

Heinz College Events

Anna Nagurney - Predictive and Prescriptive Models of Cybercrime and Cybersecurity Investments Under Network Vulnerability

The effects of cyberattacks are being felt across the globe in multiple sectors and industries. The damages incurred include direct financial damages as well as reputation issues, the loss of business, the inability to provide the expected services, opportunity costs, and the loss of trust. The world economy sustained \$445 billion in losses from cyberattacks in 2014 alone. In this talk, I will first describe a predictive analytical multiproduct network economic model of cybercrime in financial services in which the hacked products are perishable in that their "value" deteriorates over time. I will then discuss our research on prescriptive analytical models for cybersecurity investments and network vulnerability when firms compete and when they cooperate in terms of information sharing. Algorithms and computational results for both classes of models will be presented and discussed. A case study in the retail sector as well as one in the energy sector will be described along with extensive sensitivity analysis results that demonstrate the benefits of cooperation.

Event Information	Location Information
Date: Apr 04, 2016 Time: 12:00 PM to 01:30 PM	Hamburg Hall 1502 (Pittsburgh Campus)