Huff, The College Board*

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Saturday, 10:35 a.m. – 12:05 p.m., Gold Room, B3

## Bayesian Estimation in Measurement – Paper Session

### Moderator

Jodi Casabianca, Fordham University

### Presenters

Sun-Joo Cho, Vanderbilt University

*A Hierarchical Bayesian Analysis of 2-Parameter IRT Model: Effect of Prior Specification on Item Discrimination Parameters*

Su Baldwin, National Board of Medical Examiners, Peter Baldwin, National Board of Medical Examiners, Lisa Keller, University of Massachusetts

*The Impact of Sample Size on Coverage Properties of Posterior Distributions When using Fully Bayesian IRT Models*

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

*An Investigation of the Usefulness of the Cumulative Sum Procedure to Assess Convergence in Posterior Distributions Attained Using MCMC Estimation*

Tsz Cheung Lam, Rutgers, The State University of New Jersey, Yuan Hong, Rutgers, The State University of New Jersey, Jimmy de la Torre, Rutgers, The State University of New Jersey

*Ancillary Variables and Multidimensional Scoring of Polytomous Responses*

### Discussant

Seock-Ho Kim, The University of Georgia

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Saturday, 10:35 a.m. – 12:05 p.m., Silver Room, B4

## Updating the ACT/SAT Concordances – Coordinated Session

### Organizer

*Tim Moses, Educational Testing Service*

### Moderator

*Neil Dorans, Educational Testing Service*

### Presenters

Neil Dorans, Educational Testing Service, Nancy Petersen, ACT, Inc.  
*Distinguishing Concordances from Equatings*

Tim Moses, Educational Testing Service, Jill Crouse, ACT, Inc., Jim Scoring, ACT, Inc.  
*Selection Decisions for the Sample Data used in the ACT-SAT Concordances*

Neil Dorans, Educational Testing Service, Jim Scoring, ACT, Inc., Jill Crouse, ACT, Inc.  
*Selection Decisions for the ACT and SAT Scores used to Produce the ACT-SAT Concordances*

Jinghua Liu, Educational Testing Service, Neil Dorans, Educational Testing Service, Tim Moses, Educational Testing Service  
*Evaluating the Subpopulation Sensitivity of the ACT-SAT Concordances*

### Discussants

*Michael Kolen, The University of Iowa*  
*Mary Pommerich, Defense Manpower Data Center*

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Saturday, 10:35 a.m. – 12:05 p.m., Savoy Room, B5

## Multidimensionality in Computer Adaptive Testing – Paper Session

### Moderator

*Joseph Betts, Renaissance Learning*

### Presenters

Chun Wang, University of Illinois, Hua-Hua Chang, University of Illinois  
*Restrictive Stochastic Item Selection Methods in Cognitive Diagnostic  
Computerized Adaptive Testing*

Hung-Yu Huang, Hsuan Chuang University, Po-Hsi Chen, National Taiwan  
Normal University, Wen-Chung Wang, The Hong Kong Institute of Education  
*Computerized Adaptive Testing under Item Response Model with Hierarchical  
Latent Traits*

Kevin Kalinowski, University of North Texas, Robin Henson, University of North  
Texas

*Stratified Item Selection and Exposure Control in Unidimensional Adaptive  
Testing in the Presence of Two-Dimensional Data*

Ru Lu, University of Maryland–College Park, Jiao Hong, University of  
Maryland–College Park

*Impacts of Local Item Dependence of Testlet Items with the Multistage Tests*

### Discussant

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

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Saturday, 10:35 a.m. – 12:05 p.m., Majestic Ballroom, B6

## Influences on Linking and Equating – Paper Session

### Moderator

*Terran Brown, Educational Testing Service*

### Presenters

Yanming Jiang, Educational Testing Service, Shudong Wang, Northwest Evaluation Association

*A Longitudinal Study of the Effects of Cohorts' Variance and Covariance Structures on Vertical Scales*

Stephen Murphy, Pearson, Ian Little, Pearson, Robert Kirkpatrick, Pearson, Meichu Fan, Pearson, Chow-Hong Lin, Pearson

*The Impact of Different Anchor Stability Methods on Equating Results and Student Performance*

Seohong Pak, Yonsei University, Guemin Lee, Yonsei University

*An Investigation of the Effects of Sample Size, Anchor Test Length, and Group Equivalency on Kernel and Traditional Equating Methods under NEAT Design*

Kyong Hee Chon, Western Kentucky University, Won-Chan Lee, University of Iowa

*The Effect of Model-Data Misfit on IRT Equating for Mixed Format Tests*

### Discussant

*Deborah Harris, ACT, Inc.*



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Saturday, 12:25 p.m. – 1:55 p.m., Denver Room, C1

## Tests and Time – Coordinated Session

### Organizer/Moderator

Neal Kingston, University of Kansas

### Presenters

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

*How Much Time does a Test-Taker Take if a Test-Taker does Take Time?*

Amanda Wolkowitz, Assessment Technologies Institute, Jonathan Templin, University of Georgia, Neal Kingston, University of Kansas

*An Analysis of the Time and Day of the Week that Students Perform Best on Assessments*

Stephen Wise, Northwest Evaluation Association, G. Kingsbury, Northwest Evaluation Association, Carl Hauser, Northwest Evaluation Association, Lingling Ma, Northwest Evaluation Association

*An Investigation of the Relationship between Time of Testing and Test-Taking Effort*

David Scrams, Alpine Testing Solutions, Russell W. Smith, Alpine Testing Solutions

*A Practical Approach to Balancing Time Demands across Test Forms*

### Discussant

Peter Pashley, Law School Admissions Council

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Saturday, 12:25 p.m. – 1:55 p.m., Century Room, C2

## Issues in Equating – Paper Session

### Moderator

*Michael Jodoin, National Board of Medical Examiners*

### Presenters

Chunyan Liu, University of Iowa, Michael Kolen, University of Iowa  
*Standard Error of IRT Equating: Parametric versus Nonparametric*

Youngsuk Suh, University of Texas at Austin, Daniel Bolt, University of Wisconsin–Madison  
*Using a Nested Logit Model to Improve 2PL Linking in a Common-Item Design*

Robert Smith, Educational Testing Service, Charles Lewis, Fordham University  
*Finding an Equating Function to Achieve (Approximate) First Order Equity*

Peter Baldwin, National Board of Medical Examiners  
*Developing a Common Metric in Item Response Theory when Parameter Posterior Distributions are Known*

### Discussant

*Ye Tong, Pearson Educational Measurement*

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Saturday, 12:25 p.m. – 1:55 p.m., Gold Room, C3

## **Research Methodologies and Theoretical Foundations to Support Alternate Assessment Based on Modified Achievement Standards (AA-MAS) – Coordinated Session**

### **Organizer/Moderator**

*Sue Bechard, Measured Progress*

### **Presenters**

Caroline Parker, Education Development Center

*Design Features for Enhanced Reading Comprehension Assessment: Evidence from Cognitive Interviews*

Joanna Gorin, Arizona State University

*Enhanced Assessment Item Development: An Item Difficulty Modeling Approach*

Wendy McLaughlin Stoica, Ohio Department of Education

*Recommendations for AA-MAS Item Modifications: Utilizing Information from Focus Groups and Surveys with Special Educators*

Patricia McDivitt, Data Recognition Corporation

*Determining AA-MAS Test Enhancements: Qualitative Reviews by Content Experts of Existing Grade-Level Assessments, Test Items, and Student Performance*

Sue Bechard, Measured Progress

*Toward the Development of a Theoretical Foundation for Alternate Assessment Based on Modified Achievement Standards*

### **Discussant**

*Stanley Rabinowitz, WestEd*

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Saturday, 12:25 p.m. – 1:55 p.m., Silver Room, C4

## Threats to Validity – Paper Session

### Moderator

*Jeremy Penn, Oklahoma State University*

### Presenters

Hyewon Chung, John Jay College/CUNY, Jiseon Kim, University of Texas–Austin  
*The Effects of Non-Normality on Differential Item Functioning Using Multi-Group Confirmatory Factor Analysis*

Anthony Fina, The University of Iowa, Pedro Sánchez, Universidad Autónoma de Yucatán, Liz Hollingworth, The University of Iowa  
*Adaptation of the WISC-4 for Use in Mexico: Cultural Considerations*

Maria Martiniello, Educational Testing Service, Irene Kostin, Educational Testing Service  
*Comparing the Impact of Language Load on Differential Item Functioning in Mathematics Assessments for English Language Learners (ELLs) and Former ELLs*

Jennifer Randall, University of Massachusetts, Leah Kaira, University of Massachusetts, Stephen G. Sireci, University of Massachusetts–Amherst  
*Evaluating the Comparability of Paper and Computer-Based Tests: A Confirmatory Factor Analysis*

### Discussant

*Patrick Kyllonen, Educational Testing Service*

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Saturday, 12:25 p.m. – 1:55 p.m., Savoy Room, C5

## Item Response Models and Estimation – Paper Session

### Moderator

*Stephen Murphy, Pearson*

### Presenters

Younyoung Choi, University of Maryland, Andre Rupp, University of Maryland,  
Matthew Gushta, University of Maryland  
*An Investigation of a Novel Analytic Method for Learning Progressions in  
Epistemic Games*

Jian Tao, Northeast Normal University, Ning-Zhong Shi, Northeast Normal  
University, Hua-Hua Chang, University of Illinois  
*Optimal Item-Weighted WLE Methods for Ability Estimation*

Ting-Wei Chiu, Rutgers, The State University of New Jersey, Gregory Camilli,  
Rutgers, The State University of New Jersey  
*A New IRT 3PL-Based Correction for Guessing Method*

Yanyan Sheng, Southern Illinois University  
*An Empirical Study of Gibbs Sampling for 4PNO IRT Models*

### Discussant

*Chingwei Shin, Pearson Educational Measurement*

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Saturday, 12:25 p.m. – 1:55 p.m., Majestic Ballroom, C6

## **21st Century Assessment Design: Four Perspectives – Coordinated Session**

### **Organizers**

*Kristen Huff, The College Board*

*Jim Pellegrino, University of Illinois at Chicago*

### **Moderator**

*Kristen Huff, The College Board*

### **Presenters**

Jim Pellegrino, University of Illinois at Chicago, Kristen Huff, The College Board  
*Using Evidence-Centered Assessment Design to Bridge the Gap between Summative Assessments and Classroom Practice*

Kathleen Sheehan, Educational Testing Service  
*The CBAL Reading Assessment: An Approach for Balancing Measurement and Learning Goals*

Caroline Wylie, Educational Testing Service  
*Designing Quality Formative Assessment*

Geneva Haertel, SRI International  
*An Application of ECD in Large-Scale State Science Assessment*

### **Discussants**

*Robert Brennan, University of Iowa*  
*Robert Mislevy, University of Maryland*

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Saturday, 2:15 p.m. – 3:45 p.m., Denver Room, D1

## **Licensure and Certification – Paper Session**

### **Moderator**

*Julie Miles, Pearson*

### **Presenters**

Neil Dorans, Educational Testing Service, Longjuan Liang, Educational Testing Service, Gautam Puhan, Educational Testing Service  
*Aligning Scales of Certification Tests*

