RAMESH C. GUPTA
Professor Emeritus of Statistics
Office: Department of Mathematics & Statistics
University of Maine
Orono, Maine 04469-5752
Telephone: 207-951-2345
E-mail: rcgupta@maine.edu

AWARDS/SPECIAL RECOGNITION

- Elected Fellow of the American Statistical Association, 1997.
- Elected member of the International Statistical Institute, 1987.
- Honored at the International Conference on Statistics, Combinatorics and Related Areas held at the University of Southern Maine , October 3-5, 2003 , for lifelong contributions to the theory and practice of Statistics. This was awarded by FORUM FOR INTERDISCIPLINARY MATHEMATICS
- Special issue : Distribution Theory and Statistical Methods for Lifetime Data, Communications in Statistics, 2015, in recognition of numerous important contributions by Professor Ramesh C.Gupta.
- Awarded the Trustee Professorship in recognition of his innumerable contributions to the field of Statistics, 2018
- Included in the list of top 2% researchers in probability and statistics, prepared by Standford University. Full list: https://ecebm.com/2020/11/30/stanford-university-names-worlds-top-2-scientists/.
- Included in the list of top 1% mathematicians, prepared by Research Gate List for Probability and Statistics: https://umaine.edu/mathematics/wp-content/uploads/sites/70/2021/11/stat-and-prob-list-1-RCGUPTA.xlsx

EDUCATION

Ph.D. (Mathematics), Wayne State University, Detroit Michigan, 1970
M.S. (Mathematics), University of Illinois, Urbana IL , 1966
M.A. (Mathematics), University of Delhi, Delhi, India, 1958

TEACHING EXPERIENCE

- Visiting Professor
School of Aerospace Medicine, Brooks AFB, Texas, 1982-84

- Professor
University of Maine, Orono, Maine, 1981-2022

- Associate Professor
University of Maine, Orono, Maine, 1976-81

- Assistant Professor
University of Maine, Orono, Maine, 1972-76

- Assistant Professor
State University of New York, Oswego, New York, 1970-72

RESEARCH INTERESTS

- Discrete and Continuous Models
- Weighted Distributions
- Reliability and Survival Analysis
- Characterization Problems in Mathematical Statistics
- Statistical Inference
- Frailty Models and Association Measures

ADMINISTRATIVE EXPERIENCE

- Served as Head of the Department of Mathematics at S.D. College, Delhi, India (1960-1963)

- Served in various other capacities there like Controller of Examinations, Scheduling Officer and member of the Admissions Committee (1960-1963)

TITLE OF DISSERTATION Some Characterizations of Probability Distributions

MEMBERSHIP IN LEARNED SOCIETIES

- American Statistical Association
- Bernoulli Society for Mathematical Statistics
- International Environmental Society
- International Statistical Institute

EDITORIAL PARTICIPATION

- Associate Editor of *Journal of Applied Statistical Sciences*
- Associate Editor of *Communications in Statistics* (1996-2006)
- Associate Editor of *Environmetrics (-2008)*
- Associate Editor of *International Journal of Reliability and Applications*
- Associate Editor of *Computational Statistics and Data Analysis(2001-2007)*
- Associate Editor of *Journal of Statistical Theory and Applications*
- Associate Editor of *Aligarh Journal of Statistics*
- Associate Editor of *Pakistan Journal of Statistics*
- Editorial Advisory Board Member of *Statistical Methods*
- Associate Editor of *Statistical Theory and Practice*
- Associate Editor of *Journal of Nonparametric Statistics (-2009)*
- *Associate Editor of Pakistan Journal of Statistics and Operations Research*
- *Associate Editor of Journal of Statistics Applications and Probability*
- *Associate Editor of Journal of Statistics and Management Systems*
- *Associate Editor of European Journal of Statistics*
- *Associate Editor of SYMMETRY*

REVIEWED PAPERS FOR JOURNALS

- Including: *Communications in Statistics, Sankhya, Journal of American Statistical Association, Canadian Journal of Statistics, Canadian Math. Bulletin, Journal of Statistical Planning and inference, South African Statistical Journal, Aligarh Journal of Statistics, Technometrics, Journal of Applied Probability, IEEE Transactions on Reliability, Pakistan Journal of Statistics, Annals of Statistics, Statistica Neerlandica, Annals of the Institute of Statistical Mathematics , Probability in Engineering and Informational Sciences, Computational Statistics and Data Analysis, Australian and Newzealand Journal of Statistics, Metron; Journal of Applied Statistical Sciences and* Reviewer for *The Mathematical Reviews.*

- Evaluator for proposals for the National Science Foundation and NSERC, Canada

- Member of the University of Maine Problems Group of the American Mathematical Monthly, 1973-1975.

- Member of the Career Information of the American Mathematical Society.

SUPERVISION OF Ph.D. DISSERTATION

O. Akman (1994). On the reliability studies of weighted inverse Gaussian model.

SUPERVISION OF MASTERS THESES

- S. Ramakrishnan (1994). Estimation of reliability in the strength stress model.

- S. Ma (1994). Testing the equality of coefficient of variation from k normal populations.

- J. Han (1997). The confidence region for the common mean vector of multinormal populations with different covariance matrices.

- Warren, R. (1998). Determination of change points of non-mononic failure rates.

- Han, Wu (1999). Analyzing Survival Data by an Exponentiated Weibull Model.

- Nicole Brown (2000). Reliability studies of the skew normal distribution

- Bingxia Wang (2002). Estimation of standardized mortality ratio in epidemiological studies.

- Xue Li (2003). Statistical Inference for the common mean of two independent log-normal distributions and some application in reliability.

- Anna Kattermann (2004). Estimation of standardized mortality ratio in geographic epidemiology.

- Suzong Tian (2004). Statistical inference for the risk ratio in a 2x2 binomial trials with structural zero.

- Hui Tao (2005). An investigation of false discovery rates in multiple testing under dependence.

