CURRICULUM VITAE

P. G. SANKARAN, M.Sc, Ph.D.

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Highlights

 Pro Vice Chancellor, Cochin University of Science and Technology, 2017-2023

- Senior Professor, Department of Statistics, CUSAT
- Professor and Head, Department of Statistics, CUSAT
- Director, Centre for Population Studies, CUSAT
- Received Distinguished Statistician Award of Indian Society for Probability and Statistics, 2020.
- Received the Young Researcher Award in 2010, constituted by the International Indian Statistical Association, USA to honor Outstanding Researchers in Statistical Theory.
- Received BOYSCAST fellowship of Department of Science and Technology, Government of India, 2000.
- Published 177 research papers in refereed journals of which over 130 were in international journals.
- Published 4 books and 3 technical papers.
- Delivered 88 invited talks in national/international conferences
- Undertaken many research projects in Mathematical Sciences
- Visiting scientist at many leading Indian and International institutes including Indian Statistical Institute, (Kolkata and New Delhi), University of Dalhousie, Canada and University of Waterloo, Canada.
- Member of International Statistical Institute, The Netherlands; American Mathematical Society, U.S.A.; Institute of Mathematical Statistics, U.S.A.; International Indian Statistical Association, U.S.A.; International Society for Business and Industrial Statistics, U.S.A.
- Life Member of Indian Society for Probability and Statistics
- Associate Editor, IAPOR Transactions
- Reviewer of many international journals such as American Mathematical Review, U.S.A., Multivariate Analysis, Computational Statistics and Data Analysis, Statistics and Probability Letters, Statistics, Communications in Statistics- Theory and Methods, Statistical Papers, Journal of Japan Statistical Association, Journal of Applied Statistics, Journal of Indian Statistical Association, Bulletin of Calcutta Statistical Association
- Successfully supervised the 16 Research Scholars for doctoral degree.

Education

M.Sc. Statistics, Cochin University of Science and Technology, Kerala, India, 1987 Ph.D. Statistics, Cochin University of Science and Technology, Kerala, India, 1992

Areas of Specialization

Survival Analysis, Reliability Analysis, Distribution Theory

Positions held in the past

Vice Chancellor, Cochin University of Science and Technology (29, August, 2017- 20 to October, 2018 and 3, May 2019 to 24-4-2023)

Senior Professor, Department of Statistics, Cochin University of Science and Technology (Since 10th November 2010)

Head, Department of Statistics, Cochin University of Science and Technology (15th December 2014- 29, August, 2017)

Professor, Department of Statistics, Cochin University of Science and Technology (10th November 2010- 9, November, 2020)

Director, Centre for Population Studies, Cochin University of Science and Technology (2002-2016)

Associate Professor, Department of Statistics, Cochin University of Science and Technology (From 10 -11- 2007 to 09-11-2010)

Reader, Department of Statistics, Cochin University of Science and Technology (Since 10th November 2004)

Lecturer (Senior Scale), Department of Statistics, Cochin University of Science and Technology (From 10-11-1999 to 9-11-2004)

Lecturer, Department of Statistics, Cochin University of Science and Technology (From 26-9-1997 to 9-11-1999)

Lecturer in Statistics, Marthoma College for Women, Perumbavoor (From 10-11-1995 to 25-9-1997)

Statistician, Indian Cardamom Research Institute, Spices Board, Cochin (From 27-1-1993 to 9-11-1995)

Visits

- Visiting Scientist, Indian Statistical Institute, Kolkata, March 2014
- SAP DRS Visitor, Calcutta University, Kolkata, February 2010
- Visiting Scientist, Indian Statistical Institute, New Delhi, June 2008
- Visiting Scientist, Indian Statistical Institute, Kolkata, May, 2004, March 2014
- Visiting Scientist, University of Waterloo, Canada, May-June 2003
- Post Doctoral Fellow, University of Dalhousie, Canada, April-August, 1997
- BOYSCAST Fellowship of DST, Govt. of India, University of Dalhousie, Canada, March-September, 2000
- Lecturer, Dalhousie University, Canada, May 2000

Title of the Ph.D. Thesis

Characterization of probability distributions using reliability concepts

Ph.D. Thesis Supervised

- 1. Rejani P P: Cure rate regression models in survival analysis, 2023
- 2. Sisuma S: Statistical analysis recurrent event competing risks data, 2023
- 3. Aswin I C: Modeling lifetime data using quantile based reliability measures, 2023
- 4. Dileep Kumar M: Reliability modelling and analysis using quantile functions, 2019
- 5. Prasad S: Modeling and analysis of middle censored lifetime data, 2018
- 6. Preethi John: Some families of bivariate distributions and their applications, 2017.
- 7. Nidhi P Ramesh: Modeling and analysis of lifetime data in discrete time, 2017.
- 8. Anjana S.: Modeling and analysis of lifetime data using reversed hazard rates, 2016
- 9. Midhu N. N.: Modeling and analysis of lifetime data using quantile functions, 2014
- 10. Anisha P.: Modeling and analysis of recurrent event data, 2012
- 11. Sreedevi E. P.: Modeling and analysis of competing risks data, 2010
- 12. Gleeja V. L.: Modeling and analysis of bivariate lifetime data using reversed hazard rates, 2008
- 13. Sreeja V. N.: Regression models for bivariate survival data, 2008
- 14. Maya T. Nair: On finite mixtures of Pareto and beta distributions, 2007.
- 15. Ansa Alphonsa Antony: Non parametic estimation of survivor function in bivariate competing risk models, 2006.
- 16. Sindhu, T. K: A generalized Pearson system useful in reliability analysis, 2005.

Awards and Fellowships

- Distinguished Statistician Award, Indian Society for Probability and Statistics, 2020.
- 2. Young Researcher Award, International Indian Statistical Association, 2010
- 3. BOYSCAST Fellow of DST, Govt. of India, 2000
- 4. CSIR Senior Research Fellowship, 1991-1992

Conferences/Workshops Organized

- 1. International Workshop on Reliability Theory and Survival Analysis, December 31, 2013- January 2, 2014
- 2. XXXI Annual Convention of Indian Society for Probability and Statistics (ISPS) and International Conference on Statistics, Probability and Related Areas, December 19-22, 2011, Cochin
- 3. Workshop on Health and Wellness, 2007, Cochin.
- 4. IISA Joint Statistical Meeting and International Conference on Statistics, Probability and related areas, 2007, Cochin.
- 5. Workshop on Women and Health Literacy in Kerala, 2006, Cochin.
- 6. International Conference on Statistics in Industry and Business, 2003, Cochin.
- 7. Workshop on Six Sigma Limits, 2002, Cochin.
- 8. Workshop on ISO 2000, 2001, Cochin.

