CAREER: Understanding Adaptive Adversarial Behavior and Decision-Making Processes in Cyberattacks

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Challenge:

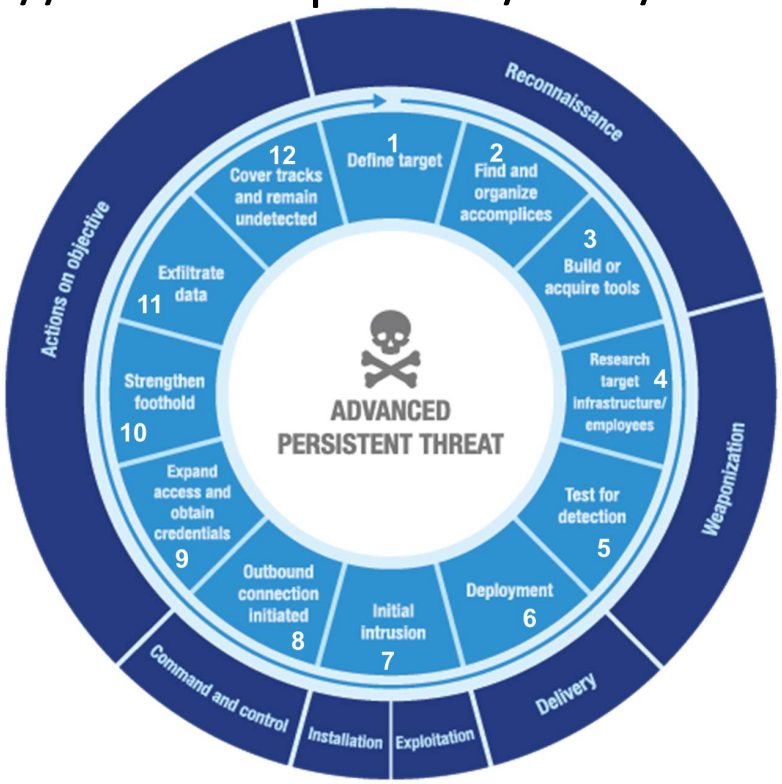
Current cyberdefense approaches are reactive and thus ineffective.

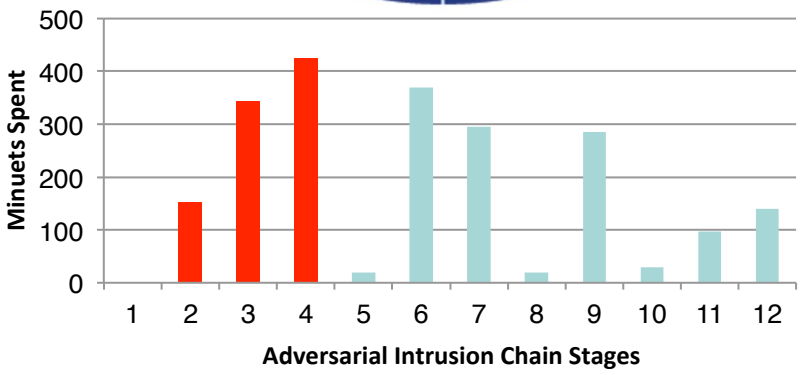
Defenders need to move to a proactive approach and parallel adaptive adversaries.

Solution:

Predict adversarial decision-making by examining:

1. Adversarial adaptability when attack paths are disrupted at different stages
2. Importance and traits of attack paths and stages
3. Factors impacting decision-making processes as attacks progresses





Scientific Impact:

1. Paradigm shift towards *proactive* cybersecurity
2. Incorporate adaptive adversarial *behavior and decision-making* to complement and supplement technical cybersecurity

Broader Impact:

1. Multidisciplinary, academic-government-private sector partnerships
2. Criminology, Computer Science, and Electrical Engineering students work together to understand dynamic and holistic cybersecurity
3. Cybersecurity in Action, Research and Education (CARE) conference: Industry, academics, students, hackers

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