

Nagaraj K. Neerchal, Ph.D.
August 2014

Department of Mathematics and Statistics
University of Maryland Baltimore County
Baltimore, MD 21250
Phone: 410-455-2412, Fax: 410-455-1066
nagaraj@umbc.edu

9688 Old Annapolis Road
Ellicott City, MD 21042
Phone: 410-992-4691
Cell: 410-707-5212
inference@gmail.com

Profile

PERSONAL

- Date of Birth: May 19, 1960
- Citizenship: United States
- Family: Married Chetana in 1991
Son Harsha born in 1994
Daughter Siri born in 1999

PROFESSIONAL

- Applied statistician, with a strong background in theoretical statistics
- Research in statistical methodology
- Project experience in analyzing large data sets from environmental, biological and transportation applications
- Teaching undergraduate and graduate courses in Statistics
- Developing applied graduate programs in Applied Statistics
- Statistical consulting with government and private clients
- Service to the department, campus and professional societies
- Administrative experience as the department chair, graduate program director and founding director of a interdisciplinary research and consulting center

Education

- Ph.D. 1986, Statistics, Iowa State University, Ames, Iowa.
Thesis title: Estimation of Stochastic Difference Equations with Nonlinear Restrictions
Thesis advisor: Professor Wayne Fuller, Iowa State University
- B.S. 1981, M.S. 1982, Statistics, Indian Statistical Institute, Kolkata, India

Experience in Higher Education

- 2011-13 **Kauffman Entrepreneurship Faculty Fellow**
Alex Brown Center for Entrepreneurship, UMBC
- 2013- **Affiliate Professor**
Asian Studies Program, UMBC
- 1999- **Professor of Statistics**
Department of Mathematics and Statistics, UMBC
- 1993-99 **Associate Professor of Statistics**
Department of Mathematics and Statistics, UMBC
- 1987-93 **Assistant Professor of Statistics**
Department of Mathematics and Statistics, UMBC
- 1986-87 **Instructor**
Department of Mathematics and Statistics, UMBC
- 1982-86 **Research Assistant**
Survey Section, Department of Statistics
Iowa State University, Ames, Iowa

Administrative Experience in Higher Education

- 2006-present **Chair**
Department of Mathematics and Statistics, UMBC
- 2005-present **Director**
Center for Interdisciplinary Consulting and Research,
Department of Mathematics and Statistics, UMBC
- 1995-1999 **Graduate Program Director**
Applied Mathematics and Statistics Program, UMBC
- 1999- 2000 **Interim Chair**
Department of Mathematics and Statistics, UMBC

Experience in other than Higher Education

Visiting Appointments

- 2002-2003 **Senior Mathematical Statistician**
Bureau of Transportation Statistics
Department of Transportation, Washington, DC
(On an Inter-Personnel Agreement assignment)
- 1994-95 **Senior Research Scientist**
Pacific Northwest Laboratories, Richland, WA

- 1989, 1990 **Statistical Consultant**
Technology International Inc., LaPlace, LA

Elected or nominated positions

- *Elected member of the Executive Committee*
Council of University [of Maryland] Systems Faculty 2012-13, 2013-14
- Member
Karl E. Peace Award Committee, American Statistical Association 2011-present
- *Member*
Journal of Agricultural, Biological and Ecological Statistics Management Committee
American Statistical Association 2009-2012
- *Chairman, Committee on Energy Statistics* 2007-2008
American Statistical Association
- Member, **Committee on Energy Statistics** 2002-2008.
American Statistical Association
- Member of the Executive Committee
Center for Urban Environment Research and Education, UMBC
- *Member of the Executive Committee*
Joint Center for Earth Systems Technology, UMBC
- *Continuing Education Coordinator* 1995
Section on Statistics and Environment, American Statistical Association
- *President* 1992-93
Maryland Chapter of American Statistical Association
- *Data Analysis Work Group Member* 1990-94
Chesapeake Bay Monitoring Subcommittee
- *Member, Scientific Advisory Group* 1998-99
Annual Conference on Contaminated Soils

Honors and Awards Received

2013 **Freeman Hrabowski Innovation Grants Award for Founding “The Math Gym”.**

The Math Gym (MG) is a place in the campus where all the tools needed to stay in excellent math shape are available to students. Students are referred to MG when their performance in various diagnostic tests or in the proprietary QuizZero, conducted by the Department of Mathematics and Statistics, indicates that they may need to boost certain parts of their basic math skills. TMG is also the place to review and reinforce the pre-requisite materials for students who are currently in any course on campus in which students routinely use math skills. Students can choose to go to the TMG on their own or because a faculty member recommends

it to them. MG is the place for students to go to get a quick brush up of the specific skills they need at that time, and get back to work. The Math Gym also provides personal trainers (PT) who will work with students, one-on-one, keep up a strict customized daily regimen, developed in consultation with knowledgeable math coaches, to improve and maintain basic math skills. This just-in-time teaching coupled with mastery based learning methods is the key feature of MG.” (MathGym.umbc.edu)

2013 **University System of Maryland Board of Regents’ Award for Innovative Excellence**

“Nagaraj K. Neerchal has been a member of the Mathematics and Statistics Faculty since 1986, and is known as an exemplary researcher in the field of applied statistics. Since becoming chair of the Department of Mathematics and Statistics in 2006, he has developed a reputation as a pioneer for educational and administrative initiatives.....

.....Neerchal is also a co-founder for the Center of Interdisciplinary Research and Consulting (CIRC), which has been a major contributor to active learning at UMBC. It combines the training of graduate students with professional consulting, and has become the host of a National Science Foundation (NSF) funded Research Experience for Undergraduates (REU).” Quote from <http://www.umbc.edu/newsevents/Awards2013/index.html>

2010 **Kauffman Entrepreneurship Faculty Fellow for the College of Natural and Mathematical Sciences, Alex Brown Center for Entrepreneurship, UMBC**

“UMBC’s Alex Brown Center for Entrepreneurship encourages that kind of thinking. The center received a gift from the Kauffman Foundation to infuse entrepreneurship throughout UMBC’s curriculum. Three faculty fellows, one from each college, lead the way. They serve as idea keepers, champions and mentors to the campus community.” Quote from <http://www.umbc.edu/innovate/>

2011 **Fellow, American Statistical Association**

“For research and service contributions to the profession, with particular emphasis on applications of statistical methods for interdisciplinary research; and for educating and mentoring graduate and undergraduate students.”

