2nd Annual
Conference on Statistical Detection of Potential Test Fraud

Conference Program

October 17 – 19, 2013
Madison, WI
Monona Terrace Convention Center
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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

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
Jiyoun 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