Biomimicry to Protect the Global Information Infrastructure

Panel Chair: Hilary Hosmer, Data Security, Inc.

Panelists: Abigail Hafer, Curry College
                      Ruth Nelson, Information System Security

ABSTRACT

Nature spent millions of years perfecting methods of attack, defense, and cooperation. Mimicking the biological world has already improved information security. For example, William Murray used epidemiology to combat computer viruses, and Stephanie Forrest used principles of immunology to improve host system defenses.

This panel focuses on the interactions among species and their environment, building an analogy with the Global Information Infrastructure where many nations and international companies will compete and jostle each other in the search for new markets, territory, and wealth.

POINT / COUNTERPOINT

Professor Hafer, a biologist, will describe an attack/defense or cooperative strategy used in the natural world. Ruth Nelson will, in turn, describe how this strategy applies to information security. Topics will include:

Refuges that preserve diversity
Secure communication
Non-human senses
Environmental balance and interspecies game theory
Natural confidentiality, integrity, assurance of service