Barbara Badgett, Alpine Testing Solutions, Alice Corkill, University of Nevada–Las Vegas  
*Toward The Development of a Model to Estimate the Readability of Credentialing-Examination Materials*

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  
*Determining Acceptable Reductions in Test Form Length for a National Licensure Examination*

Chad Buckendahl, Alpine Testing Solutions, Susan Davis, Alpine Testing Solutions  
*Evaluating the Appropriateness and use of Domain Critical Errors*

### **Discussant**

*Gregory Cizek, University of North Carolina at Chapel Hill*

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Saturday, 2:15 p.m. – 3:45 p.m., Century Room, D2

## Mixture IRT – Paper Session

### Moderator

*Brett Foley, Buros Center for Testing/University of Nebraska-Lincoln*

### Presenters

Insu Paek, Educational Testing Service, Cho Sun-Joo, Vanderbilt University,  
Allan Cohen, University of Georgia

*A Comment on Scale Linking in Mixture IRT Modeling*

Youn-Jeng Choi, University of Georgia, Natalia Alexeev, University of Georgia,  
Allan Cohen, University of Georgia

*A Mixture 3PL Model Analysis of DIF on the TIMSS 2007 Mathematics Test*

Yoon Soo Park, Teachers College–Columbia University, Young-Sun Lee,  
Teachers College–Columbia University

*Mixture IRT Model Comparison Using Bayesian Methods: An Empirical Analysis  
via Cognitive Diagnosis Interview Data*

Abigail Lau, James Madison University, Dena Pastor, James Madison University  
*Application of a Mixture IRT Model to Improve Parameter Estimates when Some  
Examinees are Amotivated*

### Discussant

*Werner Wothke, American Institutes for Research*



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Saturday, 2:15 p.m. – 3:45 p.m., Gold Room, D3

## Issues with DIF – Paper Session

### Moderator

*Randall Penfield, University of Miami*

### Presenters

Kevin Joldersma, Measurement Incorporated, Daniel Bowen, Measurement Incorporated

*Application of Propensity Models in DIF Studies to Compensate for Unequal Ability Distributions*

Cheng-Te Chen, National Chung Cheng University, Wen-Chung Wang, The Hong Kong Institute of Education

*Assessment of Differential Rater Functioning*

Yoonsun Lee, Seoul Women's University, Catherine Taylor, University of Washington

*Impact of DIF Purification Procedures on Measured Constructs*

Kadriye Ercikan, University of British Columbia

*Application of Think Aloud Protocols for Identifying and Examining Sources of Differential Item Functioning*

### Discussant

*Ida Lawrence, Educational Testing Service*

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Saturday, 2:15 p.m. – 3:45 p.m., Silver Room, D4

**Ensuring Equitable Representation of English Language Learners in NAEP: Reactions to the Technical Advisory Panel Report to NAGB on Uniform National Rules for Including and Accommodating ELLs in NAEP (Diversity Issues in Testing Committee) – Invited Symposium**

## **Organizer/Moderator**

*Charlene Rivera, The George Washington University Center for Equity and Excellence in Education*

## **Presenters**

*Cornelia Orr, National Assessment Governing Board*

*Sharif Shakrani, Michigan State University*

*Jo O'Brien, Colorado Department of Education*

*Deb V.H. Sigman, California Department of Education*

*Katherine A. Viator, Massachusetts Department of Elementary and Secondary Education*

## **Discussant**

*Carlos Martinez, US Department of Education*

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Saturday, 2:15 p.m. – 3:45 p.m., Savoy Room, D5

## Calibration in IRT – Paper Session

### Moderator

*Eugene Gonzalez, Educational Testing Service*

### Presenters

Pui-Wa Lei, The Pennsylvania State University, Yu Zhao, The Pennsylvania State University

*Effects of Vertical Scaling Methods on Linear Growth Estimation*

Christine DeMars, James Madison University

*A Comparison of Limited-Information and Full-Information Methods for Estimating IRT Parameters for Non-Normal Populations*

Jodi Casabianca, Fordham University, Xueli Xu, Educational Testing Service, Yue Jia, Educational Testing Service, Charles Lewis, Fordham University/  
Educational Testing Service

*Item Parameter Recovery in Marginal Maximum Likelihood Estimation with Non-Normal Ability*

Nina Deng, University of Massachusetts–Amherst

*A Simulation Study on Sequential Item Calibration in Multi-Stage Testing*

### Discussant

*Yasuo Miyazaki, Virginia Polytechnic Institute and State University*

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Saturday, 2:15 p.m. – 3:45 p.m., Majestic Ballroom, D6

## Differential Item Functioning – Paper Session

### Moderator

Lilly Zhang, Educational Testing Service

### Presenters

Hequn Wang, Michigan State University

*Creating a DIF Index — A Combination of DIF Measure, DIF Direction, and DIF Impact on People*

Huynh Huynh, University of South Carolina, Kim Do Hong, University of North Carolina–Charlotte

*Ethnicity Differences in Responses to Paper-and-Pencil and Computer-Based Testing: A Content Analysis for a Literacy Test*

Minhee Seo, University of North Carolina at Greensboro, Yiming Jin, University of Illinois at Urbana-Champaign, Chia-Yi Chiu, Rutgers, The State University of New Jersey

*Impact of DIF on Ability Estimation in CAT*

Mary Roduta Roberts, University of Alberta, Andrea Gotzmann, University of Alberta, Andrew Lejeune, University of Alberta

*A Comparison of Type I Error and Power Rates for the SIBTEST and Mantel-Haenszel Procedures with Large Group Differences and Different Standard Deviations*

### Discussant

Rebecca Zwick, Educational Testing Service and University of California–Santa Barbara

# Denver, Colorado

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Saturday, 4:05 p.m. – 6:05 p.m., Denver Room, E1

## **Update on the Revisions to the Standards for Educational and Psychological Testing – Invited Symposium**

### **Organizer**

*Barbara S. Plake, University of Nebraska*

### **Moderator**

*Michael Kolen, University of Iowa*

### **Presenters**

Joan Herman, UCLA Center for Research on Evaluation, Standards, and Student Testing

*Access and Fairness*

Laura Hamilton, RAND Corporation

*Accountability and Educational Policy*

Denny Way, Pearson

*Technology*

Lauress Wise, Human Resources Research Organization

*Workplace and Certification*

Barbara S. Plake, University of Nebraska

*Format and Publication Options*

### **Discussant**

*Steve Ferrara, CTB/McGraw-Hill*

# NCME • 2010 Annual Meeting & Training Sessions

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Saturday, 4:05 p.m. – 6:05 p.m., Century Room, E2

## Measurement of Growth – Paper Session

### Moderator

*Shu Jing Yen, Institute of Education Sciences*

### Presenters

Joseph Betts, Renaissance Learning

*Measuring Academic Growth with Growth Norms: A Method for Response-to-Intervention Models*

Chueh-An Hsieh, Michigan State University

*A Unified Model for the Analysis of Change: Using a Multivariate Multilevel Polytomous Item Response Theory Model to Study the Parallel Process of Change*

Katherine Furgol, University of Iowa

*Growth on an Aggregate Level: Properties and Policy Implications of Competing Group Growth Metrics*

Linette McJunkin, University of Kansas, John Poggio, University of Kansas, Douglas Glasnapp, University of Kansas

*Monitoring Growth with Vertical Scaling or Vertically Moderated Standards Setting: Differentiating the Features, Applications, and Objectives*

Seon-Hi Shin, California State University–Long Beach

*Robustness of Multilevel Models against Nonnormality*

### Discussant

*Damian Betebenner, Center For Assessment*

# Denver, Colorado

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Saturday, 4:05 p.m. – 6:05 p.m., Gold Room, E3

## Diagnostic Models – Paper Session

### Moderator

*Hye-Jeong Choi, University of Georgia*

### Presenters

Xinrui Wang, University of North Carolina at Greensboro, Zhan Shu, University of North Carolina at Greensboro, Devdass Sunnassee, University of North Carolina at Greensboro

*Incorporating the DINO Model in the Artificial Neural Network: An Alternative of Small Sample Diagnostic Classification*

Huiyun Tseng, Teachers College–Columbia University, Matthew Johnson, Teachers College–Columbia University, James Corter, Teachers College–Columbia University

*A Linear Compensatory Counterpart and Generalization of the DINA Model*

Alan Huebner, ACT, Inc.

*Comparing Classification Methods for Cognitive Diagnosis*

Susan Embretson, Georgia Institute of Technology, John Poggio, University of Kansas

*Assessing Cognitive Competencies in Mathematical Achievement with the Multicomponent Latent Trait Model for Diagnosis*

Young-Sun Lee, Teachers College–Columbia University, Jimmy de la Torre, Rutgers, The State University of New Jersey

*Item-Level Comparison of Saturated and Reduced Cognitive Diagnosis Models*

### Discussant

*André Rupp, University of Maryland*

# NCME • 2010 Annual Meeting & Training Sessions

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Saturday, 4:05 p.m. – 6:05 p.m., Silver Room, E4

## **Validity Issues for Interim Benchmark Assessment Systems (National Association of Test Directors) – Invited Symposium**

### **Organizer/Moderator**

*Jack Monpas-Huber, Shoreline Public Schools*

### **Panelists**

*Judith Arter, Educational Testing Service*

*Marty McCall, Northwest Evaluation Association*

*Lorrie Shepard, University of Colorado at Boulder*

### **Discussants**

*Pamela Moss, University of Michigan*

*Catherine Taylor, University of Washington*



# Denver, Colorado

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Saturday, 4:05 p.m. – 6:05 p.m., Savoy Room, E5

## Developing Tests and Items – Paper Session

### Moderator

Adrienne Cadle, *University of South Florida*

### Presenters

Rachel Prosser, University of Colorado at Boulder, Guillermo Solano-Flores, University of Colorado at Boulder

*Including English Language Learners in the Process of Test Development: A Study on Instrument Linguistic Adaptation for Cognitive Validity*

Ian Hembry, The University of Iowa, Catherine Welch, The University of Iowa  
*Effects of Item Modification on Alternate Assessments Based on Modified Achievement Standards (AA-MAS) Populations*

Ying Lu, Educational Testing Service, Hongwen Guo, Educational Testing Service

*Establishing IRT Test Targets that Satisfy Classical Difficulty Constraints*

Tony Lam, University of Toronto, Gary Allen, University of Toronto, Kathy Green, University of Denver

*On A Likert Scale, Is “Neutral” the Same as “Don’t Know” for the Informed and Uninformed Respondents?*

Tim Davey, Educational Testing Service, Amy Hendrickson, The College Board  
*Classical versus IRT Statistical Test Specifications for Building Test Forms*

Yi-Hsuan Lee, Educational Testing Service, Tim Davey, Educational Testing Service

*An Examination of Context Effects in Linear Test Forms with Items Pretested in a Random Context*

### Discussant

Kristen Huff, *The College Board*

# NCME • 2010 Annual Meeting & Training Sessions

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Saturday, 4:05 p.m. – 6:05 p.m., Majestic Ballroom, E6

## **Common Core Standards and Coordinated State Assessment – Invited Symposium**

### **Organizer/Moderator**

*Wayne Camara, The College Board*

### **Presenters**

*Wes Bruce, Indiana Department of Education*

*Pascal Forgione, Educational Testing Service*

*Brian Gong, Center for Assessment*

*Suzanne Lane, University of Pittsburg*

*Robert Linn, University of Colorado*

*John Tanner, Test Sense*

## Denver, Colorado

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Saturday, 6:15 p.m. – 7:30 p.m., Hyatt Regency Denver Hotel,  
Centennial Ballroom D

### **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. This year, besides hors d'oeuvres and drinks, we will have live music from several different bands made up of NCME and AERA members.