- Na Wang (2008). Estimation of extra risk and benchmark dose in dose response models.
- Weston Viles (2008). Roller coaster failure rates and mean residual life functions.
- Zezheng Li (2009). Estimating minimum effective dose in dose response studies.
- Qiuyi Wu (2012). Analysis of survival data by an exponential-generalized Poisson distribution.
- Jie Huang (2013). Analysis of survival data by a Weibull-generalized Poisson distribution
- Muhammad Waleed (2016) Analysis of survival data by a Weibull-Bessel distribution

The results in most of the above theses have been published as refereed articles.

ORGANIZATION OF AN INTERNATIONAL CONFERENCE

I organized an International Conference on Statistics in the 21 st Century at the University of Maine campus, June 29- July 1, 2000. Professor C.R.Rao, Eberly Professor of Statistics, Pennsylvania State University, was the keynote speaker. Professor Herman Chernoff, Professor of Statistics, Harvard University was the banquet speaker.118 participants registered for the conference from various countries, including the United States, Canada, Scotland, Spain, Malaysia, Turkey and Denmark.

The conference featured 81 talks including 5 plenary sessions on different branches of modern statistics. Selected papers from the proceedings of the conference have been published (with Ramesh Gupta as the guest editor) in the Communications in Statistics, Theory and Methods, Volume 30, No. 11, 2001.

INVITED TALKS / PAPERS

- University of Leeds, U.K; University of Malaya; National University of Singapore; University of Delhi, India; Panjab University, India; Meerut University, India; Indian Institute of Technology, Kanpur, India; University of Laval, Canada; Dalhousie University, Canada and University of New Brunswick, Canada.
- Conferences in India, Netherlands , Japan, France, Germany, Italy, China, Turkey, Finland, Korea, Australia, Switzerland , Portugal , Brazil, Ireland and Sri Lanka.
- ASA and IMS meetings at different places in the last 47 years.

PARTICIPATION IN A PROJECT OF NATIONAL IMPORTANCE

During the years 1982-1997, I was involved in statistical research with the United States Air Force. In particular, I have been involved in a statistical study of the so-called "*Agent Orange Problem*".The study involved examining the effect on health of the Air Force personnel exposed to the herbicide"Agent Orange" in Vietnam. I have also developed some statistical procedures for estimating relative risk in biomedical research. In addition, I have applied competing risk techniques to analyze survival data on animals who were exposed to different kinds of radiation. More recently, I have developed a dynamical system approach to analyze biomedical data.

REFEREED PUBLICATIONS

2023

- 208 Double inverse-Gaussian distributions and associated inference (with A. Almutairi, M.E. Ghitany, A. Alothman to be published in Journal of the Indian Society for Probability and Statistics (JISP)

2022

- 207 Log-concavity and other concepts of bivaraite increasing failure rate distribution (with S.N.U.A Kirmani) To be published in Journal of Applied Probability, June 2022.

2021

- 206 Bivariate Conway-Maxwell Poisson distribution with given marginals and correlation(with S.Hong and S.Z. Sim) Journal of Statistical Theory and Practice, 15(1), 2021 .

- 205 Analysis of survival data by a Weibull-generalized Sibuya distribution (with F. Almathkour, M.E. Ghitany and J. Mazucheli) To be published in Austrian Journal of Statistics. 2021.

2019

- 204 Discussion of Bienbaum Saunders distribution: A review of models, analyses and applications. Applied Stochastic Models in Business and Industry, 35(1), 110-111

- 203. Gompertz-Lindley distribution and associated inference (with M.E.Ghitany, S.M.Aboukhamseen and A.A.Baqar). Communications in Statistics-Simulation and Computation, on line, 2019

2018

- 202. Linear-Circular Statistical Modelling Lake Ice-Out Dates (with Mussie Beyne and Shalen Jain). Water Resources Research 54, doi 10 1029/2017/WR 021731

- 201. Association measures in the bivariate correlated frailty model. REVSTAT-Statistical Journal, 16 (2), 257-278., 2018.

- 200.Zero-inflated Conway-Maxwell Poisson distribution to analyze discrete data (with S.Z. Sim and S.H. Ong). International Journal of Biostatistics, volume 14 (1), 2018.

- 199. Analysis of survival data by a Weibull-Bessel distribution (with Muhammad Waleed). Communications in Statistics, 47(4), 980-995, 2018

- 198.. Some characterization results by conditional expectations and their applications in Lindley type distributions (with M.E.Ghitany and S.Wang). International Journal of Statistics and Probability, 7(1), 86-98., 2018.

2017

- 197. Asymptotic failure rates for a general class of frailty models (with D.Bradley); ADVANCES IN PROBABILITY, 49, 1230-1259, 2017

- 196..Bivariate frailty model and association measure. In Mathematical and Statistical Applications in Life Sciences and Engineering, editers: A. Adhikari, M.R.Adhikari and Y.P. Chaubey , 209-223, Springer Verlag, 2017

- 195. On bivariate Birnbaum –Saunder's distribution (with D.Kundu);. American Journal of Mathematical and Management Sciences, 36(1), 21-33, 2017

- 194. The Weibull Conway-Maxwell Poisson distribution to analyze survival data (with J.Huang); Journal of Computational and Applied Mathematics, 311, 171-182, 2017.

- 193. Generalized Sichel distribution and associated inference (with Y.Low and S.H.Ong); Journal of Statistical Theory and Applications, 16 (3), 322-336, 2017.

- 192 ..A bivariate generalized geometric distribution with applications (with Emilo Gomez-Deniz and M.E.Ghitany); Communications in Statistics ,Theory and Methods, 46(11), 5453-5465, 2017.

2016

- 191. Proportional hazard inverse Weibull distribution and associated inference (with S.M.Aboukhamseen and M.E.Ghitany) ; Journal of Mathematics and Statistics. 12(2), 86-98, 2016.

- 190. Alternative approach to conditional specification of bivariate distributions (with Barry Arnold); Metron, 74, 21-36, 2016..

- 189. Mean residual life function for additive and multiplicative hazard rate models. Probability in the Engineering and informational Sciences, 30(2), 281-297, 2016.

- 188. Poisson-mixed inverse Gaussian regression model and its application (with Emilo Gomez-Deniz and M.E.Ghitany); Communications in Statistics, Simulation and Computation, 45, 2767-2781, 2016

- 187. Reliability characterstics of Farlie-Gumbel-Morgenstern family of bivariate distributions ;Communications in Statistics,45(8), 2342-2353, 2016.

