

Curriculum Vitae

Sudhir Gupta
Division of Statistics
Northern Illinois University
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EDUCATIONAL BACKGROUND:

Degree	Date	Institution	Location
Ph.D. (Statistics)	1983	University of Kent	Canterbury, England
M.S. (Agric. Statistics)	1974	Indian Agric. Res. Institute	Delhi, India
B.S. (Physics)	1972	Delhi University	Delhi, India

PROFESSIONAL EXPERIENCE:

Professor	Northern Illinois University	1994-
Director	Division of Statistics	2001-05
	Northern Illinois University	
Associate Professor	Northern Illinois University	1988-94
Assistant Professor	Northern Illinois University	1985-88
Assistant Professor	University of Nebraska	1984-85
Scientist S-I	Indian Agricultural Statistics	1983-84
	Research Institute, Delhi, India	1976-80

CURRENT RESEARCH INTERESTS:

Experimental Designs
Cross-over Designs
Design and Analysis of Microarrays
Bioassay Designs

PUBLICATIONS:

RESEARCH MONOGRAPH

1. **Gupta, S.**, Mukerjee, R. (1989). A Calculus for Factorial Arrangements. *Lecture Notes in Statistics*, Vol. 59 . Springer-Verlag: New York.

RESEARCH PAPERS ACCEPTED/PUBLISHED

2. **Gupta, S.** (2005). Balanced factorial designs for cDNA microarray experiments. Accepted for publication in *Commun. Statist. - Theor. Meth.*, Vol. 35, Issue 8.
3. Das, A., **Gupta, S.**, Kageyama, S. (2005). A-optimal diallel crosses for test versus control comparisons. Accepted for publication in *J. of Appl. Statistics*.
4. Parsad, R., Gupta, V.K., **Gupta, S.** (2004). Optimal designs for experiments on two-line and four-line crosses. Accepted for publication in *Utilitas Mathematica*.
5. **Gupta, S.**, Singh, M. (2004). A non-iterative robust method of estimation in simple linear regression. Refereed proceedings, pp. 241-253. *International Sri Lankan Statistical Conference*, 28-30 December 2004, Kandy, Sri Lanka.
6. **Gupta, S.**, Santra, S. (2004). Confounded cross-over designs for factorial experiments. *J. Ind. Soc. Agric. Statist.*, 57, 309-319.
7. Choi, K.C., **Gupta, S.**, Kageyama, S. (2004). Designs for diallel crosses for test versus control comparisons *Utilitas Mathematica*, 65, 167-180.
8. Chatterjee, K., **Gupta, S.** (2003). Construction of supersaturated designs involving s-level factors. *J. Statist. Plann. & Inf.*, 113, 589-595.
9. **Gupta, S.**, Hosmane, B., Singh, M., Singh, R. (2002). Optimal allocation of patients in titration studies. *J. Statist. Plann. & Inf.*, 106, 215-223.
10. Choi, K.C., Chatterjee, K., Das, A., **Gupta, S.** (2002). Optimality of orthogonally blocked diallels with specific combining abilities. *Statist. and Prob. Lett.*, 57, 145-150.
11. Choi, K.C., **Gupta, S.**, Son, Y. (2002). Partial diallel cross block designs. *Ars Combinatoria*, 64, 145-150.
12. **Gupta, S.**, Kageyama, S. (2001). More optimal designs for diallel cross experiments. *Metrika*, 53, 183-187.
13. **Gupta, S.**, Lee, W.S. (2001). Efficiency factor of a block design for test versus control multi-factor experiments. *Statistics and Applications*, 3, 81-87.
14. **Gupta, S.**, Hosmane, B. (2000). Analysis of grouped survival data using logistic regression. *J. Indian Statist. Assoc.*, 38, 301-316.

15. Das, A., Dey, A., **Gupta, S.** (2000). A-efficient block designs for slope ratio assays (with A. Das and A. Dey). *Calcutta Statist. Assoc. Bull.* (Golden Jubilee Issue, September & December 2000), 255-263.
16. **Gupta, S.**, Hosmane, B. (2000). Discussion on the paper entitled "Combining evidence on air pollution and daily mortality from the 20 largest U.S. cities: a hierarchical modelling strategy." *J. Royal Statist. Soc.*, A163, 295.
17. Choi, K.C., **Gupta, S.** (2000). On construction of optimal complete diallel crosses. *Utilitas Mathematica*, 58, 153-160.
18. Dey, A., K. Balasubramnian, **Gupta, S.** (1999). Incomplete block designs for slope ratio assays. *J. Statist. Plann. & Inf.*, 78, 369-383.
19. Das, A., Dean, A., **Gupta, S.** (1998). On optimality of some partial diallel cross designs. *Sankhya*, B60, 511-524.
20. Choi, K.C., **Gupta, S.** (1998). Optimal row-column designs for complete diallel crosses. *Commun. Statist. - Theor. Meth.*, 27, 2827-2835.
21. **Gupta, S.** (1998). A class of multi-factor designs for test versus control comparisons. *J. Statist. Plann. & Inf.*, 72, 291-302.
22. **Gupta, S.**, Chatterjee, K. (1998). Supersaturated designs: A review. *J. Comb., Infor. & Systems Sci.*, 23, 475-488.
23. ****Gupta, S.** (1998; second ed. 2005). Youdon Square and Row-Column Designs. In: *Encyclopedia of Biostatistics*. Wiley. (**Not refereed**).
24. ****Choi, K.C., Gupta, S.** (1997). Components of type S designs, type S-PB designs and the use of GD designs *Basic Science and Engineering* (Chosum University, S. Korea), 1, 31-37. (**Not refereed**).
25. Bansal, N., **Gupta, S.** (1997). On the natural selection rule for general linear models. *Metrika*, 46, 59-69.
26. Das, A., **Gupta, S.** (1997). Optimal block designs for triallel cross experiments. *Commun. Statist. - Theor. Meth.*, 26, 1767-1777.
27. **Gupta, S.**, Mukerjee, R. (1996). Developments in incomplete block designs for parallel line bioassays. *Handbook of Statistics*, 13, 875-901.
28. **Gupta, S.** (1995). Multi-factor designs for test versus control comparisons. *Utilitas Mathematica*, 47, 199-210.

