Ritchey Lecture

7:30 pm, Thursday, Feb. 23
LL125, LL126

Tracking and Curbing the Next Pandemic

Dr. Lauren Ancel Meyers
Integrative Biology at the University of Texas at Austin

Abstract: A discussion of global pandemics and why influenza remains a major threat and how data and modern computing are helping to fight contagion.

Biographical Sketch:

Lauren Ancel Meyers received her B.A. degree in Mathematics and Philosophy from Harvard University in 1996 and her Ph.D. from the department of Biological Sciences at Stanford University in 2000. After completing a postdoctoral fellowship supported by the National Science Foundation, she joined the faculty of Integrative Biology at the University of Texas at Austin in 2003 where she was recently promoted to Full Professor and awarded a Donald D. Harrington Faculty Fellowship. She now serves as the Director of the Division of Statistics and Scientific Computation at UT, and is a member of the Scientific Advisory Board for the Santa Fe Institute. Lauren has developed new network-based mathematical methods to study the interplay between disease transmission dynamics, human behavior, and the evolution of pathogens including those responsible for epidemic meningitis, HIV, influenza, walking pneumonia, and SARS. Her research has been published in over 45 peer-reviewed publications and funded by research grants from National Institutes of Health, the National Science Foundation, and the James S. McDonnell Foundation. The Wall Street Journal, Newsweek, the BBC, and other news sources have highlighted her work; and a number of government agencies have sought Lauren's expertise, including the Centers for Disease Control and Prevention (CDC), the Biomedical Advanced Research and Development Authority (BARDA), and the US National Intelligence Council. In 2004, the MIT Technology Review named Lauren as one of the top 100 global innovators under age 35.

Sigma Xi presentation

Title: Connectivity and Disease -- Harnessing Network Concepts to Improve Public Health

Abstract: Infectious diseases, human behavior, and health-related information spread via networks of physical, social, and institutional interactions. By understanding and harnessing the structure of these networks, public health agencies can more effectively monitor and control human diseases. Over the last decade, we have developed new network-based mathematical approaches for predicting the spread of infectious diseases and collaborating with public health officials worldwide to apply these methods to address public health challenges. In this seminar, I will describe how simple conceptual models have been combined with high performance computing to improve disease surveillance, forecasting and intervention.