Membership in Academic Bodies

- 1. Member, Board of Studies CUSAT, University of Calicut, KUFOS
- 2. Member, Examination Board, CUSAT, University of Calicut, University of Kerala, Bangalore University, M.G. University, Mangalore University
- 3. Member, Academic Council, CUSAT
- 4. Member, Senate, CUSAT
- 5. Member, Staff Council, CUSAT
- 6. Member, Faculty of Science, CUSAT
- 7. Member, Governing Council of RUSA, CUSAT
- 8. Member, Academic Committee, CUSAT
- 9. Member, University Placement Committee, CUSAT

Membership in Professional Organizations

- 1. Elected Member, International Statistical Institute, The Netherlands
- 2. Member, American Mathematical Society, U.S.A.
- 3. Member, Institute of Mathematical Statistics, U.S.A.
- 4. Life Member, International Indian Statistical Association, U.S.A.
- 5. Life Member, International Society for Business and Industrial Statistics, U.S.A.
- 6. Life Member, Indian Society for Probability and Statistics, India
- 7. Life Member, Kerala Statistical Association

Projects Undertaken

- 1. Major Research Project (Principal Investigator): MATRICS scheme of Department of Science and Technology, Government of India, 2018-2021.
- 2. Major Research Project (Principal Investigator): Modeling and analysis of lifetime data using quantile functions, KSCSTE, Govt. of Kerala, 2017-2020
- 3. USERS Scheme-Book Writing (Co-investigator) "Quantile based Reliability Analysis", Department of Science and Technology, 2011-2013.

- 4. Major Research Project (Co-investigator): "Modelling and analysis of financial time series", Department of Science and Technology, 2008-2011.
- 5. Minor research Project "Pearson family of distributions, Cochin University of Science and Technology, 1998-2000

List of Research Papers Published

A. Research Papers

2022

- 1. P.G.Sankaran, Ashlin Mathew and Sreedevi E P:Comparison of cause specific rate functions of panel count data with multiple modes of recurrence", Statistics and Applications, 2023 (to appear)
- 2. Aswin I C, P.G.Sankaran and S.M.Sunoj: Some reliability aspects of record values using quantile functions, Communications in Statistics- Theory and Methods, 2023 (to appear)
- 3. Aswin I C, P.G.Sankaran and S.M.Sunoj: Reliability aspects of quantile-based residual coefficient of variation, International Journal of Reliability, Quality and Safety Engineering, 2022 (to appear)
- 4. Dileep Kumar M and Sankaran P G: On Proportional Odds Relevation Transform and its Applications, Communications in Statistics- Theory and Methods, 2022 (to appear)
- 5. Sankaran P G and Rejani P P: Modeling and Analysis of Competing Risks Cure Rate Regression Model with Weibull Distribution, Statistics and Applications, 2022 (to appear)
- 6. Sisuma S and Sankaran P G: Non-parametric Test of Recurrent Cumulative Incidence Functions for Competing Risks Models, Metron, 2022 (to appear)
- 7. Dileep Kumar M and Sankaran P G: Some Results of Auto-Relevation Transform in Reliability Analysis, Statistics and Applications, 2022 (to appear)

<u>2021</u>

- 8. Rejani P P and P.G.Sankaran: Regression analysis of cure model with generalized Weibull distribution, Statistica, LXXXI,3, 2021, 267-278
- 9. Silpa S; Sunoj S.M; and Sankaran P G: Nonparametric estimation of quantile based entropy function, Communications in Statistics- Simulation and Computation, 2021DOI: 10.1080/03610918.2021.1890773
- 10. Gleeja V L and Sankaran P G: Cause Specific Shared Frailty Proportional Reversed Hazards Models, Statistics and Applications, 12 (2), 2021,1-18.
- 11. Vipin N, Rahul T and P.G.Sankaran: The delayed effect of temperature on the risk of hospitalization due to COVID-19: Evidence from Mumbai, India, Epidemiologic Methods, 9, 2021, https://doi.org/10.1515/em-2020-0039, 1-11.
- 12. Sreedevi E P and P.G.Sankaran: Statistical Methods foe estimating cure fraction of Covid-19 patients in India, MASA, 16, 59-64, 2021.
- 13. Sreedevi E P and Sankaran P G: Nonparametric inference for panel count data with competing risks, Journal of Applied Statistics, 48 (16), 3102-3115, 2021.

14. Dileep Kumar M and P.G.Sankaran: A new family of quantile functions and its applications, Communications in Statistics- Theory and Methods,50(18), 4216-4235, 2021.

2020

- 15. Sankaran P.G, Ashlin Mathew and Sreedevi E.P: Cause specific rate functions for panel count data with multiple modes of recurrence, Journal of Indian Statistical Association, 58 (2), 193-211, 2020.
- 16. Asokan M Variyath and P.G.Sankaran: Empirical Likelihood Test for Equality of Cumulative Incidence Functions, Journal of Indian Society for Probability and Statistics, 21(2), 421-436, 2020.
- 17. Aswin I C, P.G.Sankaran and S.M.Sunoj: A class of distributions with quadratic hazard quantile function, Journal of Indian Society for Probability and Statistics, 21, 409-426, 2020.
- 18. Aswathy Krishnan, S.M.Sunoj and P.G.Sankaran: Some reliability properties of extropy and its related measures using quantile function, Statistica, LXXX,4, 413-437, 2020.
- 19. N.Unnikrishnan Nair P.G.Sankaran, and Dileep Kumar M: Bayesian inference in quantile functions, Communications in Statistics- Theory and Methods, 2020 https://doi.org/10.1080/03610926.2020.1827430,
- 20. Sunoj S M, Sankaran P G and Rajesh G:Dynamic information volatility function, Statistica, LXXX, 3, 233-242, 2020.
- 21. Rejani P P and P.G.Sankaran: Modeling and analysis of proportional hazards competing risks cure rate model, Journal of Indian Society for Probability and Statistics, 21 (1), 175-185, 2020.

