

A stylized, light-colored illustration of a plant with several leaves and small, round buds or flowers, positioned on the left side of the slide.

SECURING ONLINE ASSESSMENTS WITH BIOMETRIC SIGNATURE- ID (BSI)

***Presenter: David Chatham, Dean of
Academic Technology, CCCOnline***

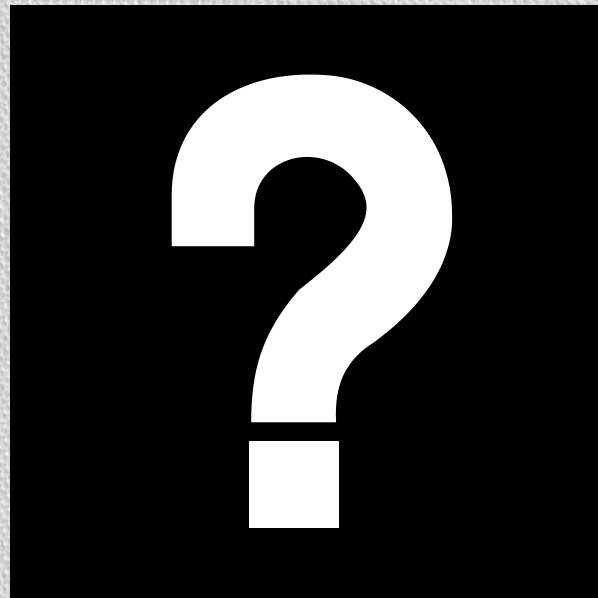
Session Explores the Technology of
Cheating, and Student Verification, and
Detection

Securing Online Assessments

- The State of Assessment Security?
- Establishing Trust with Our Partner Colleges
- Review of Available Technology for Test Security
- Biometric Signature ID Project and Roll-out
- Suspicious Activity Reporting

How bad is the problem of Assessment security?

- A. Non-issue
- B. Small problem
- C. Modest issue
- D. Significant problem



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Cheating scandal: Feds say teachers hired stand-in to take their certification tests

Sunday Nov 25, 2012 9:42 AM

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BY ADRIAN SAINZ, THE ASSOCIATED PRESS

It was a brazen and surprisingly long-l school teachers cheat on the tests the classrooms.

For 15 years, teachers in three Southe longtime educator — to send someone Each time, Mumford received a fee of ringers with fake identification to the P grade and began their careers as che

Authorities say the scheme affected h students who ended up being taught b

Mumford faces more than 60 fraud and conspiracy charges that claim he created fake driver's licenses

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December 16th, 2011

12:02 PM ET

Just how common is SAT cheating?

by Jason Kessler, CNN

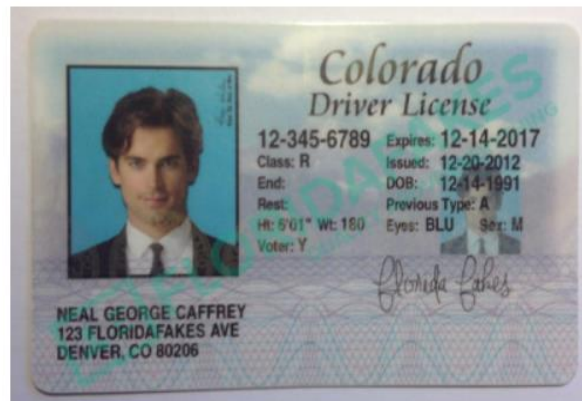
(CNN) As the Long Island SAT cheating scandal widens, the education community is asking fresh questions about how many students are scamming their way through the most important test they'll take in high school.

And the two organizations that oversee the SAT, the College Board and ETS, are facing fresh scrutiny over whether their security measures are up to snuff.

The soul-searching and finger-pointing are fiercest in Nassau County, New York, where 20 current and former students have been arrested in the exam scam. Prosecutors say that five test-takers used bogus school IDs to take the SAT or ACT for 15 students, who paid between \$500 and \$3,600 for the privilege.

The test-takers are charged with scheming to defraud, falsifying business records and criminal impersonation. If convicted, they could serve up to four years in prison.

The College Board and ETS have strongly condemned the attempted corner-cutting. "No one despises cheating more than the College Board and the people who design the SAT," said its president, Gaston Caperton, at a recent New York Senate hearing on the controversy.