- 186. Properties of additive frailty model in survival analysis; Metrika, 79, 1-17, 2016.

- 185.. Preservation of failure rate function shape in weighted distributions (with B.C.Arnold Advances in Statistical Analysis, 100(1), 1-20, 2016

2015.

- 184. Reliability studies of bivariate Birnbaum Saunders distribution; Probability in the Engineering and Informational Sciences, 29, 265-276, 2015

2014

- 183.. A proportional hazard Marshall-Olkin extended family of distributions and its application to Gompertz distribution (with R.A.Al-Jarallah and M.E.Ghitany); Communications in Statistics, Theory and Methods, 43, 4428-4443, 2014.

- 182. Stochastic comparisons of residual entropy of order statistics and some characterization results (with H.C.Taneja and Richa Thapliyal); Journal of Statistical Theory and Applications, 13(1), 27-37, 2014.

- 181. Proportional odds frailty model and stochastic comparisons (with C.Peng); Annals of the Institute of Statistical Mathematics, 897-912, 2014.

- 180. Analysis of survival data by an exponential=generalized Poisson distribution (with Qiuyi Wu and Jie Huang); Journal of Statistical Computation and Simulation, 84 (11), 2495-2505., 2014

- 179. Analysis of survival data by a Weibull-generalized Poisson distribution (with Jie Huang); Journal of Applied Statistics, 41, 1548-1564, 2014.

- 178. Analysis of discrete data by Conway-Maxwell Poisson distribution (with S.Z.Sim and S.H.Ong), Advances in Statistical Analysis, 98, 327-343, 2014.

2013

- 177. Characterizations via regression of generalized order statistics (with M.I.Beg and M.Ahsanullah); Statistical Methodology, 12, 31-41, 2013.

- 176. Competing risk analysis, In Encyclopedia of Environmetrics ,A,-H.El-Shaarawi and W.Piegorsh (eds), John Wiley & Sons, 468-477. 2013.

- 175. On a class of generalized Marshall_Olkin bivariate distributions and some reliability characteristics (with S.N.U.A.Kirmani and N.Balakrishnan); Probability in the Engineering and Informational Sciences,27,261-275, 2013

- 174. Estimation of reliability from bivariate log-normal data (with M.E.Ghitany and D.K.Al-Mutairi); Journal of Statistical Computation and Simulation, 83(6), 1068-1081, 2013.

2012

- 173. Log-concavity and monotonicity of hazard and reversed hazard functions of univariate and multivariate skew normal distributions (with N.Balakrishnan); Metrika, , 75(2), 181-191, 2012

- 172. Reliability and non-reliability studies of Poisson variables in series and parallel systems (with P.Gupta, S.H.Ong and H.M.Srivastava); Applied Mathematics and Computation, 218, 5112-5120, 2012.

- 171. Regression mean residual life of a parallel system of dependent components; Journal of Statistical Planning and Inference, 142(5), 1063-1072, 2012.

.

- 170. Statistical Inference for the extended generalized Inverse Gaussian distribution (with Weston Viles); Journal of Statistical Computation and Simulation, 82(12), 1855-1872, 2012

- 169. Some properties of bivariate log-normal distribution for reliability applications (with P.Gupta); Applied Stochastic Models in Business and Industry,28, 598-606, 2012

.

- 168. Bivariate equilibrium distribution and association measure, IEEE Transactions on Reliability, 61(4), 987-993, 2012

- 167. Entropy and residual entropy functions and some characterization results (with H.C.Taneja); Pakistan Journal of Statistics and Operations Research, volume 8(3), 605-617, 2012.

- 166. Estimation of reliability in a parallel system with random sample size (with M.E.Ghitany and D.K. Al-Mutairi); Mathematics of Computation and Simulation, 83, 44-55, 2012.

2011

- 165. Bivariate odds ratio and association measures; Statistical Papers, 52, 125-138, 2011

- 164. Roller coaster failure rates and mean residual life function (with Weston Viles); Probability in the Engineering and Informational Sciences,25 (1), 103-118, 201

- 163. On some mixture models based on the Birnbaum-Saunders distribution and associated inference (with N.Balakrishnan, D.kundu, V.Leiva and A.Sanhueza); Journal of Statistical Planning and Inference, 141, 2175-2190, 2011.

- 162. Weighted Inverse Gaussian- a versatile life time model (with D.Kundu); Journal of Applied Statistics., 38(12), 2695-2708, 2011

2010

- 161. A Generalized correlated binomial distribution with application in multiple testing problems (with H.Tao) ; METRIKA, 71(1), 59-77.

- 160. Estimating turning points of the failure rate of the extended Weibull distribution (with S.Ivin and C.Peng); Computational Statistics and Data Analysis, 54, 924-934.

- 159. Reliability functions of bivariate distributions in modeling marked point processes; Stochastic Models, 26(2), 195-211.

- 158. Estimation of reliability from Marshal-Olkin extended Lomax distributions (with M.E.Ghitany and D.K.Al-Mutairi); Journal of Statistical Computation and Simulation, 80(8), 937-947, 2010.

- 157. Random effect survival models and stochastic comparisons (with R.D.Gupta); Journal of Applied Probability, 47, 426-440, 2010.

- 156. Local dependence function for some families of bivariate distributions and total positivity (with S.N.U.A.Kirmani and H.M.Srivastava).; Applied Mathematics and Computation, 216, 1267-1279, 2010.

- 155. Estimation of reliability in a series system with random sample size (with D.K.Al-Mutairi and M.E.Ghitany); Computational Statistics and Data Analysis, 55, 964-972, 2010.

2009

- 154. Estimation of reliability in proportional odds ratio models (with Cheng Peng); Computational Statistics and Data Analysis, 53, 1495-1510.

- 153. Distribution of linear function of correlated ordered variables (with P. Gupta); Journal of Statistical Planning and Inference, 139, 2490-2497.

- 152. Estimation of extra risk and benchmark dose in dose response models (with Na Wang); Mathematics and Computers in Simulation, 79, 2036-2050.

