**RESUME** Karunarathna B. Kulasekera

## PERSONAL DATA

Professor and Graduate Program Coordinator
Department of Mathematical Sciences
Clemson University
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## EDUCATION

Ph.D., University of Nebraska-Lincoln, 1988, Statistics
M.A., University of New Brunswick, Canada, 1984, Statistics
Postgraduate Diploma, University of Sri Lanka, 1982, Mathematics
B.Sc., University of Sri Lanka, 1979, Mathematics and Statistics

## PROFESSIONAL EXPERIENCE

Clemson University, 2005-, Professor & Graduate Program Coordinator of Mathematical Sciences
Clemson University, 1999-2005, Professor of Mathematical Sciences
Clemson University, 1994-1999, Associate Professor of Mathematical Sciences
Clemson University, 1988-1994, Assistant Professor of Mathematical Sciences

## MEMBERSHIPS

Member, American Statistical Association
Member, Institute of Mathematical Statistics

## PUBLICATIONS

### Refereed Journal Publications

1. K.B. Kulasekera and Dong Ho Park, 1987, "The Class of Better Mean Residual Life at Age $t_0$," *Microelectronics and Reliability,* 27(4), pp. 725-735.

2. Z. Feng and K.B. Kulasekera, 1991, "Nonparametric Estimation of the Percentile Residual Life Function," *Communications in Statistics-Theory and Methods,* 20(1), pp. 87-105.

3. K.B. Kulasekera, 1991, "Smooth Nonparametric Estimation of Mean Residual Life," *Microelectronics and Reliability,* 31(1), pp. 97-108.

4. K.B. Kulasekera and K.M. Lal Saxena, 1991, “Estimation of Change Point in Failure Rate Models,” *Journal of Statistical Planning and Inference,* 29, pp. 111-124.

5. K.B. Kulasekera and David W. Tonkyn, 1992, “A New Discrete Distribution with Applications to Survival, Dispersal and Dispersion,” *Communications in Statistics-Simulation and Computation,* 21(2), pp. 499-518.

6. K. Alam and K.B. Kulasekera, 1992, “Truncation Error in the Expansion of the Distribution of a Quadratic Form”, *Sankhya (B),* 54(1), pp. 13-23.

7. K. Alam and K.B. Kulasekera, 1993, “A Nonparametric Sequential Selection Procedure,” *Sequential Analysis,* 12(3 & 4), pp. 271-288.

8. K. Alam and K.B. Kulasekera, 1993, “Estimation of the Quantile Function of Residual Life Time Distribution,” *Journal of Statistical Planning and Inference,* 37(3), pp. 327-338.

9. K.B. Kulasekera, 1994, “Approximate MLE’s of the Parameters of a Discrete Weibull Distribution,” *Microelectronics and Reliability,* 34, pp. 1185-1188.

10. K. Alam and K.B. Kulasekera, 1994, “On the Error Term in Bahadur’s Representation of an Order Statistic,” *Communications in Statistics-Theory and Methods,* 23(12), pp. 3361- 3372.

11. K.B. Kulasekera, 1994, “A Bound on the $\mathcal{L}_1$-Error in a Nonparametric Density Estimator with Censored Data,” *Statistics & Probability Letters,* 23, pp. 233-238.

12. K.B. Kulasekera and Peter R. Nelson, 1995, “Choosing a Model from Among Four Families of Distributions,” (1995). Special Invited Paper for *Recent Advances in Life-Testing and Reliability,* Ed. N. Balakrishnan. pp. 491-504.

13. K.B. Kulasekera, 1995, “Comparison of Regression Curves using Quasi Residuals”, *Journal of the American Statistical Association,* 90, pp. 1085-1094.

14. K.B. Kulasekera and W.H. White, 1996, “Estimation of The Survival Function from Censored Data: A Method Based on Total Time on Test,” *Communications in Statistics-Simulation and Computation*, 25, pp.189-200.

