CURRICULUM VITAE

Morris L. Eaton

August 27, 2015

I   Biographical Data

A   Personal:

Date/Place of Birth: August 10, 1939, Sacramento, CA

B   Education:

Ph.D. Stanford University, Statistics, 1966
M.S. Stanford University, Statistics, 1963
B.S. University of Washington, Mathematics, 1961

C   Professional Career:

Professor, Department of Theoretical Statistics, School of Statistics, University of Minnesota, 1973-2005. Professor Emeritus 2005-present

Associate Professor, University of Minnesota, 1971-1973

Associate Professor, University of Chicago, 1970-1971

Assistant Professor, University of Chicago, 1966-1970

Research Associate, Stanford University, January-June 1966

Visiting Professor, Department of Statistics, University of California at Berkeley, August 1983-December 1983

Single Quarter Leave, Winter, 1982

Acting Director of School of Statistics, University of Minnesota, March-June 1980

Chairman, Department of Theoretical Statistics, University of Minnesota, 1978-1981

Sabbatical leave, 1977-1978. Visited University of Copenhagen, Copenhagen, Denmark

Visiting Professor, University of Copenhagen, Copenhagen, Denmark, 1971-1972

Visiting Associate Professor, Stanford University, Summer 1971

Visiting Assistant Professor, Stanford University, Summer 1968, Summer 1970

Sabbatical leave, 1984-85. Visited Centrum voor Wiskunde en Informatica, Amsterdam

Single Quarter Leave, Spring 1988. Visited Vrije Universiteit, Amsterdam.

Faculty Exchange, Spring 1990. Taught at the University of Munich, Munich, Germany.

Sabbatical Leave, 1991-92. Visited Warwick University, Coventry, England; Bocconi University, Milan, Italy, and University of Perugia, Perugia, Italy.

Single Quarter Leave, Spring 1996. Visited Vrije Universiteit, Amsterdam

Chairman, Department of Theoretical Statistics, University of Minnesota, Fall, 1994 - Spring, 1998.

Sabbatical leave, 1998-99. Visited Centrum voor Wiskunde en Informatica in Amsterdam, and Vrije Universiteit, Amsterdam.

D   Consulting:

Consultant for the Western Institute for Research in Mental Health from 1965 to 1968

Consultant for the RAND Corporation - September 1968, July and August 1969

Consultant for the University of Minnesota. Presented expert testimony in a sex discrimination law suit (1981)

Consultant for Pickwick Corporation. Analyzed employment data (1984)

Consultant for Pfizer Corporation (2000 - 2006)

Consultant for the Legal Firm of Faegre and Benson(2007-2010)

II   Grants and Awards

A grant from the Population Council (for the academic year 1970-1971) for assistance in the study of demography ($10,000)

A grant from the National Science Foundation (1972-1973) (NSF GP-34482) joint with M. Perlman for statistical research ($13,000)

A grant from the National Science Foundation (1973-1974) (NSF GP-34482) joint with M. Perlman for statistical research ($13,000)

A grant from the National Science Foundation (1974-1975) (NSF GP-34482) for statistical research ($8,200)

A grant from the National Science Foundation (1975-1976) (NSF MCS75-08561) for statistical research ($10,500)

A grant from the National Science Foundation (1976-1977) (NSF MCS75-08561) for statistical research ($11,300)

A grant from the National Science Foundation (1977-1978) (NSF MCS75-08651) for statistical research ($19,300)

A grant from the National Science Foundation (1978-1981) (MCS 77-25112) for statistical research ($44,500)

A grant from the National Science Foundation (1981-1984) (MCS 81-00762) for statistical research ($65,000)

A grant from the National Science Foundation (1984-87) (DMS 83-19924) for statistical research ($94,000)

A grant from the McMillan Fund at the University of Minnesota ($800) for travel costs during a trip to China (August 1987)

A grant from the China Center at the University of Minnesota ($375) for travel costs during a trip to China (August 1987)

A grant from the National Science Foundation (1988-1990) (DMS 88-00284) for statistical research ($64,745)

A grant from the National Science Foundation (1990-1993) (DMS 89-22607) for statistical research (approximately $95,000)

A grant from the National Science Foundation (1989-1992) (joint with Professors Berry, Sudderth, Lane, Tierney, Meeden, Dickey, and Pruitt) for Bayesian non-parametric research (approximately $500,000)

A National Science Foundation grant (1993-1995) (DMS 93-00973) for statistical research ($60,000)

A travel grant of $600 from the Institute of International Studies and Programs at the University of Minnesota to attend meetings in July 1995

A National Science Foundation grant (1996-2000) (DMS 96-26601) for statistical research ($81,000)

A travel grant from the University of Minnesota Retirees Association for travel ($2,500), 2012.

III   Professional Memberships, Honors, Activities

1   Membership:

The Institute of Mathematical Statistics
The American Statistical Association
International Statistical Institute
Bernoulli Society

2 Honors:

Elected Fellow of the Institute of Mathematical Statistics, 1971
Elected Fellow of the American Statistical Association, 1971
Elected Member of the International Statistical Institute, 1980

3 Activities:

Participant in the Visiting Lecturer Program in Statistics, 1970-1971

Elected Council Member of the Institute of Mathematical Statistics, 1981-1984

Member of the Publications Committee of the Institute of Mathematical Statistics, 1982-86

Chairman of the Publications Committee of the Institute of Mathematical Statistics, 1985-86

Organizing Committee for IMS Western Regional Meeting held in Dallas, TX, March 23-25, 1987

Organizer of an invited paper session for the IMS Annual Meeting in San Francisco, August, 1993.