- 151. Reliability studies of the log-exponential inverse Gaussian distribution (with M.E.Ghitany and D.K.Al-Mutairi); Communications in Statistics, Theory and Methods, 38, 3532-3543.

- 150. Some characterization results based on residual entropy function; Journal of Statistical Theory and Applications, 8(1), 45-59.

- 149. General Frailty model and stochastic orderings (with R.D.Gupta); Journal of Statistical Planning and Inference, 139, 3277-3287.

- 148. Failure rate of the mixtures of two skew normal variables (with P.Gupta); Journal of Statistical Theory and Applications, 8(4), 494-505.

2008

- 147. Characterization based on convex conditional mean function (with S.N.U.A.Kirmani); Journal of Statistical Planning and Inference,138(4), 964-970, 2008.

- 146. Reliability studies of bivariate distributions with exponential conditionals; Mathematical and Computer Modeling, 47, 1009-1018, 2008.

- 145. Analyzing skewed data by Power normal model (with R.D.Gupta) TEST, 17, 197-210, 2008.

- 144. Some general results for moments in bivariate distributions (with M.Tajdari and H.Bresinsky); METRIKA,68(2), 173-187, 2008.

- 143. A study of Herwitz-Lerch-Zeta distribution with application (with P. Gupta, S.H.Ong and H.M.Srivastava); Applied Mathematics and Computation, 196(2), 521-531, 2008.

2007

- 142. Statistical Inference for the risk ratio in 2x2 binomial trials with structural zeros (with S.Tian); in Computational Statistics and Data Analysis, 51, 3070-3084, 2007.

- 141. Proportional reversed hazard rate model and its applications (with R.D.Gupta); Journal of Statistical Planning and Inference, 137, 3525-3536, 2007.

- 140. Role of Equilibrium distributions in reliability studies; Probability in the Engineering and Informational Sciences, 21, 315-334, 2007.

2006

- 138. Stochastic comparisons in frailty models (with S.N.U.A.Kirmani); Journal of Statistical Planning and Inference, 136, 3647-3658, 2006.

- 137. Monotonicity of the (reversed) hazard rate of the (maximum) minimum in bivariate distributions (with R.D.Gupta and P.Gupta); METRIKA, 63, 223-241, 2006.

- 136. Statistical inference for the common mean of two log-normal distributions and some applications in reliability (with Xue Li); Computational Statistics and Data Analysis, 50 (11), 3141-3164, 2006.

- 135. Reliability studies of bivariate distributions with Pearson type VII conditionals; METRON, vol LXIV (2), 239-251, 2006.

- 134. Some characterization results based on the conditional expectation of truncated order statistics (record values)(with M.Ahsanullah); Journal of Statistical Theory and Applications, 5(4), 391-402, 2006.

- 133. Variance residual life function in reliability studies; METRON, vol. LXIV, no.3, 343-355, 2006.

2005

- 132. Monotonicity of failure rate and mean residual life function of a gamma type model (with S. Lvin); Applied Mathematics and Computation, 165(3), 623-633, 2005.

- 131. Analyses of long-tailed count data by Poisson mixtures (with S.H.Ong); Communications in Statistics., 34(3), 557-573, 2005.

- 130. Reliability functions of bivariate distributions with beta conditionals; STATISTICS, 39(1), 42-52, 2005.

- 129. Reliability functions of generalized log-normal model (with S.Lvin) ; Mathematical and Computer Modelling, 42, 939-946, 2005.

2004

- 128. Score test for zero adjusted generalized Poisson regression model (with P.Gupta and R.C. Tripathi) ; Communications in Statistics, 33 (1), 47-64, 2004.

- 127. A new generalization of the negative binomial distribution (with S.H.Ong) ; Computational Statistics and Data Analysis, 45(2), 287-300, 2004.

- 126. Association measures in multivariate normal distribution; Communications in Statistics, 33(11), 2817-2832, 2004.

- 125. Modeling count data by random effect Poisson model (with P. Gupta and S.H. Ong); Sankhya, 66(3), 548-565, 2004.

- 124. Some characterization results based on factorization of the (reversed) hazard rate function. (with R.D. Gupta and P.G. Sankaran); Communications in statistics, 33(12), 3009-3031, 2004.

- 123. Some characterization of distributions by functions of failure rate and mean residual life (with S.N.U.A.Kirmani) ; Communications in Statistics (special issue on characterizations of probability distributions)., 33(12), 3115-3131, 2004..

- 122. Estimation of standardized mortality ratio with missing death certificates (with Bingxia Wang); Mathematical and Computer Modeling, 40, 491-498, 2004.

- 121. Generalized skew normal model (with R.D. Gupta); TEST, 13(2), 521-534, 2004.

- 120. Some characterization results based on the conditional expectation of a function of non-adjacent order statistic (record value) (with M. Ahsanullah). Annals of the Institute of Statistical Mathematics, 56(4), 721-732, 2004.

- 119. Moments of residual life and some characterization results (with S.N.U.A.Kirmani); Journal of Applied Statistical sciences, 13 (2), 155-167, 2004.

.**2003**

- 118. Limiting behaviour of the mean residual life (with D.Bradley); *Annals of the Institute of Statistical Mathematics*, 55 (1), 217-226, 2003.

- 117. On some association measures in bivariate distributions and their relationships;*Journal of Statistical Planning and Inference*, 117, 83-98, 2003.

- 116. Representing the mean residual life function in terms of failure rate (with D. Bradley); Mathematical and Computer Modeling, 37, 1271-1280, 2003.

2002

- 115. Reliability of a k out of n system of components sharing a common environment*; Applied Mathematics Letters,* 15(7), 837-844, 2002.

- 114. On the distribution of the sum of n non-identically distributed uniform random variables (with D. Bradley); A*nnals of the Institute of Statistical Mathematics*, 54 (3), 689-700, 2002.

2001

- 113. Reliability studies of bivariate distributions with Pareto conditional; *Journal of Multivariate Analysis*, 76, 214-225, 2001.