15. K.B. Kulasekera and J. Wang, 1997, “Smoothing Parameter Selection for Power Optimality in Testing of Regression Curves,” *Journal of the American Statistical Association,* 92, pp 500-511.

16. K.B. Kulasekera and J. Wang, 1998, “Bandwidth Selection for Power Optimality in a Test of Equality of Regression Curves,” *Statistics & Probability Letters*, 37, pp 287-293.

17. K.B. Kulasekera, 1999, "Crossing Points of Failure Rates," *Communications in Statistics-Theory and Methods*, 28, pp 87-104.

18. K.B. Kulasekera, 1999, "Nonparametric Tests of Equality of Two Regression Curves," *Encyclopedia of Statistical Sciences,* pp 541-546.

19. K.B. Kulasekera, 1999, "Pseudo Residuals and Quasi Residuals," *Encyclopedia of Statistical Sciences,* pp 615-616 & 629-630.

20. J. Wang, J. and K.B. Kulasekera, 1999,"Uniform Convergence Rates of Regression Estimators", Technical Report #670, Department of Mathematical Sciences, Clemson University.

21. K.B. Kulasekera, Calvin L. Williams and Amitha Manatunga, 2001, " Smooth Estimation of the Reliability Function," *Lifetime Data Analysis*, pp 415-433.

22. K.B. Kulasekera and J. Wang, 2001, "A Test of Equality of Regression Curves using Gâteaux Scores," *Australian and New Zealand Journal of Statistics*, pp 89-99.

23. K.B. Kulasekera, 2001, "Variable Selection by Stepwise Slicing in Nonparametric Regression," *Statistics & Probability Letters*, pp 327-336.

24. K.B. Kulasekera and Peter R. Nelson, 2001, "Graphical Methods of Estimation in a Three Parameter Weibull Distribution", Special Invited Paper, *Advances in Reliability*, pp 749-773.

25. K.B. Kulasekera and Colin Gallagher, 2002, "Variance Estimation in Nonparametric Regression", *Communications in Statistics, Theory and Methods*, pp 1373-1383.

26. K.B. Kulasekera and Colin Gallagher, 2003, "Testing the Equality of Two and Three Dimensional Regression Surfaces ", International Mathematical Journal, 76-100.

27. K.B. Kulasekera, C. Park, 2003, "Analysis of Incomplete Data in Competing Risks Among Several Groups", *IEEE Transactions on Reliability*, pp 11-20.

28. K.B. Kulasekera and J. Olaya, 2004, "Variable Selection in Nonparametric Regression Model," *Int. Journal of Reliability, Quality and Safety Engineering*, pp 141-161.

29. John Foulk, D. McAliste and K.B. Kulasekera, 2004, "Trash identification in mill laydown. Proceedings of the Beltwide Cotton Conferences", *National Cotton Council*, Memphis, TN, January 5-9, 2004, San Antonio, Texas. pp. 2402-2410. *www.cotton.org/beltwide/proceedings.cfm.*

30. K.B. Kulasekera, C. Park, 2004, " Robust Nonparametric Regression", *Journal of Statistical Theory and Applications*, pp 125-133.

31. K.B. Kulasekera, C. Park and Ram Tiwari, 2005, "Comparing Multiple Cause Specific Hazard Rates Among Several Groups", Special Invited Paper for *Journal of Statistical Planning and Inference*, pp. 1718-1745.

32. K.B. Kulasekera and Zhao, Meng , 2006, "Consistent Model Selection", *Statistics & Probability Letters*, pp 520-530.

33. K.B. Kulasekera and W.J. Padgett, 2006, "Bayes Bandwidth Selection in Kernel Density Estimation with Censoring", *Journal of Nonparametric Statistics*,pp 123-149.

34. John Foulk, D. McAliste and K.B. Kulasekera, 2006,"Detecting the Cotton Trash Particle Size DIstribution", *Journal of Textile and Apparel Technology and Management*, Vol 5, pp 1-11.