Security Features

State seal in 2-tone optical variable ink

State seal visible on front under UV light

"REAL ID" Gold Star in top right corner if issued after July 1, 2013

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High Tech Cheating on Proctored Exams

Chinese Test Cheating Tools Look Like Something Out Of James Bond



Eric Jou

Filed to: TESTING 6/09/14 6:00am

162,462 🔥 19 ★



- 40 Students use Technology in Exam Cheating Ring

In Fuzhou, Guangzhou province, police found this wallet receiver contraption on the person of a male test taker. The contraption works in conjunction with a small camera. The receiver was tied to the young man's armpit. The camera was built into a plastic drink bottle.



中新网
chinanews.com

Technology for Classroom Cheating

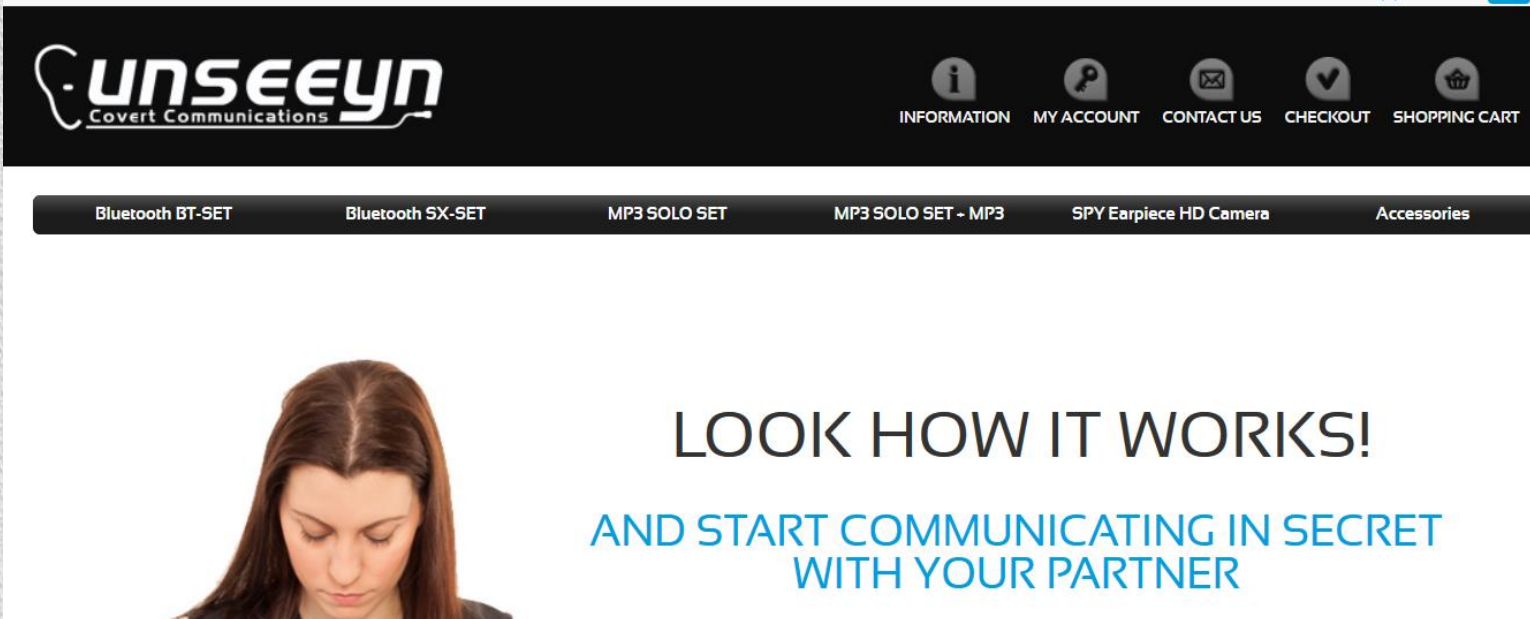


The header of the SpyStudent.com website features the brand name in a stylized white font with a glowing orange star to its right. Navigation links for HOME, FAQ, PRICE LIST, SHOP, and CONTACT are positioned on the right. A central orange banner contains the text: "If your chances to pass the exam are zero to none, there are solutions that can help you...."

