Date: 07/20/2025

ANURADHA ROY

CONTACT INFORMATION:

The University of Texas at San Antonio
Department of Management Science and Statistics
Carlos Alvarez College of Business **Phone:** 210-458-6343
One UTSA Circle **E-Mail:** Anuradha.Roy@utsa.edu
San Antonio, TX 78249, USA **Web:** https://business.utsa.edu/faculty/profiles/roy-anuradha.html

I am looking for self-motivated Ph.D. students with strong computing skills to work with me in Multivariate Analysis and Symbolic Data Analysis.

PERSONAL:

U.S. Citizen (naturalized).

ScholarGPS® ID: 70689864647574
ORCID ID: orcid.org/ 0000-0003-0294-6185
h-index (Scopus): 17
h-index (Google Scholar): 24
i10-index (Google Scholar): 39

ScholarGPS Citations
Scopus Citations
Google Scholar Citations

CURRENT ACADEMIC RANK:

Professor (with tenure).

MAIN AREAS OF RESEARCH INTEREST:

Multivariate Analysis, Multivariate Repeated Measures Data, Symbolic Data Analysis, Kronecker Structured Covariance Matrix, Mixed Effects Models: *Areas of application include Medical and Biomedical Sciences, and Engineering application.*

EDUCATIONAL BACKGROUND:

- Ph.D. 2002, Applied Mathematical Sciences, Oakland University, Rochester, Michigan, USA.
- M.Stat. (M.S.) 1981, Advanced Probability and Mathematical Statistics, Indian Statistical Institute, Calcutta, India.
- B.Sc. (B.S.) 1978, Mathematics (with first class honors), Presidency College, Calcutta University, India.

PROFRSSIONAL EMPLOYMENT HISTORY:

Professor, Dept. of Management Science and Statistics, The University of Texas at San Antonio, San Antonio, TX, 09/2021 – Present

Associate Professor, Dept. of Management Science and Statistics, The University of Texas at San Antonio, San Antonio, TX, 09/2008 – 08/2021.

Visiting Associate Professor, Departamento de Matematica and Centro de Matematica e Aplicacioes, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal, 09/2013 (10 days).

Visiting Associate Professor, Dept. of Mathematics (Division of Statistics), KTH Royal Institute of Technology, Stockholm, Sweden, 05/2013 – 07/2013 (2 months).

Visiting Associate Professor, Departamento de Matematica and Centro de Matematica e Aplicacioes, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, Caparica, Portugal, 12/2012 (2 weeks).

Visiting Associate Professor, Dept. of Mathematics (Division of Statistics), KTH Royal Institute of Technology, Stockholm, Sweden, 08/2012 (1 month).

Assistant Professor, Dept. of Management Science and Statistics, The University of Texas at San Antonio, San Antonio, TX, 09/2002 – 08/2008.

Instructor, Dept. of Mathematics and Statistics, Oakland University, Rochester, MI, 05/2002 - 06/2002.

Graduate Teaching Associate, Dept. of Mathematics and Statistics, Oakland University, Rochester, MI, 01/1998 – 04/2002.

Research Assistant, Effectiveness Research, Center of Health Care Division Wayne State University School of Medicine, MI, 05/2000 –08/2000.

Counselor, Mathematics Summer Camp, Oakland University, 1998, 1999. Mentored gifted high school students in advanced mathematics courses.

Defense Scientist, Government of India: Scientific Analysis Group, Delhi, India, 01/1988-01/1998.

Defense Scientist, Government of India: Defence Research & Development Laboratory, Hyderabad, India, 06/1987-01/1988.

Defense Training on *'Ballistics & Space Mechanics'*, Government of India: Institute of Armament Technology, Pune, India, 06/1986-06/1987.

Research Scholar, Indian Statistical Institute, Calcutta, India, 01/1982- 06/1986.

AWARDS AND HONORS:

- Awarded the *Faculty Development Leave* for Fall 2019.
- Received '*Dean's Summer Funding Award* - Summer 2018'.
- Invitation from '*Honors Alliance for Nova Dinner*': Recognition for the Outstanding Contribution to Student Success at UTSA on 11/18/2016.
- Awarded the *Faculty Development Leave* for Fall 2013.
- Awarded a research grant from the *Royal Swedish Academy of Sciences*, Sweden, Göran Gustafsson Stiftelse, for 2012-2014.

- Received the *Franklin V. Taylor memorial certificate of merit for the Best Paper and Oral Presentation in 2009 IEEE International Conference on Systems, Man, and Cybernetics*.
- Certificate of merit (6 times) for *Outstanding Academic Achievement*, Oakland University, Dept. of Mathematics and Statistics.
- '*Ramanujam Award*' for Standing *First in the Order of Merit* in the Training on *'Ballistics & Space Mechanics'*, Institute of Armament Technology, Pune, Government of India.
- *National Merit Scholarship* (Twice), Government of India.
- *First Prize for Overall Good Academic Record*, Presidency College, Calcutta, India.
- *Prize in the Intercollegiate Essay Competition held in connection with the 1500th Birthday Celebration on Astronomical Work of Aryabhatta I*, CSIR, Government of India.

PUBLICATIONS:

Refereed Statistical Journal Articles:

1. Roy Anuradha (2025), "Two-stage Principal Component Analysis on Interval-valued Data using Patterned Covariance Structures", *Advances in Data Analysis and Classification*, https://doi.org/10.1007/s11634-025-00650-9

2. Klein D., Roy Anuradha, von Rosen D. and Filipiak K. (2025), "Estimating and Testing a Doubly Exchangeable Covariance Matrix using Rao's Score Test", *Sankhya B*, invited submission, https://doi.org/10.1007/s13571-025-00366-y

   - *This article is part of the special issue "In the Memory of Professor C. R. Rao (Applied Statistics)".*

3. Opheim T. (Ph.D. student) and Roy Anuradha (2023) "Moving Average and Autoregressive Correlation Structures under Multivariate Skew Normality", *Communications in Statistics--Simulation and Computation*, 52(1), 84-97.

4. Opheim T. (Ph.D. student) and Roy Anuradha (2022), "Doubly Multivariate Linear Models With Block Exchangeable Distributed Errors and Site-Dependent Covariates", *Journal of Applied Statistics*, 49(14), 3659-3676.

5. Leiva R. and Roy Anuradha (2022), "Mean Equality Tests for High-dimensional and Higher-order Data with k-self Similar Compound Symmetry Covariance Structure", in the Special Issue entitled '*Symmetry in Multivariate Analysis*' of '*Symmetry'*, invited submission, 14(2):291.

6. Opheim T. (Ph.D. student) and Roy Anuradha (2021), (Review) "More on the Supremum Statistic to Test Multivariate Skew-normality", In Diawara, N. (Ed.) to the Special Issue entitled '*Modern Statistical Methods for Spatial and Multivariate Data'* of *Computation*, invited submission, 9(12):126.

7. Opheim T. (Ph.D. student) and Roy Anuradha (2021), "Inverse of the Covariance Matrix of an MA(2) Process", *Journal of Computational and Applied Mathematics*, 398, 113627.

8. Leiva R. and Roy Anuradha (2021), "Self Similar Compound Symmetry Covariance Structure", *Journal of Statistical Theory and Practice*, 15:70.

9. Opheim T. (Ph.D. student) and Roy Anuradha (2021), "Score Tests for Intercept and Slope Parameters of Doubly Multivariate Linear Models with Skew-normal Errors", *Journal of Statistical Theory and Practice*, invited submission, 15(2):30.

- *This article is part of the topical collection "Celebrating the Centenary of Professor C. R. Rao".*

10. Opheim T. (Ph.D. student) and Roy Anuradha (2021), "Linear Models for Multivariate Repeated Measures Data with Block Exchangeable Covariance Structure", *Computational Statistics,* 36(3), 1931–1963.

11. Roy Anuradha and Klein D. (2020), "Testing of Mean Interval for Interval-valued Data", *Communications in Statistics – Theory and Methods*, 49 (20), 5028–5044.

12. Coelho C. A. and Roy Anuradha (2020), "Testing the Hypothesis of a Doubly Exchangeable Covariance Matrix", *Metrika: International Journal for Theoretical and Applied Statistics*, 83, 45-68.

13. Kozioł A., Roy Anuradha, Zmyślony R., Leiva R. and Fonseca M. (2018), "Free-coordinate Estimation for Doubly Multivariate Data", *Linear Algebra and its Applications*, 547, 217- 239.

14. Roy Anuradha, Filipiak K., and Klein D. (2018), "Testing a Block Exchangeable Covariance Matrix", *Statistics: A Journal of Theoretical and Applied Statistics*, 52 (2), 393-408.

15. Žežula I., Klein D. and Roy Anuradha (2018), "Testing of Multivariate Repeated Measures Data with Block Exchangeable Covariance Structure", *TEST*, 27(2), 360-378.

16. Kozioł A., Roy Anuradha, Zmyślony R., Leiva R. and Fonseca M. (2017), "Best Unbiased Estimates for Parameters of Three-level Multivariate Data with Doubly Exchangeable Covariance Structure", *Linear Algebra and its Applications*, 535, 87-104.

17. Pavlenko T. and Roy Anuradha (2017), "Supervised Classifiers of High-dimensional Higher-order Data with Locally Doubly Exchangeable Covariance Structure", *Communications in Statistics – Theory and Methods*, 46(23), 11612-11634.

18. Coelho C. A. and Roy Anuradha (2017), "Testing the Hypothesis of a Block Compound Symmetric Covariance Matrix for Elliptically Contoured Distributions", *TEST*, 26 (2), 308-330.

19. Filipiak K., Klein D. and Roy Anuradha (2017), "A Comparison of Likelihood Ratio Tests and Rao's Score Test for Three Separable Covariance Matrix Structures*", Biometrical Journal*, 59(1), 192–215.

20. Filipiak K., Klein D. and Roy Anuradha (2016), "Score Test for a Separable Covariance Structure with the First Component as Compound Symmetric Correlation Matrix", *Journal of Multivariate Analysis*, 150, 105-124.

