



Institute for Mathematics and its Applications

IMA Public Lecture Series
MATH MATTERS

Epidemics in Technological and Social Networks

The Downside of Six Degrees of Separation

During the past decade, complex networks have become increasingly important in communication and information technology. Vast, self-engineered networks, like the Internet, the World Wide Web, and Instant Messaging Networks, have facilitated the flow of information, and served as media for social and economic interaction. In social networks, the ease of information flow goes by many names: the "small world" phenomenon, the "Kevin Bacon phenomenon," and "six degrees of separation"—the claim that any two people on earth can be connected through a chain of acquaintances with at most five intermediaries. Unfortunately, many of the properties that facilitate information transmission also facilitate the spread of viruses in both technological and social networks. Dr. Chayes uses simple mathematical models to explain these epidemics and to examine strategies for their containment.

Jennifer Chayes

Manager of the Theory Group and Research Area Manager
for Mathematics and Theoretical Computer Science
Microsoft Research

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7:00 pm

125 Willey Hall
225 19th Avenue South
University of Minnesota, Minneapolis



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