SpyStudent.com

HOME FAQ PRICE LIST SHOP CONTACT

If your chances to pass the exam are zero to none, there are solutions that can help you....



The Unseeeyn website header includes the brand name "unseeeyn" with the tagline "Covert Communications" and a navigation menu with icons for INFORMATION, MY ACCOUNT, CONTACT US, CHECKOUT, and SHOPPING CART. Below the header is a product category bar listing items like Bluetooth BT-SET, Bluetooth SX-SET, MP3 SOLO SET, MP3 SOLO SET - MP3, SPY Earpiece HD Camera, and Accessories. The main promotional banner features a woman looking down and the text: "LOOK HOW IT WORKS! AND START COMMUNICATING IN SECRET WITH YOUR PARTNER".

unseeeyn
Covert Communications

INFORMATION MY ACCOUNT CONTACT US CHECKOUT SHOPPING CART

Bluetooth BT-SET Bluetooth SX-SET MP3 SOLO SET MP3 SOLO SET - MP3 SPY Earpiece HD Camera Accessories

LOOK HOW IT WORKS!

AND START COMMUNICATING IN SECRET WITH YOUR PARTNER

Cheating Demo

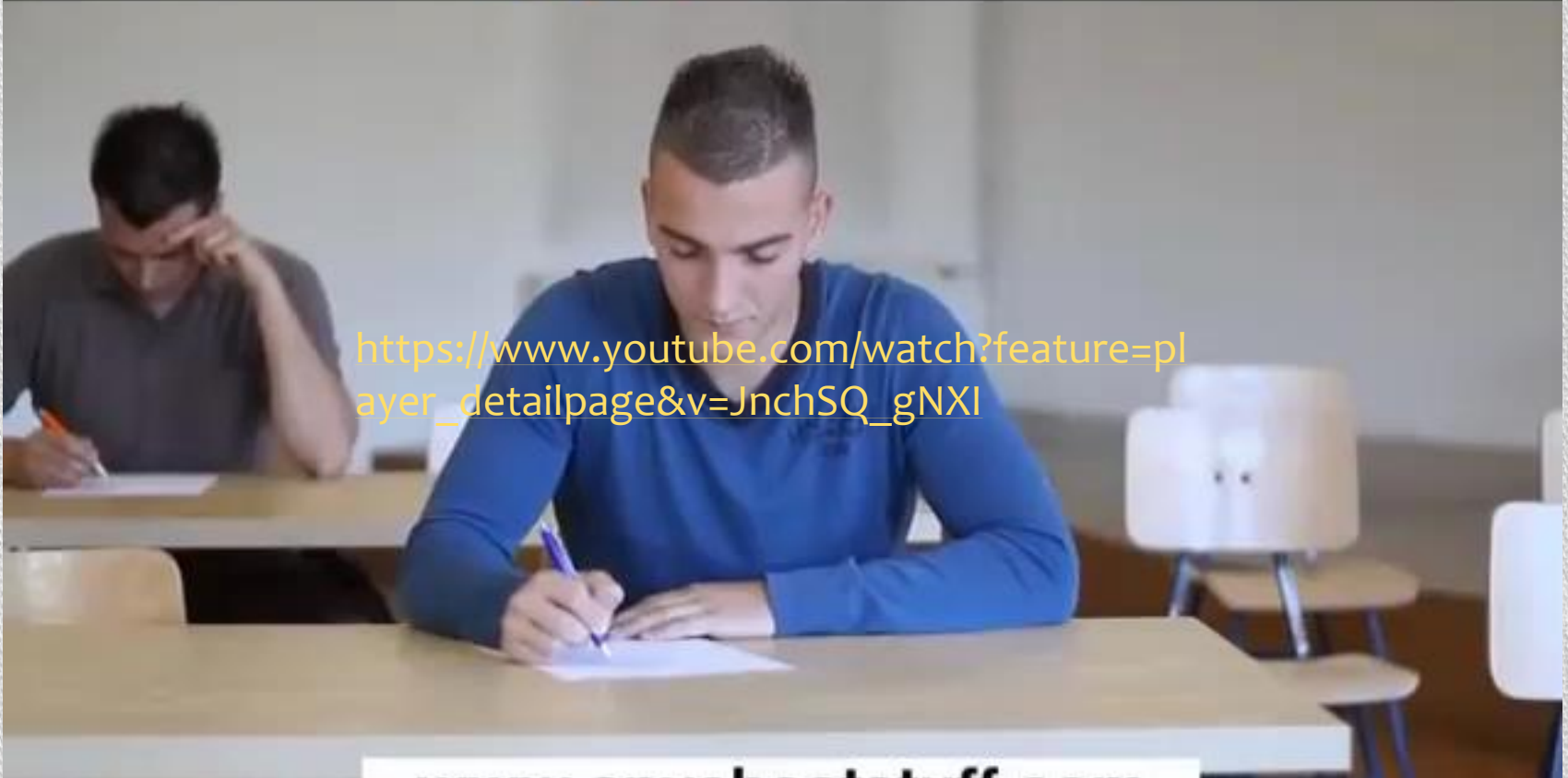
http://youtu.be/JnchSQ_gNXI



More 



https://www.youtube.com/watch?feature=player_detailpage&v=JnchSQ_gNXI



Background of Current Testing Security – *who cheats?*

Baird (1980) found 75.5% undergraduates in several majors

Meade (1992) reported 87% in various majors at top universities

McCabe (2005) counted 70% of 50K undergraduates from '02-'05

Park (2003) Minimum of 50% of students are cheating

Background of Current Testing Security - ***happens on-campus and online***

Marshall University Study Academic Dishonesty Assessment

- Classroom 1/3rd and Online 1/3rd Cheated at some time...

Cheating in the Digital Age: Do Students Cheat More in Online Courses? George Watson and James Sottile, Marshall University - *Online Journal of Distance Learning Administration*, Volume XIII, Number I, Spring 2010, University of West Georgia, Distance Education Center

Establishing Trust with Our Partner Colleges – **possible solutions available**

- Solution #1: **F2F Proctored testing on campus**
 - Logistics issues for testing around the state
 - Travel problems for students
- Solution #2: **Online testing best practices**
 - Timed tests to defeat open book or Google answers
 - Random question generator to mitigate passing answers around
 - More essay, short answer tests – harder to handle without knowing the subject
 - Authentic testing involving problem solving and applied learning
- Solution #3: **Technological documentation / authentication**

Establishing Trust with Our Partner Colleges

- **Solution#2: Online assessment, best practices**
 - Provides a better course, better measurement, better security in the long run but takes more time and resources to develop
 - Resources: solid course statistics, instructional design, and assessment strategies pertinent to subject area
- **Solution#3: Technological documentation / authentication**
 - Lab Reports – Originality Checking, TII ✓
 - Science kit labs -- Student photographs stages of their experiments ✓
 - Identity Authentication or Remote Proctoring