35. Lin, Wei and K.B. Kulasekera, 2007, "Uniqueness of a Single Index Model ", *Biometrika*, Vol 94, pp 496-501.

36. K.B. Kulasekera and Zhao, Meng, 2007, "A Pointwise Bayes Type Estimator of The Survival Probability with Censored Data", Accepted for publication subject to a revision in *Statistics & Probability Letters*.

37. K.B. Kulasekera and Lin, Wei , 2007, "Variance Estimation in Single Index Models", Accepted for publication subject to a revision in *Australian and New Zealand Journal of Statistics*

38. K.B. Kulasekera, Jon Sauls and Lei Zhao, 2007, "A Data Based Penalty Factor for Linear Model Selection using Penalized Least Squares", Under revision for the *Journal of the American Statistical Association*.

39. K.B. Kulasekera and Zhao, Meng, 2007, "Minimax Risk of Linear Functionals under $L_2$ Loss", Submitted for publication. (Technical Report $TR2005-01-ZK$; *http://www.math.clemson.edu/reports/reports.html*).

40. K.B. Kulasekera and Lin, Wei , 2007, "Testing the Equality of Two Single Index Models", Submitted for publication.

41. K.B. Kulasekera and Zhang, Wei , 2007, "Variance Estimation using Covariate Projections in Nonparametric Regression", In preparation.

42. K.B. Kulasekera and Lin, Wei , 2007, "Testing whether a model is Single Index", In preparation.

43. Kuruwita, C.N., Kulasekera, K.B. and, Padgett, W.J. , 2007, "On Boundary Bias and Bandwidth Selection in Density Estimation with Censored Data", In preparation.

44. K.B. Kulasekera, Lin, Wei and, Meng Zhao , 2007, "Variable Selection in a Single Index Model ", In preparation.

45. K.B. Kulasekera and Lin, Wei , 2007, “Testing the Equality of Two Single Index Models”, In preparation.

46. K.B. Kulasekera, Colin Gallagher and W.J. Padgett, 2007, “Local Likelihood Methods for Density Estimation with Censoring”, In preparation.

## SPONSORED RESEARCH

### Funded

1. ”Acquisition of Parallel Computing Cluster for Large-Scale Computational Problems in the Mathematical Sciences”, NSF, Co-PI $140,570 (Total) (2006-2007).

2. “Nonparametric Multiple Regression Techniques,” National Cancer Institute, National Institutes of Health, Principal Investigator, Responsible for $241,000 (2002-2006).

3. “Optical Imaging of Breast Cancer”, National Institutes of Health, Investigator, (PI: H. Jiang, Dept. of Physics, Clesmon University), Responsible for $8000 (2005-2006).

4. “Centron Reliability,” SchlumbergerSema-Utilities, Investigator, Responsible for $2000 (PI: William R. Harrell, Department of ECE, Clemson University) (Summer 2003).

5. “Issues in Multidimensional Nonparametric Regression,” National Institutes of Health, Principal Investigator, Responsible for $94,268, (1998-2001).

6. “Nonparametric Smoothing Methods in Affordability Studies,” Office of Naval Research, Investigator, Responsible for $85,000, (1997-1999).

7. “Nonparametric Tests for Equality of Regression Curves,” National Institutes of Health, Principal Investigator, Responsible for $136,193, (1994-1997).

