

Caveon Webinar Series:


“The Handbook of Test Security”

Learn more about preventing & detecting cheating on high-stakes tests


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| Dr. James A. Wollack Director Testing & Evaluation Services UW Center for Placement Testing University of Wisconsin-Madison | Dr. John Fremer President Caveon Consulting Service |
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March 21, 2013

Upcoming Caveon Events





- **NCME Conference, April 26 – 30th, San Francisco**
Test Security I: Policy Issues: Technical/Statistical/Methodological Issues.
– Presenters include: Dr. John J. Fremer
- **USDLA Conference, April 28- May 1, St. Louis**
Will the real learner please stand up?
– Presenters include Caveon’s Jamie Mulkey, Ed.D. and Patrick Martin



Latest Publications

- **Handbook of Test Security – Pre-order your copy today. To be published March 27th. We’ll share a discount code before end of session.**
- **TILSA Guidebook for State Assessment Directors on Data Forensics – just released**


Caveon Online

- **Caveon Security Insights Blog**
 - <http://www.caveon.com/blog/>
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 - "Caveon Test Security" Group
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Agenda for today





- **James Wollack**
 - Introduction to the Handbook of Test Security
 - Parts 1 & 2
- **John Fremer**
 - Part 2 & 3
 - 5 Predictions
- **James Wollack**
 - Contributing Authors
 - 5 Takeaways



HANDBOOK OF TEST SECURITY

- **Editors - James Wollack & John Fremer**
- **Slated for Publication – March 2013**
- **Preventing, Detecting, and Investigating Cheating**
- **Testing in Many Domains**
 - Certification/Licensure
 - Clinical
 - Educational
 - Industrial/Organizational



HANDBOOK – PRIMARY AIMS

- Insights of Psychometricians and Policy-Makers
- Best Practices for Designing Secure Tests
- Analysis of Security Vulnerabilities
- Practical Strategies for Cheating Prevention and Detection
- Lessons Learned
 - Actual security violations
 - Security initiatives



CURRENT STATE OF TESTING

- Large-scale, Standardized Testing is an Integral Part of our Culture
- Incentive to Cheat on Tests has never been Higher
 - Cheating is a very real problem
 - Extends across all walks of testing
- Presence of Test Security Themes at Professional Conferences has Skyrocketed
 - Much of what is known about test security resides in testing companies and is proprietary.





PRIMARY AIMS OF THE HANDBOOK

- Advance the science of test security
- Draw on insights of psychometricians and policy-makers to provide a comprehensive resource that deals with all aspects of test security for all genres of testing.
 - Best practices for designing secure tests
 - Analysis of security vulnerabilities
 - Practical cheating prevention/detection strategies
 - Lessons learned in actual security violations and initiatives



ORGANIZATION OF HANDBOOK



- **Part I: Designing Secure Delivery Systems**
 - Security vulnerabilities unique to modality
 - Chapters focus on prevalence, major threats, prevention, detection
- **Part II: Important Issues in Test Security**
 - Maintaining security before and after exam
 - Developing a security culture throughout all phases of organization
 - Reconnaissance effort following breach
- **Part III: Lessons Learned from Practice**
 - Case studies from a variety of disciplines

PART I: DESIGNING SECURE DELIVERY SYSTEMS

Security in Large-Scale Paper and Pencil Testing
John J. Fremer and Steve Ferrara



- K-12 accountability and national admissions testing
- **Methods**
 - Cheating by examinees and administrators
 - Exposure/disclosure of secure test materials
 - Inappropriate test preparation
 - Inappropriate test administration
- **Prevention & Detection**
- **Recommendations for Testing Program Managers**

PART I: DESIGNING SECURE DELIVERY SYSTEMS

Security Issues in Technology-Based Testing
David Foster

- **Use of technology to build and deliver tests has created many new vulnerabilities**
 - on-demand testing
 - Internet-based testing
 - electronic distribution of test files
 - storage of item banks, test files, results, examinee information
 - test question over-exposure
 - testing centers
- **Theft vs. Cheating**
- **Prevention, Deterrence, and Detection strategies**

PART I: DESIGNING SECURE DELIVERY SYSTEMS

Security Issues in Classroom Testing
Louis Woodruff

- Teacher-made tests, predominantly paper-based
- Many of the types of cheating are the same as those on standardized tests, but particulars are often quite different
 - Teacher usually knows students, sometimes quite well
 - Students know each other, often very well
 - Much greater physical security vulnerabilities
- Detering cheating & mitigating motivations to cheat
 - Practical, realistic, straightforward approaches



PART I: DESIGNING SECURE DELIVERY SYSTEMS

Security Issues in Writing Assessment
Suzanne Lane

- Both large-scale and classroom writing assessments
- Security vulnerabilities:
 - Prompts (and related text, if applicable)
 - Responses
- Plagiarism
 - Detection systems
 - Prevention of plagiarism
- Automated essay scoring and gaming