21. Roy Anuradha, Zmyślony R., Fonseca M. and Leiva R. (2016), "Optimal Estimation for Doubly Multivariate Data in Blocked Compound Symmetric Covariance Structure" *Journal of Multivariate Analysis*, 144, 81-90.

22. Hao C., Liang Y. (Ph.D. students) and Roy Anuradha (2015), "Equivalency between Vertices and Centers-coupled-with-radii Principal Component Analyses for Interval Data", *Statistics & Probability Letters*, 106, 113-120.

23. Roy Anuradha, Leiva R., Žežula I. and Klein D. (2015), "Testing of Equality of Mean Vectors for Paired Doubly Multivariate Observations in Blocked Compound Symmetric Covariance Matrix Setup", *Journal of Multivariate Analysis,* 137, 50-60.

24. Leiva R., Roy Anuradha, Bageta R. and Pina J. C. (2015), "An Extension of the Birnbaum-Saunders Distribution as a Model for Fatigue Failure due to Multiple Cracks", *Journal of Statistical Theory and Practice,* 9(1), 88-121.

25. Leiva R. and Roy Anuradha (2014), "Classification of Higher-Order Data with Separable Covariance and Structured Multiplicative or Additive Mean models", *Communications in Statistics – Theory and Methods,* 43(5), 989–1012.

26. Roy Anuradha and Fonseca M. (2012), "Linear Models with Doubly Exchangeable Distributed Errors", *Communications in Statistics – Theory and Methods,* 41(13), 2545–2569.

27. Roy Anuradha and Leiva R. **(**2012), "Classification Rules for Multivariate Repeated Measures Data with Equicorrelated Correlation Structure on both Time and Spatial Repeated Measurements", *Communications in Statistics – Theory and Methods,* 41(8), 1411-1420.

28. Leiva R. and Roy Anuradha (2012), "Linear Discrimination for Three-level Multivariate Data with a Separable Additive Mean Vector and a Doubly Exchangeable Covariance Structure", *Computational Statistics and Data Analysis,* 56(6), 1644-1661.

29. Roy Anuradha and Leiva R. (2011), "Estimating and Testing a Structured Covariance Matrix for Three-level Multivariate Data", *Communications in Statistics – Theory and Methods*, 40(11), 1945-1963.

30. Leiva R. and Roy Anuradha (2011), "Linear Discrimination for Multi-level Multivariate Data with Separable Means and Jointly Equicorrelated Covariance Structure", *Journal of Statistical Planning and Inference*, 141(5), 1910-1924.

31. Leiva R. and Roy Anuradha (2011), "A Quadratic Classification Rule with Equicorrelated Training Vectors for Non-random Samples", *Communications in Statistics – Theory and Methods*, 40(2), 213-231.

32. Louden C. (M.S. student) and Roy Anuradha (2010), "Classification Rules under Autoregressive and General Circulant Covariance", *Communications in Statistics – Theory and Methods*, 39(18), 3294-3315.

33. Leiva R. and Roy Anuradha (2009), "Classification Rules for Triply Multivariate Data with an AR(1) Correlation Structure on the Repeated Measures over Time", *Journal of Statistical Planning and Inference,* 139(8), 2598-2613.

34. Roy Anuradha (2009), "An Application of Linear Mixed Effects Model to Assess the Agreement between Two Methods with Replicated Observations", *Journal of Biopharmaceutical Statistics,* 19(1), 150-173.

35. Roy Anuradha and Leiva R. (2008), "Likelihood Ratio Tests for Triply Multivariate Data with Structured Correlation on Spatial Repeated Measurements", *Statistics & Probability Letters,* 78(13), 1971-1980.

36. Roy Anuradha (2008), "Computation Aspects of the Parameter Estimates of Linear Mixed Effects Model in Multivariate Repeated Measures Set-up", *Journal of Applied Statistics*, 35(3), 307-320.

37. Roy Anuradha and Leiva R. (2007), "Discrimination with Jointly Equicorrelated Multi-level Multivariate Data", *Advances in Data Analysis and Classification*, 1(3), 175-199.

38. Roy Anuradha and Khattree R. (2007), "Classification of Multivariate Repeated Measures Data with Temporal Autocorrelation", *Journal of Applied Statistical Science*, 15(3), 283-294.

39. Roy Anuradha (2006), "A New Classification Rule for Incomplete Doubly Multivariate Data using Mixed Effects Model with Performance Comparisons on the Imputed Data" *Statistics in Medicine*, 25(10), 1715-1728.

40. Roy Anuradha (2006), "Estimating Correlation Coefficient between Two Variables with Repeated Observations using Mixed Effects Model", *Biometrical Journal*, 48(2), 286-301.

    - *This article was the Most Accessed Paper in Five Consecutive Years 2014- 2018.*

41. Roy Anuradha (2006), "Testing of Kronecker Product Structured Mean Vectors and Covariance Matrices", *Journal of Statistical Theory and Applications*, 5(1), 53-69.

42. Roy Anuradha and Khattree R. (2005), "A Study of Covariance Structures for Repeated Measures in the Context of Classification Analysis", *Journal of the Indian Statistical Association*, 43(2), 127-145.

43. Roy Anuradha and Khattree R. (2005), "Classification Based on Multivariate Repeated Measures with Time Effect on Mean Vector and an AR(1) Correlation Structure on the Repeated Measures", *Calcutta Statistical Assoc. Bulletin*, 57, 49-65.

44. Roy Anuradha and Khattree R. (2005), "On Implementation of a Test for Kronecker Product Covariance Structure for Multivariate Repeated Measures Data", *Statistical Methodology*, 2(4), 297-306.

45. Roy Anuradha and Khattree R. (2005), "On Discrimination and Classification with Multivariate Repeated Measures Data", *Journal of Statistical Planning and Inference*, 134(2), 462-485.

46. Roy Anuradha and Khattree R. (2005), "Discrimination and Classification with Repeated Measures Data under Different Covariance Structures", *Communications in Statistics-- Simulation and Computation*, 34(1), 167-178.

47. Roy Anuradha and Khattree R. (2003), "Tests for Mean and Covariance Structures Relevant in Repeated Measures Based Discriminant Analysis", *Journal of Applied Statistical Science*, 12(2), 91-104.

Refereed Biomedical and Other Scientific Journal Articles:

48. LeBlanc H. P., III. and Roy Anuradha (2024), "Profile Analysis of Hourly, Daily, and Weekly Student Access to Online Asynchronous Courses", *Journal of Higher Education Theory and Practice*, 24(9), 81- 98.

49. Xiao P., Roy Anuradha, Wang X. (2024), "In-Silico Simulation of Nanoindentation on Bone using a 2D Cohesive Finite Element Model", *Journal of the Mechanical Behavior of Biomedical Materials*, 151, 106403.

50. Heath S. (MEng Ph.D. student), Han Y., Hua R., Roy Anuradha, Jiang J., Nyman .J and Wang X. (2023), "Assessment of Glycosaminoglycan Content in Bone using Raman Spectroscopy", *Bone*, 171, 116751.

51. Urrutia J., Roy Anuradha, Raut S. S., Antón R., Muluk S. C. and Finol E. A. (2018), "Geometric Surrogates of Abdominal Aortic Aneurysm Wall Mechanics", *Medical Engineering and Physics*, 59, 43-49.

52. Zhao F., Kirby M. (MEng M.S. student), Roy Anuradha, Hu Y., Guo X. E. and Wang X. (2018), "Commonality in Microarchitecture of Human Trabecular Bones: A Preliminary Study", *Bone*, 111, 59-70.

53. Roy Anuradha, Fuller C. D., Rosenthal D. I. and Thomas C. R. Jr. (2015), "Comparison of Measurement Methods with a Mixed Effects Procedure Accounting for Replicated Evaluations (COM_3PARE): Method Comparison Algorithm Implementation for Head and Neck IGRT Positional Verification", *BMC Medical Imaging*,15:35.

54. Starnes J. W., Neidre D. B., Nyman J. S., Roy Anuradha, Nelson M. J., Gutierrez G. and Wang X. (2013), "Synergistic Effect of Exercise and Statins on Femoral Strength in Rats", *Experimental Gerontology*, 48(8), 751-755.

55. Chen C. L. P., Chen M. C., Agaian S. S., Zhou Y., Roy Anuradha, Rodriguez B. M. (2012), "A Pattern Recognition System for JPEG Steganography Detection", *Optics Communications*, 285(21-22), 4252-4261.

56. Nyman J. S., Roy Anuradha, Reyes M. J., and Wang X. (2009), "Mechanical Behavior of Human Cortical Bone in Cycles of Advancing Tensile Strain for Two Age Groups", *Journal of Biomedical Materials Research: Part A*, 89(2), 521-529.

57. Oubre C. M., Roy Anuradha, Toner C. and Kalns J. (2007), "Retrospective Study of Factors Affecting Non-Healing of Wounds During Hyperbaric Oxygen Therapy", *Journal of Wound Care*, 16(6), 245-250.

58. Nyman J. S., Roy Anuradha, Tyler J. H., Acuna R. L., Gayle J. H. and Wang X. (2007), "Age-Related Factors Affecting the Postyield Energy Dissipation of Human Cortical Bone", *Journal of Orthopaedic Research*, 25(5), 646- 655.

59. Nyman J. S., Roy Anuradha, Acuna R. L., Gayle H. J., Reyes M. J., Tyler J. H., Dean D. D. and Wang X. (2006), "Age-Related Effect on the Concentration of Collagen Cross-Links in Human Osteonal and Interstitial Bone Tissue", *Bone*, 39(6), 1210-1217.

60. Nyman J. S., Roy Anuradha, Shen X. M., Acuna R. L., Tyler J. H. and Wang X. (2006), "The Influence of Water Removal on the Strength and Toughness of Cortical Bone", *Journal of Biomechanics*, 39(5), 931-938.

61. Banerjee M., George J., Song E. Y., Roy Anuradha and Hryniuk W. (2004), "Tree-Based Model for Breast Cancer Prognostication", *Journal of Clinical Oncology*, 22(13), 2567-2575.