Review of Available Technology for Assessment Security - **Attributes**

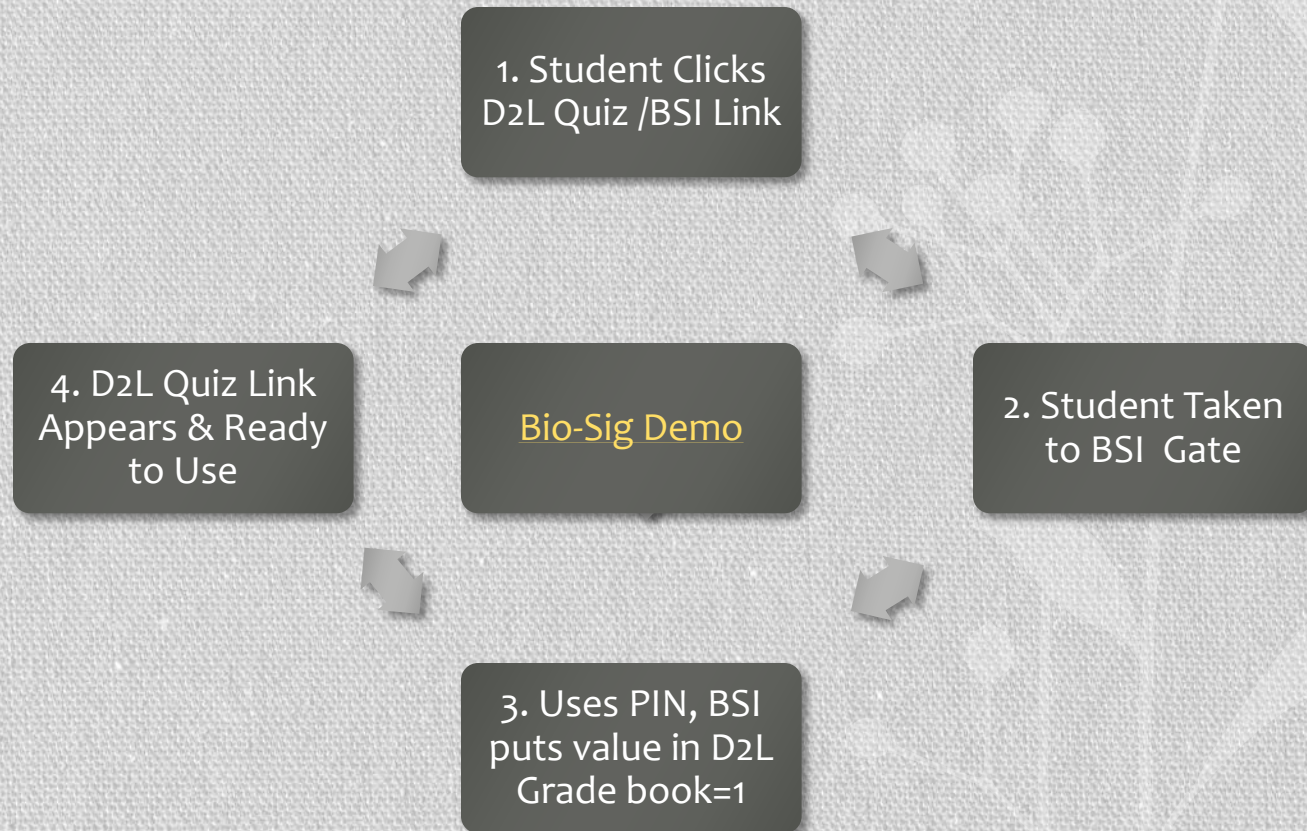
Important attributes of a solution

- 1 Assure the student's identity
- 2 No extra cost to student
- 3 Predictable cost for us
- 4 No extra technology for student
- 5 Runs on the students current network
- 6 Runs on pc, phone, tablet, etc.
- 7 Available 24/7
- 8 Available without appointment
- 9 No added responsibility to instructors or follow-up

Review of Available Technology for Test Security - Comparing Solutions

Attributes	Live Video Proctor	Passive Video Proctor	Biometrics
Assure student's identity	Y	Y	Y
No extra cost to student	N	Y	Y
Predictable cost to CCCO	Y	Y	Y
No extra technology	N	N	Y
Runs on all networks	N	Y*	Y
Works on pc, mobile devices	N	N	Y
Available 24 / 7	Y	Y	Y
Available w/o appointment	N	Y	Y
No instructor responsibility	Y	N	Y

BSI Gate to Assessments



BSI LTI Integration with CCCOnline courses

- **Pilots in two courses SP 14**

- No major issues for students or instructors
- Replication LTI issue during course copy resolved before FA 14

- **Full Production FA 14**

- Nine Science Courses :
 - BIO111, 201, 202
 - CHE111
 - PHY111, 112, 211, 212, 213
- One Math Course: MAT 121 – *Tech issue with Microsoft upgrade*
- Licensed 3,000 students for FY 15 – *very few helpdesk requests*

New - Real Time Event Notification



This is an automated e-mail triggered by the following user:

Account: Colorado Community College System MLP
LMS: Desire2Learn

Risk assessment:



RTEN: Too many login failures in a given time.

You are receiving this email because your address is configured to receive automated messages.

If you have questions/problems contact your service provider directly.