Chair of Program Committee of the Annual IMS Meeting/Bernoulli Society Third World Congress to be held in Chapel Hill, North Carolina in June, 1994.

Member of Executive Committee of the Bernoulli Society, 1994-1996.

Elected Council Member of the Institute of Mathematical Statistics, 1993-1996.

Treasurer of the Bernoulli Society, 1994-1996.

Member of the Bernoulli Society - Institute of Mathematical Statistics Liaison Committee, 1994-1997.

Member of the Nominating Committee of the Institute of Mathematical Statistics, 1995-96.

Chair of Publications Committee of the Bernoulli Society, 1997-2000.

President Elect of the Institute of Mathematical Statistics, 1998/99.

President of the Institute of Mathematical Statistics, 1999-2000.

Member, Bernoulli Society Editorial Selection Committee, 1999-2000.

Member, Committee of Presidents of Statistical Societies, 1999-2000.

IMS representative to the Bernoulli Society, 1997-2000.

Council member of the Conference Board of the Mathematical Sciences, 1999-2000.

Ex-officio member of NISS Corporations.

Past President of the Institute of Mathematical Statistics, 2000-2001.

Member of the IMS Carver Committee (2009-2011), Chair of the IMS
Carver Committee (2011)

4 Editorial Activities:

Associate Editor, *Journal of the American Statistical Association*, 1970-
1972 (Bradley Efron, Editor)

Associate Editor, *Annals of Statistics*, 1977-1979 (Rupert Miller, Editor)

Associate Editor, *Annals of Statistics*, 1980-1982 (David Hinkley, Editor)

Associate Editor of the *Proceedings of the Neyman-Kiefer Conference* held
at Berkeley, CA, June 1983(L. LeCam and R. Olshen, Editors)

Associate Editor, *Annals of Statistics*, 1986-1988 (Willem van Zwet, Edi-
tor)

Associate Editor, *Annals of Statistics*, 1989-1991 (Arthur Cohen, Editor)

Associate Editor for the translation of the Russian Encyclopedia of Math-
ematics, 1988-1993. (M. Hazewinkel, Editor)

Associate Editor, *Scandinavian Journal of Statistics* (Steffen Lauritzen,
Editor), 1998-2000.

Executive Editor, *Statistical Science*, July-December, 2001.

Co-editor, *Annals of Statistics*, Jan., 2004 - Dec., 2006.

Member of the Organizing Committee and the Publications Committee
for the recognition of Charles Stein's 90th birthday. On the Edito-
rial Board for the publication of Charles Stein's collected works(2009-
2012).

IV Scholarship/Creative Activity

A Publications:

1 Books:

Eaton, M.L. (1972). *Multivariate Statistical Analysis*. Published by In-
stitute for Mathematical Statistics, University of Copenhagen, 293
pages.

Eaton, M.L. (1983). *Multivariate Statistics: A Vector Space Approach*.
Wiley, 512 pages. Now published by the Institute of Mathematical
Statistics as Volume 53 in the Lecture Notes and Monograph Series
(2007-).

Eaton, M.L. (1987). *Lectures on Topics in Probability Inequalities*. Pub-
lished by Centrum voor Wiskunde en Informatica, Amsterdam, 197
pages.

Eaton, M.L. (1989). *Group Invariance Applications in Statistics.* Published by Institute of Mathematical Statistics and American Statistical Association, 133 pages.

2   Book Reviews and Editorials:

Review of *Distributions of Statistics: Continuous Multivariate Distributions* by Johnson and Kotz. *Journal of the American Statistical Association* (1973) 68, 749.

Review of *Techniques of Multivariate Calculation* by Roger H. Farrell. *Bulletin of the American Mathematical Society* (1977) 83, 939-941.

Review of *Probability Inequalities in Multivariate Distributions* by Y.L. Tong. *Journal of the American Statistical Association* (1982) 11, 690.

Review of *Probability Measures on Groups*, Proceedings, Oberwolfach, 1981. *Journal of the American Statistical Association* (1983) 78, 1004.

Review of *Bayesian Theory* by Bernardo and Smith (joint with J. Dickey). *Journal of American Statistical Association* (1996) 91, 906.

Review of *Parametric Statistical Theory* by Pfanzagl. *SIAM Review, 38*, p. 527.

Editorial "About This Issue" in *Statistical Science* (2001), Vol. 16, p. 311.

Editorial report in *IMS Bulletin* (2004), Vol. 33, #5, p. 11.

3   Research Journal Publications:

1. Eaton, M.L. (1966). Characterization of distributions by the identical distribution of linear forms. *Journal of Applied Probability, 3*, 481-494.

2. Eaton, M.L. (1967). Some optimum properties of ranking procedures. *Annals of Mathematical Statistics, 38*, 124-137.

3. Eaton, M.L. (1967). The generalized variance: Testing and ranking problems. *Annals of Mathematical Statistics, 38*, 941-943.