2008 Received **Service Recognition Award from the American Statistical Association’s Maryland Chapter.**

“In appreciation for the many years of dedicated support to the ASA Maryland Chapter; for serving several terms in Chapter offices; and especially for promoting statistics on a regional level.”

2001 Awarded the **Distinguished Achievement Medal** by the **Section on Statistics and the Environment of the American Statistical Association** on August 6, 2001.

1982 Won cash award for **outstanding academic performance** in the Masters in Statistics degree at Indian Statistical Institute, Calcutta.

1978-81 Won cash awards for **annual outstanding academic performance** in the Bachelors in Statistics degree at Indian Statistical Institute, Calcutta

Research Support and/or Fellowship

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 2015. \$10,000. National Security Agency. (pending)

(with Bonny Tighe, Raji Baradwaj, Elizabeth Stanwyck, Kal Nanes). **The Math Gym: Staying in Math Shape**. Winner of the Inaugural Freeman **Hrabowski Innovation Fund** Award. Jan 2013. \$25,000.

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 2014. \$10,000. National Security Agency.

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 2013. \$10,000. National Security Agency.

(Co-PI, with Matthias Gobbert) Research Experience for Undergraduates Site: Interdisciplinary Program in High Performance Computing. 2012-14. \$450,000. National Science Foundation and National Security Agency.

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 21, 2012. \$10,000. National Security Agency.

(Co-PI, with Jeff Leips, Biological Sciences, UMBC) Undergraduate Mathematics Biology Training Program (UBM@UMBC), National Science Foundation, 2010-2015. \$700,000

Statistical Methods for Data Quality Assessment in Large Databases, United States Environmental Protection Agency, 2010-2011. \$25,000.

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 23, 2011. \$12,000. National Security Agency.

(PI, with Matthias Gobbert) Research Experience for Undergraduates Site: Interdisciplinary Program in High Performance Computing. 2010-12. \$200,000. National Science Foundation.

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 25, 2010. \$9000. National Security Agency.

Physiologically Based Pharmacokinetic Models. United States Environmental Protection Agency. 2008-09. \$25,000.

(PI, jointly with College of Natural and Mathematical Sciences) Developing and Sustaining New Pathways for STEM Teacher Education at UMBC. University System of Maryland. 2008-09. \$20,000

Assessing data quality for large data sets at United States Environmental Protection Agency. 2008-09. \$25,000.

(with Matthias Gobbert et.al.) MRI: Acquisition of an Interdisciplinary Facility for High-Performance Computing \$250,000. 7/1/2008-6/10/2011. National Science Foundation.

(PI, with Jonathan Singer and Janice Zengel) UMBC Noyce Scholars Program 10/01/08-9/30/11 \$750,000, National Science Foundation.

(with Matthias Gobbert, Andrei Draganescu, Florian Potra) ``SCREMS: Parallel Computing for Interdisciplinary Research in Mathematics and Statistics," \$40000, 09/01/08-08/31/11, National Science Foundation, DMS-0821311,

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 25, 2009. \$9000. National Security Agency.

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 26, 2008. \$9000. National Security Agency.

Graduate Research Fellowship "Analysis of Large Data Sets"

- \$25,000 USEPA (2007-08)

(with Bimal Sinha). Probability/Statistics Day at UMBC. April 28, 2007. \$9000. National Security Agency.

Integrative Graduate Education and Research Traineeship "Water in the Urban Environment", Center for Urban Environment Research and Education, UMBC

- Participating faculty, teaching a core course. National Science Foundation (2006-2009)

Inter-Personnel Agreement with the United States Environmental Protection Agency "Statistical Methodologies in analyzing Large Environmental Databases"

- \$175,000, USEPA (2004-2007)

Inter-Personnel Agreement with the United States Environmental Protection Agency "Statistical Methodologies in analyzing Large Environmental Databases"

- \$64,000, Department of Transportation (2003-2004)

Inter-Personnel Agreement with the Department of Transportation "Statistical Methodologies in analyzing Transportation Data"

- \$80,000, Department of Transportation (2002-2003)

Principal investigator for the ongoing project Study of Statistical Methodologies for Modeling Environmental Data" funded by United States Environmental Protection Agency.

- \$75,000, United States Environmental Protection Agency (2000-01)
- \$47,500, United States Environmental Protection Agency (1999-00)
- \$50,000, United States Environmental Protection Agency (1998-99)
- \$90,000, United States Environmental Protection Agency (1997-98)
- \$90,000, United States Environmental Protection Agency (1996-97)
- \$57,000, United States Environmental Protection Agency (1995-96)

- \$104,000, United States Environmental Protection Agency (1993-94)
- \$97,000, United States Environmental Protection Agency (1992-93)
- \$82,000, United States Environmental Protection Agency (1991-92)
- \$92,000, United States Environmental Protection Agency (1990-91)

Participated as a consulting statistician for projects in other UMBC departments.

- Comparing and classifying gene sequences based on amino acid counts (**P.I. Dr. Steve Freeland, Department of Biological Sciences, UMBC.**)
- Developing an indicator for bovine lameness based on limb movement variables (**P.I. Dr. Uri Tasch, Department of Mechanical Engineering, and UMBC. Funded by the United States Department of Agriculture.**)
- Fatigue Microcrack Initiation Mechanisms in Bone Cement (**P.I. Dr. Tim Topoleski, Department of Mechanical Engineering, UMBC. Funded by the Arthritis Foundation.**)
- Acute Mechanical Mechanisms of Balloon Angioplasty" (**P.I. Dr. Tim Topoleski, Department of Mechanical Engineering, UMBC. Submitted to American Heart Association.**)
- Development of a Quantitative Method for Indexing the Urban-Rural Gradient for National Census and Land Use Assessments" (**P.I. Dr. Tim Foresman, Department of Geography and Environmental Systems, UMBC. Funded by United States Census Bureau.**)

Ph.D. Students

- **Sai Kumar Popuri** (Current)
- **Mina Hosseini** (Current)
- **Jonathan McHenry** (Co-Chair, Current)
- **Andrew Raim**, Feb 2014
Thesis title: Computational Methods in Finite Mixtures using Approximate Information and Regression Linked to the Mixture Mean.
Graduated and took a position as a Statistician with U.S. Bureau of the Census.
- **Anna Sun**, May 2013
Thesis title: Applying Weighted GEE for Missing Data Analysis and Sample Size Estimation in Repeated Measurement Studies with Dropout.
Graduated and took a position as a Statistician with U. S. Federal Drug Administration.
- **Yukun Wu**, Dec 2009
Thesis Title: Bayes-Type Tests for Constancy of Regression Parameters in Logistic Regression Models.
Graduated and took a position as Research Associate with University of Maryland, Baltimore.