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.

Buros Institute – University of Nebraska-Lincoln

The College Board

Educational Testing Service

GED Testing Service/American Council on Education

Graduate Management Admission Council

National Board of Medical Examiners (NBME)

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 8:00 a.m. – 10:15 a.m., Hyatt Regency Denver Hotel,  
Centennial Ballroom D

## **NCME Breakfast, Business Meeting and Presidential Address**

### ***Bridging the Gaps Between Theory and Practice***

#### **Presenter**

*Terry A. Ackerman, The University of North Carolina at Greensboro*

# Denver, Colorado

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Sunday, 10:35 a.m. – 12:05 p.m., Denver Room, F1

## Invariance and Equating – Paper Session

### Moderator

*Longjuan Liang, Educational Testing Service*

### Presenters

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

*Evaluating Subpopulation Invariance of Linking Functions to Determine the Anchor Composition for a Mixed-Format Test*

NooRee Huh, ACT, Inc., Deborah Harris, ACT, Inc.

*The Effect of Sampling on the Stability of Concordance*

Andrew Dwyer, University of Nebraska–Lincoln, Brett Foley, Buros Center for Testing

*Invariance of IRT Equating Across Subpopulations of Different Abilities and Year-To-Year Growth Rates*

Yingchen Wang, University of North Carolina at Chapel Hill, Tiese Roxbury, National Collegiate Athletic Association, Fang Chen, University of North Carolina at Greensboro

*Bias and Standard Error of Population Invariance Measures*

### Discussant

*Tim Moses, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 10:35 a.m. – 12:05 p.m., Century Room, F2

## Issues of Time in Measurement – Paper Session

### Moderator

Xiaodong Hou, University of Maryland

### Presenters

Aijun Wang, University of Georgia, Allan Cohen, University of Georgia  
*A Cross-Classified Model for Test Speededness*

Frank Goldhammer, DIPF - German Institute for International Educational Research  
*Application of Response Time Modeling: Speed in Reasoning Tasks and Its Distinctness to Reasoning Ability*

Feiming Li, National Board of Osteopathic Medical Examiners, Linjun Shen, National Board of Osteopathic Medical Examiners  
*Detecting Item Parameter Drift by Item Response and Item Response Time in a Computer-Based Exam*

Soo Ingrisone, Pearson, James Ingrisone, Pearson  
*A Joint Distribution Model Using Item Response and Response Time*

### Discussant

Neal Kingston, University of Kansas

# Denver, Colorado

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Sunday, 10:35 a.m. – 12:05 p.m., Gold Room, F3

## Reliability in Measurement – Paper Session

### Moderator

*Alvaro Arce-Ferrer, Pearson*

### Presenters

Hanwook Yoo, University of Massachusetts–Amherst, N. Scott Bishop, Data Recognition Corporation

*Evaluating Proficiency Classification using Testlet Response Theory*

Sarah Maughan, National Foundation for Educational Research, UK, Qingping He, Office of the Qualifications and Examinations Regulator, UK

*Reliability of Results from National Curriculum Assessment, A UK Perspective*

Tawnya Knupp, University of Iowa, Won-Chan Lee, University of Iowa/CASMA, Timothy Ansley, University of Iowa

*Estimating Decision Indices for Composite Scores in a Multi-Unidimensional IRT Framework*

Lihshing (Leigh) Wang, University of Cincinnati

*Impact of Measurement Unreliability on Effect Size Estimation*

### Discussant

*Paul Nichols, Pearson*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 10:35 a.m. – 12:05 p.m., Silver Room, F4

## **A New Framework and an Old Trend: The Case of NAEP Reading – Coordinated Session**

### **Organizers**

*Andreas Oranje, Educational Testing Service*

*Rebecca Moran, Educational Testing Service*

### **Moderator**

*John Mazzeo, Educational Testing Service*

### **Presenters**

Patricia Donahue, Educational Testing Service, Nicole Beaulieu, Educational Testing Service

*Changes and Challenges: Developing a New Assessment Instrument*

Adrienne Sgammato, Educational Testing Service, Rebecca Moran, Educational Testing Service

*The Hybrid Assessment Design: A Model for Integrated Bridge Studies*

Andreas Oranje, Educational Testing Service, John Mazzeo, Educational Testing Service

*A New Assessment and an Old Trend: Analysis Considerations and Challenges*

Xueli Xu, Educational Testing Service, Yue Jia, Educational Testing Service, Adrienne Sgammato, Educational Testing Service

*To Trend or Not to Trend: Building an Empirical Case Using Observed and Model Based Evidence*

### **Discussant**

*Laurens Wise, Human Resources Research Organization*



# Denver, Colorado

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Sunday, 10:35 a.m. – 12:05 p.m., Savoy Room, F5

## **Innovative Considerations in Computer Adaptive Testing – Paper Session**

### **Moderator**

*Adisack Nhouyvanisvong, Data Recognition Corporation*

### **Presenters**

Chen-Wei Liu, National Chung Cheng University, Wen-Chung Wang, The Hong Kong Institute of Education

*Computerized Classification Testing under the Generalized Graded Unfolding Model*

Kathleen Scalise, University of Oregon

*Innovative Item Types: New Results on Intermediate Constraint Questions and Tasks for Computer-Based Testing Using NUI Objects*

Susan M. Lottridge, Pacific Metrics Corporation, Alan W. Nicewander, Pacific Metrics Corporation, Howard Mitzel, Pacific Metrics Corporation

*A Comparison of Paper and Online Tests Using a Within-Subjects Design and Propensity Score Matching Study*

Xin Li, Pearson, Jerry Gorham, Pearson, Ada Woo, National Council of State Boards of Nursing

*Evaluating Parameter Drift of Innovative Items in a Computerized Adaptive Test*

### **Discussant**

*Robert Dolan, Pearson*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 10:35 a.m. – 12:05 p.m., Majestic Ballroom, F6

## **Career Award Address: Defining and Controlling Errors of Measurement – Invited Symposium**

### **Organizer/Moderator**

*Michael Kolen, University of Iowa*

### **Presenter**

Michael Kane, Educational Testing Service  
*Defining and Controlling Errors of Measurement*

### **Discussant**

*Robert Brennan, University of Iowa*

# Denver, Colorado

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Sunday, 12:25 p.m. – 1:55 p.m., Denver Room, G1

## Issues with Scoring – Paper Session

### Moderator

*Lai Kwan Pei, University of Louisiana–Lafayette*

### Presenters

Michael Chajewski, Fordham University, Rochelle Michel, Educational Testing Service

*Assessing the Added Value of Raw and Augmented Subscores in a College-Level Measure of General Education*

Maria-Elena Oliveri, University of British Columbia, Matthias von Davier, Educational Testing Service

*Investigation of Model Fit and Score Scale Comparability in International Assessments*

Guangming Ling, Educational Testing Service

*Report Subscore or Not? Comparing Two Methods Based on Simulations*

Tian Song, Michigan State University, Mark Reckase, Michigan State University  
*Comparing Two IRT Scale Score Computation Methods Based on Summed Score*

### Discussant

*Judith Koenig, National Research Council*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 12:25 p.m. – 1:55 p.m., Century Room, G2

## Issues with Local Item Independence – Paper Session

### Moderator

Johannes Hartig, *International Institute for International Educational Research (DIPF)*

### Presenters

Steffen Brandt, CAU Kiel

*Local Item Dependence and Its Impact on Likelihood Calculations*

Jessica Mislevy, University of Maryland–College Park

*Detecting Local Item Dependence in Polytomous Adaptive Data*

Kyunghwa Cho, Florida State University, Seung-Jin Lee, Florida State University,  
Akihito Kamata, Florida State University

*The Effect of Testlet Effect Variance on Q3*

### Discussant

Craig Wells, *University of Massachusetts–Amherst*

# Denver, Colorado

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Sunday, 12:25 p.m. – 1:55 p.m., Gold Room, G3

## Issues of Fit in Diagnostic Classification Models – Paper Session

### Moderator

*Daniel Sass, University of Texas at San Antonio*

### Presenters

Hye-Jeong Choi, The University of Georgia, Jonathan Templin, The University of Georgia, Allan Cohen, The University of Georgia, Charles Atwood, The University of Georgia

*The Impact of Model Misspecification on Estimation Accuracy in Diagnostic Classification Models (DCMs)*

Jimmy de la Torre, Rutgers, The State University of New Jersey, Chia-Yi Chiu, Rutgers, The State University of New Jersey

*A General Empirical Method of Q-Matrix Validation*

Sonia Romero, Universidad Autónoma de Madrid, Vicente Ponsoda, Universidad Autónoma de Madrid, Xavier Ordoñez, Universidad Complutense de Madrid

*Sensitivity and Specificity of the Least Square Distance Method (LSDM) for the Detection of Misspecifications in the Q-Matrix*

Andrew Dallas, University of North Carolina at Greensboro, Davie Store, University of North Carolina at Greensboro

*Highly Correlated: The Effects of Attributal Correlations in Diagnostic Classification Models*

### Discussant

*Daniel Bolt, University of Wisconsin–Madison*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 12:25 p.m. – 1:55 p.m., Silver Room, G4

## Estimation Issues in IRT – Paper Session

### Moderator

*Joshua Goodman, James Madison University*

### Presenters

Hongwen Guo, Educational Testing Service, Sandip Sinharay, Educational Testing Service

*When Does Measurement Error Matter in Nonparametric Item Response Curve Estimation?*

Ye Tong, Pearson, Michael Kolen, The University of Iowa

*IRT Proficiency Estimators and Their Impact*

Feifei Li, University of Pennsylvania, Robert Mislevy, University of Maryland, Shu Jing Yen, Institute for Education Sciences

*An Information Correction Method for Testlet-Based Test Analysis: From the Perspectives of Item Response Theory and Generalizability Theory*

Yasuo Miyazaki, Virginia Tech, Youngyun Chungbaek, Virginia Tech

*Comparison of PQL and Laplace Estimates of Rasch Model Implemented as a Hierarchical Generalized Linear Model*

### Discussant

*Alan W. Nicewander, Pacific Metrics*

# Denver, Colorado

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Sunday, 12:25 p.m. – 1:55 p.m., Savoy Room, G5

## Testing Accommodations – Paper Session

### Moderator

*Kooghyang Um, Pearson*

### Presenters

Saw Lan Ong, Universiti Sains Malaysia

*Improving Science Assessment with Dual-Language Test*

Guillermo Solano-Flores, University of Colorado at Boulder

*Vignette Illustrations as a Form of Testing Accommodation for English Language Learners: A Design Methodology for Use in Large-Scale Science Assessment*

Karla Egan, CTB/McGraw-Hill, M. Christina Schneider, CTB/McGraw-Hill, Karen Barton, CTB/McGraw-Hill, Diana Marr, CTB/McGraw-Hill

*Exploring the Equivalence of the Test Construct for Various Subgroups Using Residual Analysis*