4. Eaton, M.L. (1967). Transformations which preserve the multivariate normal and the Wishart distributions. Abstract. *Annals of Mathematical Statistics, 38*, 970.

5. Eaton, M.L. (1969). On linear transformations which preserve the determinant. *Illinois Journal of Mathematics, 13*, 722-727.

6. Eaton, M.L. and Pathak, P.K. (1969). A characterization of the normal law on Hilbert space. *Sankhya 31*, 259-268.

7. Eaton, M.L. (1969). Some remarks on Scheffe's solution to the Behrens-Fisher problem. *Journal of the American Statistical Association, 64*, 1318-1322.

8. Eaton, M.L. and Efron, B. (1970). Hotelling's T2 test under symmetry conditions. *Journal of the American Statistical Association, 65*, 702-711.

9. Eaton, M.L. (1970). Gauss-Markov estimation for multivariate linear models: A coordinate-free approach. *Annals of Mathematical Statistics, 41*, 528-538.

10. Eaton, M.L. (1970). A note on symmetric Bernoulli random variables. *Annals of Mathematical Statistics, 41*, 1223-1226.

11. Eaton, M.L. and Morris, C. (1970). The use of invariance in unbiased estimation. *Annals of Mathematical Statistics, 41*, 1708-1716.

12. Eaton, M.L. (1970). A complete class theorem for multidimensional one-sided alternatives. *Annals of Mathematical Statistics, 41*, 1884-1888.

13. Eaton, M.L., Morris, C. and Rubin, H. (1971). On extreme stable laws and some applications. *Journal of Applied Probability, 8*, 794-801.

14. Moses, L.E., Goldfarb, A., Glock, C.Y., Stark, R. and Eaton, M.L. (1971). A validity study using the Leighton instrument. *American Journal of Public Health, 61*, 1785-1793.

15. Eaton, M.L. and Olkin, I. (1972). An application of the Cauchy-Schwarz inequality to an extremal problem. *Inequalities III*, edited by O. Shisha, Academic Press, 83-92.

16. Das Gupta, S., Eaton, M.L., Olkin, I., Perlman, M., Savage, L.J. and Sobel, M. (1972). Inequalities on the probability content of convex regions for elliptically contoured distributions. *Proceedings of the Sixth Berkeley Symposium on Statistics and Probability Vol. II*, 241-265.

17. Eaton, M.L. and Olshen, R. (1972). Random quotients and the Behrens-Fisher problem. *Annals of Mathematical Statistics, 43*, 1852-1860.

18. Eaton, M.L. and Perlman, M. (1973). The non-singularity of generalized sample covariance matrices. *Annals of Statistics, 1*, 710-717.

19. Eaton, M.L. (1974). A probability inequality for linear combinations of bounded random variables. *Annals of Statistics, 2*, 609-613.

20. Eaton, M.L. and Perlman, M. (1974). A monotonicity property of the power functions of some invariant tests for MANOVA. *Annals of Statistics, 2*, 1022-1028.

21. Eaton, M.L. (1974). A maximatization problem and its application to canonical correlation. *Journal of Multivariate Analysis, 6*, 422-425.

22. Eaton, M.L. and Eaton, Perlman, M. (1975). Monotonicity of certain multivariate normal probabilities. *Canadian Journal of Statistics, 3*, No. 2, 165-174.

23. Kariya, T. and Eaton, M.L. (1977). Robust tests for spherical symmetry. *Annals of Statistics, 5*, 206-215.

24. Eaton, M.L. and Perlman, M. (1977). Generating O(n) with reflections. *Pacific Journal of Mathematics, 73*, No. 1, 73-80.

25. Eaton, M.L. and Perlman, M. (1977). Reflection groups, generalized Schur functions, and the geometry of majorization. *Annals of Probability, 5*, 829-860.

26. Eaton, M.L. (1978). Complete class theorems derived from conditional complete class theorems. *Annals of Statistics, 6*, 820-827.

27. Eaton, M.L. (1978). A note on the Gauss-Markov Theorem. *Annals of Institute of Statistic Mathematics, 30*, 181-184.

28. Eaton, M.L. (1981). On the projections of isotropic distributions. *Annals of Statistics, 9*, 391-400.

29. Eaton, M.L. and Kariya, T. (1983). Multivariate tests with incomplete data. *Annals of Statistics, 11*, 654-665.

30. Eaton, M.L. (1982). A review of selected topics in multivariate probability inequalities. A Special Invited Paper in *Annals of Statistics, 10*, 11-43.

31. Eaton, M.L. (1982). A method for evaluating improper prior distributions. *Decision Theory and Related Topics III, Vol. 1*, ed. by Gupta and Berger, 329-352.

32. Eaton, M.L. and Kariya, T. (1984). A condition for null robustness. *Journal of Multivariate Analysis, 14*, 155-168.

33. Eaton, M.L. (1984). Isotropic distributions. In *Encyclopedia of Statistical Sciences IV*, Kotz, Johnson, and Read, Wiley.

34. Eaton, M.L. (1984). On group induced orderings, monotone functions, and convolution theorems. In *Inequalities in Statistics and Probability*, ed. Y.L. Tong. IMS Lecture Note Series, 13-25.

