



Photo was taken during the Wald Prize Ceremony, Joint Statistical Meetings in Minneapolis, August 9, 2005.

Tze Leung Lai
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Professor Tze Leung Lai, Professor, since 1987 in the Department of Statistics, Stanford University, began his teaching and research career as an assistant professor of mathematical statistics at Columbia University in 1971 and became the Higgins Professor of mathematical statistics at Columbia in 1986. He received the prestigious Guggenheim Fellowship and the COPSS (Committee of Presidents of Statistical Societies) Award in 1983 and was elected Fellow of both the American Statistical Association and the Institute of Mathematical Statistics. Dr. Lai, a prolific author and teacher, has supervised 44 doctoral students and has published more than 220 research papers in top journals, including more than 40 papers in the *Annals of Statistics* and the *Annals of Probability* alone. Many of Dr. Lai's publications have been extremely influential for methodological developments in areas of applications including sequential analysis, clinical trials, and mathematical finance. Dr. Lai has served or continues to serve on the editorial boards of a number prestigious journals, including the *Journal of Statistical Planning and Inference*, *Sequential Analysis*, *Journal of American Statistical Association* (1986-1989), *Zeitschrift Wahrscheinlichkeitstheorie verw Gebiete* (1979-1986), *Probability Theory and Related Fields* (1987-1991), *Journal of Multivariate Analysis* (1977-1995), and *Statistica Sinica* (1991-1999). Among his many prestigious awards, Dr. Lai was awarded the first Abraham Wald Prize in Sequential Analysis, which was established in 2004, and awarded annually since 2005, for the best publication in the journal, *Sequential Analysis (SQA)*. This prestigious prize is made possible by contributions from the Wald family, Taylor & Francis (publisher of SQA and co-sponsors of the IWSM2007), Associate Editors of SQA, and other generous individuals.

Adaptive Design of Clinical Trials

Abstract: Whereas most previous works on adaptive design of clinical trials and mid-course sample size re-estimation have focused on two-stage or group sequential designs in the normal mean case to determine either the second-stage sample size or adjustments to the pre-specified group sizes, we consider here a new approach that involves at most three stages and is developed in the general framework of multi-parameter exponential families. Not only does this approach maintain the prescribed type I error probability, but it also provides a simple but asymptotically efficient sequential test whose finite-sample performance, measured in terms of the expected sample size and power functions, is shown to be superior to the existing two-stage or adaptive group sequential designs and to be comparable to the optimal sequential design, determined by dynamic programming, in the simplified normal mean case with known variance and a pre-specified alternative.