

OSTROM WORKSHOP COLLOQUIUM SERIES

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“Integrating Attackers, Defenders, and National Culture into Cybersecurity Risk Models”

Monday, January 22, 2018

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Current cybersecurity risk modeling methodologies do not consider humans as risk initiators or mitigators. Human factors are considered primarily in terms of how users use networks, which help defenders and IT managers prioritize assets; while the defenders and IT managers consider risk from their perspective of how to best protect their system. Risk management within the context of the NIST framework does not consider humans as actual risk factors, initiators and mitigators of risk, and therefore potential components of a predictive model of network security risk. Attributes of the human actors, attackers, defenders, and users, such as experience, knowledge, and cultural background, may significantly influence how human actors contribute to or mitigate cyber risk, and thus are appropriate parameters to include in a predictive cybersecurity risk model. In this paper, we extend our previous work conceptualizing a dynamic aggregated cybersecurity risk assessment model based on a Bayesian belief network and incorporate variables representing critical risk-inducing and risk-mitigating human and cultural factors into a proof of concept.



Diane Henshel is an associate professor in the School of Public & Environmental Affairs at IU. Trained as a neuroscientist, she has been researching environmental toxicology and risk assessment issues for over two decades. This skillset was transitioned to work on cybersecurity risk assessment and modeling when she joined a team of faculty from (now) seven universities (led by Penn State) who developed and were awarded the contract for the Army Research Laboratory Cyber Security Collaborative Research Alliance ([website](#)).

Presentations are open to the public and are live streamed (see our website for URL and papers). You are welcome to bring your lunch. For questions, contact Allison Sturgeon (sturgeon@iu.edu; 812/855-3151).