## GRADUATE STUDENT ADVISING

### Doctoral Students

1. Meng Zhao, “Model Selection in Regression,” Current.

2. C. Kuruwita, “Smoothing with Covariate Adjustments,” Current.

3. Wei Lin, “Analysis of Single Index Models”, May 2006.

4. Olaya, Javier, “Variable Selection in Nonparametric Regression,” August 2000.

5. Wang, Jian, “Issues in Nonparametric Regression Testing,” December, 1997.

## Masters Students

1. Z. Feng, (MS) "A Study of a Smooth Nonparametric Estimator of Quantile Residual Life Function,", 1989.
2. A. Arora, (MS) "Sequential Selection Procedure Based on Pairwise Ranking," 1989 (Co-Chair).
3. Ernest A. Walker, (MS) "Estimating a Distribution Function Based on Nomination Samples," 1991.
4. William H. White, (MS) "Estimation of the Survival Function from Censored Data: A Method based on Total Time on Test,",1993.
5. Brian Schulte, (MS) "Change Points in Regression," 1994.
6. Aaron A. Sumner, (MS) "Detection of Change Points in Regression," 1996.
7. David Hitchcock, (MS) "A New Discrete Distribution", May 1999.
8. Wei Lin,(MS) "Analysis of Single Index Models," May 2002.
9. Wei Zhang, (MS) "Variable Selection", May 2003.
10. Thomas Fisher, (MS) "Single Index Models and Linear Models", May 2006.
11. Han Xiang, (MS) "Inference for ROC Curves", May 2006.
12. C. Kuruwita (MS) "Denity Estimation with Censored Data", December 2006.
13. Jonathan Sauls (MS) "Data Based Penalty Selection", December 2006.
14. Lei Zhao (MS) "Penalty selction in Linear Models", August 2007.
15. Yicong Liu (MS) "Selection of SCAD penalty factors", Current.

## Doctoral Committees

1. J.Y. Song, Electrical Eng.; "Reliability Analysis for Rapidly Re-configurable Networks," 1990.
2. Karen Copeland, Mathematical Sciences, "Statistical Modeling of Chemical Kinetics," 1995.
3. Pedro J. Geoffroy, Statistics, "Poisson Regression for Overdispersed and Correalted Data", 1996.

4. Abraham Chen, Mathematical Sciences, "Tests for a Mixture of Two Normal Distributions," 1997.

## INVITED CONFERENCE PRESENTATIONS

1. Fourth Biennial International Conference on Statistics, Probability and Related Areas (2002). Title: Variable Selction in Nonparametric Regression by Covariate Slicing.
2. International Conference on Reliability and Survival Analysis (2003). Title: Variable Selection in the Nonparametric Accelerated Lifetime Model.
3. Current and Future Trends in Nonparametrics (2007). Title: Comparison of Single Index Models.

## TEACHING

### Courses Taught (Beginning Fall 1990)

1. MTHSC 101, Finite Probability, SU 91, SU 97
2. MTHSC 203, Elementary Statistical Inference, SU 93
3. MTHSC 301, Statistical Theory and Methods I, F-90,91,93,98 SP-93,94,97
4. MTHSC 302, Statistics for Engineers and Scientists, F-03, SP-04,05
5. MTHSC 400, Theory of Probability, F-92,95,96 SP-97
6. MTHSC 403, Introduction to Statistical Theory, F 02,SP 92,98
7. MTHSC 405, Statistical Theory and Methods II, F-96,97 SP-96
8. MTHSC 453, Advanced Calculus, SU 07
9. MTHSC 800, Probability Theory, SU 06
10. MTHSC 801, Linear Models, F-93,02,04,05,06
11. MTHSC 804, Basic Statistical Inference, F-02,07
12. MTHSC 806, Nonparametric Statistics, F-91,97,99,02
13. MTHSC 807, Applied Multivariate Analysis, F-92
14. MTHSC 808, Reliability and Life Testing,SS I 93, F-94,98 SP 01,03
15. MTHSC 881, Mathematical Statistics, F-90, SP-93,94,95,98,00,02,04,05,06,07

16. MTHSC 981, Analysis of Categorical Data, SU 92
17. MTHSC 981, Advanced Statistical Theory, F-03, SP -93
18. MTHSC 981, Smoothing Methods (Reading Course), F-95,00,02