- 22. P.G. Sankaran, Isha Dewan and Dileep Kumar M: The cause specific hazard quantile function, Austrian Journal of Statistics, 48, (2019); 56-69.
- 23. Dileep Kumar M , P.G.Sankaran and N.Unnikrishnan Nair: Proportional odds model- a quantile approach, Journal of Applied Statistics, 46 (11), (2019), 1937-1955
- 24. Sunoj S.M., P.G.Sankaran and Unnikrishnan Nair, N.: Some properties of proportional reversed hazards model based on quantile functions, International Journal for Quality, Reliability and Safety Engineering, 26 (3), 2019, https://doi.org/10.1142/S0218539319500116
- 25. Baby A.K., Rajesh G, and P.G.Sankaran. Non-parametric estimation of copula based mutual information. *Communications in Statistics-Theory and Methods* (2019): 1-15.
- 26. P.G.Sankaran and Dileep Kumar M: A class of distributions with the quadratic mean residual quantile function, *Communications in Statistics- Theory and Methods*, 48(19), 2019 4936–495
- 27. Sreedevi E.P., P.G.Sankaran and Isha Dewan: Comparison of cumulative incidence functions of current status competing risks data with discrete

observation times, Communications in Statistics-Theory and Methods, 48(23), 2019, 5766-5776.

2018

- 28. P.G. Sankaran and Dileep Kumar M: Quantile based proportional hazards relevation transform, Statistica, LXXVIII, 3, (2018); 197-214.
- 29. P.G. Sankaran and Dileep Kumar M: Relaibility properties of proportional hazards relevation transform, Metrika, (2018); 1-16.
- 30. Ghosh M, Myung J. and Sankaran P.G.: Nonparametric Bayes and empirical Bayes estimation of the population median, with application in finite-population sampling, Mathematical Population Studies, 25(3), 159-167, 2018.
- 31. Sunoj S M., Aswathy Krishnan and P.G.Sankaran: Quantile-based reliability aspects of cumulative Tsallis entropy in past lifetime, *Metrika*, 82(1), 2018, 17-38
- 32. P.G.Sankaran and Dileep Kumar M: A New Class of Quantile Functions Useful in Reliability Analysis, *Journal of Statistical Theory and Practice*, 12(3), (2018), 615-634.
- 33. P.G.Sankaran and Dileep Kumar M.: Pareto- Weibull quantile function, *Journal of Applied Probability and Statistics*, 13 (1), (2018); 81-95
- 34. Nair, N.U., Sankaran, P.G. and Sunoj, S.M.: Proportional hazards model with quantile functions, *Communications in Statistics- Theory and Methods*, 2018, https://doi.org/10.1080/03610926.2018.1445858
- 35. Nair, N.U., Sankaran, P.G. and Sunoj, S.M.: Reliability aspects of proportional mean residual model using quantile functions, *REVSTAT-Statistical Journal*, 2018 (to appear).
- 36. N.Unnikrishnan Nair, P.G.Sankaran and Preethi John: Modelling bivariate lifetime data using copula, *Metron*, 76, 2018, 133-153
- 37. Sunoj, S. M., Aswathy S. Krishnan, and P. G. Sankaran. A quantile-based study of cumulative residual Tsallis entropy measures. *Physica A: Statistical Mechanics and its Applications*, 494 (2018): 410-421.
- 38. Sunoj, S. M., P. G. Sankaran, and N. Unnikrishnan Nair. Quantile-based cumulative Kullback–Leibler divergence. *Statistics* 52(1) (2018): 1-17.
- 39. Sankaran, P. G. and Prasad S Additive risks regression model for middle censored exponentiated-exponential lifetime data. *Communications in Statistics-Simulation and Computation*, 47 (7), (2018), 1963-1974

- S.M.Sunoj, P.G.Sankaran and N. Unnikrishnan Nair: Quantile-Based Reliability Aspects of Rényi's Information Divergence Measure, *Journal of Indian Society for Probability and Statistics*, 18, 267-280, 2017
- 41. N.Unnikrishnan Nair, Sankaran P.G and Nidhi P Ramesh: Multivariate variance residual life in discrete time, *Statistica*, LXXVI (3), 182-205.
- 42. Sankaran, P. G., and S. Prasad. An additive risks regression model for middle-censored lifetime data. *Statistics in Transition*, *18* (3), 2017.

- 43. David Hanagal, Aravind Pandey and P.G.Sankaran: Shared Frailty Model Based on Reversed Hazard Rate for Left Censored Data, Communications in Statistics- Simulation and Computation, 46, 230-241,2017
- 44. Sankaran, P. G., and Preetha Kumari. P V. Proportional Reversed Hazards Rates Model with Quantile Regression. *Journal of the Indian Society for Probability and Statistics* 18 (2): 225-236, 2017.
- 45. Sunoj, S. M., Aswathy S. Krishnan, and P. G. Sankaran. Quantile-Based Entropy of Order Statistics. *Journal of the Indian Society for Probability and Statistics* 18.1 (2017): 1-17.
- 46. Sreedevi E.P., P.G.Sankaran and Isha Dewan: A semiparametric regression model for current status competing risks data, Journal of Indian Statistical Association, 55(1), 2017, 35-61
- 47. Preethi, John and P. G. Sankaran. A bivariate Weibull family with applications. *American Journal of Mathematical and Management Sciences* 36.2 (2017): 162-175.
- 48. Sankaran, P. G., and S. M. Sunoj. Quantile-based cumulative entropies. *Communications in Statistics-Theory and Methods* 46.2 (2017): 805-814.
- 49. Nair, N. Unnikrishnan, P. G. Sankaran, and Nidhi P. Ramesh. Some properties of discrete bathtub-shaped distributions. *Communications in Statistics-Theory and Methods* 46.11 (2017): 5384-5393.
- 50. Nair, N. Unnikrishnan, P. G. Sankaran, and Nidhi P. Ramesh. Discrete distributions with bathtub-shaped hazard rates. *South African Statistical Journal* 51.1 (2017): 81-102.
- 51. Sankaran, P. G., and N. N. Midhu. Nonparametric estimation of mean residual quantile function under right censoring. *Journal of Applied Statistics* 44.10 (2017): 1856-1874.
- 52. Sankaran, P. G., Isha Dewan, and E. P. Sreedevi. A martingale-based test for independence of time to failure and cause of failure for competing risks models. *Communications in Statistics-Theory and Methods* 46.16 (2017): 8178-8186.
- 53. Sankaran, P. G., Nidhi P. Ramesh, and N. Unnikrishnan Nair. Multivariate discrete reversed hazard rates. *Communications in Statistics-Theory and Methods*, 46 (19), 9817-9833, 2017.
- 54. Preethi John and Sankaran P G: A positive dependent Archimedean copula, *Journal of Applied Mathematics and Statistics*, 2017, 1-9.