62. Kalns J., Roy Anuradha, Loeffler C. and Wright J. K. (2004), "A Retrospective Evaluation of Digital Wound Imaging to Predict Response to Hyperbaric Oxygen Treatment", *Ostomy/Wound Management,* 50(4), 36-48.

63. Ray Anuradha and Datta A. K. (1994), "A Hierarchical Perception Linked Model for Machine Recognition of Vowels in Telugu", *Acustica,* 80(4), 406-412.

64. Datta A. K., Ganguly N. R., Ray Anuradha and Mukherjee B. (1991), "A Hierarchical Perception-Linked Model for Machine Recognition of Phonemes", *Information Sciences,* 55, 259-269.

65. Datta A. K., Ray Anuradha and Ganguli N. R. (1987), "An Expert System for Key Syllable Based Isolated Word Recognition", *Pattern Recognition Letters*, 6, 145-150.

66. Roy Anuradha (1986), "A Note on the Aerodynamic Force System on an Axis- Symmetric Body", *Journal of Armament Studies*, 23-26.

Conference Proceedings (Refereed):

67. Leiva R., Roy Anuradha, Bageta R. and Pina J. C. (2016), "Model of Fatigue Failure due to Equicorrelated Multiple Cracks using Extended Birnbaum-Saunders Distribution", *60th ISI World Statistics Congress (WSC)*, Rio de Janeiro, Brazil, 941-946.

68. Coelho A. C. and Roy Anuradha (2016), "Developing Near-exact Distributions for Likelihood Ratio Statistics to Test for Kronecker Product Structures in Covariance Matrices", *60th ISI World Statistics Congress (WSC),* Rio de Janeiro, Brazil, 0-5.

69. Fonseca M. and Roy Anuradha (2012), "Discriminant Analysis in Models with Structured Mean and Covariance", *Proceedings of the International Conference of Numerical Analysis and Applied Mathematics (ICNAAM 2012)*, Kos, Greece, 1686-1689.

70. Chen M. C. (ECEng Ph.D. student), Roy Anuradha and Rodriguez B. M., Agaian S. S. and Chen C. L. P. (2009), "An Application of Linear Mixed Effects Model to Staganography Detection", *Proceedings of the 2009 IEEE International Conference on Systems, Man, and Cybernetics*, San Antonio, Texas, 1782-1786.

    - *This article was Nominated as one of the five finalists for the Franklin V. Taylor Memorial Award for the Best Paper and Oral Presentation in IEEE SMC 09, and Awarded the certificate of merit.*

71. Roy Anuradha and Leiva R. (2007), "Classification Rules for Multi-level Multivariate Data", *Proceedings of the 2nd International Conference on Innovative Computing, Information and Control*, Kumamoto City, Japan. (Indexed by EI Compendex).

72. Roy Anuradha and Khattree R. (2005), "Testing the Hypothesis of a Kroneckar Product Covariance Matrix in Multivariate Repeated Measures Data", *Proceedings of the 30th Annual SAS Users Group International Conference* (SUGI 30), Philadelphia.

73. Roy Anuradha, Bhowmick B. K. and Datta A. K. (1984), "A Statistical Approach for Recognition of Vowels in Connected Speech", *Proceedings of the IEEE International Conf. on System Man and Cybernetics,* Bombay, India, 340-344.

Conference Proceedings (Non-refereed):

74. Opheim T. (Ph.D. student) and Roy Anuradha (2019), "Revisiting the Linear Models with Exchangeably Distributed Errors". *Proceedings of the American Statistical Association, Government Statistics Section,* 2677- 2686.

75. Chacón H. (Ph.D. student) and Roy Anuradha (2017), "Piecewise Solutions to Big Data", *Proceedings of the American Statistical Association, Statistical Programmers and Analysts Section,* 583- 591.

76. Roy Anuradha and Leiva R. (2008), "Testing of Hypothesis of a Structured Mean Vector for Three-level Multivariate Data with Structured Correlations on Repeated Measurements", *Proceedings of the American Statistical Association, Statistical Computing Section,* 1940- 1947.

77. Roy Anuradha (2007), "A Note on Testing of Kroneckar Product Covariance Structures for Doubly Multivariate Data", *Proceedings of the American Statistical Association, Statistical Computing Section* in Seattle, Washington, 2157- 2162.

78. Roy Anuradha (1993), "A Method to Discriminate Between Speech/ Non-Speech Region in a Noisy Speech Signal and Some Related Observations", *Proceedings of the 3rd International Conference on Advances in Pattern Recognition and Digital Techniques* at Indian Statistical Institute, Calcutta, India, 124-129.

79. Roy Anuradha (1993), "Discrimination Between Speech/Non-Speech Region in a Noisy Speech Signal Using the Direction Cosines along each Band of the Spectrum", *Proceedings of the Ninth International Congress of Cybernetics and Systems,* New Delhi, India, 93-98.

80. Roy Anuradha and Datta A. K. (1984), "A Perceptual Model for A.S.R.", *Proceedings of the International Conference on Computer Systems and Signal Processing,* Bangalore, India.

Book Series, Book Chapters and Festschrifts (Refereed):

81. Khattree R. and Roy Anuradha (2025), "*SAS*® Software for the Social and Behavioral Sciences Research", In: Nichols A. L., Edlund J. E. (Eds.) Cambridge University Press & Assessment Handbook Chapter on SAS in *the Cambridge Handbook of Research Methods and Statistics for the Social and Behavioral Sciences: Volume 3,* invited submission, In Press.

82. Roy Anuradha and Montes F. (M.S. student) (2025), "Hypothesis Testing of Mean Interval for p-Dimensional Interval-Valued Data", In: Trejos, J., Chadjipadelis, T., Grané, A., Villalobos, M. (eds) *Data Science, Classification, and Artificial Intelligence for Modeling Decision Making. IFCS 2024. Studies in Classification, Data Analysis, and Knowledge Organization*. Springer, Cham, 161-169.

83. Kozioł A., Roy Anuradha, Zmyślony R., Žežula I., and Fonseca M. (2021), "Estimation and Testing Hypotheses in Two-level and Three-level Multivariate Data with Block Compound Symmetric Covariance Structure", In: Filipiak, K., Markiewicz, A., von Rosen, D. (Eds.) *Multivariate, Multilinear and Mixed Linear Models,* Springer Proceedings, 203-232.

84. Žežula I., Klein D. and Roy Anuradha (2021), "Testing of Multivariate Repeated Measures Data with Block Exchangeable Covariance Structure", In: Filipiak, K., Markiewicz, A., von Rosen, D. (Eds.) *Multivariate, Multilinear and Mixed Linear Models,* Springer Proceedings, 233-252.

85. Žežula I., Klein D., and Roy Anuradha (2020), "Mean Value Test for Three-level Multivariate Observations with Doubly Exchangeable Covariance Structure", In: Holgersson T. and Singull M. (Eds) *Recent Developments in Multivariate and Random Matrix Analysis*, invited submission, 335-349.

86. Roy Anuradha and Khattree R. (2007), "Classification Rules for Repeated Measures Data from Biomedical Research", In: Khattree R. and Naik D. N. (Eds) *Computational Methods in Biomedical Research*, invited submission, 323-370.

Letters to the Editor:

1. Lee C. H. (Ph.D. student), Dutilleul P. and Roy Anuradha (2010), "Models with a Kronecker Product Covariance Structure: Estimation and Testing", by Srivastava M. S., von Rosen T. and von Rosen D., *Mathematical Methods of Statistics*, 19(1), 88- 90.

Manuscripts (with Undergraduate students):

1. Teniente M. (Undergraduate student) and Roy Anuradha (2024), "Rising Thermometers: A Statistical Exploration in Temperature Trends", *UTSA Journal* of *Undergraduate Research and Scholarly Works*, Vol 9, 1-17.

SCHOLARLY PRESENTATIONS AND PROFESSIONAL MEETINGS:

Invited:

1. Presented an invited paper for an Invited Paper Session: Divergence-based Inference and Classification at the *9th Data Science, Statistics, and Visualisation (DSSV 2025)* conference on July 9, 2025 in South Africa. The title of my talk was "Computational Aspects of the Parameter Estimates of Linear Models for Matrix-variate Data".

2. Presented an invited paper *virtually* at the *27th Annual Conference on Advances of Interdisciplinary Statistics and Applications in AI & ML (AISAAM-2025)* on February 23, 2025 in North-Eastern Hill University, Shillong, India. The title of my talk was "Hypothesis Testing of Mean Interval for Multivariate Interval-valued Data".

3. Presented an invited paper for an Organized Session on a Thematic Track on Symbolic Data Analysis at the *18th* conference *of the International Federation of Classification Societies* (*IFCS 2024*) on July 16, 2024 in San José, Costa Rica. The title of my talk was "Hypothesis Testing of Mean Interval for *p*-dimensional Interval-valued Data".

4. Presented an invited paper at *University of Kentucky in Lexington, Kentucky* on January 12, 2024. The title of my talk was "Linear Models for Matrix-variate Data".

5. Presented an invited paper for an *Invited Paper Session*: Recent Developments on Computational Statistics for the Modelling of Multivariate Complex Data at the *International Conference on Data Science (ICDS 2023)* on November 9, 2023 in Santiago, Chile. The title of my talk was "Computation of Parameters in Linear Mixed Effects Model for Multivariate Repeated Measures Data".

6. Presented an invited paper at the *Workshop on Statistical Modeling and Data Science UC* organized by the Department of Statistics at Pontificia Universidad Católica de Chile in Santiago, Chile on

November 6, 2023. The title of my talk was "Linear Models for Multivariate Repeated Measures Data with Block Exchangeable Covariance Structure".

7. Presented an invited paper for an Organized Invited Session: Repeated Measures and Functional Data Analysis, Nonparametric Regression, and Regularized *t*-test at the *6th Int. Conference on Econometrics and Statistics (EcoSta 2023)* on August 3, 2023 at the Waseda University, Tokyo, Japan. The title of my talk was "Linear Models for Multivariate Repeated Measures Data".