35. Eaton, M.L. (with D.A. Berry, B.P. Ekholm, and T.L. Fox) (1984). Assessing differential drug effect. *Biometrics, 40*, 1109-15.

36. Eaton, M.L. (1985). On some multivariate distributions and random orthogonal transformations. In *Proceedings of the Berkeley Conference in Honor of Jerzy Neyman and Jack Kiefer, 2*, 681-691, eds. Lucien M. LeCam and Richard Olshen.

37. Eaton, M.L. (1985). The Gauss-Markov Theorem in multivariate analysis. *Multivariate Analysis, VI*, ed. P.R. Krishnaiah, Elsevier Science Publishers, 177-201.

38. Eaton, M.L. (1986). A characterization of spherical distributions. *Journal of Multivariate Analysis, 20*, 272-276.

39. Eaton, M.L. and Olkin, I. (1987). Estimating a Cholesky decomposition. *Annals of Statistics, 15*, 1639-1650.

40. Eaton, M.L. (1988). Concentration inequalities for Gauss-Markov estimators. *Journal of Multivariate Analysis, 25*, 119-138.

41. Eaton, M.L. (1987). Comment on the paper "Testing precise hypotheses" by James Berger and Mohan Delampady. *Statistical Science, 2*, 337-338.

42. Eaton, M.L. (1987). Group induced orderings with some applications in statistics. *CWI Newsletter, Issue 16*, 3-31.

43. Eaton, M.L. and Gleser, L.F. (1989). Some results on convolutions and a statistical application. In Olkin Anniversary Volume, 75-90, Springer-Verlag.

44. Eaton, M.L. (1988). The FKG Inequality. In *Encyclopedia of Statistical Sciences*, supplemental volume, Kotz, Johnson, and Read, Wiley.

45. Eaton, M.L. and Tyler, D.E. (1991). On Wielandt's inequality and its application to the asymptotic distribution of the eigenvalues of a random symmetric matrix. *Annals of Statistics, 19*, 260-271.

46. Eaton, M.L. and Perlman, M. (1991). Multivariate probability inequalities: Convolution theorems, composition theorems, and concentration inequalities. In *Stochastic Orders and Decision under Risk*, ed. K. Mosler and M. Scarzini, IMS Lecture Notes - Monograph Series, Volume 19, Hayward, CA, 104-122.

47. Eaton, M.L. and Perlman, M. (1992). Concentration inequalities for multivariate normal and elliptically contoured distributions. *Statistics and Probability Letters, 12*, 487-504.

48. Eaton, M.L. (1992). A statistical diptych: Improper priors and admissible inferences - Recurrence of symmetric Markov chains. A Special Invited Paper in *Annals of Statistics, 20*, 1147-1179.

49. Diaconis, P., Eaton, M.L. and Lauritzen, S.L. (1992). Finite de Finetti theorems in linear models and multivariate analysis. *Scandinavian Journal of Statistics, 19*, 289-315.

50. Eaton, M.L. and Runger, G. (1992). Most powerful invariant permutation tests. *Journal of Multivariate Analysis, 42*, 202-209.

51. Eaton, M.L. (1992). A group action on covariances with applications to the comparison of linear normal experiments. In *Stochastic Inequalities*, ed. M. Shaked and Y.L. Tong, IMS Lecture Notes-Monograph Series, Hayward, CA, 76-90.

52. Eaton, M.L. (1993). On the inadmissibility of some best invariant predictive distributions: The translation parameter case. In a *Festschrift Volume for R.R. Bahadur*, edited by J.K. Ghosh, et al., 191-202. Wiley Eastern Ltd.

53. Eaton, M.L., Fortini, S. and Regazzini, E. (1993). Spherical symmetry: An elementary justification. *Journal of the Italian Statistical Society, Vol. 2*, No. 1, 1-16.

54. Eaton, M.L. and Sudderth, W.D. (1993). Prediction in a multivariate normal setting: Coherence and incoherence. *Sankhya*, Special Volume 55, Series A, Pt. 3, 481-493.

55. Eaton, M.L. and Tyler, D. (1994). The asymptotic distribution of singular values with application to canonical correlations and correspondence analysis. *Journal of Multivariate Analysis, 50*, 2, pp. 238-264.

56. Eaton, M.L. and Sudderth, W.D. (1995). The formal posterior of a standard flat prior in MANOVA is incoherent. *Journal of the Italian Statistical Society, 2*, 251-270.

57. Eaton, M.L., Giovagnoli, A. and Sebastiani, P. (1996). A predictive approach to the Bayesian design problem with applications to normal regression models. *Biometrika, 83*, 111-125.

58. Eaton, M.L. (1997). Admissibility in quadratically regular problems and recurrence of symmetric Markov chains. Why the connection? *Journal of Statistical Planning and Inference, 64*, 231-247.

59. Eaton, M.L. and Sudderth, W.D. (1999). Consistency and strong inconsistency of group invariant predictive inference. *BERNOULLI, 5*, 833-854.

60. Eaton, M. and Sudderth, W. (1998). A new predictive distribution for normal multivariate linear models. *Sankya, 60*, Series A, pt. 3, pp.363-382.

61. Eaton, M.L., Freedman, D.A., Klein, S.P., Olshen, R.A., Wachter, K.W. and Ylvisaker, D. (1998). Sampling and Census 2000. *SIAM NEWS, 31*, No. 9, p.1 ff.