<u>2016</u>

- 55. Sankaran, P. G., and N. N. Midhu. Testing exponentiality using mean residual quantile function. *Statistical Papers* 57.1 (2016): 235-247.
- 56. P. G. Sankaran & E. P. Sreedevi (2016) A proportional hazards model for the analysis of doubly censored competing risks data, *Communications in Statistics Theory and Methods*, 45:10, 2975-2987.

- 57. Sankaran, P. G., and S. Anjana. Proportional cause-specific reversed hazards model. *Journal of Nonparametric Statistics* 28.1 (2016): 68-83.
- 58. Sankaran, P. G., S. M. Sunoj, and N. Unnikrishnan Nair. Kullback–Leibler divergence: A quantile approach. *Statistics & Probability Letters*, 111 (2016): 72-79.
- 59. P.G.Sankaran and Anjana S: Nonparametric Estimation of Cumulative cause Specific Reversed Hazard Rates under Masked Causes of Failure, *Journal of Biostatistics and Biometric Applications*, 1-11, 2016.
- 60. Sankaran, P. G., Nidhi P. Ramesh, and N. Unnikrishnan Nair. Ageing Classes in Discrete Time Based on Hazard Rate: A Review and New Results. *Research & Reviews: Journal of Statistics* 5.1 (2016): 10-26.
- 61. Unnikrishnan Nair, N., P. G. Sankaran, and Nidhi P. Ramesh. Determination of Hazard Rate Shape for Discrete Lives. *International Journal of Reliability, Quality and Safety Engineering* 23.04 (2016): 1650015.
- 62. Jammalamadaka, S. Rao, Sundaresan Nair Prasad, and PadutholGodan Sankaran., A semi-parametric regression model for analysis of middle censored lifetime data, *Statistica*76.1 (2016): 27.
- 63. Sankaran, P. G., N. Unnikrishnan Nair, and Nidhi P. Ramesh. Quantification of relative ageing in discrete time, *Metron* 74.3 (2016): 339-355.
- 64. Sankaran, P. G., N. Unnikrishnan Nair, and N. N. Midhu. A new quantile function with applications to reliability analysis. *Communications in Statistics-Simulation and Computation*45.2 (2016): 566-582.
- 65. Anup Dewanji, P.G.Sankaran, Debasis Sengupta and BappaKarmakar: Regression Analysis of Competing Risks Data with General Missing Pattern in Failure Types, *Statistical Methodology*, 29, 18-31, 2016.
- 66. Sankaran P.G. and Anjana S: Parametric analysis of failure time data with multiple causes using cause specific reversed hazard rates, Bulletin of Calcutta Statistical Association, 2016

- 67. Dewan, I. Sankaran, P.G. and Sreedevi. E.P: On testing independence of time to failure and cause of failure in a competing risks model for a grouped data, Journal of Applied Statistical Science, 21(3), 291-305, 2015.
- 68. P.G.Sankaran and Anjana S: Parametric analysis of failure time data with multiple causes using cause specific reversed hazard rates, Bulletin of Calcutta Statistical Association, 67, 1-14, 2015.
- 69. Bijamma Thomas, N.N. Midhu and P.G.Sankaran: A software reliability model using mean residual quantile function, Journal of Applied Statistics, 42:7, 1442-1457, 2015.
- 70. N.Unnikrishnan Nair and P.G.Sankaran: Multivariate discrete scalar hazard rate, Statistical Methodology, 27, 39-50, 2015.

- 71. P.G.Sankaran, N.Unnikrishnan Nair and Preethi John: Characterizations of a family of bivariate Pareto distributions, Statistica 75 (3),2015: 275-290
- 72. P.G.Sankaran and Prasad S: Weibull regression model for analysis of middle censored lifetime data, Journal of Statistics & Management Systems, 18, 433-444, 2015.
- 73. P.G.Sankaran, Bijamma Thomas and Midhu N.: On bilinear hazard quantile functions, Metron, 73,135–148, 2015 DOI 10.1007/s40300-014-0048-x
- 74. P.G.Sankaran. AsokanMulayathvariyath and Anjana S: Additive reversed hazards models, American Journal of Mathematical and Management Sciences, 34, 162-183, 2015.
- 75. Vinesh Kumar B, N.Unnikrishnan Nair and P.G.Sankaran: Stochastic orders using quantile-based reliability functions, Journal of Korean Statistical Society, 44, 22-231, 2015.
- N.Unnikrishnan Nair and P.G.Sankaran: Odds functions and odds rates for discrete life distributions: Communications in Statistics- Theory and Methods, 44, 4185-4202, 2015.
- 77. P.G.Sankaran, Isha Dewan and Sreedevi E.P. A non-parametric test for stochastic dominance using total time on test transform, American Journal of Mathematical and Management Sciences, 34 (2), 162-183, 2015.

<u>2014</u>

- 78. N.Unnikrishnan Nair and P.G.Sankaran: Characterizations and time-dependent association measures for bivariate schur-constant distributions, Brazilian Journal of Probability and Statistics, 8 (3), 409-423, 2014.
- 79. Sankaran, P G, N. Unnikrishnan Nair, and John Preethi. A family of bivariate Pareto distributions. *Statistica*LXXIV, 199-215, 2014.
- 80. N. Unnikrishnan Nair and P.G.Sankaran: A family of bivariate exponential distributions and their copulas, Sankhya B, 2013DOI 10.1007/s13571-013-0067-2
- 81. N.Midhu, P.G.Sankaran and N.Unnikrishnan Nair: A class of distributions with linear hazard quantile function, Communications in Statistics- Theory & Methods, 43, 3674–3689, 2014 (DOI: 10.1080/03610926.2012.705211)
- 82. Sreedevi. E.P.,P.G.Sankaran and P.Dhanavanthan: A nonparametric test for comparing cumulative incidence functions of current status competing risks data, Journal of Statistical Theory and Practice, 8, 743-759, 2014
- 83. AsokanMulayathvariyath and P.G.Sankaran: Parametric regression models using reversed hazard rates, Journal of Probability and Statistics, 2014, http://dx.doi.org/10.1155/2014/645719
- 84. Asok K Nanda, P.G.Sankaran and S.M.Sunoj: Renyi's residual entropy: A quantile approach, Statistics and Probability Letters, 114-121, 2014.
- 85. Sankaran P.G. and Anjana S.Modeling lifetime data with multiple causes using cause specific reversed hazard rates, *Statistica*, LXXIV(3), 215-334, 2014.
- 86. Sankaran P.G. and Anjana S. A class of tests for the equality of cause specific hazard rates in competing risks models, *Journal of Indian Statistical Association*, 5291), 161-176, 2014
- 87. N.Unnikrishnan Nair and P.G.Sankaran: Modelling lifetimes with bivariate Schur-constant equilibrium distributions from renewal theory, *Metron*, 72,331–349, 2014 DOI 10.1007/s40300-014-0045-0

