THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

RTI INTERNATIONAL

BUILDING PUBLIC CYBER HEALTH
Designing and Testing the Efficacy of a School-focused, Gamification Approach to Create a Secure Computing Environment

Challenge

As the frequency and complexity of cyber attacks increase, approaches to create secure virtual environments must look beyond erecting technical barriers that protect from the outside to building a collaborative culture of cyber health from the inside. We have developed two online game platforms *StarMiner™* and *GalaxyNet™* that provide an alternative to traditional classroom-centric teaching about cybersecurity.

Solution

StarMiner™ and *GalaxyNet™* blend elements of simulation, real-time strategy, and tower defense to : 1) better understand students' awareness of and attitudes toward safety online; 2) identify specific risky behaviors that students demonstrate online; 3) modify risky online behaviors. Unlike other behavioral modification approaches, gamification assumes that the player may not be personally motivated to achieve a goal— at least at the beginning—but then secures engagement through designed incentives that increase personal motivation.

VIRUS ALERT!!

SCHOOL

Scientific Impact

If successful, our research could change the way that cybersecurity is viewed by cybersecurity researchers and managed within academic organizations and more broadly, in all organizations. Cybersecurity will become viewed more as public health is viewed—as a collaborative effort between multiple stakeholders to improve the public cyber health of organizations and society. Digital technologies such as games are an effective vehicle for collaborative efforts and worthy of more research.

Broader Impact

Our current model focuses on a single organizational unit—the school. However, we are developing and implementing a mobile application, *Sad Cyber Sam™* suitable for a smartphone, they can be transitioned to the larger eco-system of students' families, potentially reaching beyond schools to the workplace and other institutional settings. By incorporating social networking elements into the interventions, our project's impacts have the potential to be further amplified by the participants' security behaviors outside of the school environment.