

# Speculations on the Future of Cyber Security in 2025

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- Security can never hold back technology
- Cyber and physical space are increasingly entangled

- 99% of the attacks are thwarted by basic hygiene and some luck
- 1% of the attacks are difficult and expensive, even impossible, to defend or detect

## PAST, PRESENT

- Cyber security is a young and immature field
- The attackers are more innovative than defenders
- Defenders are mired in FUD (fear, uncertainty and doubt) and fairy tales
- Attack back is illegal or classified

## FUTURE

- Cyber security will become a scientific discipline
- Cyber security will be application and technology centric
- Cyber security will never be “solved” but will be “managed”
- Attack back will be an integral part of cyber security

## Security Objectives:

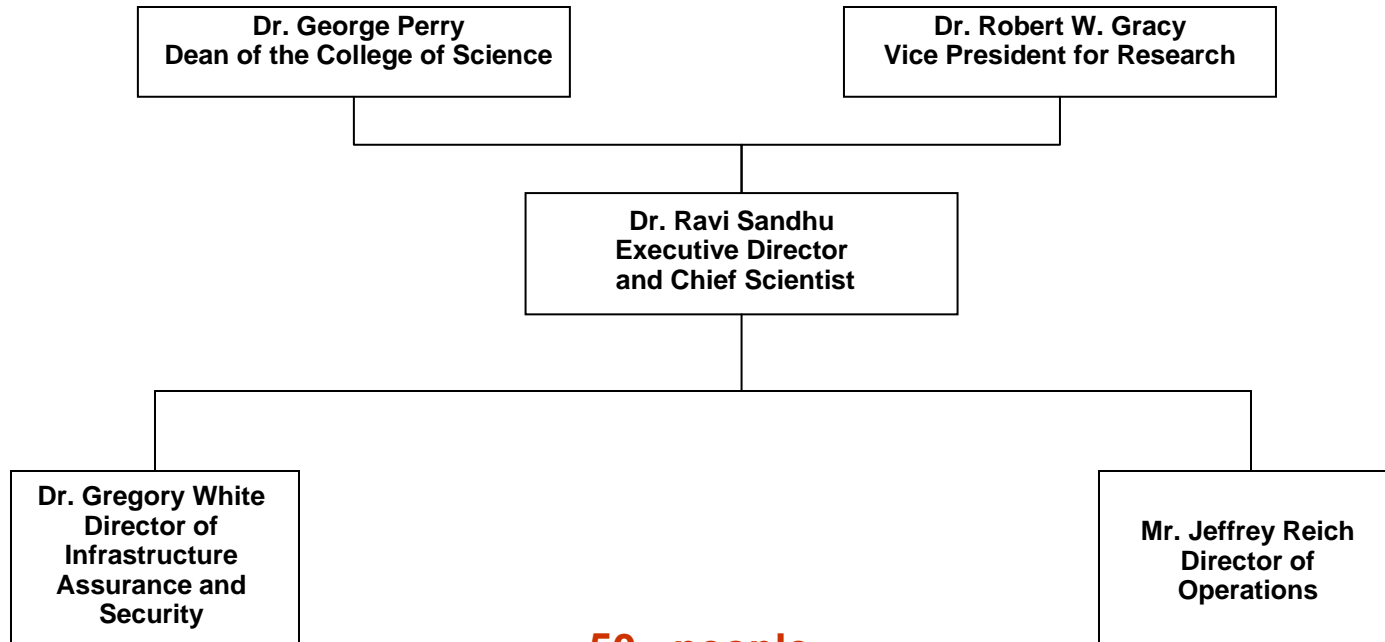
- Black-and-white to shades of grey

## Attackers:

- Innovative beyond belief

## Defenders:

- Need new doctrine



**50+ people:  
research, exercises,  
training, tech transfer**

**Research Faculty and  
Research Scholars**  
(Tenure-track faculty, Non-  
tenure track faculty, post-  
docs, graduate students, etc.)

**Research and  
Professional Staff**  
(Associate/assistant  
directors, architects, analysts,  
project leads, technical leads,  
instructors, intern, etc.)

**Administrative and Support  
Staff**  
(Administrative analyst,  
administrative associate,  
program coordinator, network  
administrator, etc.)

## Research Excellence

- Cloud Computing Security
- Infrastructure Assurance and Security
- Malware Mitigation
- Military Grade Security
- Secure Information Sharing
- Social Computing Security

## Research Laboratories

- Community Exercises: the real real-world
- Cyber Defense Competitions: real simulated data
- FlexCloud: cloud platform
- FlexFarm: malware honeyfarm

## Academic Collaborators Include

- Arizona State, Georgia Tech, Michigan, Penn State, Purdue, Illinois at Urbana-C, Maryland at Baltimore County, North Carolina at Charlotte, Texas A&M, Texas at Dallas, Wisconsin

## Sponsors Include

- NSF, AFOSR, ONR, AFRL, DHS