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## Cybersecurity Lecture Series

**Leveraging Software Instrumentation for Android Security Assessment and Privacy Enforcement****Aisha Ali-Gombe, Ph.D.**

Assistant Professor of Computer Science, Towson University

Digital Media Center 1034  
March 19, 2018 - 02:00 pm**Abstract:**

Modern malware is in use on an industrial scale by cybercrime organizations, and its development is often highly professional. On mobile devices, malicious applications can very effectively spy on users and their communications in real time, install root exploits to escalate their privileges, designate target devices as bots, etc. The information gathered by these applications is sufficient to uniquely and accurately profile users and can cause tremendous personal and financial damage. In many respects, this presents an enormous threat not just to users but organizations and nation states at large. On Android, security and privacy weaknesses in the operating system and framework code have created a whole new dynamic for malware and privacy exploitation. In this research, we leverage software instrumentation techniques to develop robust and highly adaptable tools for malware analysis and fine-grain privacy enforcement for Android applications. Unlike existing literature, our user-level approach provides a more efficient and platform-independent methodology for security monitoring and low-level access control in mobile Applications.

**Speaker's Bio:**

Aisha Ali-Gombe is an assistant professor of Computer Science at Towson University and a visiting research scientist with the Center for Computation and Technology Louisiana State University. Dr. Ali-Gombe earned her Ph.D. in Engineering and Applied Science with major in Computer Science from the University of New Orleans in May 2017, following an M.S. degree in Computer Science in 2012. Her expertise and research interest in cybersecurity and digital forensics include code fingerprinting, malware analysis, privacy policy enforcement techniques, mobile security and memory and database forensics. She has published her work in ACM conferences such as WiSec, PPREW and CODASPY, the Journal of Computer and Security (COSE), NDSS and the proceedings of the American Academy of Forensic Sciences (AAFS). Dr. Ali-Gombe is a recipient of TotalFinaElf Undergraduate Merit Scholarship, Nigeria.

