



UNIVERSITY OF ROCHESTER

Department of Mathematics Colloquium Series

ABSTRACT

The celebrated Gauss normal law is the probability distribution whose density function is the familiar bell curve. The importance of the Gauss law is largely due to the fact that the sum of a large number of independent random quantities behaves statistically in the same way as a normal random variable. The precise formulation of this fact is known as the central limit theorem. This explains why the Gauss normal distribution arises so frequently in such disparate phenomena as random walks, games of chance, statistical mechanics (from Maxwell to Gibbs), mechanical oscillations, and even in connection with prime numbers.

The normal law was first introduced by de Moivre in 1734. His result was extended by Laplace in 1812. Laplace used the normal distribution in the analysis of errors in experiments. In 1805, Legendre introduced the important method of least squares. Gauss justified the method of least squares rigorously in 1809 by assuming that the errors are normally distributed.

The speaker will illustrate some of the “ubiquity” of the Gauss normal law.

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Winner of the Leroy P. Steele Prize for Lifetime Achievement (AMS, 2007)

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***The Gauss Normal Law of Probability
and Its Remarkable Ubiquity***

**Thursday, April 5, 3:30–4:30 p.m.
Hoyt Auditorium**

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