- **Martin Klein**, May 2009 (Co-chair)
Thesis Title: Statistical Methods for Estimation of Physiologically Based Pharmacokinetic (PBPK) Models
Graduated and took a position with Bureau of the Census, DC
- **Justin Newcomer**, Dec 2008
Thesis Title: Estimation Procedures for Multinomial Models with Overdispersion
Graduated and took a position with Sandia National Laboratory, NM
- **Minglei Liu**, May 2005
Thesis title: *Estimation for Finite Mixture Multinomial Models*
Graduated and took a position in **Medtronics, CA.**
- **Santosh Sutradhar**, Dec 2001.
Thesis title: *Extra Variation models for categorical data*
(Joint advisor: Dr. Jorge Morel, Procter & Gamble, Cincinnati, OH)
Graduated and took a position in **Merck Pharmaceuticals, PA.**
- **Maxime Bokossa** May 1999.
Thesis title: *Parameter estimation in overdispersion models*
(Joint advisor: Dr. Jorge Morel, Procter & Gamble, Cincinnati, OH)
Graduated and took a position in Synectics, **Arlington, VA.**
- **Anna Lurie** May 1998.
Thesis title: *Change-point problems in time series models"*
Graduated and took a position as Statistical Analyst in **T. Rowe Price, Baltimore, MD**
- **Soma Sengupta**, December 1994.
Thesis title: *On some aspects of composite sampling*
Graduated and took a position as Statistician in **Colgate-Palmolive, Piscataway, NJ**

M.S. Students

- **Brandon Fleming**, Aug 2012
Thesis Title: Estimating risk of occupational injury in the presence of unreported zeros
Graduated and joined a program in Pharmacology at the **University of Maryland.**
- **Hannah Kyeyune**, Aug 2007
Thesis Title: Variance Estimation in Ranked Set Sampling.
Graduated and took a position in **Synectics, Arlington, VA**
- **Kerri-Ann Kelley**, Mar 2002.
Thesis title: *Logistic Regression Models for Groundwater Data*
Graduated and took a position in **Price-Waterhouse Inc., Washington, DC.**
- **Joeseeph Stevano**, Jul 2000
Thesis title: Regression Models to compare the effect of labor unions on market pricing.
Graduated and took a position in **National Highway Traffic Safety Administration, Department of Transportation, and Washington, DC.**

Patent Disclosure

- **Neerchal, N. K.** and Tasch, U. (2008) Lameness Detection of lameness using nonlinear transformations of limb movement variables.

Publications

- **Books**

- **Introduction to Environmental Statistics using SPLUS** (with Steven P. Millard, Probability, Statistics and Information) published by **Chapman Hall/ CRC Press**, Boca Raton, Florida. 2001.
- **Lameness Models that use Transformations to Enhance their Performance: Theory and Field Testing** (with Jianbo Liu, and Uri Tasch) published by LAP LAMBERT Academic Publishing. 2011.
- **Overdispersion Models in SAS** (with Jorge Morel, Procter and Gamble Inc.) published by SAS Publishing, Cary, NC. 2012
- **Introduction to Environmental Statistics using R** (with Steven P. Millard, Probability, Statistics and Information, and Philip Dixon, Iowa State University) published by **Chapman Hall/ CRC Press**, Boca Raton, Florida. 2014 (expected)

- **Refereed Publications**

53. Neerchal, N. K., Morel, J. G., Huang, X, and Moluh, A. (2014). A Stepwise Algorithm For Generalized Linear Mixed Models. Proceedings of SAS Global Forum 2014.
52. Raim, A.M., Liu, M., Neerchal, N.K., Morel, J.G. (2013). On the method of approximate Fisher scoring for finite mixtures of multinomials. **Statistical Methodology**, **18**, 115 – 130
51. Raim, A. M., Gobbert, M. K., **Neerchal, N. K.**, and Morel, J. G. (2013). Maximum-likelihood estimation of the random-clumped multinomial model as a prototype problem for large-scale statistical computing. **Journal of Statistical Computation and Simulation**. **83(12):2178-2194**.
49. Raim, A. M., Fleming, B. E., and **Neerchal, N. K.** (2012) An analysis of categorical injury data using mixtures of multinomials. In JSM Proceedings, Statistical Computing Section. American Statistical Association, pages, Alexandria, VA: 2444-2458.
50. Morel, J. G. and **Neerchal, N. K.** (2011). Sample Size Determination for Alternate Periods of Use Study Designs with Binary Responses. **Journal of Biopharmaceutical Statistics** **22**, 351-367.
48. Ivancik J., **Neerchal N.K.**, Romberg E., Arola D. (2011). On The Reduction in Fatigue Crack Growth Resistance of Dentin with Depth. **Journal of Dental Research**, **90(8)**, 1031-1036.