Yi-Chen Wu, National Center on Educational Outcome, Martha Thurlow, National Center on Educational Outcome, Kentaro Kato, National Center on Educational Outcome

*A Longitudinal Analysis of State Accommodations Policies on the Participation Rate and the Proficiency Rate for Students with Disabilities*

### Discussant

*Eric Hansen, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 12:25 p.m. – 1:55 p.m., Majestic Ballroom, G6

## **Are You Being Served? Operational Difficulties in Serving Real and Perceived Needs of State Assessment Clients – Invited Symposium**

### **Organizer/Moderator**

*Luz Bay, Measured Progress*

### **Presenters**

*Luz Bay, Measured Progress*

*Daniel Lewis, CTB/McGraw-Hill*

*Dianne Henderson-Montero, Educational Testing Service*

*Paul Nichols, Pearson*

### **Discussant**

*Robert Brennan, University of Iowa*



# Denver, Colorado

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Sunday, 2:15 p.m. – 3:45 p.m., Denver Room, H1

## **New Directions for Standard Setting: Using Cognitive Diagnostic Model, Mixture Rasch Model, SALTUS Model, and Synthesized Classification Models – Coordinated Session**

### **Organizers**

*Hong Jiao, University of Maryland*  
*Robert Lissitz, University of Maryland*  
*Feifei Li, University of Pennsylvania*

### **Moderator**

*Robert Lissitz, University of Maryland*

### **Presenters**

Robert Lissitz, University of Maryland, Feifei Li, University of Pennsylvania  
*Standard Setting in Complex Performance Assessments: An Approach Aligned with Cognitive Diagnostic Models*

Hong Jiao, University of Maryland, Robert Lissitz, University of Maryland, George Macready, University of Maryland, Shudong Wang, Educational Testing Service  
*Comparing the Use of Mixture Rasch Model and Judgmental Procedures for Standard Setting*

Karen Draney, University of California–Berkeley  
*Investigating the Saltus Model as a Tool for Setting Standards*

Jonathan Templin, University of Georgia  
*Classification Model Based Standard Setting Methods*

### **Discussant**

*Matthias von Davier, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 2:15 p.m. – 3:45 p.m., Century Room, H2

## Issues with Computer Adaptive Testing – Paper Session

### Moderator

Duanli Yan, Educational Testing Service

### Presenters

Brian Bontempo, Mountain Measurement, Inc., Gage Kingsbury, Northwest Evaluation Association, Anthony Zara, Pearson VUE

*A Comparison of Hybrid Progressive Item Selection Procedures for Adaptive Tests*

Eileen Talento-Miller, Graduate Management Admission Council, Fanmin Guo, Graduate Management Admission Council, Kyung Han, Graduate Management Admission Council

*Mythbusters: A Practical Look at the Effect of Position of Correct Responses on a Computerized Adaptive Test*

Kyoko Ito, Human Resources Research Organization, Daniel Segall, Defense Manpower Data Center

*An Evaluation of a New Procedure for Obtaining Information Functions for Maximum-Likelihood Scores from Computerized Adaptive Tests: Conditional Averaging on Theta*

Yasuko Nogami, The Japan Institute for Educational Measurement, Inc.  
*Effects of Switching IRT Models from 3PL to 2PL in a CAT*

### Discussant

Juan Barrada, Universidad Autonoma de Barcelona

# Denver, Colorado

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Sunday, 2:15 p.m. – 3:45 p.m., Gold Room, H3

## Research on Reliability – Paper Session

### Moderator

*Chunyan Liu, University of Iowa*

### Presenters

Ying Cheng, University of Notre Dame, Ke-Hai Yuan, University of Notre Dame  
*How to Retain Information in Educational and Psychological Assessments — Relations Among Three Reliability Measures*

Lianghua Shu, CTB/McGraw-Hill, Richard Schwarz, Educational Testing Service  
*IRT Estimated Reliability for Tests Containing Mixed Item Formats*

Marc Gessaroli, National Board of Medical Examiners  
*A Comparison of Reliability Estimates for Random and Fixed Multidimensionality*

Gee Hune Kim, Teachers College—Columbia University, Young-Sun Lee, Teachers College—Columbia University, Yoon Soo Park, Teachers College—Columbia University  
*Multiple Imputation with Fully Conditional Specification Approach: Estimation of Reliability Coefficient with Missing Data*

### Discussant

*Michael Rodriguez, University of Minnesota*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 2:15 p.m. – 3:45 p.m., Silver Room, H4

## Vertical Scaling – Paper Session

### Moderator

*Thakur Karkee, Measurement Incorporated*

### Presenters

Yuming Liu, Educational Testing Service  
*Standard Error Estimation Based on the Thurstone Method and Item Response Theory in Vertical Scaling*

Joanna Tomkowicz, CTB/McGraw-Hill, Litong Zhang, CTB/McGraw-Hill, Shu Jing Yen, Institute of Education Sciences  
*Comparison of Vertical Scaling Maintenance Methods and Their Impact on Scale Properties*

Shudong Wang, Northwest Evaluation Association, Hong Jiao, University of Maryland, Ying Jin, AIR, Yeow Meng Thum, Northwest Evaluation Association  
*Investigating Effect of Ignoring Hierarchical Data Structures on Accuracy of Vertical Scaling Using Mixed-Effects Rasch Model*

Xuan Wang, ACT, Inc., Deborah Harris, ACT, Inc.  
*Linking Across Forms in Vertical Scaling Under the Common-Item Nonequivalent Groups Design*

### Discussant

*Lilly Zhang, Educational Testing Service*

# Denver, Colorado

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Sunday, 2:15 p.m. – 3:45 p.m., Savoy Room, H5

## Item Response Theory Modeling – Paper Session

### Moderator

Yi Du, *Data Recognition Corporation*

### Presenters

Mabel Kung, Cal State Fullerton, Ron Armstrong, Rutgers, The State University of New Jersey  
*Determining CUSUM Critical Values and Alternative Response Probabilities for a Finite Mixed Binomial Sample*

Sungyeun Kim, University of Incheon, Yeonjeong Kim, Yonsei University, Guemin Lee, Yonsei University  
*The Utility of the Rasch Poisson Counts Model with Zero-Inflated Data*

Sunhee Kim, Teachers College–Columbia University, Gregory Camilli, University of Colorado  
*IRT Modeling Using the Generalized Linear Mixed Model: A Longitudinal Study with Ordinal Scale Items*

Ying Li, University of Maryland, Hong Jiao, University of Maryland  
*Multilevel Polytomous Testlet Model*

### Discussant

Brian Habing, *University of South Carolina*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 2:15 p.m. – 3:45 p.m., Majestic Ballroom, H6

## Large Scale Assessment – Paper Session

### Moderator

*Goran Lazendic, The University of New South Wales Global*

### Presenters

Anli Lin, Pearson, Qing Yi, Pearson, Michael Young, Pearson  
*Improving the Post-Smoothing of Test Norms with Kernel Smoothing*

Yue Jia, Educational Testing Service, Jiahe Qian, Educational Testing Service,  
Mei-Jang Lin, Educational Testing Service  
*Effect Size Measurement and Its Application in Examining Reporting Targets of NAEP*

Kyoungwon Bishop, Data Recognition Corporation, John Denbleyker, University  
of Iowa, N. Scott Bishop, Data Recognition Corporation  
*Tracking Achievement using Percentage of Students At or Above a Cut: Some  
Challenges and Possible Solutions*

Pamela Paek, The National Center for the Improvement of Educational  
Assessment  
*From Theory to Practice: Data Use across States, Districts, and Schools*

### Discussant

*Gerald Melican, The College Board*

# Denver, Colorado

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Sunday, 4:05 p.m. – 6:05 p.m., Denver Room, I1

## DIF and Model Fit – Paper Session

### Moderator

*Kadriye Ercikan, University of British Columbia*

### Presenters

Lai Kwan Pei, University of Louisiana–Lafayette, Jun Li, University of California–Riverside

*Should 2PL or 3PL be used to Generate Data for DIF Detection Simulation Studies?*

Craig Wells, University of Massachusetts–Amherst, Lisa Keller, University of Massachusetts–Amherst

*The Effect of Model Misfit on Parameter Invariance*

Randall Penfield, University of Miami

*Explaining Crossing DIF in Polytomous Items using Divergent Differential Step Functioning Effects*

Jacob Seybert, University of South Florida, Stephen Stark, University of South Florida

*Iterative Linking with the Differential Functioning of Items and Test (DFIT) Method: Comparison of Testwide and Item Parameter Replication Significance Thresholds*

Dorinda Gallant, The Ohio State University

*Assessing the Effect of Classroom Context on Ethnic-Based Differential Item Functioning on a Performance Assessment*

### Discussant

*Irina Grabovsky, National Board of Medical Examiners*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 4:05 p.m. – 6:05 p.m., Century Room, I2

## **Evolving Testing Programs: Maintaining Psychometric Integrity in Dynamic Policy Environments – Coordinated Session**

### **Organizers**

*Dianne Henderson-Montero, Educational Testing Service*  
*Chad Buckendahl, Alpine Testing Solutions*

### **Moderator**

*Dianne Henderson-Montero, Educational Testing Service*

### **Presenters**

Jan Hoegh, Nebraska Department of Education  
*Transitioning from a Local to a Centralized Assessment System: Issues and Solutions*

Joe Willhoft, Washington Office of Superintendent of Public Instruction  
*Keeping Measures Stable in Changing Contexts*

John Mazzeo, Educational Testing Service, Mary Pitoniak, Educational Testing Service  
*Managing Change in the National Assessment of Educational Progress - Lessons Learned*

Don Klinger, Queens University, Todd Rogers, University of Alberta  
*Provincial Examination Programs in Canada: Shifting Purposes and Perceptions*

Dianne Henderson-Montero, Educational Testing Service, Chad Buckendahl, Alpine Testing Solutions  
*Psychometric Challenges in a Rapidly Changing Environment*

### **Discussant**

*William Schafer, University of Maryland*



# Denver, Colorado

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Sunday, 4:05 p.m. – 6:05 p.m., Gold Room, I3

## Implementation Issues in Automated Test Assembly – Coordinated Session

### Organizer/Moderator

Wim van der Linden, CTB/McGraw-Hill

### Presenters

Kyung (Chris) Han, Graduate Management Admission Council, Lawrence Rudner, Graduate Management Admission Council

*Implementing Mixed Integer Programming to Construct Item Pools for Computerized Adaptive Testing Programs*

Oliver Zhang, American Institute of Certified Public Accountants, Donovan Hare, OptimalLogic

*Application of Optimization Techniques in ca-MST Assembly for Item Exposure Control and Pool Utilization*

Wim van der Linden, CTB/McGraw-Hill, Qi Diao, CTB/McGraw-Hill

*Automated Test Form Generation*

John Donoghue, CTB/McGraw-Hill

*Comparison of IP Solvers for Automated Test Assembly*

Qi Diao, CTB/McGraw-Hill, Wim van der Linden, CTB/McGraw-Hill

*Automated Test Assembly Using Ip solve Version 5.5 from R*

### Discussant

Krista Breithaupt, American Institute of Certified Public Accountants

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 4:05 p.m. – 6:05 p.m., Silver Room, I4