8. Presented an invited paper for an Invited Paper Session: Advances in Symbolic Data Analysis at the 64th ISI World Statistics Congress (WSC) on July 20, 2023 in Ottawa, Canada. The title of my talk was "Hypothesis Testing of Equality of Two *p*-dimensional Hyper-rectangles".

9. Presented an invited paper at the *Symbolic Data Analysis Workshop 2022* on September 7, 2022 at the University of Campania L. Vanvitelli, Caserta, Italy. The title of my talk was "Two-stage Principal Component Analysis on Interval-valued Data using Patterned Covariance Structures".

10. Presented an invited paper *virtually* for an Organized Session: Novel Statistical Methods for Censored and Skew Data (COO45) at the *COMPSTAT 2022* meeting on August 23, 2022 at the University of Bologna, Italy. The title of my talk was "Linear Models for Multivariate Repeated Measures Data from Skew Normal Distribution".

11. Presented an invited paper by the session organizer for an Organized Session on a Thematic Track on Symbolic Data Analysis at the *17th* conference *of the International Federation of Classification Societies* (*IFCS 2022*) on July 20, 2022 in Porto, Portugal. The title of my talk was "Two-stage Principal Component Analysis on Interval-valued Data using Patterned Covariance Structures".

12. Presented an invited paper *virtually* for an Organized Invited Session: Statistical Modeling of Challenging Data (EO101) at the *5th Int. Conference on Econometrics and Statistics (EcoSta 2022)* on June 6, 2022 at the Ryukoku University, Kyoto, Japan. The title of my talk was "Linear Models for Doubly Multivariate data with Exchangeably Distributed Errors and Site-Dependent Covariates".

13. Presented an invited paper *virtually* for an Organized Session: Methodological Advances in Classification Models for Complex Longitudinal Data at the *2022 Annual Meeting of the Statistical Society of Canada* on June 3, 2022, Canada. The title of my talk was "Linear Discrimination for Three-level Multivariate Data".

14. Presented an invited paper *virtually* at the Topic-contributed Session: Recent Advances in Symbolic Data Analysis of the *Joint Statistical Meetings* on August 11, 2021 in Seattle, WA. The title of my talk was "Facial Recognition Development using Principal Component Analysis for Interval-Valued Face Dataset".

15. Presented an invited paper *virtually* for an Organized Session: Novel Statistical Modeling of Multivariate Data (EO085) at the *4th International Conference on Econometrics and Statistics (EcoSta 2021)* on June 25, 2021 at HKUST, Hong Kong. The title of my talk was "Linear Models for Doubly Multivariate Data with Block Exchangeable Covariance Structure".

16. Presented an invited paper *virtually* at the research workshop on Symbolic Data Analysis at the Statistical and Applied Mathematical Sciences Institute (SAMSI) on May 10, 2021. The title of my talk was "Testing of Mean Interval for Interval-valued Data".

17. Presented an invited paper *virtually* at the *Symposium in Honor of Professor Dietrich von Rosen* on his 65th birthday on October 22, 2020 at the Linköping University, Linköping, Sweden. The title of my talk was "Linear Models for Multivariate Repeated Measures Data".

18. Presented an invited paper *virtually* at the *Conference of Texas Statisticians 2020* on September 19, 2020 at the Texas A&M University-Corpus Christi, TX, USA. The title of my talk was "Beyond the Hotelling's T-square Test!"

19. Presented an invited paper at the workshop: *Advances in Data Science for Big and Complex Data* on January 24, 2020 at Université Paris Dauphine, Paris, France. The title of my talk was "Analysis of Interval-valued Data using Patterned Covariance Structures".

20. Presented an invited paper for an Organized Session: Recent developments in non-regular statistical modeling and computational methods at the *12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2019)* in December 16, 2019 in the University of London, UK. The title of my talk was "Analysis of Interval Data using Patterned Covariance Structures".

21. Presented an invited paper for an Organized Session EO214: New advances on statistical modeling of complex data at the *11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018)* on December 16, 2018 in the Università di Pisa, Italy. The title of my talk was "Testing the Equality of Two Object Parameters in Two Populations of Symbolic data".

22. Presented an invited paper at the *Collaborative Conference on Probability Theory and Statistics* on May 8, 2018 in Dubrovnik, Croatia. The title of my talk was "Beyond the Hotelling's T Square Test!"

23. Presented an invited paper at the *School of Medicine, New York University* Biostat Seminar Series, on April 3, 2018. The title of my talk was "A Test for Equality of the Population Mean Vectors for Doubly Multivariate Data".

24. Presented an invited paper at the Texas A&M University-Kingsville on *the Seventh Annual Statistics Day* on Feb 16, 2018. The title of my talk was "Does the Width of the Pileus Cap Distinguish Poisonous Mushrooms from the Edible Ones?"

25. Presented an invited paper at the topic-contributed session "Big Data with Bite Solutions" of the *Joint Statistical Meetings* on August 3, 2017 in Baltimore, MD. The title of my talk was "Piecewise Solutions to Big Data".

26. Presented an invited paper for an Organized Session EO107: Recent advances in complex data modeling and computational methods at the *9th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2016)* on December 10, 2016 in the University of Seville, Spain. The title of my talk was "Hypothesis Test of a Block Compound Symmetric Covariance Matrix for Two-level Multivariate Data".

27. Presented an invited paper for an Organized Session: Paired Functional Data Analysis, Hypothesis Test for Covariance Matrix, and Mixed Effects Models of the *IISA (International Indian Statistical Association)* 2016 conference: Statistical and Data Sciences: A key to healthy people, planet and prosperity in North America on August 19, 2016 in Corvallis, Oregon. The title of my talk was "Hypothesis Test on Structured Covariance Matrix in the Context of Method Comparison and Mixed Effects Models".

28. Presented an invited paper for an Organized Session EO168: Recent Advances in Statistical Modeling and Computation at the *8th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2015)* on December 12, 2015 in the University of London, UK. The title of my talk was "Hypothesis Test for the Equality of Two Population Mean Vectors for Doubly Multivariate Data".

29. Presented an invited paper at the *Southwest Research Institute*, San Antonio, on October 12, 2015. The title of my talk was "A Look at Multivariate Analysis for the 21st Century Data".

30. Presented an invited paper for an organized Session Recent Advances in Multivariate Analysis at the *IASC-ABE Satellite conference 2015: Statistical Computing for Data Science* on August 2, 2015 in Búzios, Brazil. The title of my talk was "What is Beyond the Hotelling's T Square Test?"

31. Presented an invited paper at the Mini-symposium on Matrices Useful for Modelling Multi-level Models of *the 24th International Workshop on Matrices and Statistics* on May 27, 2015 in Haikou, China. The title of my talk was "Score Test for a Separable Covariance Structure with the First Component as AR(1) Correlation Matrix and its Performance Comparison with the Likelihood Ratio Test".

32. Presented and discussed an invited paper partially at a research meeting on *Multivariate Linear models* on March 9, 2015, at the Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland. The title of my talk and discussion was "On Separability Tests of Covariance Matrix with Small Sample Size in Multivariate Repeated Measures Data".

33. Presented and discussed an invited paper partially at a research meeting on *Multivariate models* on November 12, 2014, at the Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland. The title of my talk and discussion was "Hypothesis Testing of the Equality of Two Mean Intervals for Symbolic Data".

34. Presented an invited paper at the topic-contributed session "Analysis with Kronecker Product Structured Covariance Matrices" of the *Joint Statistical Meetings* on August 4, 2014 in Boston. The title of my talk was "Two-stage Principal Component Analyses of Symbolic Data using Patterned Covariance Structures".

35. Presented an invited paper at the section on Multivariate and Univariate Statistical Inference of the *IISA (International Indian Statistical Association)* 2014 conference in North America on July 12, 2014 in Riverside, California. The title of the talk was "Student's t, Hotelling's T-square and after Hotelling's T-square test".

36. Presented an invited paper at a research meeting on *Multivariate models* on March 26, 2014, at the Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland. The title of my talk was "Principal Component Analyses of Symbolic Data using Patterned Covariance Structures".

37. Presented an invited paper at *Oakland University* Colloquium Series, on March 11, 2014. The title of my talk was "Principal Component Analyses of Symbolic Data using Patterned Covariance Structures".

38. Presented and discussed an invited paper partially at a research meeting on *Mixed and Multivariate models* on Oct 23, 2013, at the Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland. The title of my talk and discussion was "Score Test for a Separable

Covariance Structure with the First Component as Compound Symmetric Correlation Matrix and its Performance Comparison with Likelihood Ratio Test".

39. Presented an invited paper at the *15th Stockholm-Uppsala symposium in Matematisk Statistik*, Annual Joint Meeting from Uppsala and Stockholm Universities, on May 29, 2013 at the KTH Royal Institute of Technology main campus in Stockholm, Sweden. The title of my talk was "Discriminant Analysis for Multi-level Multivariate Observations".

40. Presented an invited paper at *Bedlewo Spring'2013* research meeting on *Planning and Analysis of Tensor-Experiments* on April 22, 2013 at the Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland. The title of my talk was "Testing the Equality of Mean Vectors for Paired Doubly Multivariate Observations in Blocked Compound Symmetric Covariance Matrix Setup".

41. Presented an invited paper at the Session on High-Dimensional Statistical Analysis of the *International Conference on Advances in Interdisciplinary Statistics and Combinatorics* on Oct 6, 2012, at the University of North Carolina at Greensboro, Greensboro, NC. The title of my talk was "Classification of 3rd Order High-dimensional Data with Structured Covariance Matrix and Structured Multiplicative or Additive Means".

42. Presented an invited paper by the session organizer at the special organized Session on Intelligent Technique for Time Series Data Mining of the *2nd International Conference on Innovative Computing, Information and Control* on September 6, 2007 in Kumamoto City International Center, Kumamoto City, Japan. The title of my talk was "Classification Rules for Multi-level Multivariate Data".

43. Presented an invited paper at the *Conference of Texas Statisticians* on March 31, 2007 at Baylor University in Waco, TX. The title of my talk was "Classification Rules and Related Testing of Hypotheses for Multi-level Multivariate Data with AR(1) Correlation Structure on Repeated Measures over Time".