47. Wu Yukun., **Neerchal, N. K.**, Dyer Robert M., Tasch Uri., and Rajkondawar, Parimal G. (2011). Modeling Bovine Lameness using Limb Movement Variables. **Journal of Biomedical Science and Engineering** 4, 419-425.
46. Jianbo Liu., Dyer Robert M., **Neerchal N. K.**, Tasch Uri., and Rajkondawar, Parimal G. (2011). Diversity in the magnitude of hind limb unloading occurs with similar forms of lameness in dairy cows. **Journal of Dairy Research**. 78, 168–177.
45. Didolkar, Mukund S., Coleman, Cardella W., Brenner, Mark J., Chu, Kyo U., Olexa, Nicole., Stanwyck, Elizabeth., Yu, Airong., Neerchal Nagaraj K., and Rabinowitz, Stuart. (2010). Image-Guided Stereotactic Radiosurgery for Locally Advanced Pancreatic Adenocarcinoma Results of First 85 Patients. **Journal of Gastrointestinal Surgery**, 14 (10), 1547-1559.
44. Tang, Wenlong., McDowell, Kim., Limsam, Mark., **Neerchal, N. K.**, Yarowsky, Paul., Tasch, Uri. (2010). Locomotion Analysis Sprague-Dawley Rats before and after injecting 6-OHDA. **Behavioural Brain Research**, 210, 131–133.
43. Ellis, E. C., **Neerchal, N. K.**, Peng K., Xiao H. S., Wang H., Yan Z., Li S. C., Wu J. X., Jiao J. G., Ouyang H., Cheng X., and Yang L. Z. (2009) Estimating long-term changes in China's village landscapes. **Ecosystems** 12(2): 279-297.
42. Tang, Wenlong., Lovering, Richard M., Roche, Joseph A., Bloch, Robert J., **Neerchal, N. K.**, Tasch, Uri. (2009). Gait Analysis of Locomotory Impairment in rats before and after Neuromuscular injury. **Journal of Neuroscience Methods**, 181, No. 2, 249-256.
41. Tang, W., Tasch, U., **Neerchal, N. K.**, Zhu, L., and Yarowsky, Paul. (2009). Measuring early pre-symptomatic changes in locomotion of SOD1-G93A rats - a rodent model of Amyotrophic Lateral Sclerosis. **Journal of Neuroscience Methods**, 176, No. 2, 254-262.
40. Gobbert, M. K. and **Neerchal, N. K.** (2008). Preparing Graduate Students for Interdisciplinary Careers. **Computing in Science and Engineering, Education Department**, 10, No. 1, 93-95.
39. Yesilonis I. D., Pouyat, R. V., **Neerchal, N. K.** (2008). Spatial distribution of metals in soils in Baltimore, Maryland: Role of native parent material, proximity to major roads, housing age and screening guidelines. **Environmental Pollution**, 156, No. 3, 723-731.
38. Morel, J. G. and **Neerchal, N. K.** (2008). Ratio estimation via Poisson regression and Generalized Estimating Equations. **Statistics and Probability Letters**, 78, 2188-2193.
37. Sutradhar, S. C., **Neerchal, N. K.**, and Morel, J. G. (2008). Goodness of fit tests for multinomial overdispersion models. **Journal of Statistical Planning and Inference**, 138, No. 5, 1459-1471.
36. **Neerchal, N. K.**, Lacayo, H. L. and Nussbaum, B. D. (2008). Is larger sample size is always better? **American Journal of Mathematical and Management Sciences**, 28, No. 3 & 4, 295-307.
35. R. M. Dyer, **Neerchal N. K.**, Tasch U., Wu, Y., Dyer P., and Rajkondawar, P. G. (2007). Objective Determination of Claw Pain and Its Relationship to Limb Locomotion Score in Dairy Cattle. **Journal of Dairy Science**, Vol. 90. 4592-4602.

34. Gurbel PA, Bliden KP, DiChiara J, Newcomer J, Weng W, **Neerchal N. K.**, Gesheff T, Chaganti SK, Etherington A, Tantry US. (2007). Evaluation of dose-related effects of aspirin on platelet function: results from the Aspirin-Induced Platelet Effect (ASPECT) study. **Circulation. Jun 26;115(25), 3156-64.**
33. Pouyat, R. V., Yesilonis Ian, Russel-Anelli, J., and **Neerchal, N. K.** (2007). Soil Chemical and Physical Properties That Differentiate Urban Land-Use and Cover Types. **Soil Science Society of America Journal 71, 1010-1019.**
32. Rajkondawar, P. G., Liu, M., Dyer, R. M., **Neerchal, N. K.**, Tasch, U., Lefcourt, A. M.Erez], B., and Varner, M. A. (2006). Comparison of Models to Identify Lameness Cows Based on Gait and Lesion Scores, and Limb Movement Variables. **Journal of Dairy Science, 89, No. 11, 1-9.**
31. **Neerchal, N.K.** and Morel, J.G., (2005). An improved method for the computation of maximum likelihood estimates for multinomial overdispersion models. **Journal of Computational Statistics and Data Analysis, 49, No. 1, 33-43.**
30. Morel, J. G., Bokossa, M. C., and **Neerchal, N. K.** (2003). *Small Sample Correction for the Variance of GEE Estimator.* **Biometrical Journal, 45, No. 4, 1-15.**
29. Vølstad, J.H., **Neerchal, N. K.**, Roth, N. E. and Sutherland, M.T. (2003). Combining biological indicators of watershed condition from multiple sampling programs – A case study from Maryland, USA. **Ecological Indicators, 3, No. 1, 13-25.**
28. Sutradhar, S. K., **Neerchal, N. K.**, and Morel, J. G., (2002). A Goodness-of-fit test for overdispersed logistic regression models. **ASA Proceedings of the Joint Statistical Meetings, 3395-3399.**
27. Rajkondawar, P., Lefcourt, A. M., **Neerchal, N. K.**, Dyer, R. M., Varner, M. A., Ereze, B., and Tasch, U. (2002). The Development of an Objective Lameness Scoring System for Dairy Herds: Pilot Study. **The Transactions of American Society of Agriculture Engineers, 45, No. 4, 1123-1125.**
26. Lacayo, H., **Neerchal, N. K.**, and Sinha, B. K. (2002). *Ranked Set Sampling of Dichotomous Data.* **Journal of Applied Statistical Sciences, 11, No. 1, 83-90.**
25. Morel, J. G. and **Neerchal, N. K.** (2000). Extra Variation Models. **Encyclopedia of Biopharmaceutical Statistics, 197-209.**
24. Lurie, A. and **Neerchal, N. K.** (1999). Bayes-Type Tests for Constancy of the Parameters of an AR Process. **Journal of Environmetrics, 10, 737-752.**
23. **Neerchal, N. K.** and Morel, J. G. (1998). Large Cluster Efficiency of Two Parametric Multinomial Extra Variation Models. **Journal of American Statistical Association, 93, 1078-1087.**
22. **Neerchal, N. K.**, Lacayo, H., Ross, N. P., and Legore, T. (1998). Sample Size and Risk in Site Investigation. **Encyclopedia of Environmental Remediation, 4221-4240.**

