

# Preface

There have been extensive developments recently in modern nonparametric inference and modeling. Nonparametric and semi-parametric methods are especially useful with large amounts of data that are now routinely collected in many areas of science. Probability and stochastic modeling are also playing major new roles in scientific applications.

This refereed special volume highlights challenges and developments at this interface of statistics, probability and the sciences, and honors Michael B. Woodrooffe for his pioneering contributions to nonparametric inference and probability.

Topics covered include biased sampling and missing data, shape-restricted inference, contemporary sequential analysis, modern nonparametric inference, probability, and statistics applications. Some of the papers in this volume were presented at “A Conference on Nonparametric Inference and Probability with Applications to Science”, September 24–25, 2005, at Ann Arbor, Michigan:

<http://www.stat.lsa.umich.edu/conference/mw2005/>

for which there were 97 pre-registered participants. The conference was organized by Robert Keener and Jiayang Sun. Invited Speakers and participants included: Persi Diaconis, Robert Keener, Steve Lalley, T.L. Lai, Mario Mateo, Mary Meyer, Vijay Nair, Gordie Simons, Jiayang Sun, Michael Woodrooffe, Wei Biao Wu, Cun-Hui Zhang, Charles Hagwood, Steve Coad, Hira Koul, Anand Vidyashenkar, Zhiliang Ying, Arniban DasGupta, Moulinath Banerjee, Anna Amirdjanova, Bill Strawderman, Connie Page, Tom Sellke, Byron Roe, Vince Melfi, and Herman Chernoff.

Michael Woodrooffe has had a distinguished career and is widely recognized as a pre-eminent scientist in statistics and probability. He has broad interests and has made deep and significant contributions in many areas, many represented by sessions at this conference. His work in probability, sequential analysis and inference is regarded as seminal and pioneering and has influenced an entire generation of researchers. He has published more than 100 research articles, written a SIAM monograph, and authored a book. He is a former Editor of the *Annals of Statistics*, a member of Phi Beta Kappa, and a fellow of the Institute of Mathematical Statistics and an elected member of the International Statistical Institute.

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