UTSA Cyber Security Ecosystem

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Cyber Security at UTSA

A strategic priority since 2000

ACADEMIC UNITS	RESEARCH CENTERS	NSA/DHS CERTIFICATIONS
College of Sciences	Institute for Cyber Security	Center of Academic
College of Business	Center for Infrastructure	Excellence in Cyber
College of Engineering	Assurance and Security	Defense Education
College of Liberal and	Cyber Center for Security	Center of Academic
Fine Arts	and Analytics	Excellence in Cyber
College of Education and	Open Cloud Institute	Defense Research
Human Development		Center of Academic
	National Security	Excellence in Cyber
School of Data Science	Collaboration Center	Operations

http://www.utsa.edu/spotlights/cybersecurity/

World-Leading Research with Real-World Impact!

UTSA
Computer Science

I·C·S
The Institute for Cyber Security

C·SPECC
Center for Security and Privacy
Enhanced Cloud Computing

MISSION
Sustained excellence in graduate-level sponsored research

2007-2012
Founded by start-up funding from State of Texas

→

2012-2017
Graduated to a self-sustaining operation

→

2017-2022
Major expansion by winning NSF C-SPECC grant

→

- Situated in the College of Sciences, Department of Computer Science
- Established world class laboratories for:
  Secure cloud computing
  Malware research

In collaboration with:
College of Engineering
College of Business
College of Education
Open Cloud Institute
Cyber Center for Security & Analytics
Partnership with 4 NISD High Schools:
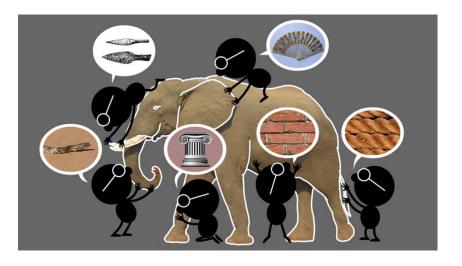Harlan, Woodson, Taft, Business Careers

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Elephant Problem

Cyber-Elephant Problem

The cyber-elephant problem requires Applied and Basic research Combined (ABC)
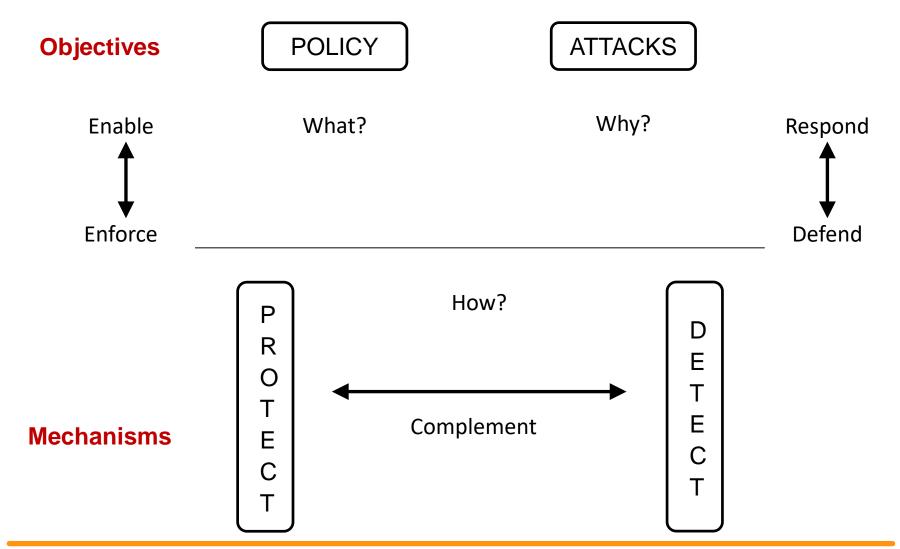*** The New ABCs of Research, Ben Schneiderman, 2016**

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Cyber Security Landscape

Objectives

POLICY ATTACKS

Enable   What?   Why?   Respond

Enforce   Defend

How?

P R O T E C T   D E T E C T

Mechanisms

Complement

World-Leading Research with Real-World Impact!

Divide and Conquer

Develop point solutions to point problems

Compose and Compensate

Build system level solutions from smaller component solutions

Bright
Shiny
Objects

Hard
Unapproachable
Problems

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Applied and Basic Research Combined (ABC)

* The New ABCs of Research
by Ben Schneiderman, 2016

➢ Software:
Waterfall -> Agile and DevOps

➢ Security:
Waterfall -> ???

➢ Tech transfer:
Technology Readiness Levels (TRLs) -> ???

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ICS Major Research Thrusts

TECHNOLOGIES

➢ Access Control

➢ Policy

➢ Malware

➢ Detection and Forensics

➢ Blockchain

➢ Artificial Intelligence/
Machine Learning

➢ ….

APPLICATION DOMAINS

➢ Cloud Computing

➢ Internet of Things (IoT)

➢ Social Networks

➢ Big Data

➢ Mobile Platforms

➢ Enterprise

➢ ….

Goal: Broaden and Deepen

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