A Collaborative Government-University-Industry Model for a STEM Career-Education Pathway: Phase III: The R&D of Forensic Analytics and Biometrics

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Two research questions to be answered by this experiment:
1. What is the accuracy rate of the keystroke biometrics for detecting unauthorized users?
2. What is the accuracy rate of the mouse biometrics for detecting unauthorized users?

METHODOLOGY
+ Design of this proposed experiment is quasi-experiment
+ Method is quantitative
+ Time scope is cross-sectional
+ Resulting data will be analyzed using the multivariate analysis of variance (MANOVA)

LAYOUT
+ Two separate student test groups – one valid user group and one hacker group
+ Both groups attempt to access email account and send two emails – only valid users are provided credentials
+ Keylogging software and mouse tracking software is installed on computer for both groups

RESULTS
+ Full trials not yet completed, so little data is available
+ Unable to find commercial mouse tracking software
+ Brainstormed ideas to alter experiment to still test hypothesis while avoiding these roadblocks

Post-Survey Data Summary and Benchmarks: 2017 CSI Academy
(= Program objectives aimed to influence 31 out of 36 (85%) attendees who agreed that the CSI Academy impacted their STEM career interests and college aspirations positively.)

A Logic Model for the CSI Academy Program (2016-2018)

Bridge Program Components/Tool Kits
• Innovative teaching and learning kit
• Simulated crime scenes
• Field trips, job shadowing, & interaction with forensics professionals
• College Planning Resources Kit
• STEM Career Exploration Kit

Potential Short-Term Impacts
• Broad STEM participation by underrepresented demographic groups
• Awareness of STEM career opportunities
• Awareness of financial aid availability
• Awareness of college planning

Potential Long-Term Impacts
• Success in college
• Increase in STEM/Forensics degrees conferred
• Increase in intellectual capital
• Increase in our state’s equitable STEM workforce

Physiological Biometric Technologies (Source: Prabhakar, Pankanti & Jain, 2003)