- 88. Bijamma Thomas, Midhu N. and P.G.Sankaran: A software reliability model using quantile function, Journal of Probability and Statistics, 2014 http://dx.doi.org/10.1155/2014/951608
- 89. P.G.Sankaran and Midhu N: A class of distributions defined by quantile density function, Bulletin of Calcutta Statistical Association, 66, 1-24, 2014.
- 90. P.G.Sankaran and Debasis Kundu: A bivariate Pareto distribution, Statistics, 48 (2), 241-255, 2014

- 91. Midhu N. P.G.Sankaran and N.Unnikrishnan Nair: A class of distributions with linear mean residual quantile function, Statistical Methodology, 5, 1-24, 2013.
- 92. N.Unnikrishnan Nair and P.G.Sankaran: Some new applications of the total time on test transforms. Statistical Methodology, 10, 93-102,2013.
- 93. N.Unnikrishnan Nair, P.G.Sankaran and S.M.Sunoj: Quantile based stop-loss transform and its applications, Statistical Methods and Applications, 22, 167-182, 2013.
- 94. P.G.Sankaran, Isha Dewan and Anisha P: On testing independence of failure time and cause of failure using sub-quantiles, Journal of Statistical Theory and Practice, 7, 24-32, 2013
- 95. S.M.Sunoj, P.G.Sankaran and Asok Nanda: Quantile based entropy function in past lifetime, Statistics and Probability Letters, 83, 366-372,
- 96. N.Unnikrishnan Nair, P.G.Sankaran and S.M.Sunoj: Quantile based reliability aspects of partial moments, Journal of Korean Statistical Society, 42, 329-342. 2013.
- 97. E.P.Sreedevi and P.G.Sankaran: Analysis of competing risks data using neural network models, International Journal of Statistics and Applications, 3(4), 123-131
- 98. N.Unnikrishnan Nair and P.G.Sankaran: Characterizations of discrete distributions by reliability concepts in reversed time, Statistics and Probability Letters, 1939-1945, 2013.

- 99. N.Unnikrishnan Nair, P.G.Sankaran and B. Vineesh Kumar Govindarajalu distribution and its properties, Communications in Statistics- Theory & Methods, 41, 4391-4406, 2012
- 100. N.Unnikrishnan Nair and P.G.Sankaran. Some results on an additive hazards model, Metrika, 75, 389–402, 2012.
- 101. P.G.Sankaran and Sreeja V.N. Proportional Hazards Model for Successive Duration Times Under Informative Censoring, Communications in Statistics-Theory and Methods, 41, 262-280,2012
- 102. N.Unnikrishnan Nair, P.G.Sankaran and M.Preeth, Reliability Aspects of Discrete Equilibrium Distributions, Communications in Statistics- Theory and Methods, 41, 500-515, 2012
- 103. E.P.Sreedevi and P.G.Sankaran: A semiparametric Bayesian approach for the analysis of competing risks data, Communications in Statistics-Theory and Methods, 41, 2803-2818, 2012

- 104. P.G.Sankaran, M.Manoharan and Anisha P Nonparametric estimators of survivor function of paired recurrent events, Statistical Methodology, 9, 501-512, 2012
- 105. S.M.Sunoj and P.G.Sankaran Quantile residual entropy function, Statistics and Probability Letters, 82, 149-1053, 2012
- 106. P.G.Sankaran and P.Anisha Additive hazards models for recurrent event data with multiple causes, Statistics and Probability Letters, 82(7). 1454-1462, 2012.
- 107. Sreedevi E.P., P.G.Sankaran and P.Dhanavandhan: A nonparametric test for independence of time to failure and cause of failure of current status competing risks data, Bulletin of Calcutta Statistical Association, 167-180, 2012.
- 108. N.Unnikrishnan Nair and P.G.Sankaran: Characterization of Distributions by Properties of Truncated Gini Index and Mean Difference, Metron, LXX N. 2-3, 173-191, 2012

- 109. K.R.Muraleedharan Nair, P.G.Sankaran and Smitha.S: Chernoff distance for truncated distributions, Statistical Papers, 893-910, 2011(DOI 10.1007/s00362-009-0297-6)
- 110. P.G.Sankaran and Sreeja V.N. Proportional Hazards Model for Gap Time Distributions of Recurrent Events, Special issue on Survival Analysis, Journal of Applied Statistical Science, 59-71, 2011
- 111. N.Unnikrishnan Nair, P.G.sankaran and Vineesh Kumar B. Modelling lifetimes by quantile functions using Parzen's score function, Statistics, 2011
- 112. P.G.Sankaran and Anisha P. Shared frailty model for recurrent event data with multiple causes, Journal of Applied Statistics, 38, 2559- 2568, 2011.
- 113. P.G.Sankaran and Gleeja V.L. On proportional reversed hazards frailty models, Metron, LXIX, 151-173, 2011.
- 114. N.Unnikrishnan Nair and P.G.Sankaran: Quantile based lower partial moments and their applications, American Journal of Mathematical and Management Sciences, 255-276, 2011.