44. Presented an invited paper at *Georgia State University*, on October 29, 2004. The title of my talk was "Effect of the Correlation Structures on Classification Rules for Repeated Measurements of Doubly Multivariate Data".

45. Presented an invited paper at *Oakland University* Colloquium Series, on July 22, 2004. The title of my talk was "Classification of Incomplete Doubly Multivariate Data with Mixed Effect Models".

46. Presented an invited paper at the *Tulane-LSU* Biostatistics Seminar Series on Jan 26, 2004 in New Orleans, LA. The title of my talk was "Discrimination and Classification of Doubly Multivariate Measurements with Application in Medical Diagnosis".

Contributed (refereed):

47. Presented a paper at the *2024 Classification Society Annual Meeting* on June 20, 2024 at the University of British Columbia - Okanagan, British Columbia, Canada. The title of my talk was "On Discrimination with Multi-level Multivariate Data using Patterned Covariance Structure".

48. Presented a paper at the Session Statistical Modelling of the workshop *SDA 2018: Symbolic Data Analysis* on October 19, 2018 in Polytechnic Institute of Viana do Castelo, Portugal. The title of my talk was "Hypothesis Testing of Equality of Two Mean Intervals".

49. Presented a paper at the Session on Principal Component Analysis of the workshop *SDA 2015: Symbolic Data Analysis* on November 18, 2015 in MAPMO Laboratory, CNRS-University of Orléan, France. The title of my talk was "Principal Component Analyses of Interval Data using Patterned Covariance Structures".

50. Presented a paper at the Session on Business and Industry of the *60th ISI World Statistics Congress (WSC)*, on July 30, 2015 in Rio de Janeiro, Brazil. The title of my talk was "Model of Fatigue Failure due to Equicorrelated Multiple Cracks using Extended Birnbaum-Saunders Distribution".

51. Presented a paper at the Session on Multivariate statistics of the *21st International Conference on Computational Statistics (COMPSTAT 2014)* on August 19, 2014 in Geneva, Switzerland. The title of the talk was "Same, but Better: Comparing Centers-coupled-with-radii and Vertices Principal Component Analyses for Symbolic Data".

52. Presented a paper in the Statistics and Data Analysis Section at the 30th Annual *SAS Users Group International (SUGI 30)* on April 12, 2005 in Philadelphia. The title of my talk was "Testing the Hypothesis of a Kroneckar Product Covariance Matrix in Multivariate Repeated Measures Data".

Contributed (non-refereed):

53. Presented a paper at the Session on Recent Advances in Statistical Estimation and Testing of the *International Conference on Advances in Interdisciplinary Statistics and Combinatorics* on Oct 8, 2022, at the University of North Carolina at Greensboro, Greensboro, NC. The title of my talk was "Linear Models for Doubly Multivariate Data with Exchangeably Distributed Errors".

54. Presented a paper at the Session Advancement in Theoretical and Applied Aspects of Modeling of the *Joint Statistical Meetings* on July 31, 2019 in Denver, Colorado. The title of my talk was "Revisiting the Linear Models with Exchangeably Distributed Errors".

55. Presented a Proposal with my Southwest Research Institute, Texas colleagues regarding statistical models to predict floods, in Texas in an effort to receive grant funding to develop the model, at the *National Flood Insurance Program, Texas Water Development Board*, Austin, Texas on December 2, 2016. The title of our presentation was "Multivariate Statistical Modeling Approach for Flood Assessment and Analyses".

56. Presented a paper at *LinStat2014* on August 25, 2014 in Linköping, Sweden. The title of my talk was "Model of Fatigue failure due to Multiple Cracks using Extended Birnbaum-Saunders Distribution".

57. Presented a paper at *MAT-TRIAD 2013* on September 17, 2013 in Herceg-Novi, Montenegro. The title of my talk was "Supervised Classifiers of Ultra High-dimensional Higher-order Data with Locally Doubly Exchangeable Covariance Structure".

58. Presented a paper at the Section on High-Dimensional Statistical Inference of the *29th European Meeting of Statisticians, EMS 2013* in July 23, 2013, in Budapest, Hungary. The title of my talk was "Classification of Higher-order High-dimensional data".

59. Presented a paper at the Section on High-throughput Data Analysis of the *4th Nordic-Baltic Biometric Conference, NBBC13* on June 10, 2013 at the Karolinska Institutet in Solna, Sweden. The title of my talk was "Supervised Classifiers of Ultra High-Dimensional Higher-Order Data with Locally Doubly Exchangeable Covariance Structure".

60. Presented a paper at the Session Multivariate Analysis part V at *LinStat 2012* on July 20, 2012 at the *Mathematical Research and Conference Center of the Polish Academy of Sciences* in Bedlewo, Poland. The title of my talk was "Classification of Higher-order Data with Separable Covariance and Structured Multiplicative or Additive Mean Models".

61. Presented a paper at the Section on Statistical Computing of the *Joint Statistical Meetings* on August 2, 2011 in Miami, Florida. The title of my talk was "Quadratic Discrimination for Multi-level Multivariate Data with Separable Means".

62. Presented a paper at the Session 3B –Linear Algebra in Statistics at *MAT-TRIAD 2011* on July 12, 2011 in Tomar, Portugal. The title of my talk was "Discriminant Analysis for Multi-level Multivariate Data".

63. Presented a paper at the Section on Statistical Computing of the *Joint Statistical Meetings* on August 5, 2010 in Vancouver, British Columbia, Canada. The title of my talk was "Estimating and Testing the Blocked Compound Symmetry Covariance Structure for Doubly Multivariate Data".

64. Presented a paper at the Session XXVII – Statistical Inference in Mixed and Multivariate Linear Models part IV at *LinStat 2010* on July 29, 2010 in Tomar, Portugal. The title of my talk was "Linear Models with Doubly Exchangeable Distributed Errors".

65. Presented a paper at *MAT-TRIAD 2009* on March 26, 2009 at the Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland. The title of my talk was "Linear Discrimination for Three-level Multivariate Data with Structured Mean Vectors and Doubly Exchangeable Covariance Structure".

66. Presented a paper at the *8th Annual Hawaii International Conference on Statistics, Mathematics and Related Fields* on January 14, 2009 in Honolulu, Hi. The title of my talk was "Does Dose Matter in Multiple Sclerosis Treatment? A Retrospective Study of Longitudinal Outcome Measurements of Magnetic Resonance Imaging and Count of Lesions".

67. Presented a paper at the Section on Government Statistics of the *Joint Statistical Meetings* on August 4, 2008 in Denver, CO. The title of my talk was "Classification Rules for Repeated Measures Data from Multiple Sources".

68. Presented a paper for the poster session of the *Graybill Conference VII* on June 11, 2008 in Colorado State University, Fort Collins, CO. The title of my talk was "Still another Application of Linear Mixed Effects Model for Assessment of Agreement between Two Methods with Replicated Observations".

69. Presented a paper at the Section on Statistical Computing of the *Joint Statistical Meetings* on August, 2007 in Salt Lake City, Utah. The title of my talk was "Testing of Hypothesis of a Structured Mean Vector for Multi-level Multivariate Data with Structured Correlations on Repeated Measurements".

70. Presented a paper at the *ENAR Spring Meeting* on March 12, 2007 Atlanta, Georgia. The title of my talk was "Classification Rules for Triply Multivariate Data with an AR(1) Correlation Structure on the Repeated Measures Over Time".

71. Presented a paper at the Section on Statistical Computing (Mixed Models and Data Mining Session) of the *Joint Statistical Meetings* on August 7, 2006 in Seattle, Washington. The title of my talk was "A Note on a Testing of Hypothesis of a Kroneckar Product Covariance Structure in Doubly Multivariate Data".

72. Presented a paper at the Section on Statistical Computing (Algorithm and Software) of the *Joint Statistical Meetings* on August 8, 2005 in Minneapolis, Minnesota. The title of my talk was "Estimating Correlation Coefficient between Two Variables with Repeated Observations using Mixed Effects Model".

73. Presented a paper at the Section on Missing Data in Longitudinal Data Analysis at the *ENAR Spring Meeting* on March 21, 2005 in Austin, TX. The title of my talk was "Classification of Multivariate Repeated Measures Data with Missing Values".

74. Presented a paper at the *Micro- JSM*, an ASA San Antonio chapter meeting, on Jan 22, 2004 in San Antonio, TX. The title of my talk was "Classification Rules for Repeated Measures".

75. Presented a paper at the *Joint Statistical Meetings* on Aug 3, 2003 in San Francisco, CA. The title of my talk was "Classification Rules for Repeated Measures".

76. Presented a paper at the *ENAR Spring Meeting* on Apr 1, 2003 in Tampa, FL. The title of my talk was "Digital Wound Imaging Enables Timely Identification of Chronic Non-healing Wounds Minimally Responsive to Hyperbaric Oxygen Treatment".

77. Presented a paper at *Fourth Biennial International Conference on Statistics, Probability and Related Areas* at Northern Illinois University, DeKalb, Illinois, on June 16, 2002. The title of my talk was "Classification Methods for Repeated Measures Data with Applications to Cancer Studies".

78. Presented a paper at the *Joint Statistical Meetings* on Aug 7, 2001 in Atlanta, GA. The title of my talk was "Some Approaches to Discriminations and Classifications with Repeated Measures Data".

79. Presented a paper at *Oakland University* Colloquium Series, on Oct 11, 2001. The title of my talk was "On Discriminations and Classifications with Multivariate Repeated Measures Data".

80. Presented a paper at the *8th Biennial CDC and ATSDR Symposium on Statistical Methods* on Jan 23, 2001 in Atlanta, GA. The title of my talk was "Comparing Two Goodness-of-Split Measures for Classification Trees: A Simulation Based Study".

81. Presented a paper at the *3rd International Conference on Advances in Pattern Recognition and Digital Techniques*, at Indian Statistical Institute, Calcutta, India in 1993. The title of my talk was "A Method to Discriminate Between Speech/ Non-Speech Region in a Noisy Speech Signal and Some Related Observations".