PART II: IMPORTANT ISSUES IN TEST SECURITY

Physical Security at Test Centers and the Testing Company
Anthony R. Scicchitano and Roger D. Meade

- Controlling physical testing environment to protect data
 - Layout of the testing environment
 - check-in/examinee authentication process
 - proctoring
 - handling of test materials
 - security audits



PART II: IMPORTANT ISSUES IN TEST SECURITY

Educator Cheating and the Statistical Detection of Group-Based Test Security Threats

Dennis Maynes

- Data Forensics with focus on detecting collusion or groups of individuals
 - Largely non-technical description
 - credibility of various sources of data
- Standards for statistical evidence of test security breaches



PART II: IMPORTANT ISSUES IN TEST SECURITY

Legal Matters in Test Security
Jennifer Ancona Semko and Robert Hunt

- Examined case law related to score cancelation and the basics of U.S. Copyright law
- Before the exam: Candidate agreements and organizational security policies
- During the exam: legal issues with biometric data and proctor intervention
- After the exam: No need to “prove” cheating, take action against copyright infringement
- Emphasis on being prepared for a possible lawsuit before the incident.



PART II: IMPORTANT ISSUES IN TEST SECURITY

Security Planning, Training, and Monitoring
Cyndy Thomas Fitzgerald and Jamie R. Mulkey



- Need comprehensive written security plan
- Develop related training materials
- Provide and keep current training
- Follow clear guidelines



PART II: IMPORTANT ISSUES IN TEST SECURITY

Conducting Investigations of Misconduct
Deborah J. Harris and Rachel R. Watkins Schoenig



- Importance of examinee/sponsor agreements
- Decide on "triggers" for investigations
- Provide "understandable" results
- Scrupulously follow your rules



PART II: IMPORTANT ISSUES IN TEST SECURITY

Security Related Communications
Susan M. Case and Beth E. Donahue



- Need thoughtful plan of communication
- Regular briefings and updates
- Decision makers identified
 - Operational
 - Policy
- Document security threats and their resolution



PART III – CASE STUDIES

Certification/Licensure Testing Case Studies
Janet Duffy Carson



- Healthy level of paranoia
- Commitment to follow up on problems identified
- Careful attention to training
- Include dealing with "unusual events"
- Register copyrights
- Use outside resources when appropriate



PART III – CASE STUDIES

Prevention, Detection, and Management of Falsified Test Development Data
Kevin M. Williams, Sara Rzepa, Gill Sitarenios, Hazel Wheldon



- **Very real danger of fraudulent data**
 - Develop industry standards
 - Preventative methods
 - Warning signals
 - Compare data from different sites



PART III – CASE STUDIES

Educational Testing
Neal Kingston



- Pressures to cheat increasing
- Make unethical behavior very clear
- Use multiple statistical methods
- Must act on data
- Management of communications essential



PART III – CASE STUDIES

Industrial/Organizational Testing Case Studies
Dave Bartram and Eugene Burke

- Body of knowledge growing
- Use multiple testing and scoring mechanisms
- Benefit to using honesty contracts



OBSERVATIONS ON CASE STUDIES

- **Quotes from other fields**
 - As in Anna Karenina “Every security breach has unique elements”
 - Following Mark Twain “History does not repeat itself but it sure does rhyme”
 - “Fake it until you make it” (Falsified data)
 - Joe Friday of Dragnet – “All we want are the facts ma’am”
 - Warren Buffet – “Unfortunately, the hangover may prove proportional to the binge”



FIVE TAKEAWAYS

- **Security Vulnerabilities for All Genres of Testing**
- **Critical Importance of Security Planning**
- **Practical and Proven Prevention & Detection Strategies**
- **How Security Breaches Have Been Dealt With**
- **Lessons We Have Learned From Past Instances of Testing Misbehavior**




FIVE PREDICTIONS

- **In Many High Stakes Testing Programs**
 - Cheating detection statistical analyses will be performed routinely
 - Computer-based testing will increasingly become the norm
 - Technology developments will be critically important to test security
 - Internationalization of testing programs will increase
 - “Test Security Manager” will become a recognized position




Handbook Contributors


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RESOURCES

- **CCSSO/ATP – Operational Best Practices**
- **ATP Security Committee**
- **Caveon Test Security**
 - **Blog**
 - **Webinars**
- **(Just released) NCME Guidelines**
- **(Just released) TILSA Guidebook for State Assessment Directors on Data Forensics**





CAVEON'S 10 YEAR ANNIVERSARY VIDEO
Take a look and celebrate with us!

<http://lnkd.in/XFBKR7>





RESOURCES

- Don't forget to pre-order your copy of the Handbook of Test Security
- www.routledge.com
 - <http://www.routledge.com/books/details/9780415816540/>
- Discount code: HYJ82
- Save 20%



THANK YOU!

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