- 115. P.G.Sankaran, N.Unnikrishnan Nair and E.P.Sreedevi: A quantile based test for comparing cumulative incidence functions of competing risks models, Statistics and Probability Letters, 80, 886-891, 2010
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- 117. N.Unnirkishnan Nair and P.G.Sankaran: A new measure of association for bivariate survival data, Journal of Statistical Planning and Inference, 140, 2569-2581, 2010
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- 119. P.G.Sankaran, AshisSenGupta and Sreeja V.N. Nonparametric estimation of distribution function using concomitants of order statistics. Journal of Statistical Theory and Practice, 4(4), 617-630, 2010

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- 141. P.G.Sankaran, Bovas Abraham and Ansa Alphonsa Antony: A dependence measure for bivariate failure time data, Metron, 64, 1-15, 2006.
- 142. P.G.Sankaran and Gleeja.V.L: On bivariate reversed hazard rates, Journal of Japan Statistical Association, 36(2), 213-224, 2006

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- 144. B.Abraham and P.G.Sankaran: Renyi's entropy for residual lifetime distributions, Statistical Papers, 17-30, 2005.
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- 146. P.G.Sankaran and Maya.T.Nair: On a finite mixture of Pareto distributions, Calcutta Statistical Association Bulletin, 67-84, 2005
- 147. Ansa Alphonsa Antony and P.G.Sankaran: Non parametric estimation of bivariate survivor function of competing risk models under censoring, Journal of Statistical Theory and Applications, 4, 401-423, 2005.
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- 155. P.G.Sankaran and Maya, T Nair: On a finite mixture of beta distributions, Far East Journal of Theoretical Statistics, 103-120, 2004.
- 156. P.G. Sankaran and N. Unnikrishnan Nair: Partial moments for bivariate distributions, Metron, 62, 339-351, 2004

- 157. P.G.Sankaran, N. Unnikrishnan Nair and T.K.Sindu: A generalized Pearson system useful in reliability analysis, Statistical Papers, 44, 125-130, 2003.
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159. G.Asha and P.G Sankaran: A bivariate geometric distribution with applications in reliability, Journal of Indian Statistical Association, 2002

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- 160. P.G.Sankaran, R.P.Gupta and N.Unnikrishnan Nair: Characterizations using joint distribution of age and residual life in Stationary Renewal process, Far East Journal of Theoretical Statistics, 5(2), 2001, 253-264.
- 161. P.G.Sankaran and T.K.Sindu: On IFR (DFR) classes of distributions, IAPQR Transactions, 26(2), 2001.

<u>2000</u>

- 162. P.G. Sankaran and N. Unnikrishnan Nair: On reliability aspects of Pearson family of distributions, Statistical Papers, 2000, 41, 109-117.
- 163. P.G. Sankaran and N. Unnikrishnan Nair: Conditional mean residual life functions, Communications in Statistics-Theory and Methods, 2000, 29(7), 1663-1675.

164. P.Priya, P.G.Sankaran and N.Unnikrishnan Nair: Factorial partial moments and their properties, Journal of the Indian Statistical Association, 2000, 38(1), 45-56.

<u> 1999</u>

165. P.G.Sankaran and R.P.Gupta: Characterization of lifetime distributions using measure of uncertainty, Calcutta Statistical Association Bulletin, 1999, 49, 154-166.

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- 166. N.Ajithkumar and P.G.Sankaran: Instability of Turmeric Production in India, Journal of Spices and Aromatic Crops, 1998, 19-22.
- 167. R.P.Gupta and P.G.Sankaran: Bivariate equilibrium distributions and its applications in reliability, Communications in Statistics-Theory and Methods, 1998, 15, 49-59.

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- 168. P.G.Sankaran, N.Unnikrishnan Nair and N.Hitha: Some characterizations of the geometric law, Aligarh Journal of Statistics, 1996, 15, 49-54.
- 169. P.G.Sankaran and N.Unnikrishnan Nair: On bivariate finite range distributions, Journal of the Indian Statistical Association, 1996, 119-124.

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170. P.G.Sankaran, K.M.Kuruvila and K.J.Madhusoodhanan: Correlation between growth characters in Vanila, Journal of Indian Spices and Aromatic Crops, 1994, 155-157

- 171. P.G. Sankaran and N. Unnikrishnan Nair: Characterizations by residual life distributions, Statistics, 1993, 24(3), 245-251.
- 172. P.G.Sankaran and N.Unnikrishnan Nair: On form-invariant length biased models from Pearson family, Journal of the Indian Statistical Association, 1993, 31(2), 85-89.
- 173. P.G.Sankaran and N.Unnikrishnan Nair: Some characterizations of the geometric law, Proceedings of the Mahalanobis Birth Centenary Symposium, 1993, 69-78.
- 174. P.G.Sankaran and N.Unnikrishnan Nair: Bivariate variance residual life, IAPQR Transactions, 1993, 18(2), 1-6.
- 175. P.G. Sankaran and N. Unnikrishnan Nair: A bivariate Pareto model with applications to reliability, Naval Research Logistic Quarterly, 1993, 40, 1013-1020.

- 176. N. Unnikrishnan Nair and P.G.Sankaran: Characterization of the Pearson family of distributions, IEEE Transactions on Reliability, 1991, 22, 75-77.
- 177. P.G. Sankaran and N. Unnikrishnan Nair: Bivariate vitality functions, Proceedings of the Symposium on Distributions Theory, 1991, 61-71.

B. Books

- 1. N.Unnikrishnan Nair, P.G.Sankaran and N.Balakrishnan: Reliability Modeling and Analysis in Discrete Time, Academic Press, 2018, ISBN 978-0-12-801913-9
- 2. N.Unnikrishnan Nair, P.G.Sankaran and N.Balakrishnan: Quantile based Reliability Analysis, Published by Springer, Birkhauser, New York, 2013
- 3. P.G.Sankaran and S.M.Sunoj: The Collected Papers of Prof.N.Unnikrishnan Nair, Published by Department of Statistics, Cochin, 2007.
- 4. N. Unnikrishnan Nair and P.G.Sankaran: StatisticalMethodsfor Quality and Reliability, Published by Education Publishers and Distributors, Ernakulam, 1998.

C. Technical Reports

- 1. P.G. Sankaran, Dewan, I. and Sreedevi, E.P.: A Classof General Tests for Testing Independence of Failure Time and Cause of Failure in a Competing Risks Model. Technical Report, Indian Statistical Institute, New Delhi, 2009
- **2.** P.G.Sankaran, S.M.Sunoj and Sreedevi E.P. A Study on Population Changes in Corporation of Cochin, 2005.
- **3.** P.G.Sankaran, S.M.Sunoj and Sreedevi Menon: A General Health Profile of Corporation of Cochin, 2003.