62. Eaton, M.L. (joint with Brown, L.D., Freedman, D.A., Klein, S.P., Olshen, R.A., Wachter, K.W., Wells, M.T., and Ylvisaker, D.). Statistical Controversies in Census 2000. *Jurimetrics, 39*, 347-375.

63. Eaton, M.L. and Sudderth, W. (2002) Group invariant inference and right Haar measure. *Journal of Statistical Planning and Inference, 103*, pp. 87-99.

64. Eaton, M.L. (2001) Markov chain conditions for admissibility in estimation with quadratic loss. In *State of the Art in Statistics and Probability*, a Festschrift for Willem van Zwet edited by M. de Gunst, C. Klaassen and A. van der Vaart, p. 223-243. Volume 36 in the IMS Lecture Note Series, Beachwood, Ohio.

65. Eaton, M.L. (2002) Invariance in Statistics. In *International Encyclopedia of the Social and Behavioral Sciences*. Eds. N.J. Smelsen and Paul B. Bates, pp. 7893-7897. Pergamon, Oxford.

66. Eaton, M.L. and Sudderth, W. (2001) Best Invariant Predictive Distributions. *Contemporary Mathematics Series of the American Mathematical Society*, eds. Marlos Viana and Donald Richards, pp. 49-62, Vol. 287. Providence, Rhode Island.

67. Eaton, M.L. and Freedman, D.A. (2004). Dutch book against some "objective" priors. *Bernoulli, 10*, pp. 861-872.

68. Eaton, M.L. and Sudderth, W. D. (2004). Properties of Right Haar Predictive Inference. *Sankhya, 66*, pt. 3, pp. 487-512.

69. Eaton, M. L., Muirhead, Robb J., and Pickering, Eve H. (2006). Assessing a vector of clinical observations. *Journal of Statistical Planning and Inference*, Volume 136, pp 3383-3414.

70. Eaton, M. L. (2004). Evaluating improper priors and the recurrence of symmetric Markov chains: An overview. In a Festschrift for Herman Rubin (ed. Anirban Dasgupta), pp. 5-20. Volume 45 in IMS-LNMS. Beachwood, Ohio.

71. Eaton, M. L. and Fraser, D. A. S. (2005). Prediction and studentization in a multivariate normal setting. *Statistica Neerlandica*, **59**, #3, pp. 268-276. A volume in honor of Willem Schaafsma.

72. Eaton, M. L., Muirhead, R. S., and Steeno, G. S. (2003). Aspects of the dissolution profile problem. *Biopharmaceutical Report*, Vol. II, #2, pp. 2-7.

73. Eaton, M. L., Hobert, James P., and Jones, Galin L. (2006). On perturbations of strongly admissible prior distributions. In *Annals of the Institute of Henri Poincare*, Volume 43, pp 633-653.

74. Eaton, M. L., Muirhead, R. J., Mancuso, J. Y., and Kolluri, S. (2006). A confidence interval for the maximal mean QT interval change due to drug effect. In *Drug Information Journal*, Volume 40, pp 267-271.

75. Eaton, M. L. and Muirhead, R. J. (2007). On a multiple endpoints testing problem. In *Journal of Statistical Planning and Inference*, Volume 137, pp 3417-3429.

76. Eaton, M. L. (2006). Dutch book in simple multivariate normal prediction: Another look. In *Essays in Honor of David Freedman* (edited by D. Nolan and T. Speed). IMS Collections, Volume 2, pp 12-23, Beachwood, Ohio.

77. Eaton, M. L., Hobert, J. P., Jones, G. L., and Lai, W.-L. (2008). Evaluation of formal posterior distributions via Markov chain arguments. In *Annals of Statistics*, Volume 36, pp 2423-2452.

78. Eaton, M. L. (2007). William H. Kruskal and the Development of Coordinate-free Methods. In The William Kruskal Legacy: 1919-2005 (edited by Stephan E. Fienberg, Stephan M. Stigler, and Judith M. Tanur). In *Statistical Science*, Volume 22, pp 264-265.

79. Eaton, M. L.(joint with James Dickey and William Sudderth)(2009). de Finetti Coherence and Logical Consistency. In *Notre Dame Journal of Formal Logic*, Volume 50, pp 133-139.

80. Eaton, M. L. and Muirhead, R. J.(2009). The North Pole Problem and Random Orthogonal Matrices. In *Statistics and Probability Letters*, Volume 79, pp 1878-1883.

81. Eaton, M. L.(joint with K. Crimin, A. Grieve, and R. Muirhead)(2009). An Objective Bayes Approach to the Multiple Co-primary Endpoints Problem. This appeared in the ASA publication of the 2009 JSM Proceedings.

82. Eaton, M. L. and Sudderth, W. D.,(2010). Invariance of Posterior Distributions under Reparameterization. In *Sankhya*, Volume 72-A, Part 1, pp 101-118.

83. Eaton, M. L. (2012). Charles Stein and Invariance in Statistical Problems. To appear in a volume entitled "The Collected Works of Charles Stein" (11 pages).

84. Eaton, M. L. and Sudderth, W. D.(2012). Invariance, Model Matching and Probability Matching. In *Sankhya*, Volume 74-A, pp 170-193.