## Approaches to DIF Detection – Paper Session

### Moderator

*Kevin Joldersma, Measurement Incorporated*

### Presenters

Lihua Yao, Defense Manpower Data Center, Feiming Li, National Board of Osteopathic Medical Examiners

*A DIF Detection Procedure in Multidimensional Framework and its Applications*

S. Natasha Beretvas, University of Texas at Austin, Cindy Walker, University of Wisconsin at Milwaukee

*Extending the Multilevel Measurement Model for Differential Testlet Functioning Identification: A Demonstration and Evaluation*

Michelle Langer, National Board of Medical Examiners

*Extending the Wald Test for Differential Item Functioning to Multiple Groups*

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

*Assessing Differential Item Functioning for Testlet-Based Tests Using the Bifactor Model*

Qian Liu, Florida State University, Akihito Kamata, Florida State University

*Item Purification in Differential Item Functioning Using Generalized Linear Mixed Model*

### Discussant

*Ruth Childs, University of Toronto*

# Denver, Colorado

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Sunday, 4:05 p.m. – 6:05 p.m., Savoy Room, I5

## **Making the Most of Innovative Items – Coordinated Session**

### **Organizers**

*Joshua Goodman, James Madison University,  
J. Christine Harmes, James Madison University*

### **Moderator**

*Joshua Goodman, James Madison University*

### **Presenters**

J. Christine Harmes, James Madison University, Cynthia Parshall, Measurement Consultant

*A Model for Planning, Designing, and Developing Innovative Items*

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

*Controlling Difficulty and Security for Complex Computerized Performance Exercises using Assessment Engineering*

Joshua Goodman, James Madison University, J. Christine Harmes, James Madison University

*Practical Considerations in Modeling the Responses from Complex Performance Exercises*

David M. Williamson, Educational Testing Service

*How to Lie about Automated Scoring*

Kirk Becker, Pearson VUE

*The Care and Feeding of Innovative Items: Practical and Operational Considerations*

### **Discussants**

*Denny Way, Pearson Educational Measurement*

*Tim Davey, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Sunday, 4:05 p.m. – 6:05 p.m., Majestic Ballroom, I6

## View from the Top of the Mountain – Invited Symposium

### Organizer/Moderator

*Terry A. Ackerman, The University of North Carolina at Greensboro*

### Presenters

*Robert Brennan, University of Iowa*

*Ron Hambleton, University of Massachusetts at Amherst*

*Robert Linn, University of Colorado at Boulder*

*William Mehrens, Michigan State University*

*Barbara S. Plake, University of Nebraska*

*Lorrie Shepard, University of Colorado at Boulder*

*Wendy Yen, Educational Testing Service*

# Denver, Colorado

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Sunday, 4:05 p.m. – 6:05 p.m., Vail Room, I7

## Graduate Student Poster Session

Sponsored by the Graduate Student Issues Committee

### Organizers

*Mary Roduta Roberts, University of Alberta*

*Sarah Hagge, University of Iowa*

*Wendy Lam, University of Massachusetts*

*Chad Gotch, Washington State University*

*George MacDonald, University of South Florida*

*Aminah Perkins, Emory University*

### Presenters

Tashia D.S. Abry, University of Virginia, Leslie M. Booren, University of Virginia, Patrick J. Meyer, University of Virginia, Jason T. Downer, University of Virginia  
*Analyzing Observational Ratings of Classroom Interactions: An Application of Generalizability Theory to inCLASS Scores*

Carol L. Barry, James Madison University, S. Jeanne Horst, James Madison University, Allison R. Brown, James Madison University, Sara J. Finney, James Madison University, Jason P. Kopp, James Madison University  
*Do Types of Test-Takers Exist? A High-Stakes Question for Low-Stakes Testing*

Tzu-An Ann Chen, University of Texas at Austin, S. Natasha Beretvas, University of Texas at Austin  
*Sample Sizes Necessary for Estimating the Three-Level Multilevel Latent Growth Model*

Ronli Diakow, University of California–Berkley, David Torres Irribarra, University of California–Berkley, Mark Wilson, University of California–Berkley  
*New Graphical Methods for the Representation of Ordered Partition Models*

Richard A. Feinberg, National Board of Medical Examiners, Nilufer Kahraman, National Board of Medical Examiners, Kimberly A. Swygert, National Board of Medical Examiners, Ratna Nandakumar, University of Delaware  
*Modeling Computer-Based Case Simulations Using Mixed Models*

Chad M. Gotch, Washington State University, Brian F. French, Washington State University  
*Sex Differences in Item Functioning in the Comprehensive Inventory of Basic Skills-II*

## NCME • 2010 Annual Meeting & Training Sessions

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Matthew W. Grady, University of Texas at Austin, Brandon K. Vaughn, University of Texas at Austin, Barbara G. Dodd, University of Texas at Austin

*Using Group-Specific Priors for Trait Estimation in Computerized Adaptive Testing: Potential Applications and Advantages*

Chueh-An Hsieh, Michigan State University

*A Unified Model for the Analysis of Individual Latent Trajectories: An Evaluation Study of Model Parameter Estimate Performance*

Sui Huang, The Ohio State University, Jerome D'Agostino, The Ohio State University

*Alternative Predictors of College Performance: A Meta-Analytic Study*

Anne Corinne Huggins, University of Miami

*Examining Different Weighting Methods when Utilizing the Root Expected Mean Square Difference Index to Assess Population Invariance in Linking Functions*

Andrea L. Jehly, University of Wisconsin–Milwaukee, Bo Zhang, University of Wisconsin–Milwaukee

*IRT Parameter Estimation for Small Samples and Short Tests Using the Graded Response Model*

Jiyoung Jung, Yonsei University, Moonsoo Lee, Yonsei University, Guemin Lee, Yonsei University

*Comparison of IRT Equating Results for Mixed-format Tests According to Differences of Item Difficulty and Discrimination Parameters Between Anchor and Total Tests*

Daniel P. Jurich, James Madison University, Joshua T. Goodman, James Madison University, Kirk A. Becker, Pearson VUE

*The Impact of Cheating on the Assignment of Pass/Fail Scores under Various Equating Methods*

Jiseon Kim, University of Texas at Austin, Barbara G. Dodd, University of Texas at Austin

*Comparing Computer-Based Classification Testing Approaches using Mixed-Format Tests with the Generalized Partial Credit Model*

Kristina LaVenía, Florida State University, Mark LaVenía, Florida State University, Laura B. Lang, Florida State University

*Development of a Short Form of the California Measure of Mental Motivation (CM3)*

Hollis Lai, Centre for Research in Applied Measurement and Evaluation, University of Alberta, Kirk Becker, Pearson VUE

*Using Artificial Neural Network for Enemy Item Detection*

## Denver, Colorado

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Joni M. Lakin, University of Iowa

*Equivalent Measurement Models for a Multidimensional Ability Test in a Sample of English Language Learners and Native English Speakers*

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

*Comparison of Standard Error of Measurement and Standard Error of Equating Using Various Equating Methods*

Moonsoo Lee, Yonsei University, Guemin Lee, Yonsei University

*A Comparison of IRT Equating for Mixed-Format Tests with Multidimensional Case*

Ying Li, University of Maryland, Hong Jiao, University of Maryland, Robert W. Lissitz, University of Maryland

*Investigation of Content Clustering in Large-scale Science Assessments Using Multidimensional IRT and Testlet Models*

Yeongyu Lim, Georgia Institute of Technology, Susan Embretson, Georgia Institute of Technology, John Poggio, University of Kansas

*Diagnosing Sources of Mathematical Difficulties from Performance on a State Accountability Test*

Chunyan Liu, University of Iowa, Michael Kolen, University of Iowa

*A Comparison among IRT Equating Methods and Traditional Equating Methods for Mixed Format Tests*

L. Leland Lockhart, III, University of Texas at Austin, S. Natasha Beretvas, University of Texas at Austin, Stephanie Cawthon, University of Texas at Austin, Alyssa Kaye, University of Texas at Austin

*Comparing Multilevel Measurement Models' Assessment of Accommodations' Moderation of Linguistic Complexity's Effect on Item Difficulties*

Jaime Maerten-Rivera, University of Miami, Nicholas Myers, University of Miami, Randall Penfield, University of Miami, Soyeon Ahn, University of Miami, Okhee Lee, University of Miami

*A Comparison of Model Longitudinal Change Models with an Examination of the Error Covariance Structure*

Yu Meng, University of Massachusetts–Amherst, Craig S. Wells, University of Massachusetts–Amherst, Ronald K. Hambleton, University of Massachusetts–Amherst

*The Impact of Missing Data on Assessing Dimensionality*

Joseph R. Newton, University of Wisconsin–Madison, Daniel M. Bolt, University of Wisconsin–Madison

*Parameter Recovery for a New Multidimensional Partial Credit Model*

## NCME • 2010 Annual Meeting & Training Sessions

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Yoon Soo Park, Teachers College–Columbia University, Lawrence T. De Carlo, Teachers College–Columbia University

*Rater Drift in Constructed Response Scoring: A Longitudinal Analysis of Rater Behavior via Latent Class Signal Detection Theory*

Jeffrey M. Patton, Notre Dame University, Ying Cheng, Notre Dame University  
*The Effect of Item Calibration Error on Uncertainty in Ability Estimation*

Jonathan D. Rubright, University of Delaware, Ratna Nandakumar, University of Delaware, Kristin Harkins, University of Pennsylvania, Jason Karlawish, University of Pennsylvania

*DIF and Research Attitudes: Does Race Matter?*

Jason Schweid, University of Massachusetts–Amherst, Stephen G. Sireci, University of Massachusetts–Amherst

*Apples to Oranges: Evaluating the Comparability of Paper- and Computer-Based Math and Science Tests using MDS*

MinJeong Shin, Yonsei University, Jung A. Han, Yonsei University, In-Yong Park, Yonsei University, Guemin Lee, Yonsei University

*Estimating Conditional Standard Errors of Measurement for the Aptitude Test Composed of Testlets Using G-Theory and IRT Approaches*

Hongwook Suh, University of Kansas

*A Study of Bayesian Estimation and Comparison of Response Time Models in IRT*

Joshua Tudor, University of Iowa, Jin Gong, University of Iowa, Wei Cheng Liu, University of Iowa

*Representativeness of a Small Norming Sample with School Title I Eligibility as a Stratification Variable*

Hao Wu, The Ohio State University, Steven N. MacEachern, The Ohio State University

*Detecting Monotonic Selection Effect via Nonparametric Bayesian Item Response Model*

Ting Xu, University of Pittsburgh, Clement A. Stone, University of Pittsburgh  
*Using IRT Trait Estimates Versus NR Scores in Predicting Outcomes*

Hanwook Yoo, University of Massachusetts–Amherst, Stephen G. Sireci, University of Massachusetts–Amherst

*Evaluating the Structure of a Language Proficiency Test across Second-Language and Heritage Language Examinees*

Mo Zhang, Washington State University, Brian F. French, Washington State University

*Gender Related Differential Item Functioning in Mathematics Tests: A Meta-Analysis*



# Denver, Colorado

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Monday, 5:45 a.m. – 7:30 a.m., Sheraton Denver Downtown Hotel Lobby

## **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 Denver. 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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The College Board

