



# NORTHWEST INSTITUTE FOR CYBERSECURITY EDUCATION AND RESEARCH

## CySER Virtual Seminar

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Flexible and Adaptive Malware Identification Using Techniques from Biology

March 21, 2022, 3:10 – 4PM PDT

Team Link: [Click here to join the meeting](#) Or call in (audio only) +1 509-498-6399

Phone Conference ID: 293 434 94#

### Abstract:

Cyber security data in many ways mimics the behavior of organic systems. Individuals or groups compete for limited resources using a variety of strategies, the most effective of which are re-used and refined in later generations. Traditionally this behavior has made detection of malware very difficult because 1) recognition systems are often built on exact matching to a pattern that can only be 'learned' after a malicious entity reveals itself and 2) the enormous volume and variation in benign code is an overwhelming source of previously unseen entities that often confound detectors. In addition, the enormous volume of malware artifacts is overwhelming anyone trying to categorize and characterize new additions to the many malware repositories as so much of the processing is done by hand.

### Bio:

Elena Peterson joined PNNL in 1990 after getting her BS in Computer and Information Sciences from the University of Oregon. She is currently a Senior Cyber Security Researcher in the Computation and Analytics Division. Ms. Peterson has led the research, development, and management of multiple cross-disciplinary, multi-laboratory projects focused in the fundamental sciences and national security sectors. Her work has included research and development of integrated computational environments for bioinformatics, physics, computational chemistry, cyber security, and more recently Advanced Wireless Communications. She is currently the principal investigator for the MLSTONES and mMutant projects, which applies algorithms and tools from the biological sciences to create new and innovative solutions to relevant cyber security problems thus merging two of her main interests.



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