85. Eaton, M. L., Muirhead, R. J. and Soaita, A. I. (2013). On the limiting behavior of the "Probability of a Claiming Superiority" in a Bayesian context. *Bayesian Analysis*,Volume 8, Number 1, pp 221-232.

86. Eaton, M. L. and Jones, G. L.(2016). A method for improving certain formal Bayes estimators when loss is quadratic. In preparation.

4   Unpublished Technical Reports:

T.1 Eaton, M.L., Eckles, J. and Morris, C. (1969). "Gauss-Markov Estimates for a Generalization of the Classical Linear Model." RAND Report RM 6078-PR.

T.2 Eaton, M.L. (1970). "Some problems in covariance estimation (Preliminary Report)." Stanford University Technical Report.

T.3 Eaton, M.L. (1971). "Error and variance in the population prediction process." Reprint No. 9, Institute for Mathematical Statistics, University of Copenhagen.

T.4 Eaton, M.L. (1974). "Orderings induced on R^n by compact groups with applications to probability inequalities - Preliminary Report." University of Minnesota Technical Report No. 251 under NSF Grant GP-34482.

T.5 Eaton, M.L. and Kariya, T. (1975). "Testing for independence with additional information." University of Minnesota Technical Report No. 238.

T.6 Eaton, M.L. and Kariya, T. (1975). "Tests on means with additional information." University of Minnesota Technical Report No. 243.

T.7 Eaton, M.L. (1977). "N-dimensional versions of some symmetric univariate distributions." University of Minnesota Technical Report No. 288.

T.8 Eaton, M.L. and Freedman, D. (1982). A remark on adjusting for covariates in multiple regression. Berkeley Technical Report No. 11, September 1982, Department of Statistics, University of California, Berkeley, CA.

T.9 Eaton, M.L. (1986). Admissibility for fair Bayes prediction problems, I. General Theory. University of Minnesota, School of Statistics, Technical Report #482.

T.10 Eaton, M.L. (1987). (Joint with P. Diaconis and S.L. Lauritzen). Applications of de Finetti style theorems to linear models. University of Minnesota, School of Statistics, Technical Report #502.

T.11 Eaton, M.L. (1997) (joint with D.A. Freedman, S.P. Klein, R.A. Olshen, K.W. Wachter, and D. Ylvisaker). Discussion of Census 2000. Technical Report No. 484. Department of Statistics, University of California, Berkeley.

5   Work in Progress:

Eaton, M.L. Bayesian prediction and estimation using improper prior distributions. In progress.

Eaton, M.L. (1996). Perturbed data and induced inferences: An alternative view of bootstrap ideas. In progress.

Eaton, M.L. and Olkin, I. (1996). On the asymptotic distribution of the eigenvalues of sample correlation matrices. In progress.

Eaton, M.L. and Lai, Wen Lin (2001). Strong admissibility based on improper prior distributions. In preparation.

B   Addresses at professional meetings:

Invited Speaker: Annual Meeting of the Institute of Mathematical Statistics held at Yale University, August 1976.

Special Invited Speaker: Western Regional Meeting of the Institute of Mathematical Statistics held at Stanford University, June 1977.

Invited Speaker: Oberwolfach meeting on Multivariate Statistical Analysis, held at November 28, December 1, 1978 in Oberwolfach, West Germany.

Invited Speaker: Third Purdue Symposium on Decision Theory and Related Topics. Held at Purdue University, June 1981.

Invited Speaker: Symposium on Inequalities in Statistics and Probability. Held at University of Nebraska, October 1982.

Invited Speaker: The Neyman-Kiefer Conference held at University of California, Berkeley, California, June 1983.

Invited Speaker: Sixth International Symposium on Multivariate Analysis held at the University of Pittsburgh, July 1983.

Invited Speaker: Conference on "New multivariate methods in statistics" held at Bowdoin College, Brunswick, Maine, June 10-16, 1984.

Invited Speaker: Meeting of Danish Statisticians, held at Aarhus University, October 5-7, 1984.

Invited Speaker: Lunteren Conference on Statistics, held at Lunteren, The Netherlands, October 10-12, 1984.

Invited Speaker: Bernoulli Society Satellite Meeting, held in Maastricht, The Netherlands, August 23-27, 1985.

Invited Speaker: Midwest Statistical Conference held at Bowling Green University, October 24-25, 1986.

Invited Speaker: IMS Western Regional Meeting held in Dallas, TX, March 23-25, 1987.

Invited Speaker: IMS Annual Meeting held in Fort Collins, CO, August 14-18, 1988.

Special Invited Speaker: Western Regional Meeting of the Institute of Mathematical Statistics held at U.C. Davis, June 1989.

Contributed paper: Second World Congress of the Bernoulli Society and Institute of Mathematical Statistics, in Uppsala, Sweden, August 13-19, 1990.

Invited Speaker at conference on stochastic orderings held in Seattle, Washington in July, 1991.

Invited Speaker at a conference on recent developments in de Finetti type theorems held in Cortona, Italy, Oct. 6-12, 1991.

Invited Speaker at 'Convegno di analisi armonica' held in Perugia, Italy, May 26-28, 1992.

Invited Speaker at the Annual Meeting of the Institute of Mathematical Statistics held in San Francisco, August, 1993.