- 112. On the proportional odds model in survival analysis (with S.N.U.A. Kirmani). *Annals of the Institute of Statistical Mathematics, 53 (2) ,203-216, 2001.*

- 111. Determination of change points of non-monotonic failure rates (with R. Warren*). Communications in Statistics* (Rao's volume), 30 (8 & 9), 1903-1920,2001.

- 110. Analyzing survival data by proportional reversed hazard model (with Han Wu*). International Journal of Reliability and Applications*, 2(1), 203-216, 2001.

- 109. Failure rate of the minimum and maximum of a multivariate normal distribution (with P. Gupta); *Metrika,* 53, 39-49, 2001.

- 108. Reliability studies of the skew-normal distribution and its application to a strength stress model (with N. Brown); *Communications in Statistics* (Maine volume), 30 (11), 2427-2445 , 2001.

- 107. Competing risk analysis. Encyclopedia of *Environmetrics,* volume 1, 381-387, 2001.

- *106. Non- monotonic failure rates and mean residual life functions. System and Bayesian Reliability*: *Essays in honor of Professor Richard Barlow* (eds: Y. Hayakawa, T. Irony and M. Xie), 147-163, 2001. World Scientific Publishing Co., Singapore.

2000

- 105. On the crossing of reliability measures (with P. Gupta) *Statistics and Probability Letters*, 46, 301-305, 2000.

- 104. On the monotonicity of reliability measures of the beta distributions (with P. Gupta); *Applied Mathematics Letters, 13, 5-9, 2000.*

.

- 103. Residual coefficient of variation and some characterization results (with S.N.U.A. Kirmani); *Journal of Statistical Planning and Inference, 91, 23-31,2000.*

1999

- 102. Point and interval estimation of Pr (X<Y): The Normal Case with common coefficient of variation (with S. Ramakrishnan and X Zhou); *Annals of the Institute of Statistical Mathematics*, 51(3), 571-584, 1999.

- 101. A study of Log-logistic model in survival analysis (with O. Akman and S. Lvin); *Biometrical Journal*, 41 (4), 431-443, 1999.

- 100. A Dynamical system approach to the analysis of biomedical data (with R. A. Albanese) *Dynamics of Continuous and Discrete Impulsive Systems*, 6, 221-236, 1999.

- 99. Frailty models and their applications (with P. Gupta); *Statistical Methods* 1 (1), 41-53, 1999

1998

- 98. Modeling Failure Time Data by Lehman alternatives (with P. Gupta and R.D. Gupta); *Communications in Statistics*, 27(4) 887-904, 1998.

- 97. Estimation of reliability in a bivariate normal distribution with equal coefficient of variation (with S. Subramanian); *Communications in Statistics*, Simulation and Computation, 27(3), 675-698, 1998.

- 96. Statistical inference based on the length biased data for the Inverse Gaussian distribution (with O. Akman); *Statistics*, 31, 325-337, 1998.

- 95. Numerical methods for the maximum likelihood estimation of Weibull parameters (with P. Gupta and S.J. Lvin); *Journal of Statistical Computation and Simulation*, 62(1), 1-7, 1998.

- 94. On the proportional mean residual life model and its implications (with S.N.U.A. Kirmani); *Statistics*, 32, 175-187, 1998.

- 93. A general approach of studying random environmental models (with P. Gupta); *Quality Improvement through Statistical Methods*, (Bovas Ebraham, Editor), Birkhauser Publisher, Boston, 351-362, 1998.

- 92. Residual life function in reliability studies (with S.N.U.A. Kirmani); *Frontiers of Reliability* (A.P. Basu, S.K. Basu, and S. Mukhopadhyay, Editors), World Scientific Publishing Co., New Jersey, Vol. 4, 175-190, 1998.

1997

- 91. Analysis of log normal survival data (with N. Kannan and A. Raychaudhari); *Mathematical Biosciences*, 139, 103-115, 1997.

- 90. Estimation of critical points in the mixture Inverse Gaussian model (with O. Akman); *Statistics Papers*, 38, 445-452, 1997.

- 89. Bayes estimation of relative risk in biomedical research (with R.A. Albanese*); Environmetrics*, 8, 133-143, 1997.

- 88. On the monotonic properties of discrete failure rates (with P. Gupta and R.C. Tripathi); *Journal of Statistical Planning and Inference*, 65, 255-268, 1997.

- 87. On the multivariate normal hazard (with P. Gupta); *Journal of Multivariate Analysis*, 62(1), 64-73, 1997.

1996

- 86. Testing the equality of coefficient of variation in k normal populations, (with S. Ma); *Communications in Statistics* 25(1), 115-132, 1996.

- 85. Weighted bivariate logarithmic series distributions (with R.C. Tripathi*); Communications in Statistics* 25(5), 1099-1117, 1996.

- 84. Ageing characteristics of the Weibull mixtures (with P. Gupta); *Probability in the Engineering and Informational Sciences*, 10, 591-600, 1996.

- 83. Analysis of failure time data by Burr distribution (with P. Gupta and S.J. Lvin); *Communications in Statistics*, 25(9), 2013-2024, 1996.

- 82. Estimation of coefficient of variation in a mixture Inverse Gaussian model (with O. Akman); *Applied Stochastic Models and Data Analysis*, 12, 255-263, 1996.

- 81. Analysis of zero adjusted count data (with P. Gupta and R.C. Tripathi); *Computational Statistics and Data Analysis*, 23, 207-218, 1996.

1995

- 80. Mean residual life function for certain types of non-monotonic ageing (with O. Akman); *Stochastic Models*, 11(1), 219-225, 1995.

- 79. On some transforms of distribution functions and their relationships, *Statistics*, 26, 123-128, 1995.

- 78. Estimation of reliability under order restriction on the parameters (with R.D. Gupta and O. Akman); *Communications in Statistics*, 24(7), 1799-1812, 1995.

- 77. Inflated modified power series distributions with applications (with P. Gupta and R.C. Tripathi); *Communications in Statistics*, 24(9), 2355-2374, 1995.

- 76.On the reliability studies of a weighted Inverse Gaussian model (with O. Akman); *Journal of Statistical Planning and Inferences*, 48, 69-83, 1995.

