2nd Annual

Conference on Statistical Detection of Potential Test Fraud

Conference Program

October 17 – 19, 2013

Madison, WI

Monona Terrace Convention Center

2013 Conference Hosts

Conference Sponsors

2nd Annual Conference on Statistical Detection of Potential Test Fraud

October 17-19, 2013

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Thursday, October 17, 2013

4:00 – 5:30	**Check-In/Registration**	**Community Terrace**
6:00 – 7:30	**Welcoming Reception**	**Community Terrace**

Friday, October 18, 2013

8:00 – 8:45	**Check-In/Registration & Breakfast**	**Community Terrace**
8:45 – 9:00	**Welcome**	**Ballroom CD**
9:00 – 10:15	**Session 1: Detection of Answer Similarity and Person Misfit**	**Ballroom CD**

Hellinger Distance and its Use to Identify Answer Copying
　　Seonho Shin, Prometric Inc.
　　Larissa Smith, National Board of Medical Examiners
　　Jaehoon Seol, American Institute of Certified Public Accountants

Using a Hypergeometric-Binomial Compound Distribution for Evaluating Potential Collusion on Multiple-Choice Tests
　　Dennis Maynes, Caveon Test Security

Detecting Unusual Item Response Patterns Based on Likelihood of Answer
　　Kyoungwon Lee Bishop, Pearson
　　Christopher Neil Stephens, American Institutes for Research

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

10:15 – 10:45	**Discussion of Session 1**
	Lawrence Rudner, Graduate Management Admissions Council
10:45 – 11:00	**Break**

11:00 – 11:45 **Keynote Address: Three Eras in Cheating Detection**
Gregory J. Cizek, University of North Carolina

This presentation will describe three historical phases of quantitative methods for investigating the integrity of test data in the U.S. primarily focusing on assessment integrity in K-12 education contexts, but also touching on cheating in licensure and certification contexts. Primary attention will be paid to Phase III -- the era that those concerned with statistical detection of unethical test behavior are now entering and the challenges facing detection in increasingly distributed computer-based learning and testing environments.

11:45 – 12:45 **Lunch**   **Community Terrace**

12:45 – 2:15 **Session 2: Detection of Preknowledge and Braindumps** **Ballroom CD**

The Impact of Test Characteristics on Kullback-Leibler Divergence Index to Identify Examinees with Aberrant Responses
Jaehoon Seol, American Institute of Certified Public Accountants
Jonathan D. Rubright, American Institute of Certified Public Accountants

Identification of Test Collusion by the Methods of Information Theory and Combinatorial Optimization
Dmitry I. Belov, Law School Admissions Council

Detecting Examinees with Preknowledge: Examining the Robustness of the Deterministic Gated IRT Model
Carol Eckerly, University of Wisconsin
James A. Wollack, University of Wisconsin

Scoring Tests with Contaminated Response Vectors
Arnond Sakworawich, Fordham University
Howard Wainer, National Board of Medical Examiners

Free Proven Tools to Help Nail the Brain Dumps
Lawrence Rudner, Graduate Management Admissions Council
Daniel Eyob, Graduate Management Admissions Council
Layne Pethick, Association of American Medical Colleges

2:15 – 2:45 **Discussion of Session 2**
Wim J. van der Linden, CTB/McGraw-Hill

2:45 – 3:15 **Break**

3:15 – 4:30   **Session 3: Detection of Unusual Gains**   **Ballroom CD**

Detecting Unexpected Changes in Pass Rates: A Comparison of Two Statistical Approaches
 Matthew N. Gaertner, Pearson
 Yuanyuan Z. McBride, Pearson

Analysis of Ability Changes for Repeating Examinees Using Growth Models
 Shu-chuan Kao, Pearson VUE
 Ada Woo, National Council of State Boards of Nursing
 Jerry Gorham, Pearson VUE

A Bayesian Hierarchical Linear Model for Detecting Group-Level Cheating and Aberrance
 William P. Skorupski, University of Kansas
 Karla Egan, CTB/McGraw-Hill