Invited Speaker at an International Society for Bayesian Analysis meeting held in Toronto, Canada in August, 1994.

Principle Speaker at Mini-conference on distributional inference held at University of Groningen in December, 1994.

Invited Speaker at 58th Annual Meeting of the Institute of Mathematical Statistics, held in Montreal, Canada, July 9-13, 1995.

Presented a contributed paper at the 21st European Meeting of Statisticians, held in Aarhus, Denmark, August 21-25, 1995.

Invited Speaker at a conference in Oberwolfach, Germany on Invariance and Graphical Models in Multivariate Analysis, July 1-7, 1995.

Contributed paper at 4th World Congress of the Bernoulli Society held in Vienna, Austria, August 26-31, 1996.

Invited paper at a Conference on Reference Prior Distributions held at Purdue University, October 29-31, 1996.

Presented a contributed paper at the 60th Annual meeting of the Institute of Mathematical Statistics, held in Park City, Utah, August, 1997.

Invited speaker at Lunteren Conference, presented two lectures, November 16-17, 1998.

Invited speaker at Post Lunteren Conference, presented two lectures, November 19-20, 1998.

Invited speaker at Conference on Distributional Inference, Groningen, December 10, 1998

IMS Presidential Address. Given at the 63rd Annual Meeting of the IMS in Guanajuato, Mexico in May 2000.

Invited speaker at the Summer Research Conference held at Mt. Holyoke College in July, 2000 and sponsored by AMS, IMS, and SIAM.

Invited speaker at the Joint Statistical Meetings held in New York City, August 2002 - in an IMS Session on mathematical statistics.

Invited speaker at the Seventh Purdue International Symposium on Statistics. Conference on Statistical Decision Theory. Held at Purdue University on June 21-22, 2003.

Invited speaker at the Geisser Memorial Session, Joint Statistical Meetings in Minneapolis, MN in August, 2005.

Invited speaker at a meeting at The Wharton School, University of Pennsylvania to celebrate Larry Brown's 70th birthday. My talk was given on December 10, 2010 and was titled "Invariance, Model Matching and Probability Matching"

Invited Keynote Speaker at Workshop on Compositional Data Analysis held June 4-7, 2013 Vorau, Austria. The title of my talk was "A vector space approach to aspects of multivariate analysis"

C Invited Addresses:

1 Recent invited addresses:

Ohio State University, February 1983
University of North Carolina, March 1983
University of Michigan, May 1983
University of California, Berkeley, September 1983
University of California, San Diego, November 1983
University of California, Berkeley, November 1983
Stanford University, December 1983
University of Minnesota, April 1984
Centrum voor Wiskunde en Informatica, September 1984
University of Copenhagen, October 1984
Aalborg University, October 1984
University of Delft, April 1985
University of Grningen, June 1985
University of Leiden, June 1985
University of Minnesota, December 1985
Aalborg University, June 1986
Fudan University, (Shanghai, China), August 1987
Hitotsubashi University (Tokyo, Japan) (3 lectures), September 1987
University of Minnesota, January 1988
University of Pittsburgh, February 1988
University of Michigan, February 1988
University of Delft (Delft, Netherlands), April 1988
University of Amsterdam, June 1988
University of Grningen, June 1988
Centrum voor Wiskunde en Informatica, July 1988
University of Montral, January 1989
University of Qubec (Montral), January 1989
University of Florida, February 1989
Purdue University, January 1990
University of Illinois, January 1990
Ohio State University, January 1990
University of Minnesota, October 1990
University of Rome "La Sapienza", October 1991
University of Warwick, December 1991
City University, London, December 1991
Cambridge University, England, January 1992
University of Milan, Italy, March 1992
Bocconi University, Milan, Italy, March 1992
University of Pavia, Pavia, Italy, April 1992

University of Perugia, Perugia, Italy, June 1992
University of Rome, Department of Mathematics, Rome, Italy, June 1992
Duke University, Department of Statistics, February 1993
University of Maryland, Department of Mathematics, March 1994
University of Utrecht, Mathematics Department, December 1994
University of Groningen, Mathematics Department, December 1994
University of Aarhus, August 1995
University of Michigan, November 1995
Vrije Universiteit, May 1996
Leiden Universiteit, May 1996
City University, London, May 1996
Warwick University, England, May 1996
Purdue University, October, 1997.
Vrije Universiteit, October, 1998.
Centrum voor Wiskunde en Informatica, October 1998.
Carnegie Mellon University, December 1998.
Phillips University, Marburg, Germany, February 1999.
Technical University of Delft, February 1999.
Centrum voor Wiskunde en Informatica, May 1999.
Seminar at Pfizer Research, August 2000.
Seminar at Rutgers University, November 2001.
Seminar at University of Chicago, June 2003.
Seminar at M. D. Anderson Cancer Center, February, 2004.
Seminar at the University of Central Florida in Orlando, February, 2008.
Presented the S. James Press Endowed Lecture at the Department of Statistics, University of California at Riverside on May 24, 2011.
Presented an invited talk at the celebration of Charles Stein's 90th birthday at Stanford University. The talk was entitled "On some contributions of Charles Stein to Applications of Invariance in Statistics" and was presented on March 22, 2010.
Seminar at the Department of Mathematics, Univesity of Minnesota, on May 6, 2011. The title was "Admissibility and the Recurrence of Symmetric Markov Chains".