21. Morel, J. G. and Neerchal, N. K. (1997). Cluster Binary Logistic Regression Using a Finite Mixture Distribution with Application to Teratology Experiment. **Statistics in Medicine**, **16**, 2843-2853.
20. Bose, A. and Neerchal, N. K. (1997). *Estimation of Autoregressive Parameters with Systematic but Incomplete Sampling*. **Proceedings of 2nd Triennial Symposium on Probability and Statistics**, Calcutta, India, 41-51.
19. Lu, X., Topoleski, L. D. T., and Neerchal, N. K. (1997). *The influence of Notch Tip Geometry on Fatigue Crack Initiation in PMMA Bone Cement*. **Abstracts of 23rd Annual Meetings of The Society for Biomaterials**.
18. Neerchal, N. K. and Sengupta, S. (1996). *Variance Estimation with Composite Sampling*. **Journal of Applied Statistical Sciences**, **3**, 35-44.
17. Neerchal, N. K. and Legore, T. (1995). *Decision Analysis Approach to Sample Size Determination*. **Proceedings of Waste Technology and Quality Assessment Conference**, Washington, DC.
16. Neerchal, N. K. and Shafer, R. (1995). *Spatial Analysis of Benthic data from the Chesapeake Bay*. **Proceedings of ASA Section on Statistics and the Environment**.
15. Sengupta, Soma, and Neerchal, N. K. (1994). *Classification of Grab Samples Using Composite Sampling: An improved Strategy*, **Calcutta Statistical Association Bulletin**, **44**, 195-208, (1994).
14. Neerchal, N. K., Papush, Gina, and Shafer, R. (1994). *Statistical Method for Measuring DO restoration Goals by Combining Monitoring Station and Buoy Data*. **Computer Techniques in Environmental Studies V, Proceedings of Envirosoft 94**, 227--235, (1994).
13. Neerchal, N. K. and Shafer, R. (1994). *A Mapping Procedure for Chesapeake Bay Data*. **Numerical Methods in Water Resources** by A. Peters, G. Wittum, B. Herling, and U. Meissner (eds).
12. Morel, J.G. and Neerchal, N. K. (1993). A Finite Mixture Distribution for Modeling Multinomial Extra Variation. **Biometrika**, **80**, 363-372.
11. Neerchal, N. K. and Brunenmeister, S. L. (1993). *Accommodation of Below Detection Limit Data in Trend Estimation for Water Quality Variables*, **Environmental Statistics, Assessment and Forecasting** by C. Richard Cothorn and N. Phil Ross (eds), 113--127.
10. Neerchal, N. K. and Brunenmeister, S. L. (1993). *Estimation of Trend in Chesapeake Bay Water Quality Data*, **Multivariate Environmental Statistics** by G. P. Patil and C. R. Rao (eds), 407--421.
9. Neerchal, N. K. and Reddy, C. S. (1993). *Asymptotic Nonnull Distributions of some Tests for Change in Level when Data is Correlated*, **Proceedings of the First Triennial Symposium on Probability and Statistics**, Calcutta, India, 126--135.
8. Neerchal, N. K. and Reddy, C. S. (1993). *Asymptotic Null Distributions of Tests for Change in Level for Correlated Data*, **Sankhya**, **55**, 37--48.

7. **Neerchal, N. K.** and Fuller, W. A. (1992). *Least Squares Estimation of the Linear Model with Autoregressive Errors. New Directions in Time Series Analysis Part I*, Brillinger, D., Parzen, E., and Rosenblatt, M. (eds), IMA volumes in Mathematics and its Applications, IMA, Minneapolis, MN.
6. **Neerchal, N. K.** and Fuller, W. A. (1991). *Estimation of the Parameters of Linear Time Series Models Subject to Nonlinear Restrictions*, **Annals of Statistics**, **19**, 1143--1154.
5. **Neerchal, N. K.** (1990). Two-Sided Tests for Change in Level for Correlated Data. **Statistische Hefte**, **31**, 181-194.
4. **Neerchal, N. K.** (1990). *Locally Optimal Invariant Tests for Change in Level*, **Communications in Statistics**, **19**, 869--878.
3. Lo, James T-H., Rukhin, Andrew L., and **Neerchal, N. K.** *Cyclic Regression for Weighted Subspace Fitting to Find Multiple Signal Directions*, **Proceedings of OCEANS'90 Conference**, 518--522.
2. **Neerchal, N. K.** and Brunenmeister, S. L. (1989). *An Application of Seemingly Unrelated Regression Estimation (SURE) to Characterizing Trends in Total Phosphorus in the Upper Chesapeake Bay, October 1984 to September 1989. New Perspective in the Chesapeake System: A Research and Management Partnership, Proceedings of a Conference*, Chesapeake Research Consortium Publication No. 137, 355--369, CRC, P. O. Box 1280, Solomons, MD 20688.
1. **Neerchal, N. K.**, Liang, Enju, Rodriguez, Rodrigo J., and Hussein, Abdo A. (1989). *A Systematic Approach to the Design and Reliability Analysis of a Fault-Tolerant Controller*. **Reliability Engineering and System Safety**, **24**, 297--342.

Software Development

- SAS Version 9.3 has introduced a new PROC FMM based on the work of Morel+Neerchal research group on finite mixture distributions.
- SAS Version 9.2 has incorporated "MBN" Variance Adjustment option named after our paper [Morel, Bokossa, Neerchal (2003); #30 in the list above].
- Designed and developed **Time Series Tutor, a self-guided tour of basic concepts in Time Series Analysis**. TST is coded in C and runs on any IBM-compatible personal computer. TST is available at www.math.umbc/nagaraj and used in providing basic training in Time Series Analysis to managers.
- Designed and developed **Interactive Multivariate Time Series Analysis (IMTSA)** program. IMTSA is coded in C and runs on any IBM-compatible personal computer. This interactive program was developed to obtain **trend estimates for pollution data** and includes the use of **Bootstrapping** to estimate standard errors.
- Developed computer codes for **Bayesian estimation of Dose-response models**. Dose-response models are used in Toxicology to study the effect of carcinogens on animals and extrapolate the results to humans.