Using Nonlinear Regression to Identify Unusual Performance Level Classification Rates
 J. Michael Clark III, Pearson
 William P. Skorupski, University of Kansas
 Stephen T. Murphy, Pearson

4:30 – 5:00   **Discussion of Session 3**
 Gregory J. Cizek, University of North Carolina

5:00 – 5:15   **Break/Poster Set-Up**

5:15 – 7:15   **Poster Reception**   **Community Terrace**

Identifying Cheaters: An Experiment in Anomaly Detection
 Kathleen A. Gialluca, Pearson
 Paul Reiners, Pearson

Answer-Changing Statistics and Covariates
 Vincent *Primoli, Data Recognition Corporation*
 Djibril Liassou, Data Recognition Corporation

Answer Changing and Response Time on Computer-Based High Stakes Achievement Tests
 Gail C. Tiemann, University of Kansas
 Neal M. Kingston, University of Kansas

On False Key Analyses
Jennifer A. Lawlor, Law School Admissions Council
Charles Lewis, Fordham University
Peter J. Pashley, Law School Admissions Council

Data Forensics Using Conditional Expectations to Identify Possible Harvesters and Cheaters
Sanjeev Sethi, Graduate Management Admissions Council
Lawrence Rudner, Graduate Management Admissions Council

Impact of CAT Settings on Person-Fit Index Performance
David Shin, Pearson
Yuehmei Chien, Pearson

Practical Application of Testing Irregularities in a Large Urban District
Joshua Looser, Milwaukee Public Schools
Marc Sanders, Milwaukee Public Schools

Empirical Methods of Cheating Detection
Amin Saiar, PSI Services LLC
John Weiner, PSI Services LLC

Item-Level Analysis of Response Similarity
Arianto Wibowo, Measurement Incorporated
Leonardo S. Sotaridona, Measurement Incorporated
Irene Hendrawan, Measurement Incorporated

An investigation of the detection of cheating on the Multistate Bar Exam
Seo Young Lee, University of Wisconsin
Mark Albanese, National Conference of Bar Examiners

Student Cheating: Best Practice for Deterrence, Detection, and Disposition
Mark Albanese, National Conference of Bar Examiners
Sharon McDonough, University of Tennessee Health Science Center
George Mejicano, Oregon Health & Science University
Elizabeth Petty, University of Wisconsin-Madison
Jasna Vuk, University of Arkansas for Medical Sciences

Saturday, October 19, 2013

8:30 – 9:00	**Breakfast**	**Hall of Ideas**

9:00 – 10:30   **Concurrent Session 4A: Robustness and Sensitivity Issues**   **Ballroom C**

Robustness of Common Data Forensics Methods in the Presence of Model Misfit
Jessalyn Smith, CTB/McGraw-Hill
Karla Egan, CTB/McGraw-Hill

Realistic Simulation Study to Investigate Sensitivity of Data Forensic Methods for Various Cheating Types
Mayuko Simon, Data Recognition Corporation
Christie Plackner, Data Recognition Corporation
Vincent Primoli, Data Recognition Corporation
Djibril Liassou, Data Recognition Corporation

The Performance of Statistical Indices in Detecting Answer Copying on Multiple-Choice Examinations Using Dichotomous Item Scores
Cengiz Zopluoglu, University of Miami
Troy T. Chen, ACT, Inc.
Chi-Yu Huang, ACT, Inc.
Andrew A. Mroch, ACT, Inc.

Not So Neat? Evidence of Fraudulent Preparation on Internal Anchor Items
N. Scott Bishop, ACT, Inc.