D. Book Review

P.G.Sankaran: Survival Analysis in Genetics and Medicine - Li J. and Ma S. CRC Press, 2013, *International Statistical Review*, 2017.

Invited Talks in Conferences/ Seminars/ Workshops

- 1. Delivered a talk on Modeling and analysis of panel count data in the Colloquium at Indian Statistical Institute, 30 November, 2021
- 2. Delivered a talk on Proportional mean model for panel count data with competing risks in the conference STATISTICS 2021 CANADA, July15-18, 2021.
- 3. Delivered a talk on Quantile modelling at National Webinar on Advances in Statistics at Department of Statistics, University of Calicut, June 29, 2021.
- 4. Delivered a talk on Quantile Modeling in the National Webinar on The Recent Developments in Statistics and Probability, February 18-19, 2021.

- 5. Delivered a talk on Modeling and analysis of panel count competing risks data in the Web Conference on Visionary Innovations in Statistical Theory and Applications during February 24-28, 2021
- 6. Delivered a talk on Bayesian inference in quantile functions in the International Virtual Conference: Statistics in The Era of Pandemic of Kerala Statistical Association, March 4-6, 2021.
- 7. Delivered a talk as invited speaker in the International Virtual Conference on Advanced Statistical Techniques in Business and Industry during 28-30, December 2020
- 8. Delivered an invited talk on Nonparametric Inference on Panel Count Data in the International Webinar in honour of Prof C R Rao Birth centenary celebrations, a International Webinar on Advances in "Statistics and Data Science for Sustainable Human Development" during 7-10, September, 2020.
- 9. Delivered a talk on Proportional odds model- a quantile approach In National Seminar on Advanced Developments in Statistical Theory and Applications during 28-29, February 2020
- Delivered a talk at FIFTH International conference on Statistics for twenty –
 First century 2019 conducted by Department of Statistics, University of Kerala during December 18-20, 2019
- 11. Chaired a session at National workshop on Reliability Theory and Survival Analysis conducted by Department of Statistics, Central University Pondicherry during December 11-13, 2019.
- 12. Delivered a talk on Modeling and analysis of current status data in the National Seminar on Statistical Approaches in Data Science, St.Thomas College, Thrissur,6-7 Feb 2019
- 13. Attended LEAP of MHRD, Govt. of India, Feb. 24- March 8, 2019 at IIT Bombay and 18-23, March 2019, at NTU Singapore
- 14. Delivered a lecture on Current status data in the National Workshop on Reliability Theory and Survival Analysis , Indian Statistical Institute, November 28-30, 2018
- 15. Delivered a talk on Modeling and analysis of statistical data using quantile functions in Khristu Jayanti College, Bangalore, December 14, 2018
- 16. Resource person for Refresher Course in Statistics organized by University of Kerala, Trivandrum, 7-3-2018
- 17. Delivered a talk on "A Class of Bivariate Weibull Distributions and itsApplications" in International Conference on Theory and Applications of Statistics and Information Sciences and Annual Conference of ISPS, Bharathiar University, Coimbatore, January 5-7, 2018.
- 18. Delivered a talk on "Quantile Regression Models for the Analysis of Middle Censored Data" in 2017 IISA International Conference on Statistics, December 27-30,2017.
- 19. Resource person on "Reliability" in the Four day Workshop on "Time- to Events and Time Series Data Analysis using R", Department of Statistics, CUSAT, December 15-18,2017

- 20. Resource person in a one day seminar on "Applied Statistical Techniques", St. Joseph College Irinjalakuda, Thrissur, November 30,2017.
- 21. Resource person in a one day seminar on "Applied Statistics", St. Mary's College, Thrissur, September 26, 2017.
- 22. Delivered a talk on National Conference on "Recent Advancements in Statistics and their Applications to Society", University of Pune, March 23-25, 2017
- 23. Delivered a talk on Annual Conference of Kerala Statistical Association, University of Kannur, February 17-18, 2017.
- 24. Delivered a talk in Second International Conference on Statistics for Twenty-first Century-2016, University of Kerala, December, 21-23, 2016.
- 25. Delivered a talk in International Symposium on Statistics and Optimization in conjunction with XXXVI Annual Convention of ISPS and Seminar on Statistical Inference, Sampling and Optimization Techniques and Related Areas, Aligarh Muslim University, December, 17-19, 2016.
- 26. Resource person for International Workshop on Reliability Theory and Survival Analysis, University of Pune, November 3-5, 2016
- 27. Delivered a talk on Frailty Models in the Kerala Statistical Association Conference, Nirmala College, Muvattupuzha, February 12-13. 2016.
- 28. Delivered a talk in the National Seminar, Department of Mathematics, Mercy College, Palakkad, January 29, 2016.
- 29. Delivered a talk in the International Indian Statistical Association Conference, Dept. of Statistics, University of Poona, Pune, 20-24, December 2015
- Delivered a talk in the International Seminar on Distribution Theory and Related Areas, Dept. of Statistics, University of Kerala, Trivandrum, 17-19, December 2015
- 31. Delivered a talk in the International Workshop on Distribution Theory and Related Areas, Dept. of Statistics, University of Kerala, Trivandrum, 14-16, December 2015
- 32. Delivered a talk on Survival Analysis in the National seminar at Govt. Victoria College, Palghat, 23-24, November 2015
- 33. Delivered a talk on Statistical Inference in the Workshop on Optimizations Techniques at LBS Engineering College, Trivandrum, 20-24, July 2015
- 34. Delivered a talk on Statistical Modeling and Applications in International Conference on New Horizons in Presidency College, Chennai, 27-28, February, 2015
- 35. Delivered a talk in International workshop on Reliability Theory and Time Series Analysis, CUSAT, Cochin, January 5-7, 2015.
- 36. Delivered a talk in National Seminar on Recent Advances in Statistics, University of Pune, January 2-3, 2015
- 37. Delivered a talk in Annual conference of ISPS, S.V. University, Tirupati, November 30- December 2, 2014
- 38. Delivered a talk International Conference on Stochastic Modelling, St.Thomas College, Pala, January 3-5, 2014
- 39. Attended international Workshop on Reliability Theory and Survival Analysis, CUSAT, Cochin, December 31, 2013- January 2, 2014