BioSig-ID™ protects your virtual Identity!

powered by



Biometric Signature ID
708 Valley Ridge Circle Suite 8
Lewisville, TX 75057-3318

RTEN Review Process

#1 Pull a Custom Report on the students test login history for 60 days

- Look for pattern of login failures, clues:
 - IP Address timing issues
 - Changing IP address
 - Test time coincidence with login failure?
 - Or reach out to student to assist with login issues

• #2 Send to Student Services for Review and Action

- Warning letter
- Further action if needed

Example Custom Report



Custom Detail Report

From: 2/8/2015

To: 4/9/2015

Time	Signature Data	Client IP	Device	Context Action	Succ	Acc.	App
2/9/2015 9:20:16 AM 01530	3 0 8 5	63.156.186.26 Louisville, CO, US (CenturyLink)	Mouse	Validate/ Validate Profile	✓	66	Biosig-ID
2/9/2015 8:55:27 PM 01530	3 0 8 5	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Validate/ Validate Profile	✗	21	Biosig-ID
2/9/2015 8:55:51 PM 01530	3 0 8 5	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Validate/ Validate Profile	✗	16	Biosig-ID
2/9/2015 8:56:09 PM 01530	3 0 8 5	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Validate/ Validate Profile	✗	25	Biosig-ID
2/9/2015 8:56:39 PM 01530		162.194.133.196 Fortuna, CA, US (AT&T U-verse)	None	Validate/ Validate Profile	✓	82	Click-ID
2/9/2015 8:56:39 PM	.	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Enroll/ Lock Profile	✓	0	Biosig-ID
2/9/2015 8:58:40 PM 01530	3 0 8 5	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Enroll/ Create Profile	✓	100	Biosig-ID
2/9/2015 8:59:43 PM 01530	3 0 8 5	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Enroll/ Create Profile	✗	0	Biosig-ID
2/9/2015 9:00:19 PM 01530	3 0 8 5	162.194.133.196 Fortuna, CA, US (AT&T U-verse)	Mouse	Enroll/ Create Profile	✗	0	Biosig-ID

Other Tools Used: MaxMind IP Look-Up

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GeoIP2 Precision Lookup Form

Show Sidebar >

GeoIP2 Precision: Insights Results

IP Address	Country Code	Location	Postal Code	Coordinates	ISP	Organization	Domain	Metro Code	User Type	Confidences
216.185.39.166	US	Columbus, Ohio, United States, North America	43215	39.9612, -82.9988	Alentus Corporation	Init7 (Switzerland) Ltd.		535	cellular	city: 11, subdivisions: 11, country: 63, postal: 10
182.66.47.17	IN	India, Asia		20, 77	Bharti Broadband	Bharti Airtel			cellular	country: 98
66.171.229.141	US	Torrance, California, United States, North America	90503	33.8359, -118.3406	nLayer Communications	nLayer Communications		803	hosting	city: 27, subdivisions: 37, country: 74, postal: 27

Service

Insights (9631 lookups available) ▾

IP Addresses

Please enter one IPv4 or IPv6 address per line.

216.185.39.166
182.66.47.17
66.171.229.141

Other Tools:

- IP Tracking Tool (D2L)
- **MaxMind** (Commercial IP Database)

D2L IP Tracking Tool										
			Date	IP Address						
			3/21/15 10:54	182.66.34.140						
			3/21/15 14:32	66.171.229.44						
			3/21/15 19:04	182.66.33.9						
			3/21/15 20:57	216.185.39.161						
			3/21/15 21:44	112.79.36.82						
			3/22/15 0:56	216.185.39.166						
			3/22/15 9:13	182.66.47.17						
			3/22/15 20:24	66.171.229.141						
			3/23/15 0:49	66.171.229.128						
			3/23/15 15:15	66.171.229.139						
			3/25/15 1:33	106.218.93.233						
MAXMIND: GeoIP2 TOOL										
IP Address	Country Code	Location	Postal Code	Coordinates	ISP	Organization	Domain	Metro Code	User Type	Confidences
216.185.39.166	US	Columbus, Ohio, United States, North America	43215	39.9612, -82.9988	Alentus Corporation	Init7 (Switzerland) Ltd.		535	cellular	city: 11, subdivisions: 11, country: 63, postal: 10
182.66.47.17	IN	India, Asia		20, 77	Bharti Broadband	Bharti Airtel			cellular	country: 98
66.171.229.141	US	Torrance, California, United States, North America	90503	33.8359, -118.3406	nLayer Communications	nLayer Communications		803	hosting	city: 27, subdivisions: 37, country: 74, postal: 27

Other Tools:

