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MAKING CYBERSECURITY EDUCATION FUN:
Gamification and Humor in a Flipped Classroom

Dr. Mansur Hasib, CISSP, PMP, CPHIMS

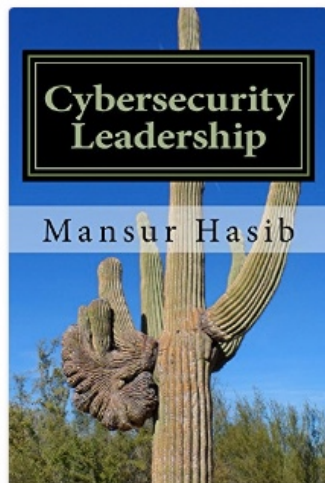**Program Chair, Cybersecurity Technology, The Graduate School**

2018 Hall of Fame, Cyber Startup Observatory

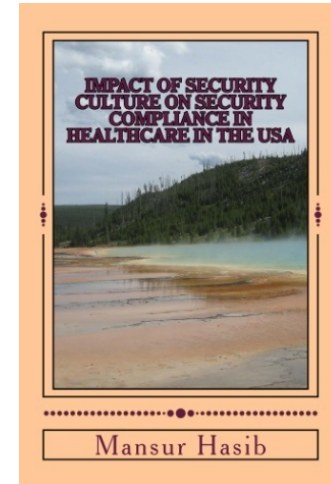**2017 People's Choice Award in Cybersecurity**

2017 Information Governance Expert of the Year

2017 (ISC)2 Americas ISLA Award for Cybersecurity Technology Degree Program at UMUC

Book *Cybersecurity Leadership* Rated #1 Cybersecurity Audiobook of All Time

Cybersecurity Leadership
Mansur Hasib

Cybersecurity Leadership
Powering the Modern Organization
By Mansur Hasib

Bookauthority
BEST BOOKS OF ALL TIME
WINNER

IMPACT OF SECURITY CULTURE ON SECURITY COMPLIANCE IN HEALTHCARE IN THE USA
Mansur Hasib

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LET'S UNDERSTAND CYBERSECURITY FIRST

Confidentiality (Privacy), Integrity, Availability

People

**Policy**

Technology

Mission, Risk, Governance

People Powered Perpetual Innovation

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THE DYNAMIC CYBERSECURITY MODEL

Note. Adapted from "A Model for Information Assurance: An Integrated Approach," by W. V. Maconachy, C. D. Schou, D. Ragsdale, and D. Welch, 2001, June. Paper presented at the 2001 IEEE Workshop on Information Assurance and Security, United States Military Academy, West Point, New York: New York and "Cybersecurity Leadership: Powering the Modern Organization," by M. Hasib, 2014

CYBERSECURITY MODEL - 2014
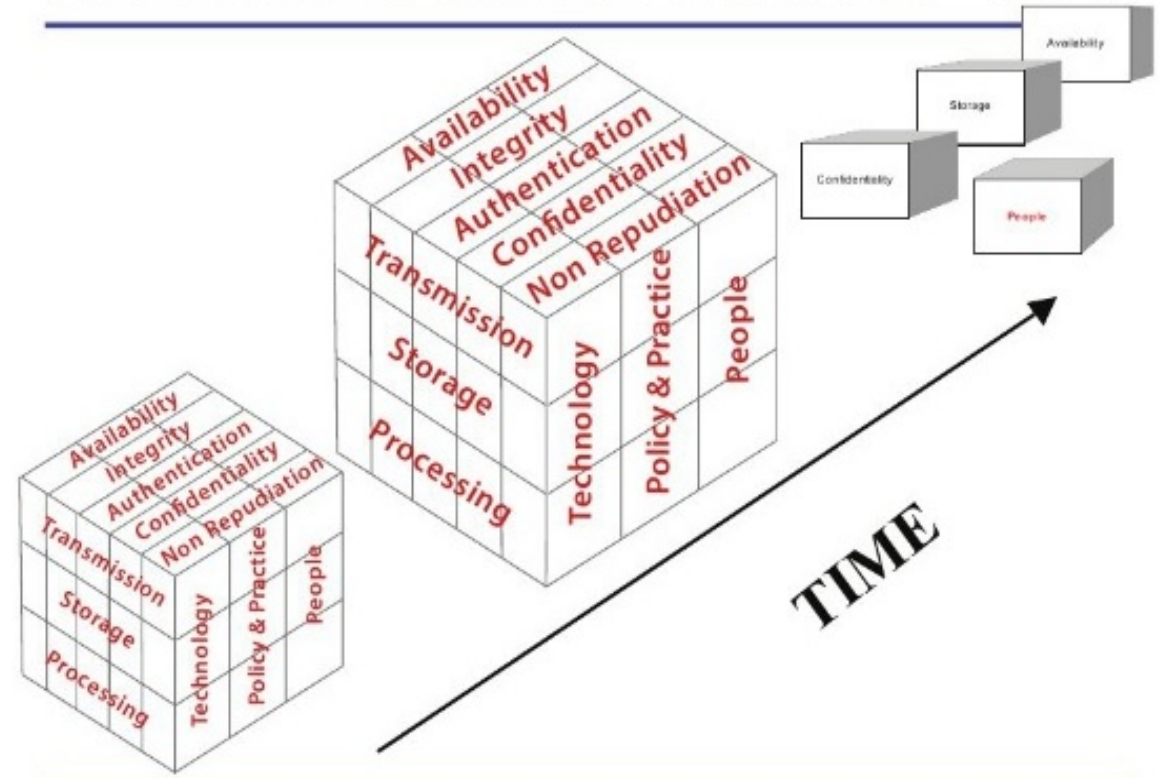
FOUNDATION: MISSION, RISK and GOVERNANCE