Short Courses Taught for Professionals

- Analysis of Overdispersed Data using SAS®, 8th Annual Probability and Statistics Day, UMBC April 18, 2014.
- Advanced Programming with R by UMBC Training Center. Oct 21-23, 2013.
- Analysis of Overdispersed Data using SAS®, Continuing Education Program, Joint Statistical Meetings, San Diego, CA, Aug 10, 2012.
- A Short Course on R. Organized by UMBC Training Centers. Aug 19-20 and 24, 2010.
- Analysis of Categorical Data with Overdispersion, Continuing Education Program, Joint Statistical Meetings, Toronto, ON, Canada, Aug 10, 2004.
- Analysis of Categorical Data with Overdispersion, Food and Drug Administration, Rockville, MD, Mar 12, 2004.
- Analysis of Categorical Data with Overdispersion, International Statistical Institute Conference, Berlin, Germany, Aug 12, 2003.
- Analysis of Categorical Data with Overdispersion, MSBW Conference, Muncie, IN, May 19, 2003.
- Analysis of Categorical Data with Overdispersion, P&G Pharmaceuticals Inc. Cincinnati, OH, May 7, 2003.
- Introduction to the basics of PC SAS, Office of Information Technology, UMBC, Baltimore, MD, February 17 and February 19, 2003.
- Introduction to Logistic Regression II, Bureau of Transportation Statistics, Department of Transportation, Washington DC, March 6, 2002 and March 13, 2002.
- Introduction to Logistic Regression I, Bureau of Transportation Statistics, Department of Transportation, Washington DC, April 6, 2002 and June 12, 2002.
- *Sampling Designs and Statistical Methods in Environmental Studies*, 14th Annual Conference on Contaminated Soils, Amherst, MA, October 18-21, 1999.
- *Introduction to Environmental Statistics using S-PLUS*, Joint Statistical Meetings, Dallas, TX August 7-12, 1998.
- *Sampling Designs and Statistical Methods in Environmental Studies*, 14th Annual Conference on Contaminated Soils, Amherst, MA, October 19-22, 1998.
- *Environmental Statistics for Planning Data Collection*, University of Maryland Baltimore County, January 21-31, 1998.

- *Time Series Analysis and Trend Estimation using S-PLUS*, United States Environmental protection Agency, Washington, DC, October 7, 1997 and Raleigh, NC, October 9, 1997.
- *An Introduction to Environmental Statistics using S-PLUS*, Joint Statistical Meetings, Anaheim, CA, August 8-12, 1997.
- *An Introduction to Environmental Statistics using S-PLUS*, The 12th Annual EPA Conference on Statistics, Richmond, VA, April 1-4, 1997.
- *Using Environmental Statistics to Plan Your Data Collection Program*, a Two-day Short Course at the Department of Engineering Professional Development, College of Engineering, University of Wisconsin, Madison, October 30-31, 1995.

Initiating Distance Education

- Taught Environmental Statistics course over **Interactive Video Network (IVN)** to a large class including Marine, Estuarine, and Ecological Studies (MEES) students in 5 sites of the University of Maryland System. This is the **first such course in our Department**.

Statistical Consulting (Selected)

- Provided expert testimony in the Baltimore City Circuit Court in a criminal case. (Details are confidential)
- Provided expert review and counsel on a civil case involving the State of Maryland and Public School System of a number of counties.
- Provided statistical expert advice to **Bou-Matics**, a dairy equipment manufacturing company, Madison, WI.
- Provided statistical expert advice to **KPFM&G Associates**, a well-known Baltimore accounting firm, in settling a lawsuit.
- Provided statistical support to **Rainbow Technologies, Inc.**, in water quality data analysis.
- Directed the **analysis of hospitalization rate of various injury types**, using Seemingly Unrelated Regression technique, to see if the rates were significantly different between the state of New York and other states. The project was sponsored by **PRACON, Reston, VA**.
- Directed a project to review various estimation methods for the multistage dose-response model. A report, namely,
- **Estimating Carcinogenic Potency: A Review Parameter Estimation Methods for the Linearized Multistage Model**", was prepared and submitted to the sponsor American Management Systems, Inc. and to Project Officer Mr. Timothy Barry, **Science-Policy Integration Branch, Environmental Protection Agency**.
- Directed a project to explore the feasibility of Bayesian estimation of multistage dose-response model. A report, namely,
- **Statistical Study of Bayesian Dose-Response Models**", was prepared and submitted to the

sponsor **Statistical Policy Branch of Environmental Protection Agency** and the Project Officer Dr. Pepi Lacayo.

- Directed a project on applying grafted polynomials regression to model remotely sensed data and submitted a report, namely, "**Modeling Remotely Sensed Data by Fractals and Spatial Statistics**", to the sponsor **Technology International Inc., LaPlace, LA.**
- Participated in the project **Multivariate Analysis of Complex Survey Data** at **Technology International Inc., La Place, LA.** The project involved developing personal computer software in C to analyze multivariate data collected in stratified multi-stage cluster sampling.

Professional Activities

- **Professional Service**

- | | |
|-------------|--|
| 2012 | Member of the Editorial Board
Statistical Methodology |
| 2004 | Associate Editor
Soil & Sediment Contamination: An International Journal |
| 2002-2011 | Associate Editor
Environmental Modelling and Assessment |
| 2002-2005 | Associate Editor
Communication in Statistics, Theory and Methods |
| 2000-2003 | Associate Editor
Human Ecology and Risk Assessment |
| Aug 9, 1999 | Co-Coach
UMBC's College Bowl Team, which finished runner up |
| Jul 5, 1998 | Organizer
Special Session on Environmental Policy and Information
The 9th International Conference
The International Environmetrics Society, Gold Coast, Australia. |
| Mar 7, 1996 | Organizer
Short course on Regression Diagnostics
United States Environmental Protection Agency, Washington, DC. |
| Mar 9, 1996 | Organizer
Short course on Regression Diagnostics
United States Environmental Protection Agency, Raleigh, NC. |
| Aug 8, 1996 | Organizer
Short course on Ranked Set Sampling
Joint Statistical meetings, Chicago, IL,
Sponsored by Section on Statistics and the Environment |

American Statistical Association.

1985--

Reviewer for:

American Statistician

Canadian Journal of Statistics

Environmetrics

IEEE Transactions in Automatic Control

Journal of Agricultural, Biological and Environmental Statistics

Journal of American Statistical Association

Journal of Applied Statistical Science

Journal of Business and Economic Statistics

Journal of Environmental and Ecological Statistics

Journal of Financial Management

Journal of Johns Hopkins University Applied Physics Laboratory

Journal of Time Series Analysis

National Science Foundation

Sankhya

Statistics and Probability Letters

Water Resources Research

- **Membership in professional organizations**

American Statistical Association

The International Environmetrics Society

- **Invited Presentations**

Estimation of Risk with Incidence Data. Social Decision Analytics Lab, Virginia Bioinformatics Institute, Virginia Tech - National Capital Region Center, Arlington, VA. Jul9, 2014.