2 Invited Lecture Series:

Principal lecturer at NSF/CBMS Regional Conference entitled "Group invariance applications in statistics" (Professor Robb Muirhead, Conference Director). Eighteen lectures were given at the University of Michigan during the week of June 15, 1987.

Six lectures on multivariate probability inequalities were given during the period August 20-30, 1987 at Academia Sinica, Beijing, China.

Six lectures on the decision theoretic properties of posterior and predictive distributions. Given during April and May, 1988 at the Vrije Universiteit (Amsterdam, Netherlands).

Three lectures on Finite de Finetti Theorems with Applications to Linear Models. Delivered at a meeting in Cortona, Italy in October, 1991.

Six lectures on Evaluating Improper Prior Distributions. Delivered at the University of Warwick in January, 1992.

Three lectures sponsored by the Board of Studies in Statistics, University College, London on Improper Priors and Markov Chains. Delivered at the University of London in February, 1992.

Seven lectures on Finite de Finetti Theorems and Related Topics. Delivered at Istituto per le Applicazioni della Matematica e della Informatica, Milan, Italy in March, 1992.

Four lectures on Bayesian Statistics. Delivered at Department of Statistics, University of Perugia, Perugia, Italy in May, 1992.

V Teaching and Advising

A Ph.D. Students:

Divakar Sharma (University of Chicago, 1969). Thesis topic was estimation in exponential families with special emphasis on the Pareto distribution. Dr. Sharma is currently on the faculty of the Indian Institute for Technology in Kanpur, India.

Takeaki Kariya (University of Minnesota, 1974). Thesis topic was the general multivariate analysis of variance model and its reduction via invariance. Dr. Kariya is currently on the faculty of Hitotsubashi University in Tokyo, Japan.

George Runger (University of Minnesota, 1982). Thesis topic was the permutation theory of testing problems in multivariate analysis of variance and testing for independence.

Bradford Johnson (University of Minnesota, 1991). Thesis topic was the study of fair Bayes loss functions and topics in the evaluation of improper prior distributions.

Ching Hsu (University of Minnesota, 1991). Thesis topic was the evaluation of improper prior distributions in certain one-dimensional parametric families.

Wenlin Lai (University of Minnesota, 1996). Thesis topic was methods for evaluating certain improper prior distributions with applications to the normal and Poisson distribution.

Garrick Wallstrom (University of Minnesota, 1999). Thesis topic was consistency and strong inconsistency in inference. (This thesis won the Savage Competition as the best theoretical Bayesian Statistics thesis - award presented in August, 2000.)

Haihong Zhu (University of Minnesota, 2002). Thesis topic was invariant predictive inference and applications.

Ronald Neath (joint advisor with Galin Jones, University of Minnesota, 2006). Thesis topic was maximization of complicated likelihood functions.

B   Masters Students:

David Jacobsen (1975)
   Topics in Inference.

Soetarto Sastrosowignjo (1977)
   Estimation in linear models.

Hing-Kay Hung (1977)
   Principle components and Fisher's linear discriminant function.

Patricia Knack (1980)
   Capture - recapture methods.

Eric Panken (1984)
   Kalman filtering.

Lydia Voti (1989)
   Bayesian prediction in the calibration problem.

Ching Hsu (1990)
   No thesis.

Garrick Wallstrom (1998)
   No thesis

C   Teaching:

Over the past ten years, my undergraduate teaching has been focused on an introductory pre-calculus course in which the understanding of statistical arguments is stressed.

At the beginning graduate level, the following is a list of courses taught on a regular basis:

   (i) mathematical statistics - a one-year course which begins with a review of probability and covers estimation, hypothesis testing, Bayesian inference and asymptotics.

(ii) analysis of variance - a course on the geometric theory of linear models which includes the Gauss-Markov Theorem, F-testing and topics in experimental design.

(iii) multivariate analysis - a classical course in the theory and application of the multivariate normal distribution. Statistical applications of geometry and group theory are given.

(iv) introduction to statistical theory - a one year course for first year graduate students which introduces statistical models and beginning problems in statistical inference (testing, estimation, ANOVA,).

Special topics courses for advanced graduate students:

(i) Statistical decision theory with an emphasis on Bayesian inference

(ii) A research level course on methods for evaluating inferential procedures obtained from improper prior distributions with an emphasis on Bayesian Prediction.

(iii) Applications of group theory in statistics including de Finetti type theorems and best invariant inferential procedures.

(iv) A research level course which develops the connection between the problem of evaluating statistical inferences and recurrence/transience problems for symmetric Markov Chains.

D Outside Advising:

1. Faculty opponent for the Ph.D. thesis of Björn Holmquist, University of Lund, Lund, Sweden, June, 1985.

2. Outside reader of the Ph.D. thesis of A.H. Kroese for the University of Groningen, Groningen, The Netherlands. Degree awarded December, 1994.

3. Outside reader of the Habilitationsschrift of Dr. Lutz Dümbgen, University of Heidelberg. D. Sc. Degree awarded, December, 1996.

4. Outside committee member for the final Ph.D. Examination for Diemer Salomé, University of Groningen, December, 2000.