82. Presented a paper at the *Ninth International Congress of Cybernetics and Systems*, New Delhi, India in 1993. The title of my talk was "Discrimination Between Speech/Non-Speech Region in a Noisy Speech Signal Using the Direction Cosines along Each Band of the Spectrum".

83. Presented a paper at the *International Conference on Computer Systems and Signal Processing*, Bangalore, India in December, 1984. The title of my talk was "A Perceptual Model for A.S.R.".

84. Presented a paper at the *IEEE International Conf. on System Man and Cybernetics*, Bombay, India in 1984. The title of my talk was "A Statistical Approach for Recognition of Vowels in Connected Speech".

GRANTS FUNDED:

Co-Investigator (2019- 2024), "Age-related Effect of Proteoglycans on Bone Fragility", *NIH Grant.*

Co-Investigator (2020- 2021), "Energy Performance Analysis of Urban Buildings under Climate Change Scenarios", *INTRA Seed Grant,* UTSA.

Research Team Member (2012- 2014), "Classification Procedures and Covariance Structure Learning Methods for Multi-level High-dimensional Data", *The Royal Swedish Academy of Sciences, Göran Gustafsson Stiftelse,* Sweden.

Research Team Member (2007), "Discriminación en el Modelo de Medidas Repetidas Multivariadas", *Secretaría de Ciencia y Técnica de la Universidad Nacional de Cuyo, SECYT- UNC,* Argentina.

Faculty Research Award (2006), UTSA.

Statistical Consultant (2004), "Age-related Effect of Bone Remodeling on the Toughness of Bone" *NIH Grant.*

Summer Research Grants (2003- 2013), *College of Business,* UTSA.

Graduate Research Grant (2001), Oakland University, Michigan.

INSTRUCTIONAL ACTIVITIES:

List of Formal Courses Taught:

The University of Texas at San Antonio, TX:

STA 1053 Basic Statistics (undergraduate)
STA 2303 Appl Probability & Stat-Engrs (undergraduate)
STA 3013 Multivariate Analysis (undergraduate)
STA 3513 Probability and Statistics (undergraduate)
STA 3523 Mathematical Statistics (undergraduate)
STA 3533 Probability and Random Process (undergraduate)
STA 3543 Statistics and Experimental Design for Computer Science (undergraduate)
STA 4643 Introduction to Stochastic Processes (undergraduate)
STA 4713 Applied Regression Analysis (undergraduate)
STA 4913 Independent Study
STA 5103 Applied Statistics (graduate)
STA 5713 Foundation of Linear Models (graduate)
STA 5723 Theory and Application of Linear Models (graduate)
STA 5813 Applied Multivariate Statistics (graduate and doctoral)
STA 6713 Linear Models (graduate and doctoral)
STA 6813 Multivariate Analysis (graduate and doctoral)
STA 7013 Advanced Appl Bus Stat Methods (doctoral)
STA 7023 Applied Linear Stat Models (doctoral)

STA 7033 Multivariate Statistical Analysis (doctoral)
STA 7723 Advanced Linear Models (doctoral)
STA 7813 Advanced Multivariate Analysis (doctoral)

Oakland University, MI:

Spring 2002: Linear Programming/Elementary Functions (undergraduate)
Fall 1998 –Winter 2002: Elementary Algebra, Intermediate Algebra (undergraduate)

Invited Lectures:

The University of Texas at San Antonio, TX:

- Delivered a lecture on "The Time Dimension in Research" to the students of the COM 2213, Foundations of Communication class on Feb 9, 2004.

- Delivered a short lecture on "English Language and Cultural Experience" to the students of the COM 3553, Intercultural Communication class on Oct 3, 2002.

- Delivered a short lecture on "Gender, Culture and Communication" to the students of the COM 3083, Language and Communication Theory class on Nov 19, 2002.

Visits by International Scholars:

Professor Richard Emilion from University of Orleans, MAPMO Laboratory, France visited me in 09/2016.

Ph.D. students Ms. C. Hao and Ms. Y. Liang from Department of Statistics, Stockholm University, Sweden visited me for two weeks from Jan 19 to Feb 2, 2014.

Act as an Opponent for Dissertations (*virtual*):

Ngailo E. K. (2020), "Contributions to Linear Discriminant Analysis with Applications to Growth Curve Analysis and Portfolio Theory", Ph.D. in Statistics, Institute of Technology, Linköping University, Linköping, Sweden, Completed.

External Evaluator for Dissertations:

Das Mandal S. K. (2008), "Role of Shape Parameters in Speech Recognition: A Study on Standard Colloquial Bengali (SCB)", Ph.D. in Elect. & Telecom Eng., Jadavpur Univ., Calcutta, India, Completed.

Pal S. K. (2007), "Development of Techniques for Protection and Analysis of Hidden Digital Information", Ph.D. in Computer Sc., Delhi Univ., India, Completed.

Theses and Dissertations Supervised:

Opheim T. (Fall 2019- Spring 2021), "Multivariate Repeated Measures Linear Models with Normal and Skew Normal Errors Characterized by Patterned Covariance Structures", Ph.D. in Applied Statistics, UTSA, Completed.

Chacón H. (Spring 2017- Spring 2018), "TBA", Ph.D. in Applied Statistics, UTSA.

Louden C. (2008), "Classification of Data under Autoregressive Circulant Covariance Structure with Comparisons to Compound Symmetric Covariance Structure", M.S. in Statistics, UTSA, Completed.

- *The thesis was published in the form of a printed book by VDM Verlag Dr. Müller AG & Co. KG.*

Roy J. R. (2005- 2006), "The Constant Rate Effect in the Spread of Syntactic Change: Applications of Alternating Logistic Regressions in Historical Linguistic Repeated Response Data", M.S. in Statistics, UTSA, Completed.

Theses and Dissertations Committees:

Tran N. Q. H. (2023-2024), "Contributions to Multivariate Data Science: Assessment and Identification of Multivariate Distributions and Supervised Learning for Groups of Objects", Ph.D. in Applied Mathematical Sciences, Oakland University, Michigan, Completed.

Ismail-Aldayeh H. (2022- 2024), "Adaptive Design and Inference For Step-Stress Accelerated Life Tests with Lifetimes From Exponential and Log-Location-Scale Families of Distributions", Ph.D. in Applied Statistics, UTSA, Completed.

Heath S. (2022-2023), "Holistic Study Into The Age-Related Effect Of Glycosaminoglycans (Gags) Loss On Bone Quality and Potential Underlying Mechanisms", (First part only), Ph.D. in Biomedical Engineering, UTSA.

Bai T. (2017- 2019), "Inference and Optimization for the Step-stress Accelerated Life Test under Progressively Type-I Censoring", Ph.D. in Applied Statistics, UTSA, Completed.

Kirby M. L. (2016- 2017), "Commonality among Trabecular Bones: Probabilistic Analysis and Modeling of the Trabecular Structure", M.S. in Mechanical Engineering, UTSA, Completed.

Wang B. (2016- 2019), "Spatial Modeling of Rainfall Accumulated over Short Periods of Time", Ph.D. in Applied Statistics, UTSA, Completed.

Benavides M. (2015), "TBA", Ph.D. in Applied Statistics, UTSA.

Han Z. (2015- 2017), "Gaussian Copula Models for Geostatistical Count Data", Ph.D. in Applied Statistics, UTSA, Completed.

Roy S. (2015), "COM Type Generalizations of Hypergeometric and Negative Hypergeometric Distributions", (First part only), Ph.D. in Applied Statistics, UTSA, Completed.

Kone B. (2012- 2014), "Block Prediction Intervals", Ph.D. in Applied Statistics, UTSA, Completed.

Vesey J. (2010- 2014), "Exploring the Role of Motivation on Workplace Outcomes", Ph.D. in Management, UTSA, Completed.

Chen M. C. (2008- 2009), "Image Security and Recognition System", Ph.D. in Elect. & Computer Eng., UTSA, Completed.

Vance J. A. (2004- 2005), "A Continuous Emission Tracking and Predictive Model for Emissions Reduction and Process Improvement", M.S. in Statistics, UTSA, Completed.

Thesis Supports:

Provided consulting assistance in developing the statistical models used in the following thesis. Not a member of the thesis committee.

Garza O. (2003- 2004), "Food Service Establishment Waste-water Characterization and Management Practice Evaluation", M.S. in Civil Eng., Texas A&M Univ., Completed.

Honors Credits:

Chaurasia A. K. (2005, Fall) STA 3013 (Multivariate Analysis for the Life and Social Sciences)
Chaurasia A. K. (2006, Spring) STA 4643 (Introduction to Stochastic Processes)

SERVICE ACTIVITIES:

LIST OF COMMITTEE ASSIGNMENTS

Department:

- Member, faculty recruitment Committee of the Dept. of Management Sc. and Statistics, for Assistant Professor in Data Science and Biostatistics, 2022- 2023.
- Member, Search Committee in the field of an AI/STAT, Fall 2021--2022.
- Library Liaison for the Department, Fall 2017—Present.
- Undergrad Internship Coordinator, Spring 2021—Spring 2022
- Organizer of the Departmental Seminar Series, Fall 2019—Fall 2022.
- Member Graduate Catalog Revisions Committee for 2021--2023, Spring 2020.
- Ph.D. Qualifying Examination Committee, 2020.
- Member, Ph.D. Admissions Committee, Fall 2016– 2018.
- Department (STA) Academic Program Review Committee, Fall 2017 – Spring 2018.
- Co-Chair, Undergraduate Catalog Revisions for 2018-2020 Committee, Fall 2017 – 2018.
- Member, Graduate Catalog Revisions Committee for 2018-2020, Fall 2017.
- Member Department Faculty Review Advisory Committee (DFRAC), Fall 2008 – Present.
- Member, Applied Statistics Journal and Conference Ranking Committee, Fall 2013 – 2014.
- Member, Ph.D. Admissions Committee, Spring 2006 – Spring 2010.
- Member, M.S. Program Self-study Committee, Fall 2007-- Summer 2008.
- Member, Undergraduate Programs Committee, Fall 2006 – Spring 2008.
- Member, Search Committee for a faculty position in Statistics in 2008.
- Member, Search Committee for a faculty position in Statistics in 2006.
- Member, Dean's Assistant Professor Council, 2005- 2006.
- Member, Search Committee for a Faculty Position in Statistics in 2005.
- Present a talk (3 Sessions) at the Career Day on May 6, 2005, at UTSA Downtown Campus. The title of my talk was "A Statistician Looks at Diabetic Foot Wounds".
- Organizer of the departmental Bi-Weekly seminar series, Aug 2004- May 2006.
- Member, Search Committee for two faculty positions in Statistics in 2003.