Educational Testing Service

GED Testing Service/American Council on Education

Graduate Management Admission Council

National Board of Medical Examiners (NBME)

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 8:15 a.m. – 10:15 a.m., Denver Room, J1

## **New Constructs and New Measures for Higher Education Admissions – Coordinated Session**

### **Organizer/Moderator**

*Patrick Kyllonen, Educational Testing Service*

### **Presenters**

Sheldon Zedeck, University of California, Marjorie Shultz, University of California–Berkeley

*New Constructs and Measures for Law School Admissions*

Wayne Camara, The College Board

*New Predictors in Admissions: Challenges in Moving Higher Education from Judgmental Predictors to Standardized Measures*

Veronica Santelices, Catholic University–Santiago, Chile

*Measurement of New Attributes for Chile's Higher Education Admissions System*

Lutz Hornke, RWTH Aachen University, Daniel Putz, RWTH Aachen University

*How to Choose an Appropriate Major? Self-Assessments for Prospective University Students*

Patrick Kyllonen, Educational Testing Service

*Assessing Personal Attributes for Graduate School Admissions: The Personal Potential Index (PPI)*

### **Discussants**

*Eva Baker, University of California–Los Angeles*

*David Lohman, University of Iowa*

# Denver, Colorado

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Monday, 8:15 a.m. – 10:15 a.m., Majestic Ballroom, J2

## **Quality Assurance and Control in Automated Scoring – Coordinated Session**

### **Organizer/Moderator**

*Isaac Bejar, Educational Testing Service*

### **Presenters**

Richard Luecht, University of North Carolina at Greensboro  
*Some Small-Sample Statistical Quality Control Procedures for Constructed Response Scoring in Language Testing*

Catherine McClellan, Educational Testing Service  
*Quality Assurance and Control of Human Scoring in Large-Scale Tests*

Brian Clauser, National Board of Medical Examiners, Polina Harik, National Board of Medical Examiners, Ulana Dubas, National Board of Medical Examiners, Constance Murray, National Board of Medical Examiners, Richard Feinberg, National Board of Medical Examiners  
*Quality Control for the Automated Scoring of Computer-Based Case Simulations in the United States Medical Licensing Examination*

Krista Breithaupt, American Institute of Certified Public Accountants, Elaine Rodeck, American Institute of Certified Public Accountants, Peter Brittingham, American Institute of Certified Public Accountants  
*Risks and Controls in the Automated Scoring of Accounting Tasks*

Isaac Bejar, Educational Testing Service  
*Towards a Quality Assurance and Control Framework for Automated Scoring*

### **Discussants**

*Denny Way, Pearson*  
*Larry Rudner, Graduate Management Admission Council*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 8:15 a.m. – 10:15 a.m., Gold Room, J3

## **Modeling Growth in Multiple Dimensions: Issues and Consequences – Coordinated Session**

### **Organizer**

*Jonathan Weeks, University of Colorado at Boulder*

### **Moderator**

*Matthew Gaertner, University of Colorado at Boulder*

### **Presenters**

Ji Zeng, Michigan Department of Education, Joseph Martineau, Michigan Department of Education  
*A Method for Identifying Dimensionality*

Peng Lin, Educational Testing Service, Robert Lissitz, University of Maryland  
*Developing a Multidimensional Vertical Scale: The Impact of Calibration Decisions on Interpretations of Growth*

Joseph Martineau, Michigan Department of Education, Adam Wyse, Michigan Department of Education, Ji Zeng, Michigan Department of Education  
*Impact of Construct Shift on Measures of Growth*

Jonathan Weeks, University of Colorado at Boulder, Derek Briggs, University of Colorado at Boulder, Ben Domingue, University of Colorado at Boulder  
*Is a Multidimensional Vertical Scale Really Necessary: Examining Achievement Growth on Multiple Dimensions*

Frank Rijmen, Educational Testing Service  
*A Model for Measuring Multidimensional Latent Growth*

### **Discussants**

*Mark Reckase, Michigan State University*  
*Daniel Bolt, University of Wisconsin–Madison*

# Denver, Colorado

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Monday, 8:15 a.m. – 10:15 a.m., Silver Room, J4

## Standard Setting – Paper Session

### Moderator

*Carol Morrison Featherman, National Board of Medical Examiners*

### Presenters

Irvin Katz, Educational Testing Service, Richard Tannenbaum, Educational Testing Service

*Comparison of Web-Based and Face-to-Face Standard Setting Using the Angoff Method*

Guemin Lee, Yonsei University, In-Yong Park, Yonsei University, Myung-Suk Lee, Yonsei University, Yeonbok Park, Yonsei University, Kyung-Sung Kim, Seoul National University of Education

*A Study on the External Validity of the Angoff and Bookmark Standard Setting Methods*

Julie Miles, Pearson, Walter Way, Pearson, Jennifer Beimers, Pearson  
*The Modified Briefing Book Standard Setting Method: Using Validity Data as a Basis for Setting Cut Scores*

Mary Hansen, Robert Morris University, Steven Lyon, University of Pittsburgh, Peter Heh, University of Pittsburgh, Naomi Zigmond, University of Pittsburgh  
*Comparing Panelists' Understanding of Standard Setting Across Multiple Levels of an Alternate Science Assessment*

Yi-Fang Wu, The University of Iowa, Hueying Tzou, National University of Tainan  
*Evaluating the Utility and Validity of IRT-Based Approaches in the Modified Angoff Standard-Setting Method*

### Discussant

*Daniel Lewis, CTB/McGraw-Hill*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 8:15 a.m. – 10:15 a.m., Century Room, J5

## Item Pool and Item Selection in Computer Adaptive Tests – Paper Session

### Moderator

Lei Yu, *Pacific Metrics*

### Presenters

Nathan Wall, ACT, Inc.

*Investigating Calibration Effects on Items in Concurrent Calibrations for Use in Item Banking*

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

*Improving Item Pool Usage for Computerized Adaptive Testing*

Kyung (Chris) T. Han, Graduate Management Admission Council

*Comparison of Non-Fisher-Information-Based Item Selection Criteria in Fixed-Length Computerized Adaptive Testing*

Fanmin Guo, Graduate Management Admission Council

*A Simple Method for Controlling Test Time Intensity in CAT*

Wei He, Michigan State University, Mark Reckase, Michigan State University

*Optimal item Pool Design for a Constrained Computerized Adaptive Test*

Ya-Hui Su, National Chung Cheng University–Taiwan, Wen-Chung Wang, The  
Hong Kong Institute of Education

*Investigating Cheating Effects on the Conditional Symptom and Hetter Online  
Procedure with Freeze Control for Testlet-Based Items*

### Discussant

James Olsen, *Alpine Testing Solutions*

# Denver, Colorado

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Monday, 8:15 a.m. – 10:15 a.m., Savoy Room, J6

## **The Impact of Linking Data on the Results of IRT Equating: The Pretest Effect and Approaches for Improvement – Coordinated Session**

### **Organizer/Moderator**

*Anton Béguin, Cito*

### **Presenters**

Peter Van Rijn, Cito

*Exposing Trends in Populations in the Context of Test Equating*

Anton Béguin, Cito, Marie-Anne Mittelhaeuser, Tilburg University

*Application of Different Sources of Linking Data: Internal and External Anchor Data Versus Pre-Test Data*

Barbara Donahue, Qualifications and Curriculum Development Agency, Anton Béguin, Cito

*Efforts to Remove the 'Pretest Effect'*

### **Discussant**

*Cees Glas, University of Twente*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 10:35 a.m. – 12:05 p.m., Denver Room, K1

## Score Reporting – Paper Session

### Moderator

*Yi-Chen Wu, University of Minnesota*

### Presenters

Jianbin Fu, Educational Testing Service, Yanxuan Qu, Educational Testing Service

*A Comparison of Subscore Reporting Approaches on Mixed Format Tests*

Diego Zapata-Rivera, Educational Testing Service, Waverly VanWinkle, Educational Testing Service, Rebecca Zwick, Educational Testing Service  
*Exploring Effective Communication and Appropriate Use of Assessment Results through Teacher Score Reports*

Alvaro J. Arce-Ferrer, Pearson

*Derivation of a Reliability Index for an Individual Profile: A Multi-Factor Congeneric Approach with Guttman Error Structures*

Ji Seung Yang, University of California–Los Angeles, Mark Hansen, University of California–Los Angeles, Li Cai, University of California–Los Angeles  
*Characterizing Sources of Uncertainty in IRT Scale Scores*

### Discussant

*Guangming Ling, Educational Testing Service*



# Denver, Colorado

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Monday, 10:35 a.m. – 12:05 p.m., Century Room, K2

## Issues in Growth Modeling – Paper Session

### Moderator

*Susan Loomis, National Assessment Governing Board*

### Presenters

Liru Zhang, Delaware Department of Education, Shudong Wang, Northwest Evaluation Association

*Using Longitudinal Data to Measure Student Academic Growth*

Zhen (Jane) Wang, Educational Testing Service

*Achievement Gap and Growth: An Investigation of Gender, Ethnic Differences and School Effects*

Chingwei Shin, Pearson, Yuehmei Chien, Pearson

*An Exploration of Methods for Evaluation of Individual and School Progress at the Subscale Level*

Daeryong Seo, Pearson, Ian Little, Pearson, Insu Paek, Educational Testing Service

*Multilevel Growth Mixture Analysis of Developmental Trajectories of Achievement Motivational Beliefs across Subject Areas*

### Discussant

*Carole Gallagher, WestEd*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 10:35 a.m. – 12:05 p.m., Gold Room, K3

## Multidimensional IRT – Paper Session

### Moderator

*Anton Béguin, Cito*

### Presenters

Daniel Bolt, University of Wisconsin–Madison, Joseph Newton, University of Wisconsin–Madison

*Application of a Multidimensional Partial Credit Model Allowing Within-Item Slope Heterogeneity*

Yu Fang, Act, Inc., Yang Lu, Michigan State University

*The Effect of Proficiency Correlation on the Application of Multidimensional IRT Model*

Minh Duong, Michigan State University, Mark Reckase, Michigan State University

*Linking Multidimensional Item Calibrations: Which Dimensions Should the Anchor Cover?*

Li Cai, University of California–Los Angeles, Mark Hansen, University of California–Los Angeles, Ji Seung Yang, University of California–Los Angeles  
*Extended Full-Information Item Bifactor Analysis*

### Discussant

*Lihshing Leigh Wang, University of Cincinnati*

# Denver, Colorado

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Monday, 10:35 a.m. – 12:05 p.m., Silver Room, K4

## **Assessment of Learning in the Context of Educational Reform: Experiences from América Latina – Invited Symposium**

### **Organizer/Moderator**

*Michael C. Rodriguez, University of Minnesota*

### **Presenters**

Lorena Meckes, Universidad Católica

*The Case of Chile, Challenges and Lessons Learned*

Fernando Rubio, USAID-Guatemala

*The Case of Guatemala, Challenges and Lessons Learned*

Michael Fast, American Institutes of Research

*The Case of Honduras, Challenges and Lessons Learned*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 10:35 a.m. – 12:05 p.m., Savoy Room, K5

## Mixture Models in Measurement – Paper Session

### Moderator

*Dena Pastor, James Madison University*

### Presenters

Hong Jiao, University of Maryland, Matthias von Davier, Educational Testing Service, Shudong Wang, Northwest Evaluation Association  
*Polytomous Mixture Rasch Testlet Model*