- 75. Bayes estimation in a mixture Inverse Gaussian model (with O. Akman); *Annals of the Institute of Statistical Mathematics*, 47(3), 493-503, 1995.

- 74. Some results on randomly stopped minimal repair processes (with S.N.U.A. Kirmani); *Stochastic Models*, 11(4) 631-644, 1995.

1994

- 73. A goodness of fit test for left truncated modified power series distribution (with R. Shanmugam and R.C. Tripathi); *Journal of Applied Statistical Sciences*, 1(3) 179-193, 1994.

- 72. Estimation of parameters in beta binomial distribution (with R.C. Tripathi and J. Gurland); *Annals of the Institute of Statistical Mathematics*, 46(2), 317-331, 1994.
- 71. Survival analyses of radiated animals incorporating competing risks and covariates (with R.A. Albanese) *Environmetrics*, 5, 365-379, 1994.

1993

- 70. Statistical tests involving several independent gamma distributions (with R.C. Tripathi and R.K. Pair); *Annals of the Institute of Statistical Mathematics*, 45(4) 773-786, 1993.

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- 69.. Statistical Inference based on the length biased data for the Modified Power series distributions (with R.C. Tripathi); *Communications in Statistics*, 21(2), 519-537,1992.

- 68. A comparison of various estimators of the mean of an Inverse Gaussian distribution (with O. Akman); *Journal of Statistical Computation and Simulation*, 40, 71-81, 1992.

- 67. Some weighted distributions of order k (with R.C. Tiwari and R.C. Tripathi); *Communications in Statistics*, 21(2), 411-422, 1992.

- 66. Some moment inequalities for the minimal repair process (with S.N.U.A. Kirmani); *Probability in the Engineering and Informational Sciences*, 6, 245-255, 1992.

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- 65. The role of weighted distributions in stochastic modeling; (with S.N.U.A. Kirmani); *Communications in Statistics*, 19(9), 409-417, 1991.

- 64. Estimation of reliability in bivariate distributions (with K. Dinh and J. Singh); *Statistics*, 22(3), 409-417, 1991.

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- 63. Estimation of $P(a'x > b'y)$ in the multivariate normal case (with R.D. Gupta); *Statistics*, 21, 91-97, 1990.

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- 62. On repair age and residual repair life in the minimal repair process (with S.N.U.A. Kirmani); *Probability in the Engineering and Informational Sciences*, 3, 381-391, 1989.

- 61. On predicting repair times in a minimal repair process (with S.N.U.A. Kirmani); *Communications in Statistics, Simulation and Computation* 18(4), 1359-1368, 1989.

- 60. On the determination of three parameter Weibull MLE's (with V.G. Panchang); *Communications in Statistics, Simulation and Computation*, 18(3), 1037-1057, 1989.

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- 59. Estimation of $P(Y_p > Max(Y_1, Y_2 \ldots, Y_p))$ in the Exponential case (with R.D. Gupta); *Communications in Statistics*, 17(3) 911-924, 1988.
- 58. Closure and monotonicity properties of (non) homogeneous Poisson processes and record values (with S.N.U.A. Kirmani); *Probability in the Engineering and Informational Sciences*, 2, 475-484, 1988.

- 57. Another generalization of the logarithmic series and geometric distributions (with R.C. Tripathi); *Communications in Statistics*, 17(5), 1541-48, 1988.

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- 56. On the monotonic properties of residual variance and their applications in reliability; *Journal of Statistical Planning and Inference*, 16, 329-335, 1987.

- 55. On the order relations between reliability measures of two distributions (with S.N.U.A. Kirmani); *Stochastic Models*, 3(1), 149-156, 1987.

- 54. A comparison between the ordinary and length biased modified power series distributions with applications (with R.C. Tripathi); *Communications in Statistics*, 16(4), 1195-1206, 1987.

- 53. Some generalizations of the geometric distribution (with R.C. Tripathi and T. White); *Sankhya*, B, 49, 218-223, 1987.

- 52. On life distributions having monotone residual variance (with S.N.U.A. Kirmani and R.L. Launer); *Probability in the Engineering and Informational Sciences*, 1, 299-307, 1987.

- 51. A comparison of various estimators of reliability (with R.D. Gupta); *Computational Statistics and Data Analysis*, 5, 215-226, 1987.

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- 50. A characterization of the Poisson process (with P. Gupta); *Journal of Applied Probability*, 233-235, 1986.

- 49. An exact test for the mean of a normal distribution with known coefficient of variation (with R.C. Tripathi, J. Michalek and T. White); *Computational Statistics and Data Analysis*, 3, 219-226, 1986.

- 48. Incomplete moments of modified power series distributions with applications (with R.C. Tripathi and P. Gupta) (invited paper). *Communications in Statistics*, 15(3), 999-1015, 1986.

- 47. Relations for reliability measures under length biased sampling (with J.P. Keating); *Scandanavian Journal of Statistics*, 13, 49-56, 1986

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- 46. On the determination of Reliability functions by the TTT transform (with J.E. Michalek); *IEEE Transactions on Reliability*, R34, 175-176, 1985.

- 45. On the relationships between the proportional hazards and accelerated failure time models in survival analysis (with J.E. Michalek); *Statistics and Probability Letters*, 3, 231-234, 1985.

- 44. A generalization of log-series distribution (with R.C. Tripathi); *Communications in Statistics*, 14(8), 1779-1799, 1985.

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- 43. Estimating the probability of winning (losing) in a gambler's ruin problem with applications, *Journal of Statistical Planning and Inference*, 9, 55-62, 1984.

- 42. Some characterization of renewal densities with emphasis on reliability; *Mathematische Operations Forschung und Statistik*, 1984, Vol. 15, 571-579.

- 41. On the distribution of order statistics for a random sample size (with D. Gupta); *Statistica Neerlandica*, 38, 13-19, 1984.

- 40. On the determination of a distribution by its median residual life function; A functional equation (with E. Langford); *Journal of Applied Probability*, 21, 120-128, 1984.

- 39. On Gehan's Wilcoxon extension and the accelerated failure time model (with J.E. Michalek); *Communications in Statistics*, 13(5) 563-566, 1984.

- 38. Relationships between order statistics and record values and some characterization results; *Journal of Applied Probability*, 21, 433-438, 1984.