Short Course “Overdispersion Models in SAS” Procter & Gamble, Cincinnati, OH. June 25, 2012

Speaker at the Department of Mathematics and Statistics, James Madison University, September 19, 2011. Title: Overdispersion Models for Multinomial Data

Speaker in an invited session on Statistical Consulting, Joint Statistical Meetings, July 30-August 4, 2011. “Innovative Strategies for Incorporating Consulting into Graduate Education”

“Why should we study Mathematics?” Invited talk in the PTA meeting of Hebbesville Elementary School, Maryland.

Invited talk in the Department of Epidemiology and Biostatistics, UMB, January 1, 2008.

“Data Quality Assessment of Toxics Release Inventory Database”. Invited talk in EPA GIS/STAT Users’ conference, Las Vegas, NV. September 19, 2007.

Invited talk at the Center for Urban Environmental Research and Education, UMBC. December 9, 2005.

Invited talk at the Department of Statistics, Agricultural University of Bangalore, Bangalore, India. August 9, 2005.

Invited talk at the Department of Statistics, Mangala Gangotri, Mangalore, India. August 4, 2005

Invited talk at the 24th Annual National Conference on Managing Environmental Quality Systems will take place April 11-14, 2005 in San Diego, California.

Invited talk at 23rd Annual National Conference on Managing Environmental Quality Systems, April 13--16, 2004, Tampa, Florida.

Invited talk at the meetings of the Cincinnati Chapter of American Statistical Association, May 6, 2003, Cincinnati, OH.

Invited speaker in the special session in honor of Professor Ian MacNeill. The 9th International Conference of the The International Environmetrics Society, Gold Coast, Australia, July 3--6, 1998.

Invited speaker at the School of Mathematics and Center for Industrial and Applicable Mathematics, University of South Australia, Levels Campus, Adelaide, Australia, June 25, 1998.

Invited speaker at the Joint Statistics Seminar of Department of Statistics and Australian Graduate School of Management, University of New South Wales, Sydney, Australia, June 24, 1998.

Invited speaker at the meetings of the Chesapeake Chapter of the American Statistical Association, Aberdeen Proving Ground, MD, and November 13, 1997.

Invited speaker for the Seminar Series at the Department of Mathematics and Statistics, University of South Alabama, Mobile, AL, April 25, 1997.

Session Chair, The International Environmetrics Society Meetings, Kuala Lumpur, Malaysia, December 6--9, 1995.

Invited speaker for the Seminar Series of Program in Statistics, Washington State University, and February 16, 1995.

Invited speaker at The International Environmetrics Society Meetings, Burlington, Canada, August 12--15, 1994.

Invited speaker at The International Environmetrics Society Meetings, Perth, Australia, December 6--10, 1993.

Invited speaker at the US EPA/NISS Workshop on Statistical Methods for Combining Environmental Information, Chapel Hill, North Carolina, September 27--28, 1993.

Invited speaker at the Department of Biometry, Louisiana State University Medical Center, New Orleans, Louisiana, and March 17, 1993.

Invited speaker at the Department of Epidemiology and Biostatistics, University of South Florida, Tampa, March 24, 1992.

Invited speaker for the Methodology Seminar of Washington Statistical Society, February 27, 1992.

Invited speaker at the Technical Seminar of Applied Physics Laboratory of Johns Hopkins University, May 5, 1991.

Invited discussant for the session "Evaluating Cleanup Standards" at the Sixth Annual EPA Conference on Statistics, March 26--29, 1990, Williamsburg, VA.

- **Papers presented in Conferences**

1. A Stepwise Algorithm for Generalized Linear Mixed Models, SAS global Forum 2014, Washington DC. March 23-26, 2014.
2. Innovative Strategies for Incorporating Consulting into Graduate Education. Invited Session organized by Section on Statistical Consulting, Section on Quality and Productivity, Section on Teaching of Statistics in the Health Sciences. Joint Statistical Meetings, Miami Beach, FL. Jul 30-Aug 4, 2013.
3. Discussant for a Topics Contributed session in the Annual Joint Statistical Meetings, Denver, CO. Jul 27- Aug 8, 2008.
4. Analysis of Chromium Emissions Data. Applied Analysis and Applications Workshop of the Office of Environmental Information, USEPA. Solomons, MD. Jul 12-14, 2005.
5. Analysis of Chromium Emissions Data. 24th Annual National Conference on Managing Environmental Quality Systems. April 11-14, 2005, San Diego, CA.
6. Exploratory Analysis of Toxics Releases Inventory Data. TRI National Conference, Washington DC. February 8-9, 2005.
7. Modelling Counts of Nitrate Concentration Violations Per Watershed Using Overdispersed Logistic Regression, University of Maryland Baltimore County-Smithsonian Environmental Research Center Joint Workshop, Schmidt Center, SERC, January 18, 2005.
8. Overdispersion Models for the Violation of Nitrate Concentration limits, 23rd Annual National Conference on Managing Environmental Quality Systems, April 13--16, 2004, Tampa, Florida.
9. *A Case Study on Suitability of Toxics Release Inventory System Database for Secondary Purposes: Reporting Trends in Toxic Releases in Maryland*, Special Session on Environmental Policy and Information, The 9th International Conference of the The International Environmetrics Society, Gold Coast, Australia, July 3--6, 1998.
10. *On Ranked Set Sampling*, The Silver Jubilee Meetings of the Statistical Society of Canada, Fredericton, Canada, June 2--6, 1997.
11. *A Decision Analysis Approach to Determining Sample Size for Site Investigation*, The Eleventh Annual Waste Testing & Quality Assurance Symposium, July 23--28, 1995.
12. *Spatial Analysis of Benthic Data from the Chesapeake Bay*, The International Environmetrics Society Conference, Burlington, Ontario, Canada, August 12--15, 1994.
13. *Estimation of Trend in Water Quality Data*, at International Congress on Modelling and Simulation, December 6--10, 1993.
14. *Analysis of Benthic Data from the Chesapeake Bay*, EPA/NISS workshop on Combining Environmental Information, September 27--28, 1993, Chapel Hill, NC.