- 40. Delivered talk in the International Conference on Role of Statistics in Advancement of Science and Technology, University of Pune, December 16-18, 2013
- 41. Served as resource person in the UGC sponsored National Seminar on "Process capability studies with special emphasis on computational techniques and recent trends in Statistics, Nirmala Colloge, Muvattupuzha, 3-5, October, 2013
- 42. Served as resource person in the Workshop on Random Processes and Applications, College of Engineering, Karunagappally, September 10, 2013
- 43. Attended Workshop on Statistical Analysis of Time Series Data with Applications, CUSAT, January 14-16, 2013
- 44. International Conference on Statistics, Science and Society: New Challenges and Opportunities, University of Madras, Chennai, January 2-5, 2013.
- 45. National Conference on Statistics for 21st Century, University of Kerala, December10-12, 2012
- 46. Workshop on Reliability Theory and Survival Analysis, IIT, Kanpur, December 3-5, 2012
- 47. Workshop on Reliability, Survival Analysis and Industrial Statistics, University of Pune, November 9-10, 2012
- 48. International Symposium on Business and Industrial Statistics, Chulalongkorn University, Bangkok, June 17-21, 2012
- 49. National Seminar on Recent Developments in Statistics, Pondicherry University, Pondicherry, February 2-3, 2012
- 50. Annual Convention of ISPS and International Conference on Statistics, Probability and related Areas, Cochin University of Science and Technology, Cochin, December, 19-22, 2011
- 51. Workshop on Reliability Theory and Survival Analysis, Indian Statistical Institute, Kolkata, November 23-25, 2011
- 52. National Seminar on Stochastic Modelling and Analysis, Cochin University of Science and Technology, Cochin, March 24-25, 2011
- 53. National Seminar on Statistics in 21st Century, University of Kerala, Trivandrum, March 17-19, 2011
- 54. National Seminar on Advances in Statistics, Calcutta University, Kolkata, January 28-29, 2011
- 55. Workshop on Reliability Theory and Survival Analysis, Indian Institute of Technology, Mumbai, November 25-27, 2010
- International Conference on Business and Industrial Statistics organized by International Society for Business and Industrial Statistics, Protrose, Slovenia, July 5-9, 2010
- 57. International Conference on Probability, Statistics, Operations Research, Computer Science and Related areas, IISA & ISPS annual conference, Andhra University, Vysag, January 4-8, 2010.
- 58. Mathematical Methods in Reliability Conference, Glasgow, U.K., July 1-4, 2007.
- 59. IISA Workshop on Financial Mathematics, Cochin, January 6, 2007.
- 60. IISA Joint Statistical Meeting and International Conference on Statistics, Probability and Related Areas, Cochin, January 2-5, 2007.

- 61. National Seminar on Modeling and Analysis of Life time Data, Cochin University of Science and Technology, February 20-22, 2006.
- 62. International Conference on Reliability, Survival analysis and related areas, ISI, New Delhi, December 20-22,2005.
- 63. International Conference on Statistical Inference and Stochastic Processes, University of Pune, January 8-10, 2006.
- 64. International Conference on Reliability, Statistics and Related Areas, Indian Institute of Management, Calicut, January 6-8, 2005.
- 65. International Srilankan Conference, University of Perideniya, December 28-30, 2004
- 66. UGC Sponsored Refresher Course, Department of Statistics, CUSAT, November, 2004
- 67. Annual Conference of ISPS, St. Thomas College, Pala, November 2004
- 68. Annual Conference of ISPS, Nagarjuna University, Guntur, December 2003.
- 69. International Conference on Statistics in Industry and Business, Cochin, January 2003.
- 70. Annual Conference of ISPS, University of Pune, Pune, December 2001.
- 71. Annual Conference of ISPS, University of Chandigarh, Chandigarh, December 2001
- 72. International Conference on Reliability Analysis, University of Pune, June 2001.
- 73. Workshop on Bayesian Inference and its Applications, Indian Statistical Institute, March 2001.
- 74. Workshop on ISO 9000, Third Edition and Cost of Quality, Cochin, January 2001.
- 75. International Symposium on 'Development of Statistics in 21st Century', University of Madras, USA, June 2000.
- 76. International Conference on 'Statistics in 21st Century', University of Maine, USA, June 2000.
- 77. National Seminar on 'Probability Models and Applied Statistics', University of Calicut, February 2000.
- 78. National Conference on 'Reliability Analysis', Cochin University of Science and Technology, December 1999.
- 79. International Conference on 'Stochastic Processes and their Applications', Cochin University of Science and Technology, December 1999.
- 80. International Conference on 'Combinatorics, Statistics, Pattern Recognition and Related Areas', University of Mysore, December 1998.
- 81. National Seminar on 'Development in Statistical Science', Bangalore University, August 1998.
- 82. National Seminar on 'Stochastic Systems', Mangalore University, February 1998.
- 83. UGC Sponsored Refresher Course, Department of Statistics, CUSAT, March, 1997
- 84. Workshop on QS 9000, Cochin, January 1997.
- 85. International Conference on 'Quality Improvement through Statistical Methods', Cochin University of Science and Technology, December 1996.

- 86. Annual Conference of Indian Society for Probability and Statistics, Thirunelveli, December 1994.
- 87. International Symposium on plantation crops, NRCS, Calicut, November 1994.
- 88. Annual Conference of Indian Society of Agricultural Statistics, Thrissur, February 1994.

Extension Activities

- 1. Reviewer of American Mathematical Review, U.S.A.
- 2. Reviewer of international Statistics journals such as Multivariate Analysis, Computational Statistics and Data Analysis, Statistics and Probability Letters, Statistics, Communications in Statistics- Theory and Methods, Statistical Papers, Journal of Japan Statistical Association, Journal of Applied Statistics, Journal of Indian Statistical Association, Bulletin of Calcutta Statistical Association
- 3. Resource Person for UGC sponsored Refresher course for University/College teachers conducted by Academic Staff College, University of Calicut, 2001.
- 4. Resource Person for UGC sponsored Refresher course for University/College teachers conducted by Department of Statistics, Victoria College, Palakkad, 2001.
- 5. Resource Person for UGC sponsored Refresher course for University/ College teachers conducted by Academic Staff College, University of Kerala, Thiruvananthapuram, 2001.
- 6. Resource person for Research Scholars Meet at Indian Statistical Institute, Kolkata, 19-21, February 2014
- 7. State Coordinator, Admission Test of Indian Statistical Institute, Kolkata (2012 2017).