College:

- ACOB P&T workshop on Tuesday, April 5th, from 9-10 am. Gave suggestions on how to make the package concise and outstanding. Also, Answered Q&A and gave other advices.

- A virtual dialog: providing a faculty perspective for ACOB to a candidate Dr. Rita Bossetti who has applied for the HCAP/ACOB faculty on Tuesday, February 22 from 1:30-2:00 pm.
- Volunteer for the Graduate Open House (recruitment committee) in the COB at UTSA on February 18, 2020.
- Volunteer for the Graduate Open House (recruitment committee) in the COB at UTSA on February 12, 2019.
- Member, Research Excellence Squad Committee, October 2018 – December 2018.
- Off Campus Outreach for Undergraduate/ Graduate Programs Recruitment Committee on February16, 2018.
- Volunteer for the Graduate Open House (recruitment committee) in the COB at UTSA on February 1, 2018.
- Member College Faculty Review Advisory Committee (CFRAC), Fall 2014 – Spring 2015.

University:

- Member, University Standing Committee: Parking and Traffic Committee, Fall 2024 – Summer 2026.
- Member, University Standing Committee: Parking and Traffic Committee, Fall 2022 – Summer 2024.
- Member, Search Advisory Committee for the Dean of the Alvarez College of Business, 2021-2022.
- Member, University Standing Committee: Core Curriculum Committee, Fall 2020 – 8/31/2022.
- Member, University Standing Committee: Parking and Traffic Committee, Fall 2019 – Summer 2021.
- Member, Search Committee of the Dept. of Construction Science in the field of 'Artificial Intelligence in the Construction Science and Management Area' in 2019-2020.
- Member, Search Committee of the Dept. of Construction Science for a 'Faculty Cluster Hire in Artificial Intelligence' in 2018-2019.
- Member, (Substitute for Dr. Ram Tripathi) Committee of Graduate Council, Spring 2006, Spring 2008, Fall 2015, on Oct 11 in Fall 2016, Spring 2020.

➢ (*Presented the proposal of M.A. in Educational Psychology at the Graduate Council meeting on May 10, 2016*).

- Volunteer as judge for the 2019 Undergraduate Research & Creative Inquiry Showcase for the Best-In-College Award for research and the Civic Engagement on April 25, 2019 at UTSA.
- Member, UTSA Faculty Gender Pay Equity Assessment Guidelines Committee, Spring 2018.
- Member, University Committee on TSI Deficiency (Core curriculum), Fall 2017 – Spring 2018.
- Member, University Task Force on Testing Services – Parscore and Proctoring, Spring 2017 – Fall 2018.
- Graduate Council Graduate Programs & Courses Committee, Fall 2015 – Spring 2017.
- Graduate Council Graduate Program Evaluation Committee, Fall 2015 – Spring 2017.
- Volunteer as interviewers for Spring 2017 Honors Admission process at UTSA on Feb 16, 2017.
- Volunteer as interviewers for Fall 2017 Honors Admission process at UTSA on Sep 28, 2017.
- Volunteer as interviewers for the Fall 2016 Honors Admission process at UTSA on Sep 21, 2016.
- Member, Faculty Senate Evaluations, Merit, Rewards, and Workload Committee, Fall 2011 – 8/31/2013, and Fall 2014 -- Spring 2015.
- Member, Faculty Senate Academic Policy & Requirements Committee, Fall 2010 – 8/31/2013.
- Member, Graduate Programs Committee, a Subcommittee of the Curriculum and Programs Review Committee, Fall 2005 – Spring 2006.

PROFESSIONAL SERVICE ACTIVITIES

Editorials:

- Guest editor of a special issue of *Sankhya B* in memory of Prof. C R. Rao, May 2024 - Present.

- Editorial Board Member of the MDPI journal *Axioms*, February 2022- February 2024.
  Guest Editor, a special issue "Statistical Modeling of Modern Multivariate Data" of *Axiom* journal, October 2022 – October 2023.

- Editor-in-Chief for *Journal of Data Analysis and Operations Research*, 2012 --2013. This was a New Refereed Electronic International Journal according to the International Accredited Standard, launched by the Department of Statistics of the University of Bahrain.

Invited Reviewer/Grant Proposal Panelist:

- External Reviewer of a Mathematics and Statistics Discovery Grant application for *Natural Sciences and Engineering Research Council of Canada* (NSERC) in 2016-2017.

- Reviewer of Book Proposal to SAGE publications, UK in 2011.

- External Reviewer for Evaluation of Tenure Promotion in 2010.

IRB Member at the University of Texas at Health Science Center:

- Member, The University of Texas at Health Science Center at San Antonio (UTHSCSA) Institutional Review Board, Summer 2011- Summer 2012.

Conference Related:

1. Member (invited for) of the Scientific Program Committee (SPC) of the *8th Int. Conference on Econometrics and Statistics (EcoSta 2025)* in Aug 21-23, 2025 at the Waseda University, Tokyo Japan.

2. Organizer (invited for) and Chair of an Invited Organized (hybrid) Session (EO021) "Beyond the Classical Multivariate Data" for the *8th Int. Conference on Econometrics and Statistics (EcoSta 2025)* in Aug 21-23, 2025 at the Waseda University, Tokyo, Japan.

3. Organizer (invited for) and Chair of an Invited Session "Dense Data: Methods and Applications" for the *9th Data Science, Statistics, and Visualisation conference (DSSV 2025)* on July 8, 2025, at the Kruger Park, South Africa.

4. Organizer and Chair of an Invited Organized Session on a thematic track "Modeling Multivariate Data" for the *18th* conference *of the International Federation of Classification Societies* (*IFCS 2024*) on July 15, 2024 in San José, Costa Rica.

5. Organizer (invited for) and Chair of an Invited Organized Session (EO065) "Theory and Methods for High-dimensional and Complex Data" for the *6th Int. Conference on Econometrics and Statistics (EcoSta 2023)* on August 2, 2023 at the Waseda University, Tokyo, Japan.

6. Organizer (invited for) of an Invited Organized Session "Modern Models and Computational Methods for Today's Complex Data" for the *International Conference on Advances in Interdisciplinary Statistics and Combinatorics (AISC 2022)* on Oct 7, 2022, at the University of North Carolina at Greensboro, Greensboro, NC, USA.

7. Member (invited for) of the Program Committee of the *2022 Symbolic Data Analysis Workshop* in Sep 7-8, 2022 at the University of Campania "L.Vanvitelli", Caserta, Italy.

8. Organizer (invited for) and Chair of a *virtual* Invited Organized Session (CO047) "Novel Statistical Methods for Statistically Challenging Data" for the *24th Int. conference on Computational Statistics (COMPSTAT 2022*) on August 25, 2022 at the University of Bologna, Bologna, Italy.

9. Chair (invited for) of a *virtual* Contributed Session (CV193) "Applied Statistics" for the *24th Int. conference on Computational Statistics (COMPSTAT 2022*) on August 23, 2022 at the University of Bologna, Bologna, Italy.

10. Member (invited for) of the Scientific Program Committee (SPC) of the *5th Int. Conference on Econometrics and Statistics (EcoSta 2022)* in June 4-6, 2022 at the Ryukoku University, Kyoto, Japan.

11. Organizer (invited for) and Chair of a *virtual* Invited Organized Session (EO023) "Modern Multivariate Methods for Multifaceted Data" for the *5th Int. Conference on Econometrics and Statistics (EcoSta 2022)* on June 5, 2022 at the Ryukoku University, Kyoto, Japan.

12. Member of the Program Committee, Organizer (invited for) and Chair of an Invited Organized Session "Matrix-variate Statistical Distributions and their Applications" at the *2020 IMS/ASA Spring Research Conference (SRC)* in May 20-22, 2020 at Oakland University, Rochester, MI, USA (*Cancelled due to COVID*).

13. Organizer (invited for) and Chair of a *virtual* Invited Organized Session (EO085) "Novel Statistical Modeling of Multivariate Data" for the *4th Int. Conference on Econometrics and Statistics (EcoSta 2021)* on June 24, 2021 at the Hong Kong University of Science and Technology, Hong Kong.

14. Chair (invited for) of two *virtual* sessions at the *Conference of Texas Statisticians 2020* on September 19, 2020 at the Texas A&M University, Corpus Christi, TX.

15. Organizer and Chair of an Invited Organized Session (EO474) "Computational and Likelihood Aspects of Biostatistical and Environmental Modeling" for the *12th International Conference of the ERCIM WG on Computational and Methodological Statistics (*CFE-CMstatistics 2019*)* on December 15, 2019 at the University of London, UK.

16. Organizer (asked for) of an Invited Organized Session (EO169) "Statistics for Unconventional, Complex and Challenging Datasets" for the *3rd International Conference EcoSta 2019* on June 26, 2019 at the National Chung Hsing University (NCHU), Taichung, Taiwan.

17. Chair of the Session "Big Data with Bite Solutions" of the *Joint Statistical Meetings* on August 3, 2017 in Baltimore, MD.

18. Organizer (asked for) and Chair of a Session "Recent Advances in Multivariate Analysis" for the *International Association for Statistical Computing and Associação Brasileira de Estatística* (*IASC-*

ABE) Satellite Conference 2015: Statistical Computing for Data Science on August 2, 2015 in Búzios, Brazil.

19. Organizer (selected) of the Special Topic Paper Session (STS062) "Statistical Modeling of Multi-level Multivariate Data using Kronecker Product Structured Covariance Matrices" for the *60th ISI World Statistics Congress* on July 31, 2015 in Rio De Janeiro, Brazil.