15. *A tutorial introduction to Time Series Analysis and Box-Jenkins Methodology*, 9th Annual EPA Conference on Statistics, March 1--4, 1993, Baltimore, MD.
16. *An Approximation for the Information Matrix of a Finite Mixture of Multinomials and its Application to Modeling Extra Variation*, at Joint Statistical Meetings 1992, Boston.
17. *Estimation of trend in Chesapeake Bay Water Quality Data*, Seventh International Conference on Multivariate Analysis, May 5--9, 1992, University Park, PA.
18. *A new method to accommodate Censored Data in Trend Analysis with applications to Chesapeake Bay Water Quality Monitoring Program*, 8th Annual EPA Conference on Statistics, March 9--12, 1992, Philadelphia, PA.
19. *Asymptotic Distributions of Tests for Change in level in Associated Data*, First International Triennial Symposium on Probability and Statistics, December 29--31, 1991, Calcutta, India.
20. *Two-Sided Tests for Change in Level for Correlated Data*, Australasian Meeting of the Econometric Society 1989, Armidale, NSW, Australia.
21. *Estimation of Stochastic Difference Equations with Nonlinear Restrictions on the Parameters*, NBER-NSF Seminar on Time Series, 1987, Raleigh, NC.
22. *Linear Models with Nonlinear Restrictions*, Joint Statistical Meetings 1987, San Francisco.

University and Community Service

- **Member, Council of University System Faculty (CUSF), 2011-2013, 2014-present.**
- **Internal Advisory Board of the I-CUBED study, 2010-present.**
- **Internal Advisory Board of the Alex Brown Center for Entrepreneurship, 2010-present.**
- **Coordinating Committee of the Alex Brown Center for Entrepreneurship, 2014-present.**
- **Judge, Howard County Mathematics, Science, and Technology Fair, Columbia, MD 21045. March 3, 2005.**
- **Graduate Program Director for the Department of Mathematics and Statistics, UMBC, 1996—1999**
 - Implemented new ideas into the MS program in Statistics. Introducing a track in Environmental Statistics. A proposal for a track in Biostatistics is under consideration by the Graduate Council.
 - Conducted weekly **graduate student seminars** to inculcate presentation skills. Brought Toastmasters" structure to the graduate student seminar. (A student is designated as a chair for a session with two speakers and two evaluators. The Evaluators give concrete feedback on presentation aspects of the speakers immediately following the speech.) Faculty members are recruited as evaluators and this increased faculty participation. Took the necessary steps to

make the seminar mandatory for all supported students. **Seminar series has been cited by many colleagues as ``the highlight'' among departmental activities.**

- Used my contacts at MathSoft, and ITP Publishing Co. and obtained **the first corporate sponsorship for the Graduate Student Research Day, 1997**. The companies gave away software and books as prizes for all the winners.
- Conducted annual departmental orientation for the new graduate students. **As a new feature** incorporated a workshop on teaching into the orientation program with **invited speakers from Learning Resources Center**.
- Pushed for a campus-wide orientation for all incoming graduate students. Participated in the planning of the **first campus-wide orientation of all new graduate students**.
- Arranged **campus interviews** for all local applicants for our graduate program. This new **approach** has proved to be a very effective. We have four local students admitted with support this year.
- Worked with the Undergraduate Council of Majors and Pi-Mu-Epsilon (the undergraduate honor society) **to publicize the Combined BS/MS program** offered by the department.
- **Increased the recruiting efforts** within the United States and outside. Interviewed each candidate for graduate assistantship (telephone interview for international applicants). The efforts have resulted **in significant improvement in the quality of spoken English ability** among incoming Graduate Assistants. This year, we recruited a total of 10 graduate assistants, including 4 from United States.
- Organized **bi-weekly Software Study'' group meetings** where Students and interested faculty meet regularly and teach each other new developments in statistical software. Meetings help to increase the **overall level of software knowledge** among students and **to foster a community spirit** in the department.
- Re-designed and updated the **Graduate Program Web Page** of the department. Regularly **contributed pictures** of graduations, departmental activities, and social functions to the web page.
- **Designed courses in Applied Statistics, which emphasize data analysis using statistical software such as SAS, SPLUS and R.**
 - Regression Methodology (STAT 601)
 - Applied Time Series Analysis (STAT 617)
 - Environmental Statistics (STAT 414/614)
 - Statistical Computing (STAT 433/633)
- Served in MS and Ph.D. committees.
- Served in the Statistics faculty recruitment committees.
- Appointed by **Graduate Dean, Dr. Scott Bass** to be the chair of the Associate Dean Search Committee.

- Served in the Departmental Chair Search Committee, which ended its successful search by recruiting Prof. Florian Potra.
- Member of the UMBC team making presentations to the **Staff of Senator Barbara Mikulski** on April 9, 1998. Appointed by **Graduate Dean, Dr. Scott Bass**. Successful presentation has led to inclusion of specific mark-up language in a bill on the US Senate floor, which is expected result in funding to UMBC to establish a **Center for Environmental Research**.
- Member, Provost's **Environmental Sciences Degree Planning Group**. The group has a draft of the final proposal and preparing to send out a **letter of intent for a B.S. Degree in Environmental Sciences**.
- Elected Member, **Joint Graduate Council for UMBC and UMB**. (1998--2000)
- Member, **Academic Planning and Budget Committee**. (2000-2005)
- Member, **Faculty Grievances subcommittee** of Joint Graduate Council for UMBC and UMB. (1998--2000)
- Member, Program **Review Subcommittee** of Joint Graduate Council for UMBC and UMB. (1998-2000)
- Member, **Ph.D. or M.S. thesis committees** in UMBC.

Community Activities

- **Volunteer Teacher**, Sunday School for Youth and Children, Chinmaya Mission of Washington Regional Center (www.chinmayadc.org)
- **Member**, Technology committee of the Parent Teacher Association of Centennial Lane Elementary School, Ellicott City, MD. 2001-2002
- **Vice President**, Parent Teacher Association of Centennial Lane Elementary School, Ellicott City, MD. 2000-2001
- **Secretary**, Columbia Toastmasters, 1997-98
- **Actor**, Yakshagana and Community Plays
- **Joint Secretary**, Kaveri, Kannada Cultural Association, 1997-98
- **Co-editor**, Newsletter of Kaveri, 1997-99

References Available upon request.