Join the Department of Statistics in Celebrating the Distinguished Careers of

STEPHEN M. STIGLER
Ernest DeWitt Burton Distinguished Service Professor
Chairman, Department of Statistics and the College
Member, Committee on Conceptual and Historical Studies of Science

and

MICHAEL J. WICHURA
Associate Professor
Department of Statistics and the College

Saturday, November 4, 2006
Room 120 of Kent Chemical Laboratory
1020 East 58th Street
Chicago, Illinois  60637

Guest Speakers

DAVID BELLHOUSE
Professor of Statistics at The University of Western Ontario
“A War of Words in Pictures: The dispute between Montmort and De Moivre over the Probability Calculus”
11:00 a.m.

Break for Lunch

JIM FILL
Professor of Applied Mathematics and Statistics at Johns Hopkins University
“Precise Logarithmic Tail Asymptotics for the Right Tails of Some Limit Random Variables for Random Trees”
1:30 p.m.

Break

ROBERT KASS
Professor of Statistics at Carnegie Mellon University
“Statistical Thinking in Neurophysiology”
3:00 p.m.
“A War of Words in Pictures: The dispute between Montmort and De Moivre over the Probability Calculus”

David Bellhouse
Professor of Statistics at The University of Western Ontario

ABSTRACT

In 1708 Pierre Rémond de Montmort published Essay d’analyse sur les jeux de hazard, an analysis of contemporary games of chance using probability theory. The book also includes Montmort’s solutions to the five challenge problems in De Ratiociniis in Ludo Aleae by Christiaan Huygens. The Essay d’analyse also contains an engraving inspired by another one published in 1659 in a French book on games. Montmort’s engraving illustrates the importance that he attached to his work. Three years after Montmort’s initial publication, Abraham De Moivre published De Mensura Sortis in which a variety of probability problems were solved. Montmort brought out the second edition of the Essay d’analyse in 1713 and De Moivre followed in 1718 with The Doctrine of Chances, a considerable expansion of De Mensura Sortis. Through these publications, as well as some contemporary letters and papers, we can follow the increasingly bitter rivalry between Montmort and De Moivre. The Doctrine of Chances also contains an engraving. Although De Moivre was generally polite and complimentary to Montmort in the written text, the engraving is a scathing criticism of Montmort’s work. Two of the three engravings shown in the talk are courtesy of Stephen Stigler.
“Precise Logarithmic Tail Asymptotics for the Right Tails of Some Limit Random Variables for Random Trees”

James Fill
Professor of Applied Mathematics and Statistics
Johns Hopkins University

ABSTRACT

For certain random variables that arise as limits of functionals of random finite trees, we obtain precise asymptotics for the of the right-hand tail. Our results are based on the facts (i) that the random variables we study can be represented as functionals of a Brownian excursion and (ii) that a large principle with good rate function is known explicitly Brownian excursion. Examples include limit distributions of the total path length and of the Wiener index in conditioned Galton-Watson trees (also known as simply generated trees).

In the case of Wiener index (where we recover results proved by Svante Janson and Philippe Chassaing by a different method) for some other examples, a key constant is expressed as solution to a certain optimization problem, but the constant's precise value remains unknown. (We invite audience participation!)

(This is joint work with Svante Janson of Uppsala University in Sweden.)
Statistical Thinking in Neurophysiology

Robert E. Kass
Department of Statistics and
Center for the Neural Basis of Cognition
Carnegie Mellon University

ABSTRACT

Neurophysiology has strong quantitative components and, as a field, is populated with many mathematically sophisticated data analysts. Nonetheless, what statisticians might call “statistical thinking” is noticeably absent from many neurophysiological analyses. I will articulate a version of statistical thinking, and will illustrate with work on motor cortical decoding in a brain-machine interface for neural prostheses. I will also reflect on some philosophical and practical implications of our discipline's emphasis on what has become the standard statistical paradigm.