	QUIZ LOG TOOL			
MAT 203 Unit 4 Exam	Event Log	22-Mar-15		
TIME	EVENT	IP ADDRESS	CITY	
10:43 AM	Quiz Entry	216.185.58.180	Columbus, OH	
10:43 AM	Response to Question 1 Saved.	216.185.58.180	Columbus, OH	
10:47 AM	Response to Question 2 Saved.	216.185.58.180	Columbus, OH	
10:47 AM	Response to Question 3 Saved.	216.185.58.180	Columbus, OH	
10:48 AM	Response to Question 5 Saved.	216.185.58.180	Columbus, OH	
10:57 AM	Response to Question 6 Saved.	216.185.58.180	Columbus, OH	
11:03 AM	Quiz Re-entry	204.93.58.165	San Jose,	
11:04 AM	Response to Question 7 Saved.	204.93.58.165	San Jose,	
11:05 AM	Response to Question 8 Saved.	204.93.58.165	San Jose,	
11:05 AM	Response to Question 9 Saved.	204.93.58.165	San Jose,	
11:05 AM	Response to Question 10 Saved.	204.93.58.165	San Jose,	
11:06 AM	Response to Question 11 Saved.	204.93.58.165	San Jose,	
11:07 AM	Response to Question 12 Saved.	204.93.58.165	San Jose,	
11:07 AM	Response to Question 13 Saved.	204.93.58.165	San Jose,	
11:10 AM	Response to Question 17 Saved.	204.93.58.165	San Jose,	
11:10 AM	Response to Question 18 Saved.	204.93.58.165	San Jose,	
11:11 AM	Response to Question 22 Saved.	204.93.58.165	San Jose,	
11:11 AM	Response to Question 25 Saved.	204.93.58.165	San Jose,	
11:17 AM	Quiz Re-entry	204.93.58.165	San Jose,	
11:18 AM	Quiz Re-entry	204.93.58.165	San Jose,	
11:18 AM	Response to Question 24 Saved.	204.93.58.165	San Jose,	
11:22 AM	Quiz Re-entry	204.93.58.165	San Jose,	
11:23 AM	Response to Question 23 Saved.	204.93.58.165	San Jose,	
11:23 AM	Response to Question 21 Saved.	204.93.58.165	San Jose,	
11:28 AM	Response to Question 20 Saved.	204.93.58.165	San Jose,	
11:29 AM	Response to Question 19 Saved.	204.93.58.165	San Jose,	
11:35 AM	Quiz Re-entry	204.93.58.222	San Jose,	
11:43 AM	Quiz Re-entry	204.93.58.222	San Jose,	
11:47 AM	Response to Question 15 Saved.	204.93.58.222	San Jose,	
11:52 AM	Quiz Re-entry	50.118.162.110	Torrance,	
11:54 AM	Response to Question 16 Saved.	50.118.162.110	Torrance,	
11:54 AM	Response to Question 4 Saved.	50.118.162.110	Torrance,	
12:01 PM	Response to Question 14 Saved.	50.118.162.110	Torrance,	
12:01 PM	Page 1 Saved	50.118.162.110	Torrance,	
12:01 PM	Page 1 Saved	50.118.162.110	Torrance,	
12:01 PM	Quiz Submission Confirmation Screen	50.118.162.110	Torrance,	
12:01 PM	Quiz Completion	172.22.3.20		

Results: BSI Tools and D2L/MaxMind Tools

SP15 – CURRENT COUNT

- 10 BSI Courses : warnings sent to 20 students
- Other Non-BSI SCI, ACC, CSC and MAT courses: 30 warnings sent
- Review and Reconfigure BSI Course List for FY 16

Not the End... What is the Future?

- Biometric Signature-ID RTEN will refining students PIN responses and IP addresses
 - Foreign or Out-of-State IP addresses
 - High grades
 - Single Course Enrollment
 - First Time Enrollment
- Data Forensics...electronic trail of student's activities around assessments
 - Caveon (<http://www.caveon.com/>)– using data analysis to find anomalies after the test is taken and who was likely cheating
 - College Boards
 - Mississippi State Department of Education
 - Statistical Methods
 - Used by IRS to detect tax cheaters
 - Used by businesses use to detect accounting fraud