- 37. Small sample tests for an absolutely continuous bivariate exponential distribution (with K.G. Mehrotra and J.E. Michalek); *Communications in Statistics*, 13(14), 1735-1740, 1984.

- 36. Modified power series distributions (with R.C. Tripathi); *Encyclopedia in statistics* (eds: N.L. Johnson and S. Kotz), John Wiley & Sons, 1984, Vol. 5, 593-599.

- 35. Statistical inference regarding the generalized Poisson distribution (with R.C. Tripathi); *Sankhya,* Series B, 46, 166-173, 1984.

- 34. Simultaneous comparison of scale estimators and the length biased distribution (with J.P. Keating); *Sankhya*, Series B, 46, 275-280, 1984.

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- 33. On the survival function of a mixture in life testing*; IEEE Transactions on Reliability*, R 32(1), 34-35. 1983.

- 32. On the moments of residual life in Reliability and some characterization results (with P. Gupta); *Communications in Statistics*, 12(4), 449-461, 1983.

1982

- 31. Estimation of probabilities in the class of modified power series distribution (with J. Singh); *Mathematische Operations Forschung und Statistik*, 13(1), 71-77, 1982.

- 30. On the determination of mixing density in reliability studies; *Journal of Statistical Planning and Inference*, 7, 101-105, 1982.

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- 29. On the mean residual life function in survival studies; *Proceedings of NATO International Summer School on Statistical distributions in Scientific Work*, Trieste, Italy, Vol. 5, 327-334, 1981.

- 28. On the proportionality assumption in the competing risk analysis; *Scandanavian Actuarial Journal*, 57-63,1981.

- 27. On the Rao - Rubin characterization of the Poisson distribution; *Proceedings of NATO International Summer School on Statistical Distributions in Scientific Work*, Trieste, Italy, Vol 4, 341-347, 1981/

- 26. Moments in terms of mean residual lie functions; *IEEE Transactions on Reliability*, Vol. R30 (5), 450-451,1981.

- 25. Probability of ties and Markov property in discrete order statistics (with P. Gupta); *Journal of Statistical Planning & Inferences* 5, 273-279, 1981.

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- 24. On the mean residual life function of a mixture in reliability studies; *Communications in Statistics*, A9 (13), 1365-1369. 1980.

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- 23. On the characterization of survival distributions in reliability by properties of their renewal densities; *Communications in Statistics* A8 (7), 685-697, 1979.

- 22. On the negative moments of generalized Poisson distribution; *Zeitschrift Mathematische Operations Forschung und Statistik* 10(1), 169-172, 1979.

- 21. Waiting time paradox and size biased sampling; *Communications in Statistics* A8(6), 601-607, 1979.

- 20. The order statistics of exponential, power function and Pareto distributions and some applications; *Mathematische Operations Forschung und Statistik* 10(4), 551-554, 1979.

- 19. Some counterexamples in the competing risk analysis; *Communications in Statistics*, A8 (15), 1535-1540, 1979.

- 18. Powers of distributions functions; *Trabajos Estadistica*, 30, 71-82, 1979.

1977

- 17. Minimum variance unbiased estimation in a modified power series distribution and some of its applications; *Communications in Statistics*, A. Vol. 6, 977-991, 1977.

- 16. On characterizing distributions by the ratio of variance and mean; *Zeitschrift Mathematische Operations Forschung und Statistik* 8(4), 523-527, 1977.

- 15. On the Kimball Chiang controversy in the theory of competing risks; *Proceedings of the 41st session of the International Statistical Institute*, New Delhi, 204-207, 1977.

- 14. A study of some problems in competing risks; invited paper presented at the *International Conference on Optimization in Statistics*, Bombay, India, 1977.

1976

- 13. Distribution of the sum of independent generalized logarithmic series variables; *Communications in Statistics* 5(1), 45-48, 1976.

- 12. Some characterization of distributions by properties of their forward and backward recurrence times in a renewal process; *Scandinavian .Journal of Statistics* 3, 215-216, 1976.

- 11. Some applications of modified power series distribution in genetics; *Sankhya* 38, Series B, 187-191, 1976.

1975

- 10. On characterization of distributions by conditional expectations; *Communications in Statistics* 4(1), 99-103, 1975.

- 9. Maximum likelihood estimation of modified power series distribution and some of its applications; *Communications in Statistics* 4(7), 689-697, 1975.

- 8. Some characterizations of discrete distributions by properties of their moment distribution; *Communications in Statistics* 4(8), 761-765, 1975.

1974

- 7. Distribution of the sum of decapitated generalized negative binomial variables; *Sankhya* 36, Series B, 67-69, 1974.

- 6. Distribution of the sum of decapitated generalized Poisson variables; *Sankhya* 36, Series B., 1974, 212-214.

- 5. Characterization of distributions by a property of discrete order statistics; *Communications in Statistics* 3(3), 287-289, 1974.

- 4. Mixtures of some discrete distribution; *South African Statistical Journal* 8(2), 83-92, 1974.

- 3. Some mixtures of sine wave circular distribution; (with D. Gupta), *South African Statistical Journal* 8(2), 93-98, 1974.

- 2. Modified power series distribution and some of its applications; *Sankhya* 36, Series B, 288-298, 1974.

1973

- 1.A characterizing property of the exponential distribution; *Sankhya*, Series B, 365-366, 1973.

EDITED BOOKS

- Communications in Statistics: Theory and Methods, Volume 30, No. 11, 2001.
  Selected Papers Presented at the International Conference on Statistics in the 21st Century held at the University of Maine, June 29- July, 1, 2000.

- Special issue on **Characterizations of Probability Distributions.** Communications in Statistics: Theory and Methods, Volume 33, NO. 12, 2004.

- Special issue on **Proceedings of Malaysia Conference; Selected papers.** Communications in Statistics, Volume 37, No. 11, 2008.

TECHNICAL REPORTS

- A Fortran Program to compute the critical value and power for an exact test for the mean of a normal distribution with a known coefficient of variation (with R. Tripathi, J. Michalek and T. White), USAFSAM) TR 85-89. USAF School of Aerospace Medicine, Brooks AFB, Texas, January, 1986.