## New Course Development

1. Developed and taught a Probability and Statistics (301) course specially for Computer Science majors at request from Department of Computer Science-1990 Spring.
2. Developed the course MTHSC 981, Analysis of Categorical Data, as an advanced graduate level course for senior graduate students in 1992. This had a mixture of theory and applications. SAS was used in various data analysis projects. The text was supplemented by: Discrete Multivariate Analysis by Bishop, Fineberg and Holland.
3. MTHSC 981, Advanced Statistical Theory: Designed for students who are preparing for the fourth departmental examination. Texts: Lehmann and Casella (TPE) and Lehmann (TSH)
4. Reading course MTHSC 981, Smoothing Methods: Designed for a few students who are working on doctoral degrees. A collection of the latest papers and a few chapters from Eubank(1988,1998) were covered.
5. Developed an experimental breadth course in statistics (Mthsc 804) for the graduate students in Mathematical Sciences with two colleagues.
6. Developed a graduate service course in statistics (Mthsc 884) for the graduate students in Engineering and Sciences with two colleagues.

# UNIVERSITY AND PUBLIC SERVICE

## Administrative Experience

1. Graduate Program Coordinator of Mathematical Sciences, 2005 -
   Manage all aspects of the graduate program of the department.
   - Recruitment, initial evaluation and advising of graduate students (program size grew from 68 in 05 to 102 in 07)
   - Responsible for graduate curriculum issues

- Started the “Bridge to Graduate Studies” program for entering domestic graduate students (06,07, –).
- Started the “Mathematical Sciences Open House” program for recruiting with funding from the Graduate School at Clemson University.

**Editorial Work**

1. Associate Editor, Journal of Statistical Computation and Simulation, 2004-

**Committees**

1. University Athlectic Council, 2003 -
2. Mathematical Sciences Council, 2002 -
3. Search committee for department chair position: 2002
4. Search committee for the bioinformatics position in Mathematical Sciences, 2005-06.
5. Search committee for the bioinformatics position in Genetics/Biochemistry, 2005-06.
6. Member SACS assesment committee for the department: 1998-
7. Chair, Search committee for statistics position: 1998,2000,2002
8. Co-Adviser of new Statistics Graduate Students:1992-1993, 1996-2001
9. Adviser of all new Statistics graduate students:1993-1995,2003.
10. Local arrangements coordinator for ASA chapter activities: 1993-1994
11. Chairman of the Departmental Research Committee: 1992,1993
12. Representative to Departmental Graduate Affairs committee: 1995,1996,1998,2000,2001.
13. Representative to Math Scinces Council, 2002-
14. Representative to Departmental Research committee: 1992,1993
15. Committee on Statistics courses for undergraduate Math majors: 1994
16. Committee on Graduate Courses in Statistics: 1995
17. Preliminary Examination Committee: 1989-present
18. Management Science Comprehensive Examination Committee: 1990-present

19. Coordinator, Annual joint colloquium series with the University of Georgia: 1993,1994

## MISCELLANEOUS

### Book Reviews

1. "Reliability Improvement with Design of Experiments", 1995, *Journal of the American Statistical Association*, pg. 397.

### Refereeing

Refereed research papers for

1. Annals of Statistics
2. Journal of the American Statistical Association
3. Technometrics
4. IEEE Transactions in Reliability
5. Journal of Quality Technology
6. Journal of Statistical Computation and Simulation
7. Journal of Nonparametric Statistics
8. Institute of Statistical Mathematics
9. Statistics and Probability Letters
10. Communications in Statistics-Theory and Methods
11. Electronics and Telecomunications Research Institute
12. Annals of the Institute of Statistical Mathematics
13. Journal of Nonparametriic Statistics

### Review Panels

1. Member, Review Panel to Evaluate a proposed doctoral program in Mathematics, Texas State University-San Marcos, September 2007.

2. Invited Member of the Review Panel for Statistics, National Institutes of Health, 1998.

3. "Multipredictor Function Estimation," 1997, National Science Foundation.

4. "Computer Simulation and Analysis of System Availability and Effectiveness," 1995, Lousiana Board of Regents and NSF.

**Mentoring**

Research mentor for three assistant professors of statistics at Clemson University (one promoted in 2006)