PORCELLI LECTURE SERIES

LSU Mathematics

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Photo by Harald Hanche-Olsen

One of the leading authorities in probability theory, he has played a central role in the development of the theory of large deviations. His ideas have influenced a broad range of fields, from quantum field theory to population dynamics. The diverse and deep impact of his works has been recognized through many awards, including the **National Medal of Science** and the **Abel Prize**.

4:30pm–5:20pm @ 103 Design Building

Wed Apr 17 2013

What is Large Deviations?

In probability theory, we often have to estimate the probabilities of various events. If they are not too small, we can try to approximate them. But sometimes they are very small and it can be important to know exactly how small they are. For example, in calculating conditional probabilities that are ratios, the conditioning event can have small probability. We are then looking at ratios of two small numbers, which may or may not be small.

Thu Apr 18 2013

Scaling limits of large systems

Often we have a large system whose behavior is specified through local interactions. We may be interested in understanding their large scale consequences. We will examine some examples of this.

Fri Apr 19 2013

Counting graphs

Probability theory can be used to estimate, for large N, the number of graphs with N vertices that have specified properties. For example, for a finite collection of finite graphs Γ_j, the ratio of the number of times Γ_j occurs in the graph to the number of times it can occur in a complete graph can be specified.