- An interactive analysis of observer agreement data (AGREE), (with J. Michalek and T. White), USAF School of Aerospace Medicine, Books AFB, Texas, USAFSAM-TR-87-12, 1987 (91 pages).

RESEARCH AWARDS AND GRANTS

- Faculty Summer Research Award, 1973, University of Maine. Amount: $4,000.

- Faculty Summer Research Award, 1981, University of Maine. Amount: $4,000.

- AFOSR Grant – University Resident Research Associateship at the School of Aerospace Medicine, Brooks AFB, Texas, 1982-1984. Amount: $130,677.

I was involved in a statistical study of the so-called "Agent Orange Problem" under the above grant from the Air Force Office of Scientific Research at the USAF School of Aerospace Medicine, Brooks AFB, Texas. The study involved examining the effect on the health of the Air Force personnel exposed to the herbicide "Agent Orange" in Vietnam.

- United States Air Force Summer Faculty Research Fellow at the School of Aerospace Medicine, Brooks AFB, Texas, 1986. Amount: $10,610.

- AFOSR Grant – Project: Survival Analysis of Radiated Animals for small sample sizes, 1987. Amount: $21,452.

- United States Air Force Summer Faculty Research Fellow at the School of Aerospace Medicine, Brooks AFB, Texas, 1990. Amount: $ 14,000.

- AFOSR Grant – Project: Repeated measures designs with missing observations, 1991. Amount: $33,967.

- United States Air Force Summer Faculty Research Fellow at the Armstrong Laboratory, Brooks AFB, Texas, 1992. Amount: $14,000.

- IPA Grant – AFOSR, 1993 - Project: A new approach to the analysis of biomedical data. Amount: $35, 000.

- IPA Grant – AFOSR, 1994 – Project: A new approach to the analysis of biomedical data. Amount: $38,430.

- IPA Grant – AFOSR, 1995 – Project: A new approach to the analysis of biomedical data. Amount: $ 37,112.

- United States Air Force Summer Faculty Research Fellow at the Armstrong Laboratory, Brooks AFB, Texas, 1997. Amount: $15,000.

OTHER SCHOLARLY ACTIVITIES

- Initiated and participated in seminars on:

a) Integral Equations at State University of New York at Oswego.
b) Applications of Group Theory at State University of New York at Oswego.
c) Mathematical Modeling at the University of Maine.
d) Reliability Theory at the University of Maine.
e) Survival Analysis at the University of Maine.

PARTICIPATION IN GRADUATE PROGRAM

- Have served on the committees of several masters and Ph.D. candidates. Also I have served as an external examiner for Ph. D theses of candidates from the University of Malaya, Malaysia and University of Delhi, India. I have also

- served as the Graduate Chair for the Department of Mathematics and Statistics
.
- Directed a Ph.D. thesis in Statistics and 11 master's theses.

- At present, directing two masters thesis in Statistics.

SUBJECTS TAUGHT DURING THE LAST FIVE YEARS

Graduate Level: Mathematical Statistics, Probability and Stochastic Processes, Probabilistic Models in Operations Research, Theory of Estimation and Testing Hypothesis, Applied Statistics and Designs of Experiments, Linear Models, Reliability and Quality Control and Bioinformatics.
Undergraduate Level: Mathematical Statistics (junior and senior levels), Regression Analysis and Analysis of Variance, Statistics for Business and Economics students, Statistics for Engineers and Scientists, Statistics for Social and Biological students, Linear Algebra, Differential Equations, Calculus and Analytical Geometry, etc.

PARTICIPATION IN CURRICULUM DEVELOPMENT

Designed and implemented new courses including a Statistics course for Engineers and Scientists and a course in Mathematical Statistics. Also I have offered selected topics courses on Linear Models, Quality Control and Reliability and Bioinformatics.

SERVICE TO THE DEPARTMENT and UNIVERSITY COMMITTEE MEMBERSHIP

(i) Have served as a member of the Policy Advisory Committee of the Department, 1974-1976, 1977,1978.

(ii) Have served as Colloquium Chairman of the Department, 1977-1978, 1988-1992.

(iii) Presidential appointment as a member of the Student Aid Committee of the Campus.

(iv) Chairman of the Professional Peer Review Committee of the Department.

(v) Member of the Library Committee of the Department, 1980-1982, 1985 (chair), 1986, 1987-2000.

(vi) Member of the Chairman Selection Committee of the Department, 1980-82, 1990-1991, 1996, 1999, 2000.

(vii) Member of the Full Professor Promotion Committee, 1981, 1982, 1994.

(viii) Presidential appointment as a member of the Traffic and Safety Committee of the Campus, 1981-1982.

(ix) Member of the Distinguished Lecture Series Committee of the Campus, 1985-1988.

(x) Graduate Chair of the Department of Mathematics, 1985-1987, 1992-93, 1998-2000.

(xi) Member of the Tenure and Promotion Committee, 1986-1987, 1989.

(xii) Served as a member of the Policy Advisory Committee of the Department, 1989.

(xiv) Served as a Member of the Canadian Center Advisory Committee of the campus, 1988-1991..

(xv) Served as a member of the Students' Wage Committee of the Campus.

(xvi) Served as a member of the Campus Planning and Facilities Committee

STATISTICAL CONSULTING

Served as statistical consultant to research projects conducted in various departments of the University, industry, and government. In particular:

- I served as a statistical consultant to the Central Maine Power Company and prepared a report on sampling techniques for load research.

- I have served as statistical consultant to the Social Science Research Institute on the project "Hypertension Control Activities in Maine", submitted by Medical Care Development, Inc. and the Maine Department of Human Services to the National Institutes of Health.

- I have participated in the evaluation of Central Maine Power Load Research Program in the light of the requirements under the Public Utility Regulating Policies Act and, in particular, the "accuracy level" mentioned in a copy of the Federal Register.

- In addition to these examples, I have provided statistical consulting services to various professionals, including:

(i) Faculty members from various departments
(ii) Graduate students from various disciplines of the University
(iii) Accountants from the Bangor area
(iv) Bangor Daily News