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Advances in Distribution Theory, Order Statistics, and Inference

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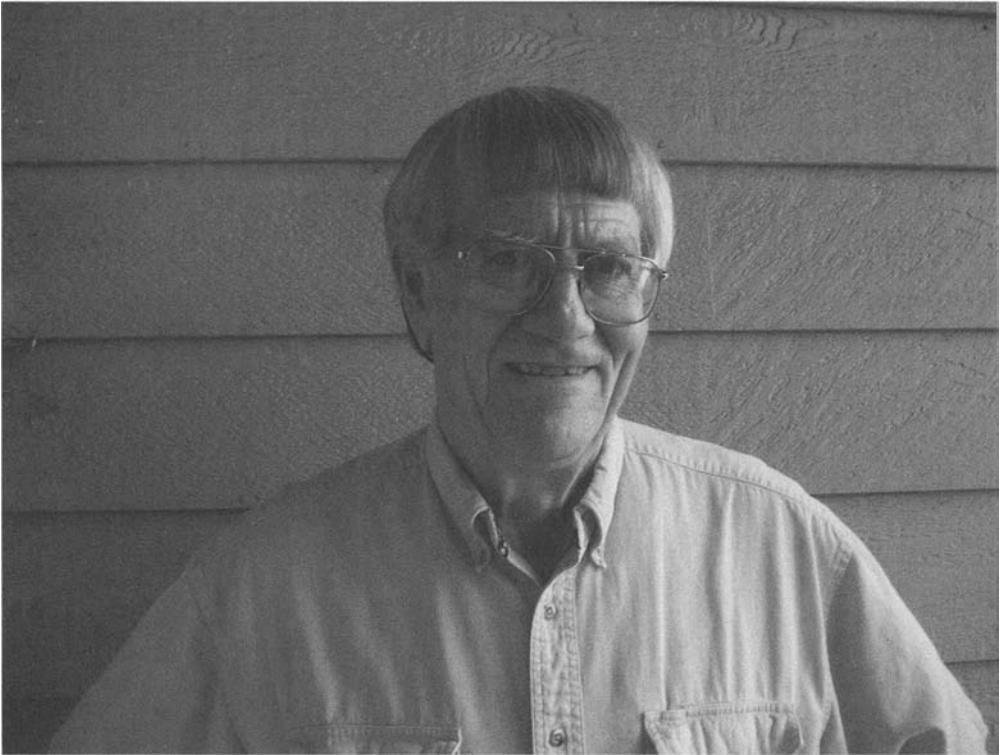
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In Honor of
Barry C. Arnold



BARRY C. ARNOLD

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Preface

Barry Arnold has made fundamental contributions to many different areas of statistics including order statistics, distribution theory, Bayesian inference, multivariate analysis, bounds and orderings, and characterization problems. He has written numerous research articles (see the list of his Publications) in all these topics, and these have received many citations over the years.

During his illustrious career, he has contributed significantly to the statistical profession in many different ways—as a teacher (at Iowa State University, University of California at Riverside, and other places), supervisor (to many graduate students), researcher, administrator (as the Head of the Department of Statistics at University of California at Riverside), organizer (of numerous invited sessions in conferences), and editor (of *Journal of Multivariate Analysis*, managing editor of *The Annals of Statistics*, as well as being on the editorial board of many other journals).

All three of us have had a long association with Barry and have enjoyed our collaboration with him for the past two decades. Those who know him as well as we do certainly have an appreciation for his wit and humor, lively lectures, keen interest in statistics, and great enthusiasm for research. We consider him to be our friend, guide, and philosopher, and we feel that our lives have been greatly enriched by our association with him.

When Barry turned 65 last year, we therefore took the opportunity to organize an **International Conference on Distribution Theory, Order Statistics, and Inference** in his honor. This conference was held during June 16-18, 2004, at the University of Cantabria, Santander, Spain, where he has been a frequent visitor for a number of years. A number of his friends, colleagues, coauthors, and researchers participated in this event. The conference, with participation from around 140 delegates, was a great success.

Some selected papers that were presented at this conference have been included in this volume. We thank all the authors for their contributions for this volume and also the referees for helping us in the evaluation of these manuscripts. We also express our sincere gratitude to Tom Grasso (editor, **Birkhäuser**, Boston) for his support and encouragement for this project, and to Ms. Debbie Iscoe for assisting us with the preparation of this volume.

It is with great pleasure that we dedicate this volume to our friend,
Barry C. Arnold!

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Barry C. Arnold: Career and Accomplishments

Barry C. Arnold was born on December 6, 1939, in the London borough of Lewisham to Charles and Irene Arnold. He was the second child born to his parents with his sister, Nina Arnold, born earlier on January 24, 1938.

After their house was bombed by the Germans, they were evacuated from London and then lived in Herne Bay, Barrie, and Blackpool before settling in Caterham, Surrey, a few miles south of London. In April 1952, the family emigrated to Canada. After attending St. Laurent High School, Barry joined the Engineering Program at McGill University in 1956. When the family moved to Hamilton in 1958, he transferred to McMaster University and graduated in 1961 with a Bachelor's degree in mathematics (statistics).