20. Organizer and the Chair of the Special Session "The use of Kronecker Product in Statistical Modeling" for the *LinStat 2014* on August 25, 2014 in Linköping, Sweden.

21. Chair of the Session "Contributions to Longitudinal Data Analysis I" of the *COMPSTAT 2014* on August 20, 2014 in Geneva, Switzerland.

22. Chair of a session of the *MAT-TRIAD 2013* on September 17, 2013 in Herceg-Novi, Montenegro.

23. Chair of the Session on High-Dimensional Statistical Inference of *the 29th European Meeting of Statisticians (EMS)* 2013 on July 23, 2013, in Budapest, Hungary.

24. Chair of the Session Multivariate Analysis Part I at *LinStat 2012* on July 16, 2012 in Bedlewo, Poland.

25. Chair of the Session 7 at the *MAT-TRIAD* 2011 on July 13, 2011 in Tomar, Portugal.

26. Chair of the Session XXII – Statistical Inference in Mixed and Multivariate Linear Models III at the *LinStat 2010* on July 28, 2010 in Tomar, Portugal.

27. Chair of the Session XV at the *MAT-TRIAD 2009* on March 26, 2009, Mathematical Research and Conference Center of the Polish Academy of Sciences in Bedlewo, Poland.

28. Chair of the Applied Statistics Session at the *8th Annual Hawaii International Conference on Statistics, Mathematics and Related Fields* on January 14, 2009 in Honolulu, Hi.

29. Chair of the Cancer Applications, Including Spatial Cluster Detection Session of ASA Biometrics Section at the *ENAR Meeting* on March 13, 2007 in Atlanta Georgia.

30. Chair of the Inference Session of Section on Statistical Computing at the *Joint Statistical Meeting* on August 7, 2006 in Seattle.

Volunteer (Judging etc.):

- Volunteer as Judge *virtually* for the research posters at the *Conference of Texas Statisticians* at the Texas A&M University-Corpus Christi, TX on September 18, 2020**.**

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics in the senior division (high school) research projects, at the Alamo Regional Science Fair at the St. Mary's University, San Antonio, on March 2, 2019.

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics in the senior division (high school) research projects, at the Alamo Regional Science Fair at the St. Mary's University, San Antonio, on March 2, 2018.

- Volunteer as Judge for the research posters at the *Conference of Texas Statisticians* at Trinity University, San Antonio, on April 8, 2016.

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics at the Texas Science and Engineering Fair at the Henry B. Gonzalez Convention Center, San Antonio, on April 2, 2016.

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics in the senior division (high school) research projects, at the Alamo Regional Academy of Science and Engineering (ARASE) 2016 Fair at the St. Mary's University, San Antonio, on February 26, 2016.

- Volunteer for International Indian Statistical Association (IISA) at the *Joint Statistical Meetings* in Boston, on Aug 3 and Aug 4, 2014.

- Volunteer for Two Sessions as Session Coordinator for the Pre-conference Statistical Tutorials at the *SAS Global Forum* 2008 conference in San Antonio on March 16, 2008.

- Volunteer on behalf of San Antonio ASA in support of schools/ teachers /students that plan to participate in the 2008 Alamo Regional Science and Engineering Fair at the UT Health Science Center in San Antonio on September 29, 2007.

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics at the Exxon Mobil Texas Science and Engineering Fair (EMTSEF) at the Henry B. Gonzalez Convention Center, San Antonio, 2006.

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics in the senior division (high school) research projects, at the 2006 Alamo Regional Science and Engineering Fair at the St. Mary's University, San Antonio, on March 11, 2006.

- Volunteer on behalf of San Antonio ASA for the Science Open House for high school students to publicize the ASA activities at the UT Health Science Center in San Antonio on November 6, 2004.

- Volunteer as Judge for the San Antonio American Statistical Association (ASA) Chapter Special Award for the best application of statistics in the senior division (high school) research projects, at the Science and Engineering Fair in the Incarnate Word Grossman International Conference Center, San Antonio, on Mar 8, 2004.

- Volunteer for Career Day Grants exhibition, sponsored by the Committee on Career Development, American Statistical Association, at the *Joint Statistical Meetings* in San Francisco, on Aug, 2003.

- Volunteer for International Indian Statistical Association (IISA) at the *Joint Statistical Meetings* in San Francisco, on Aug, 2003.

Others:

- Elected Representative of the American Statistical Association (ASA), Council of Chapters (COC) (San Antonio) for the period 07/21/2020-12/31/2022.

- Participated in the Statistical Science Delegation to China on behalf of the American Statistical Association for ten days in Dec 2010.

- Presented the 2007 Don Owen Award to Jeffrey D. Hart, Ph.D. at the *Conference of Texas Statisticians* in Waco TX on March 30, 2007.

- Organizer of the 2005 Applied Nonlinear Statistical Methods Traveling Course on behalf of the San Antonio Chapter of the American Statistical Association (ASA), and the ASA Council of Chapters, on March 9, 2005.

- Representative of the American Statistical Association (ASA)**,** Council of Chapters (COC) (San Antonio) Representative, January 2005- December 2007.

- Editorial Representative/Newsletter Editor to the International Indian Statistical Association (IISA), July 2003- June 2004.

CONSULTING ACTIVITIES:

- Provided Statistical Consulting Service to Department of Communication, the University of Texas at San Antonio, TX, December 2023-May 2024.

- Provided Statistical Consulting Service to Department of Mechanical and Biomedical Engineering, the University of Texas at San Antonio, TX, 2016- January 2024.

- Provided Statistical Consulting Service to Department of Biomedical Engineering, the University of Texas at San Antonio, TX, 2011- 2012.

- Provided Statistical Consulting Service to Medical Center Ophthalmology Associates, San Antonio, TX, 2011.

- Provided Statistical Consulting Service to SBScibus (formerly Strategic Bovine Services and Cattle Production Consultants), Australia, 2011.

- Provided Statistical Consulting Service to North Coast Cancer Institute, New South Wales, Australia and University of New South Wales, Coffs Harbour, Australia, 2008- 2009.

- Provided Statistical Consulting Service to Department of Radiation Oncology, Graduate Program in Human Imaging, Division of Radiological Sciences, University of Texas Health Science Center at San Antonio, San Antonio, TX, 2008- 2009.

- Provided Statistical Consulting Service to Department of Kinesiology, The University of Texas at Austin, Austin, TX, 2006- 2007.

- Provided Statistical Consulting Service to Hyperion Biotechnology, Inc, San Antonio, TX, 2006.

- Provided Statistical Consulting Service to United States Air Force School of Aerospace Medicine at Brooks AFB, TX, 2002- 2005.

- Statistical consultant for an animal use protocol entitled "Long-acting EPO (Darbepoietin) for protection against laser-induced battlefield injuries to the retina." Consult provided to US Air Force School of Aerospace Medicine, Hyperbaric Medicine Division, 2004.

- Statistical consultant for an animal use protocol entitled "Evaluation of efficacy of probiotic treatment on infected full-thickness dermal wounds in the pig (Sus Scrofa)." Consult provided to US Air Force School of Aerospace Medicine, Hyperbaric Medicine Division, 2004.

- Provided Statistical Consulting Service to Department of Psychology, the University of Texas at San Antonio, TX, March 2004- Sep 2004.

- Provided Statistical Consulting Service to Department of Mechanical Engineering and Biomechanics, the University of Texas at San Antonio, TX and to Department of Orthopaedics, University of Texas Health Science Center at San Antonio, San Antonio, TX, 2003- 2009.

REVIEWS/REFEREE:

Journal Reviews:

Advances in Data Analysis and Classification, Journal of the Royal Statistical Society – Series B, Journal of the Royal Statistical Society – Series C, Journal of Statistical Planning and Inference,Journal of Multivariate Analysis,Computational Statistics and Data Analysis,Communications in Statistics- Theory and Methods,Communications in Statistics- Simulation and Computation,Communications in Statistics – Case Studies and Data Analysis, Metrika, Mathematics, Statistical Methodology,The American Statistician, Journal of Statistical Computation and Simulation, Pattern Recognition Letters,International Journal of Ecological Economics & Statistics, African Journal of Mathematics and Computer Science Research,Journal of Data Analysis and Operations Research,Statistics & Probability Letters,Journal of Applied Statistics,Journal of Statistical Theory and Practice, Acta et Commentationes Universitatis Tartuensis de Mathematica, Sankhya A, Sankhya B, Random Matrices: Theory and Applications.

Book Reviews:

- Negative Binomial Regression, 2nd Edition, by Joseph M. Hilbe, (2012), Cambridge University Press, UK, *International Review of Economics and Finance*, 22(1), 305.

- Intelligent Decision Support, Handbook of Applications and Advances of the Rough Sets Theory, Edited by Roman Slowinski, (1993), Kluwer Academic Publishers, Netherlands, *OPSEARCH Journal*, Vol. 30(4), 368-371.

- Envisioning Information, by Edward R. Tufte, (1993) Graphics Press, Cheshire, Connecticut, U.S.A. *OPSEARCH Journal*, Vol. 30(3), 265-267.

Others:

- Abstracts and articles reviewed for the *18th* conference *of the International Federation of Classification Societies* (*IFCS 2024*), San José, Costa Rica

- Abstracts reviewed for the *Workshop SDA 2015: Symbolic Data Analysis* held at MAPMO Laboratory, CNRS-University of Orléan, France.

- Special Issue of *EEST enhanced by the Workshop* held at Middle East Technical University, (2011) Turkey.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

International Statistical Institute, American Statistical Association, American Statistical Association (San Antonio Chapter), International Indian Statistical Association (Life), The Classification Society (TCS), Computational and Methodological Statistics on the items: GMS: General Methodological Statistics, MCS: Matrix Computations and Statistics and MSW: Multi-set and multi-way models.

HOBBIES:

My favorite hobbies include gardening and traveling. My favorite old hobby was high-altitude trekking in the Indian Himalaya (received three gold medals from the Government of India). I also enjoy exploring the connections among different languages and among different cultures through costume, food and music.