An Investigation of Unusual Response Patterns on a Large Scale Assessment
Hulya Yurekli, Florida State University
Xinya Liang, Florida State University
Jin Koo, Florida State University
Betsy Becker, Florida State University
Insu Paek, Florida State University
Salih Binici, Florida State University

Concurrent Session 4B: Test Tampering   **Ballroom D**

Compelling Illustrations of Test Score Tampering
Cynthia Butler, Caveon Test Security

Multilevel Detection of Possible Test Tampering
Shanshan Qin, University of Georgia
Allan S. Cohen, University of Georgia

Detection of Test Tampering at the Group Level
James A. Wollack, University of Wisconsin
Carol Eckerly, University of Wisconsin

An Initial Exploration into the Use of Erasure Analysis Results to Target Monitoring and Investigations
Steven G. Viger, Michigan Department of Education
Dong Gi Seo, Michigan Department of Education
Shiqi Hao, Michigan Department of Education

Item-Level Analysis of Wrong-to-Right Erasures
Leonardo S. Sotaridona, Measurement, Incorporated
Arianto Wibowo, Measurement, Incorporated
Irene Hendrawan, Measurement, Incorporated

10:30 – 10:45   Break

10:45 – 12:00   Concurrent Session 5A: Computer-Based Testing   Ballroom C

Data Forensics: Enhancing Security in a Computerized Adaptive Exam
Xiao Luo, National Council of State Boards of Nursing
Melissa Franke, National Council of State Boards of Nursing
Logan West, National Council of State Boards of Nursing

Detection of Compromised Items Using Response Time
Muhammad Naveed Khalid, Cambridge English Language Assessment
Ardeshir Geranpayeh*, Cambridge English Language Assessment*
Farah Shafiq, University of Glasgow

Utilization of Response Time in Data Forensics of K-12 Computer-Based Assessment
Lucy *Liu, Data Recognition Corporation*
Christie Plackner, Data Recognition Corporation
Vincent Primoli, Data Recognition Corporation

Detecting Aberrant Test Response Patterns Through Modeling Expected Response Time with Item and Examinee Characteristics
Jiyoon Park, Federation of State Boards of Physical Therapy
Yu Zhang, Federation of State Boards of Physical Therapy

Concurrent Session 5B: Policy Issues   **Ballroom D**

Cheating on Tests: A Threat to Response Validity
   Mark Albanese, National Conference of Bar Examiners
   James A. Wollack, University of Wisconsin-Madison

Establishing Baseline Data for Incidents of Misconduct in the Next Generation
Assessment Environment
   Deborah J. Harris, ACT, Inc.
   Chi-Yu Huang, ACT, Inc.
   Rya Dunnington, ACT, Inc.

Enhancing Security by Reducing Item Exposure: Detecting Low and Unusual
Performance during Testing
   Richard Feinberg, National Board of Medical Examiners
   Michael G. Jodoin, National Board of Medical Examiners
   Carol A. Morrison, National Board of Medical Examiners
   Thomas Fogle, National Board of Medical Examiners

When Numbers are not Enough: Collection and Use of External Information to
Assess the Ethics and/or Professionalism of Examinees Suspected of Test
Fraud
   Marc J. Weinstein, Dilworth Paxson LLP

12:00 – 1:00   **Lunch**   **Hall of Ideas**

1:00 – 2:00   **Concurrent Symposium 6A: Detection of Test Compromise**   **Ballroom C**

Potential Test Fraud Challenge
   Dennis Maynes, Caveon Test Security
   Kim Brunnert, Elsevier Science
   Daniel John Wilson, Mountain Measurement
   Brian Bontempo, Mountain Measurement
   Cleopatra DeLeon, PPD, Inc.
   Sarah Thomas, University of Virginia
   Yu Zhang, Federation of State Boards of Physical Therapy
   Jiyoon Park, Federation of State Boards of Physical Therapy
   Joy Matthews-Lopez, National Association of Boards of Pharmacy
   Leslie Rosales, University of Ohio
   Ben Babcock, The American Registry of Radiologic Technologists

Concurrent Symposium 6B: Security Planning   **Ballroom D**

Extending the Role of Psychometrics in Integrated Security Plans
   Lisa O'Leary, Alpine Testing Solutions
   Jill Burroughs, Alpine Testing Solutions

2:00 – 2:15   **Closing Remarks**   **Ballroom C**