Barry subsequently entered the graduate program in statistics at Stanford University, the school that he selected because, not only was it highly recommended, but it also had some palm trees on campus. This was a good choice as Stanford had an all-star faculty that included Ted Anderson, Herman Chernoff, Kai Lai Chung, Shanti Gupta, M. V. Johns, Sam Karlin, Ingram Olkin, Rupert Miller, Lincoln Moses, Emmanuel Parzen, Charles Stein, Herbert Solomon, and Pat Suppes. His classmates here were a pretty impressive group, too, which included Norm Breslow, Morris Eaton, Brad Efron, Leon Gleser, Burt Holland, Myles Hollander, Jay Kadane, Carl Morris, Jim Press, Richard Royall, Steve Samuels, Galen Shorack, Muni Srivastava, David Sylwester, Grace Wahba, and Jim Zidek. Barry graduated from Stanford in 1965 after writing a doctoral dissertation under the guidance of Pat Suppes. Another event of importance that occurred while Barry was at Stanford was that he got married to Carole Revelle in September 1964. From that day on, he has had his own personal psychologist, of course!

From Stanford, Barry went to Iowa State University and joined the faculty with a joint appointment in the Departments of Mathematics and Statistics. There, he had good friends and plenty of intellectual stimulation from many statisticians of repute that included Ted Bancroft, H. A. David, H. T. David, Wayne Fuller, Dick Groeneveld, Chien-Pai Han, Dean Isaacson, B. K. Kale,

Oscar Kempthorne, Bill Kennedy, Glen Meeden, Ed Pollak, Joe Sedransk, and Vince Sposito. During 1968–1969, Barry was a visiting professor at the Colegio de Postgraduados in Chapingo, Mexico, lecturing in pretty bad Spanish. During 1974–1975, he went on a AID assignment, working with the Ministry of Agriculture in Lima, Peru. Though he was not successful in selling sampling methods there, he did improve his Spanish!

In 1979, Barry hung up his snow shovel, donated his winter coat to the Salvation Army, and moved to Riverside, California, to join Jim Press (whom he knew from Stanford) and his department there. He has been there since then. He spent two years (1982–1984) back in Mexico as the Director of the University of California Education Abroad Program.

Barry Arnold has served the Department of Statistics at the University of California, Riverside, as Chair for a number of years. In addition, he has provided distinguished service to the statistical community at large by his activities in various capacities for professional societies such as the American Statistical Association and the Institute of Mathematical Statistics. He has participated in numerous national and international conferences and delivered many invited and plenary lectures. He has provided valuable service to several research journals in various capacities including associate editor of *Journal of Multivariate Analysis*, *Journal of the American Statistical Association* and *Communications in Statistics*, editor-in-chief of *Journal of Multivariate Analysis*, and managing editor of *The Annals of Statistics*.

Barry Arnold has been elected a Fellow of the American Statistical Association and the Institute of Mathematical Statistics, and a member of the International Statistical Institute.

He has had a long list of stimulating coworkers and coauthors. Particularly noteworthy are Enrique Castillo and Jose Maria Sarabia (both at the University of Cantabria, Santander, Spain), H. N. Nagaraja (at The Ohio State University, Columbus, Ohio, USA) and N. Balakrishnan (McMaster University, Hamilton, Ontario, Canada). Numerous visits to Santander, Hamilton, and Texcoco, Mexico (where Barry has worked with Jose Villaseñor) have provided him with many pleasant productive interludes. He has never been to a foreign country he did not like, and so he rarely turns down any invitation!

Over the past 40 years, Barry Arnold, through his tremendous research in many different areas of statistics, and especially in distribution theory and ordered data, has greatly influenced the trend of research in these areas and has provided inspiration and encouragement to many young researchers. It is our wish and sincere hope that he will continue his contributions to the field with added vigor, interest, and energy!

Publications

Books

1. *Pareto Distributions*, International Cooperative Publishing House, Burtonsville, MD, 326 pages, 1983.
2. *Majorization and the Lorenz Order: A Brief Introduction*, Lecture Notes in Statistics, Vol. 43, Springer, New York, 122 pages, 1988.
3. *Relations, Bounds and Approximations for Order Statistics* (co-edited with N. Balakrishnan), Lecture Notes in Statistics, Vol. 53, Springer, New York, 173 pages, 1989.
4. *A First Course in Order Statistics* (co-edited with N. Balakrishnan and H. N. Nagaraja), John Wiley & Sons, New York, 279 pages, 1992.
5. *Conditionally Specified Distributions* (co-edited with E. Castillo and J. M. Sarabia), Lecture Notes in Statistics, Vol. 73, Springer, New York, 151 pages, 1992.
6. *Records* (co-edited with N. Balakrishnan and H.N. Nagaraja), John Wiley & Sons, New York, 312 pages, 1998.
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1. A generalized urn-scheme for simple learning with a continuum of responses, *Journal of Mathematical Psychology*, **4**, 301–315.
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