Cybersecurity at MIT Sloan
Research Priorities for 2019

Cybersecurity at MIT Sloan brings thought leaders from industry, academia and government together with MIT faculty, researchers and students to address strategy, management, governance and organization of cybersecurity of critical infrastructure using an interdisciplinary approach.

Research Priorities 2019

Research at CAMS focuses on the difficult leadership and managerial questions of cybersecurity. Our research framework (available here) outlines the broad scope of the areas on the CAMS research agenda. After discussions with cybersecurity leaders, we have chosen to focus this year on five of the biggest world-wide cybersecurity challenges facing both private and public sector organizations:

1. **Developing Operational Approaches to Cyber Risk Management and Metrics**- This research stream seeks to answer the large question of "How secure are we?" How does the cybersecurity maturity map to exposure and risk (are more mature organizations experiencing lower risk)? How can we measure the impact on cybersecurity risk of various organization and technical investments?

2. **Using Knowledge of Attacker Business Models to Improve Cybersecurity**- Looking at the dark web as a collection of "as a service" offerings changes the way we think about how attack vectors are created and who can create them. This stream looks at the dark web through the lens of the Porter value chain and seeks ways to identify and defend against future attacks.

3. **Developing, Managing and Maintaining a Vibrant Cybersecurity Culture**- This stream looks at how we influence our employee's behaviors and increase positive cybersecurity behaviors. We believe behaviors are primarily driven by the beliefs, values and attitudes of the organization which we see as the culture. Culture is influenced by organizational mechanisms that managers implement and by external factors. The goal of this research is to provide managers and leaders with a roadmap of how to build a culture to increase cybersecurity

4. **Providing IoT and End Point Cybersecurity**- What is the best approach to managing cybersecurity of IoT devices, especially those running in plants and complex systems? As the number of endpoint devices increases, managers want a way to make sure all additional cybersecurity vulnerabilities are well managed. This research stream focuses on a better way to think about cybersecurity of IoT.

5. **Providing Cyber-Physical Security Using a Systems Approach**- This research stream takes a systems-level view of cybersecurity. Applying System-Theoretic Accident Model and Processes (STAMP) approach to cyber-physical systems has highlighted insights to better security in energy delivery systems. This research stream identifies critical vulnerabilities and hazards in cyber-physical systems and suggests strategies to mitigate and reduce the possible damage caused by a cyber attack.

Cybersecurity at MIT Sloan welcomes funding from sponsors for general support of the consortium research, and from organizations interested in specific research topics. All members and sponsors receive invitations to consortium events and activities, and access to consortium research, websites, and newsletters. For more information, visit https://cams.mit.edu or contact:

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Cybersecurity leadership has many challenges. CAMS 2018-2019 research priorities bring MIT research to some of the most difficult.