

# Seminar



## Detecting the 1% Growing the Science of Vulnerability Discovery

**Abstract.** Daily, news reports reveal the latest increasingly sophisticated security breaches that threaten our national security, our cyber infrastructure, our health, our finances, our children, and democracy itself. Vulnerabilities enable these breaches. Yet, our studies and those of other researchers indicate that detected vulnerabilities are rare events, appearing in about 1-4% of software files. Protecting the American people, the American homeland, and the American way of life, as outlined in the 2017 US National Security Strategy, necessitates that organizations detect the 1% of files that contain exploitable vulnerabilities so that the vulnerabilities can be remediated. Proactive security review and test efforts are necessary components of the software development lifecycle. Resource limitations often preclude reviewing and testing the entire code base. Making informed decisions on what code to review and test can improve a team's ability to find and remove more exploitable vulnerabilities. Therefore, security engineers looking to prioritize security inspection and testing efforts may be better served by vulnerability-based detection techniques and tools and effective vulnerability prediction models. This talk will present an overview of extensive research of vulnerabilities and vulnerability discovery.

**Biography.** Dr. Laurie Williams is a Distinguished Professor in the Computer Science Department of the College of Engineering at North Carolina State University (NCSU). She is a co-director of the NCSU Science of Security Lablet sponsored by the National Security Agency and the NCSU Secure Computing Institute. Dr. Williams research focuses on software security; agile software development practices and processes, particularly continuous deployment; and software reliability, software testing and analysis. In 2018, Dr. Williams was named an IEEE Fellow for contributions to reliable and secure software engineering.



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Friday January 24, 2020  
Time: 2:00 - 2:50pm  
Room: Bate 1001

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# Graduate studies at NCSU

## Degrees

- PhD
- Master of Science
- Master of Computer Science
  - Track in Data Science
  - Track in Security
  - Track in Software Engineering
- Master of Computer Science (Distance Education)
- Master of Science in Computer Networking
- Master of Science in Computer Networking (Distance Education)

## Certificate

- Computer Science
- Data Science Foundations