Natalia Alexeev, University of Georgia, Jonathan Templin, University of Georgia, Allan Cohen, University of Georgia  
*Detecting Latent Classes in Mixture Rasch Models*

Yunyun Dai, University of Maryland–College Park, Robert Mislevy, University of Maryland–College Park  
*A Mixture Rasch Model with Covariate: A Simulation Study Via Bayesian MCMC Estimation*

Ruth Childs, University of Toronto, Orlena Broomes, University of Toronto, Monique Herbert, University of Toronto  
*Understanding Response Processes: A Latent Class Analysis Approach*

### Discussant

*Matthew Johnson, Teachers College–Columbia University*

# Denver, Colorado

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Monday, 10:35 a.m. – 12:05 p.m., Majestic Ballroom, K6

## **Extreme Equating: How Far will Assumptions Bend Before They Break? – Coordinated Session**

### **Organizers**

*Lisa Keller, University of Massachusetts–Amherst*  
*William Skorupski, University of Kansas*

### **Moderator**

*H. Jane Rogers, University of Connecticut*

### **Presenters**

Kinge Mbella, University of North Carolina at Greensboro, Robert Keller, Measured Progress, Liz Burton, Measured Progress  
*Is There a Best Method to Equate Test Scores from Small Samples?*

Hariharan Swaminathan, University of Connecticut, H. Jane Rogers, University of Connecticut, Rohini Sen, University of Connecticut  
*Linking in Multidimensional Item Response Models*

Lisa Keller, University of Massachusetts–Amherst, Robert Keller, Measured Progress, Jennifer Dunn, Measured Progress, Tyler Lonczak, Measured Progress  
*Establishing a Common Scale for Accommodated Test Forms and Special Populations Using IRT*

William Skorupski, University of Kansas  
*The Effects of Multidimensionality Across Grade Levels on Creating a Vertical Scale*

Peter Baldwin, National Board of Medical Examiners, Robert Keller, Measured Progress, Robert Cook, University of Massachusetts–Amherst, Su Baldwin, National Board of Medical Examiners  
*Developing a Common Metric in IRT When No Link Exists*

### **Discussants**

*Wim van der Linden, CTB/McGraw-Hill*  
*Daniel Eignor, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 12:25 p.m. – 1:55 p.m., Denver Room, L1

## Test Security – Paper Session

### Moderator

*Ronald Armstrong, Rutgers, The State University of New Jersey*

### Presenters

Ifeoma Iyioke, Michigan State University

*The Distribution of a Proximity Index: Bootstrap and Kernel Estimators*

Dmitry Belov, Law School Admission Council, Ronald Armstrong, Rutgers,  
The State University of New Jersey

*Detection of Heterogeneity in Response Data*

Xavier G. Ordoñez, Universidad Complutense de Madrid, José Luis Gaviria  
Soto, Universidad Complutense de Madrid, Sonia Romero, Universidad  
Autónoma de Madrid

*KSC: A Statistic for the Detection of Answer Copying*

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

*A Further Look at the Sequential Procedure for Detecting Compromised Items*

### Discussant

*Russell Smith, Alpine Testing Solutions*

# Denver, Colorado

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Monday, 12:25 p.m. – 1:55 p.m., Century Room, L2

## **Dimensionality Analysis in IRT – Paper Session**

### **Moderator**

*Lixiong Gu, Educational Testing Service*

### **Presenters**

Jiahe Qian, Educational Testing Service  
*Effects of Sampling Variability on Dimensionality Analysis*

Roy Levy, Arizona State University, Dubravka Svetina, Arizona State University  
*A Framework for Characterizing Dimensionality Assessment and Overview of Current Approaches*

Tan Li, University of South Carolina, Brian Habing, University of South Carolina,  
Louis Roussos, Measured Progress  
*Conditional Covariance-Based Subtest Selection for Polytomous Item DIMTEST*

Meng Wu, Educational Testing Services, Brian Habing, University of South  
Carolina  
*DETECT Based Hypothesis Test for Unidimensionality*

### **Discussant**

*Frank Goldhammer, DIPF - German Institute for International Educational Research*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 12:25 p.m. – 1:55 p.m., Gold Room, L3

## Item and Scale Drift – Paper Session

### Moderator

*Catherine Taylor, University of Washington*

### Presenters

Tianshu Pan, Pearson

*Labeling Drifting Items Based on the Rasch Model*

Judit Antal, The College Board, Gerald Melican, The College Board, Thomas Proctor, The College Board, Andrew Wiley, The College Board

*The Effect of Anchor Test Construction on Scale Drift*

Huijuan Meng, Pearson, Susan Steinkamp, Pearson, Joy Matthews-López, the National Association of Boards of Pharmacy

*An Investigation of Item Parameter Drift in a Computer Adaptive Test*

Justin Green, University of South Carolina, Brian Habing, University of South Carolina, Jessalyn Smith, University of South Carolina

*A Comparison of the Robust Z and Chi-Square Methods for Item Drift Detection*

### Discussant

*Lisa Keller, University of Massachusetts–Amherst*



# Denver, Colorado

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Monday, 12:25 p.m. – 1:55 p.m., Silver Room, L4

## Issues in Linking and Equating – Paper Session

### Moderator

*Yeow Thum, Northwest Evaluation Association*

### Presenters

Samuel A. Livingston, Educational Testing Service, Sooyeon Kim, Educational Testing Service

*Random-Groups Equating with Small Samples*

Hyeon-Joo Oh, Educational Testing Service, Tim Moses, Educational Testing Service

*Comparison of Angoff and Kolen-Brennan Approaches in Conducting Chained Equipercentile Equating*

Dong Gi Seo, University of Minnesota, David Weiss, University of Minnesota, Yi Du, Data Recognition Corporation

*Simulation Designs and Test Information Criterion to Evaluate Various IRT Linkings in Computerized Adaptive Testing*

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

*Assessing the Equating Results Based on Equity Properties*

### Discussant

*Alina A. von Davier, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 12:25 p.m. – 1:55 p.m., Savoy Room, L5

## Test Use with Special Populations – Paper Session

### Moderator

*Kelly Burling, Pearson*

### Presenters

Jaime Cid, Educational Testing Service, Dena Pastor, James Madison University, Joshua Goodman, James Madison University

*Using Explanatory Item Response Models to Examine the Impact of Linguistic Features of a Reading Comprehension Test on English Language Learners*

Joseph Nese, University of Oregon, Daniel Anderson, University of Oregon, Gerald Tindal, University of Oregon

*The Invariance of the Easy CBM Mathematics Measures Across Educational Setting, Language, and Ethnic Groups*

Adisack Nhouyvanisvong, Data Recognition Corporation, Xiaowen Zhu, Data Recognition Corporation, Hanwook Yoo, University of Massachusetts, N. Scott Bishop, Data Recognition Corporation, Takeshi Terada, University of Minnesota  
*Building a Modified Assessment for NCLB: Practical Research Issues Addressed by One State Program*

Eric Hansen, Educational Testing Service, Diego Zapata-Rivera, Educational Testing Service

*Designing Assessment-for-Learning (AfL) Systems for Diverse Students: A Game-Based AfL for Learning Middle School Mathematics*

### Discussant

*John Olson, Olson Educational Measurement & Assessment Services*

# Denver, Colorado

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Monday, 12:25 p.m. – 1:55 p.m., Majestic Ballroom, L6

## **Item/Task Modeling and Analysis: From Theory to Practice – Coordinated Session**

### **Organizer/Moderator**

*James Olsen, Alpine Testing Solutions*

### **Presenters**

Kathleen Scalise, University of Oregon, Mark Wilson, University of California–Berkeley

*Examining Student Reasoning with Bundle Models in Criterion-Referenced Assessment*

James Masters, Pearson-VUE, Richard Luecht, University of North Carolina at Greensboro

*Assessment Engineering Quality Assurance Steps: Analyzing Sources of Variation in Task Models and Templates*

Hanneke Geerlings, University of Twente, Cees Glas, University of Twente, Wim van der Linden, CTB/McGraw-Hill

*Optimal Design of Tests with Automatic Item Generation*

James Olsen, Alpine Testing Solutions, Joseph Olsen, Brigham Young University, Russell Smith, Alpine Testing Solutions

*Investigating Alternative Approaches for Analyzing Item/Task Model Data*

### **Discussant**

*Ronald Hambleton, University of Massachusetts–Amherst*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 2:15 p.m. – 3:45 p.m., Denver Room, M1

## Smoothing Techniques in Equating – Paper Session

### Moderator

*Qing Yi, Pearson*

### Presenters

Yi Du, Data Recognition Corporation, Shuqin Tao, Data Recognition Corporation, Christie Plackner, Data Recognition Corporation, Dave Chayer, Data Recognition Corporation

*Evaluating Feasibility and Stability of the Traditional Equipercentile, Kernel, and Rasch Equating Methods for a State Alternate Assessment*

Haiwen (Henry) Chen, Educational Testing Service

*A Comparison between IRT Observed Score Equating and Levine Observed Score Equating*

Anthony Albano, University of Minnesota, Tim Moses, Educational Testing Service, Jinghua Liu, Educational Testing Service

*The Impact of Loglinear Smoothing on Equating with Structured Data Irregularities*

Jaehoon Seol, The University of Iowa, Seonho Shin, Prometric Inc., Shungwon Ro, Prometric, Inc.

*Automatic Presmoothing Method Using Cross-Validated Smoothing Splines (CVSS)*

### Discussant

*Dan Eignor, Educational Testing Service*

# Denver, Colorado

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Monday, 2:15 p.m. – 3:45 p.m., Century Room, M2

## Issues with Dimensionality – Paper Session

### Moderator

*Prathiba Natesan, University of North Texas*

### Presenters

Shun-Wen Chang, National Taiwan Normal University, Shin Teng, National Yang-Ming University, Yu-Te Wu, National Yang-Ming University  
*Explorations of Composite Scores under the Multivariate Proficiency Distribution Using IRT*

Nilufer Kahraman, National Board of Medical Examiners  
*Within-Item Multidimensionality in Unidimensional Tests*

Tae-hoon Kang, Sungshin Women's University, Insu Paek, Educational Testing Service  
*Providing Both Overall and Domain Scores Based on MIRT*

Shu-Chuan Kao, Pearson, Yeow Meng Thum, Northwest Evaluation Association  
*Characterizing the Dimensionality of a Set of Random Variables: A Strategy to Analyze Factor Structures*

### Discussant

*Andreas Oranje, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 2:15 p.m. – 3:45 p.m., Gold Room, M3

## **Precision of Ability Estimates – Paper Session**

### **Moderator**

*Zhen (Jane) Wang, Educational Testing Service*

### **Presenters**

Benjamin Andrews, University of Iowa, Michael Kolen, University of Iowa, Won-Chan Lee, University of Iowa  
*Measurement Error Variability for Advanced Placement (AP) Composite Scores and Grades*

Huiqin Hu, Data Recognition Corporation  
*Conditional Standard Errors of Measurement for Scaled Scores at the Lower End of Score Distribution: A Comparison of Four Estimation Methods*