CYBERSECURITY DEFINITION DERIVED FROM MODEL

Cybersecurity is the mission-focused and risk-optimized governance of information, which maximizes confidentiality, integrity, and availability using a balanced mix of people, policy, and technology while perennially improving over time.

-Mansur Hasib (2017)

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WHY DO WE NEED TO MAKE IT FUN?

Material May Be Dry

Engagement Difficult

Monotonous for Instructor and Student

Limited Perspective

Working Professionals as Graduate Students

Doing More Important Than Knowing

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HUMAN PRODUCTIVITY AND INNOVATION

KASH

- **Knowledge**

- **Attitude**

- **Skill**

- **Habit**

Attitude and Habit Have Highest Impact

Note: Adapted from Zachery, K. (2011). The Leadership Catalyst: A New Paradigm for Helping Leaders Flourish in Organizations, http://repository.upenn.edu/cgi/viewcontent.cgi?article=1063&context=od_theses_msod

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COMPETENCY BASED EDUCATION: FLIPPED CLASSES

Knowing is Not Enough
Students Apply Knowledge to Do Things
Students Learn from Each Other
Faculty as Coach Instead of Primary Source
Teaching is the Best Form of Learning

WHY GAMIFICATION AND HUMOR?

Makes Dry Material Come Alive

Provides Variety in the Student Experience

Fun Makes Us Learn Better

Happiness Makes Brain More Creative

Games Sharpen Engagement and Focus

Dramatic Impact on Attitude and Habit

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PRECONDITIONS FOR SUCCESS

Cannot Grade Students on Curve
Cannot Have Quotas for Grades
Must Have Competency Based Grading

RISK MANAGEMENT AND COMPLIANCE

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LECTURES AND DISCUSSIONS

Instructor Sets Initial Context
Class Materials Divided Among Students
Student Research a Portion and Prepare Lecture
Students Graded on Engagement, Humor, Fun

ASSIGNMENTS

**Students Apply Knowledge to an Organization
Upload Drafts for Peer Review
Peer Review and Feedback
Revisions and Final Submission**

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SOME GAMES STUDENTS CREATED FOR THEIR CLASS

**Cybersecurity Jeopardy
Cybersecurity Millionaire
Cybersecurity Bingo**

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WHAT IS DIFFERENT?

**Students Learn About Multiple Organizations
Students See Multiple Examples of Work
Peer Review Motivates Higher Quality Work
Peer Feedback is Powerful Help for Students**

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RESULTS

Students Loved the Experience
Better Class Attendance
Strengths of All Students Used to Improve All
Higher Grades for Students
Higher Levels of Competency for Students
Presentations and Papers Used at Interviews
Higher Faculty Evaluations By Students
Excellent Feedback from Employers

QUESTIONS/DISCUSSIONS/CONTACT INFORMATION

References:

Hasib, M. (2015). *Cybersecurity Leadership: Powering the Modern Organization*.

Hasib, M. (2013). *Impact of Security Culture on Security Compliance in Healthcare in the USA*.

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IMPACT OF SECURITY CULTURE ON SECURITY COMPLIANCE IN HEALTHCARE IN THE USA

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www.cybersecurityleadership.com