

IOWA STATE UNIVERSITY

Department of Electrical and Computer Engineering

Adventures in Cyberspace:

Cyber Security Literacy for K-12 and Beyond

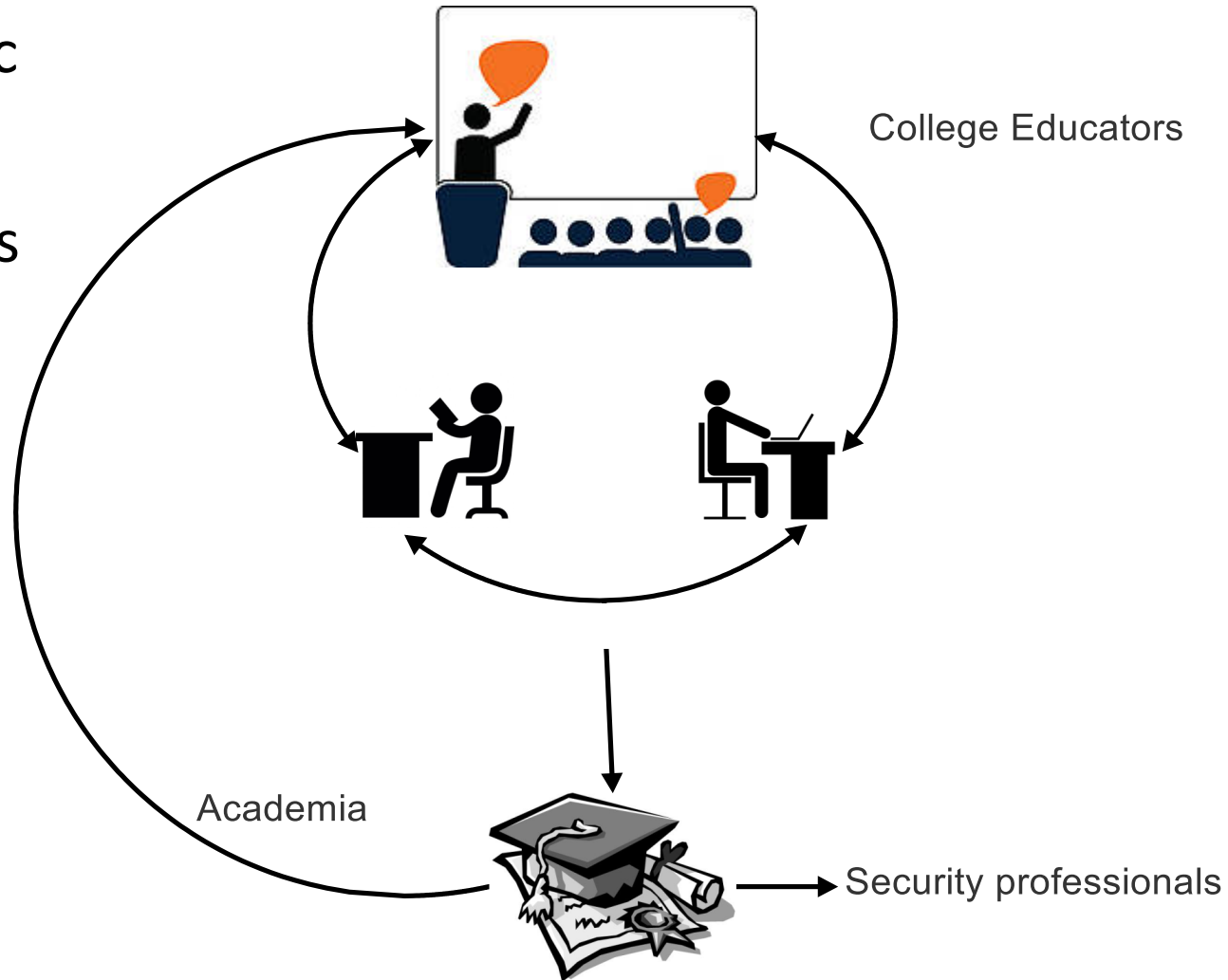
Dr. Julie A. Rursch, Lecturer

Tracy La Van, Graduate Student

Information Assurance Center

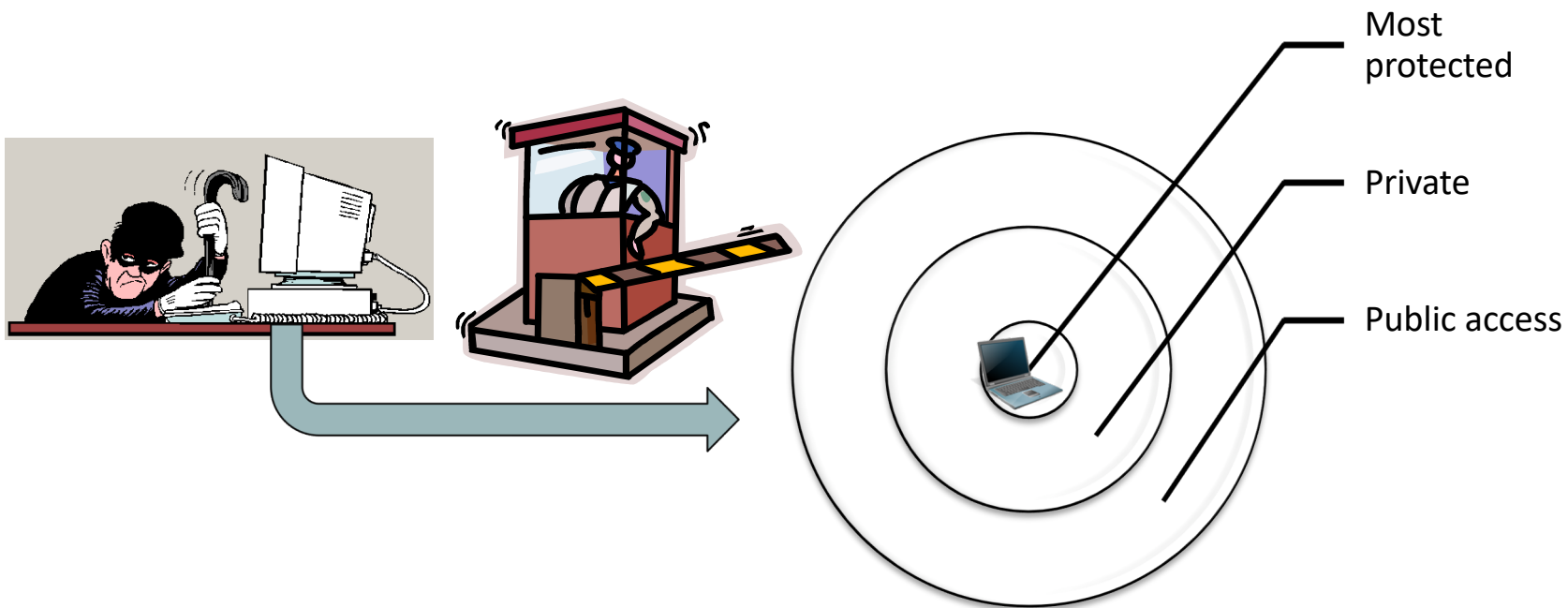
Classic Cyber Security Education

- Protect the public
- Creating tools
- Providing services



Practice of Defense in Depth

- Multiple walls run or designed by trained professionals
- Higher education trains the guards who watch or build the walls
- We build and sell tools



Grading the Education Current System

Teaching Defenders

Degrees
BS, MS, PhD

Certifications

Training

A-

Teaching IT-Literate

Classes

Training

Informal

Certifications

C+

The Masses

Awareness

Fear

Deceit

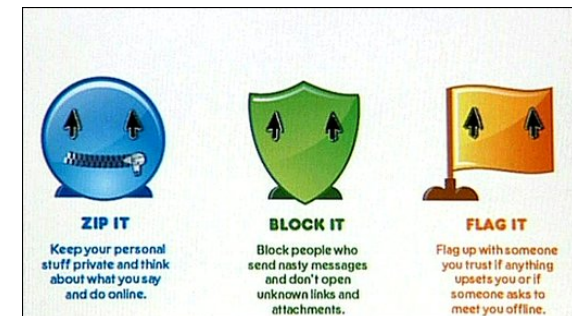
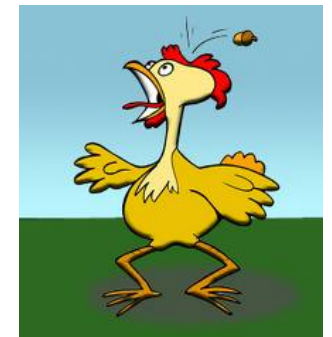
Punishment

D



Awareness Campaigns

- Awareness
 - People are aware, but don't know what to believe
 - Current news stories breed fear
 - End up with two types of people:
 - Head in the sand
 - Chicken little
- Top 10 lists and posters
 - No tools provided to user
 - Users can't take an active role
 - No real action directives



Other Methods

- Fear
 - It is easy to generate, but two outcomes
 - I'm not going to use the computer to bank, shop, etc.
 - It is hopeless, but I'm going to do it anyway
- Deceit / Punishment
 - Tricking them into doing something bad and then telling them not to do it again
 - Tends to upset most people
 - Penalty for a security “violation”
 - Creates conflict between IT and the users



What is Security Literacy?

- Teach a man/woman to fish
- Teaching computer security in terms the average user will understand
 - Abstract the technical away / reduce
 - Use metaphors and common language
 - Relate to everyday activities
 - Help users understand they can't depend upon "the security professionals"
 - They have a role in their own safety



What We Do

- The basics of what we do
- College Level
- K-12
- Beyond

What Can You Do?

- We want you to think about how you can get involved, but first... Pick a topic of interest to you:
 - Passwords
 - Email
 - Internet
 - Social Networking
 - Malware
 - Ethics

For our activity, please navigate to:

security-literacy.org

> Training Opportunities

> WiCyS 2018

Our Challenge to You

- Take what you have learned today and find a way to apply it in your domain
- Help spread the word about cyber security literacy for all

Questions?

Contact Information

- Dr. Julie A. Rursch jrursch@iastate.edu
- Tracy La Van tlavan@iastate.edu
- www.security-literacy.org