Jason Meyers, Pearson, Ahmet Turhan, Pearson, Steven Fitzpatrick, Pearson  
*Performance of Ability Estimation Methods for Writing Assessments under Conditions of Multidimensionality*

Christopher Stephens, University of Iowa, Won-Chan Lee, University of Iowa  
*Psychometric Properties of Scale Scores For Tests with Solely Polytomous Items*

### **Discussant**

*Gunter Maris, Cito*

# Denver, Colorado

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Monday, 2:15 p.m. – 3:45 p.m., Silver Room, M4

## **New Directions in Model Based Measurement of Mathematical Skills – Coordinated Session**

### **Organizer**

*Johannes Hartig, German Institute for International Educational Research – DIPF*

### **Moderator**

*Eckhard Klieme, German Institute for International Educational Research – DIPF*

### **Presenters**

Olga Kunina, Humboldt University–Berlin, André Rupp, University of Maryland, Oliver Wilhelm, Humboldt University–Berlin  
*Modeling the Latent Structure of a Diagnostic Mathematics Assessment within a General Log-Linear Modeling Framework*

Johannes Hartig, German Institute for International Educational Research (DIPF), Karina Greb, German Institute for International Educational Research (DIPF)  
*A Partially Non-Compensatory Multidimensional Model for Basic Mathematical Skills in Primary School*

Andreas Frey, Leibniz-Institute for Science and Mathematics Education (IPN), Nicki-Nils Seitz, Leibniz-Institute for Science and Mathematics Education (IPN)  
*Measuring Multiple Mathematical Skills with Multidimensional Adaptive Testing*

Heinz Holling, Westfaelische Wilhelms-Universitaet Muenster, Wim van der Linden, CTB/McGraw-Hill  
*Rule-Based Generation of Items for the Assessment of Statistical Literacy*

### **Discussant**

*Karen Draney, University of California–Berkeley*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 2:15 p.m. – 3:45 p.m., Savoy Room, M5

## **Studies of Raters and Ratings – Paper Session**

### **Moderator**

*Meagan Karvonen, Western Carolina University*

### **Presenters**

Mark Raymond, National Board of Medical Examiners, Polina Harik, National Board of Medical Examiners, Brian Clauser, National Board of Medical Examiners

*The Impact of Statistically Adjusting for Rater Effects on Conditional Standard Errors for Performance Ratings*

Jisung Cha, Teachers College–Columbia University, Matthew Johnson, Teachers College–Columbia University

*An Application of Latent Class Regression to Constructed Response Scoring*

Polina Harik, National Board of Medical Examiners, Brian Clauser, National Board of Medical Examiners, Peter Baldwin, National Board of Medical Examiners

*A Comparison of Alternative Scoring Methods for a Computerized Performance Assessment of Clinical Judgment*

Lidia Dobria, University of Illinois at Chicago, Carol Myford, University of Illinois at Chicago

*A Multilevel Approach to Detecting Variations in Rater Severity Based on Rater Background Characteristics*

### **Discussant**

*Sheryl Lazarus, National Center on Educational Outcomes*



# Denver, Colorado

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Monday, 2:15 p.m. – 3:45 p.m., Majestic Ballroom, M6

## Issues in Validity – Paper Session

### Moderator

*Eileen Talento-Miller, Graduate Management Admission Council*

### Presenters

Gregory Cizek, University of North Carolina at Chapel Hill, Daniel Bowen, University of North Carolina at Chapel Hill, Keri Church, University of North Carolina at Chapel Hill

*Sources of Validity Evidence for Educational and Psychological Tests: A Follow-Up Study*

Noreen Webb, University of California–Los Angeles, Marsha Ing, University of California–Riverside, Jeffrey Shih, University of Nevada–Las Vegas

*Validity of Observational Measures of Classroom Practices: Class-Level vs. Student-Level Protocols*

Martha Koch, University of Ottawa

*The Multiple-Use of Large-Scale Assessments: Implications for Validity Theory & Practice*

Carole Gallagher, WestEd, Edynn Sato, WestEd, Stanley Rabinowitz, WestEd  
*A Framework for Examining Evidence Related to the Consequential Validity of Standards-Based Assessments*

### Discussant

*Susan Brookhart, Brookhart Enterprises, LLC*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 4:05 p.m. – 6:05 p.m., Denver Room, N1

## **Cognitive Interviews in the Item Design Process for Assessments with Modified Achievement Standards – Coordinated Session**

### **Organizers**

*Kelly Burling, Pearson,  
Patricia Almond, University of Oregon*

### **Moderator**

*Kelly Burling, Pearson*

### **Presenters**

Patricia Almond, University of Oregon, Cara Laitusis, Educational Testing Service, Sheryl Lazarus, National Center on Educational Outcomes, Katherine Nagle, SRI International, Andrew Roach, Georgia State University  
*White Paper on Cognitive Interview Methods Applied to Reading Test and Item Design and Development for Alternate Assessments Judged against Modified Achievement Standards*

Kelly Burling, Pearson, Robert Dolan, Pearson  
*Using Cognitive Interviews to Design Instructionally Relevant Simplifications and Supports for an Interactive Computer-Based AA-MAS*

Maureen Kavanaugh, Boston College, Caroline Parker, Educational Development Center, Inc.  
*Cognitive Interviews with Students with Disabilities in High School: Methods and Challenges*

Chris Johnstone, National Center on Educational Outcomes  
*Understanding Construct-Relevant and Construct-Irrelevant Challenges Using Think Aloud Methods*

Edynn Sato, WestEd  
*Cognitive Interviews of English Language Learners and Students with Disabilities: Similarities, Differences and Implications of Lessons Learned*

# Denver, Colorado

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Monday, 4:05 p.m. – 6:05 p.m., Century Room, N2

## IRT Equating – Paper Session

### Moderator

Michael Mekhael, Educational Testing Service

### Presenters

Thakur Karkee, Measurement Incorporated, Stephen Murphy, Pearson, Kevin Fatica, CTB/McGraw-Hill

*Comparisons of Test Characteristic Curves Alignment Criteria of the Anchor Sets and the Total Test for Maintaining Test Scale and Impact on Students' Performance*

Deping Li, Educational Testing Service, Yanlin Jiang, Educational Testing Service, Alina von Davier, Educational Testing Service  
*The Consistency of IRT True Score Equatings*

Alan W. Nicewander, Pacific Metrics  
*IRT Equating Using Parameterized Test Characteristic Curves*

Dongyang Li, Prometric, Shungwon Ro, Prometric  
*Score Equating for a Certification Examination using a Testlet Model Based Characteristic Curve Scaling Method*

### Discussant

Rosemary Reshetar, The College Board

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 4:05 p.m. – 6:05 p.m., Gold Room, N3

## Evaluating Anchor Items – Paper Session

### Moderator

Andrew Dwyer, *University of Nebraska–Lincoln*

### Presenters

Terran Brown, Educational Testing Service, Kisha Jones, University of Illinois at Urbana-Champaign, Gautam Puhan, Educational Testing Service  
*The Robustness of Methods to Detect Outliers within Equating Sets in the Context of Observed Score Equating*

Yanxuan Qu, Educational Testing Service, Chi-wen Liao, Educational Testing Service, Rick Morgan, Educational Testing Service  
*Evaluating Anchor Item Performance in Classic Equating – An Illustration of the Four Commonly used Methods and their Impact on Equating Results*

Lixiong Gu, Educational Testing Service, Venessa Lall, Educational Testing Service, Lora Monfils, Educational Testing Service, Yanming Jiang, Educational Testing Service  
*Evaluating Anchor Items for Outliers in IRT Common Item Equating: A Review of the Commonly Used Methods and Flagging Criteria*

Chanho Park, ACT, Inc.  
*The Effects of Item Disclosure on IRT Linking via Item Parameter Drift*

Lisa Keller, University of Massachusetts, Karla Egan, CTB/McGraw-Hill, Christine Schneider, CTB/McGraw-Hill  
*Detecting and Deleting Anchor Set Items: Guidelines and Consequences*

### Discussant

Judit Antal, *The College Board*

# Denver, Colorado

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Monday, 4:05 p.m. – 6:05 p.m., Silver Room, N4

## Measurement in Higher Education – Invited Symposium

### Organizer/Moderator

*Donna Sundre, James Madison University*

### Presenters

Peter Ewell, National Center for Higher Education Management Systems  
*Higher Education's Big Test: The Collision between Politics and Assessment*

Gary Pike, Information Management & Institutional Research, IUPUI  
*New and Old Wine in New Bottles: 20 Years of Assessing College Student Learning*

Richard Shavelson, Stanford University  
*On Direct and Indirect Measures of College Learning: The CLA & Other Approaches*

Donna Sundre, James Madison University  
*Measurement Matters*

Tom Zane, Western Governors University  
*A Radical Model of Higher Education where Measurement Governs Curriculum*

### Discussant

*Lorrie Shepard, University of Colorado at Boulder*

Monday, 4:05 p.m. – 6:05 p.m., Savoy Room, N5

## **Multidimensional Random Item Profile Models: Models, Applications, and Parameter Estimation – Coordinated Session**

### **Organizer/Moderator**

*Sun-Joo Cho, Vanderbilt University*

### **Presenters**

Paul De Boeck, University of Amsterdam, Mark Wilson, University of California–Berkeley

*Multidimensional Random Item Profile Models*

Shih-Ying Yao, University of California–Berkeley, Mark Wilson, University of California–Berkeley

*Random Item Profile Modeling of DIF*

Jinnie Choi, University of California–Berkeley, Jing Chen, Michigan State University

*Random Item Profile Modeling of Polytomous Responses*

Sun-Joo Cho, Vanderbilt University, Ivailo Partchev, K.U. Leuven

*Parameter Estimation of Multidimensional Random Item Profile Models*

### **Discussant**

*Daniel Bolt, University of Wisconsin–Madison*

# Denver, Colorado

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Monday, 4:05 p.m. – 6:05 p.m., Majestic Ballroom, N6

## Issues with Anchor Items in Equating – Paper Session

### Moderator

*Ourania Rotou, Educational Testing Service*

### Presenters

YoungWoo Cho, ACT, Inc., Nathan Wall, ACT, Inc., Won-Chan Lee, The University of Iowa, Deborah Harris, ACT, Inc.

*The Effects of Common Item Selection on Equipercentile Equating for Mixed Format Tests*

Tia Sukin, University of Massachusetts–Amherst, Jennifer Dunn, Measured Progress, Wonsuk Kim, Measured Progress, Robert Keller, Measured Progress  
*A Balancing Act: Common Items Nonequivalent Groups (CINEG) Equating Item Selection*

William Insko, Riverside Publishing Company

*The Effect of Anchor Item Stability on Known Levels of Proficiency Rate Improvement Using Simulation Techniques*

J. Patrick Meyer, University of Virginia, Huynh Huynh, University of South Carolina

*Evaluation of the Robust z Method of Identifying Unstable Items and Estimating IRT Equating Coefficients*

Hua Wei, Pearson

*Impact of Non-Representative Anchor Items on Scale Stability*

### Discussant

*Michael Walker, Educational Testing Service*

# NCME • 2010 Annual Meeting & Training Sessions

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Monday, 4:00 p.m. – 7:00 p.m., Spruce Room

## **NCME Board of Directors Meeting**

Members of NCME are invited to attend as observers.



# Denver, Colorado

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## Notes

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