29. **Gupta, S.**, Lee, W.S., Kageyama, K. (1995). Nested balanced n-ary designs. *Metrika*, 42, 411-419.
30. Mukerjee, R., **Gupta, S.** (1995). A-efficient designs for bioassays. *J. Statist. Plann. and Inference*, 48, 247-259.
31. **Gupta, S.**, Das, A., Kageyama, S. (1995). Single replicate orthogonal block designs for circulant partial diallel crosses. *Commun. Statist. - Theor. Meth.*, 24, 2601-2607.
32. ****Gupta, S.** (1995). Design and Analysis of multi-factor experiments for test versus control comparisons. *Proc. International Conf. on Statistical Methods and Statistical Computing for Quality and Productivity Improvement*, (ICSQP '95), 147-156. **(Not refereed).**
33. Zahnizer, S.C., **Gupta, S.**, Kendrick, J.S., Lee, N.C., Spirtas, R. (1994). Tubal pregnancy and cigarette smoking: Is there an association? *Journal of Women's Health*, 3, 329-336.
34. **Gupta, S.**, Kageyama, S. (1994). Optimal complete diallel crosses. *Biometrika*, 81, 420-424.
35. **Gupta, S.** (1994). Block designs with nested rows and columns for factorial experiments. *Sankhya*, B56, 52-58.
36. **Gupta, S.**, Sinha, K. (1993). An EGD/3 scheme having 5 associate classes. *Statist. & Prob. Lett*, 17, 287-291.
37. **Gupta, S.**, Kageyama, S. (1993). Type S designs in unequal blocks. *J. Comb., Infor. & Systems Sci.*, 18, 97-112.
38. **Gupta, S.**, Kageyama, S. (1992). Variance balanced designs with unequal block sizes and unequal replications. *Utilitas Mathematica*, 42, 15-24.
39. **Gupta, S.** (1992). Some optimal nested row-column designs. *Calcutta Statist. Assoc. Bull.*, 42, 261-265.
40. **Gupta, S.** (1992). Efficiency balance through BIB and GD designs. *Sanhkya*, B54, 220-226.
41. **Gupta, S.** (1992). Comments on the paper "Design of Clinical Trials for Treatment of Opiate Dependence: What is Missing?". *National Institute on Drug Abuse Research Monograph* 128, 37-41.

42. **Gupta, S.**, Singh, M. (1992). Behavior of some transforms of correlation coefficient from a bivariate normal sample contaminated with bivariate normal outliers. *Sankhya*, B54, 184-199.
43. **Gupta, S.**, Singh, M. (1991). Partially balanced incomplete block designs with nested rows and columns. *Utilitas Mathematica*, 40, 291-302.
44. Mukerjee, R., **Gupta, S.** (1991). Geometric construction of balanced block designs with nested rows and columns. *Discrete Mathematics*, 91, 105-108.
45. Mukerjee, R., **Gupta, S.** (1991). Q designs for bioassays. *Comput. Statist. & Data Analy.*, 11, 345-350.
46. **Gupta, S.**, Kageyama, S. (1991). Type S designs with nested rows and columns. *Metrika*, 38, 195-202.
47. **Gupta, S.**, Singh, M. (1990). Estimating the sum of two ratios of parameters and an application. *Commun. Statist. - Theor. Meth.*, 19 , 3267-3282.
48. **Gupta, S.**, Mukerjee, R. (1990). On incomplete block designs for symmetrical parallel line assays. *Aust. J. of Statist.*, 19 , 337-344.
49. **Gupta, S.** (1990). On efficient subsets under recursive exclusion of plots from block designs. *Refereed proceedings of the R.C. Bose Symposium on Probability, Statistics and Design of Experiments, Delhi, December 27-30, 1988. Wiley Eastern, New Delhi*, 357-367.
50. **Gupta, S.** (1989). Efficient designs for comparing test treatments with a control. *Biometrika*, 76, 783-787.
51. **Gupta, S.**, Mukerjee, R. (1989). Efficient non-equireplicate designs obtained by merging of treatments. *Comput. Statist. & Data Analy.*, 8, 29-37.
52. **Gupta, S.** (1989). On block designs for symmetrical parallel line assays. *J. Statist. Plann. & Inf.*, 21, 383-389.
53. **Gupta, S.**, Singh, M. (1989). Analysis of PBIB designs using association matrices. *Metrika*, 6, 1-6.
54. Mukerjee, R., **Gupta, S.** (1989). Universal optimality of main effect deletion designs. *Statist. & Prob. Lett.*, 7, 89-91.
55. **Gupta, S.** (1988). Type A incomplete multi-response designs. *Commun. Statist. - Theor. Meth.*, 17, 3089-3105.

56. **Gupta, S.** (1988). Designs for symmetrical parallel line assays obtainable through group divisible designs. *Commun. Statist. - Theor. Meth.*, 17, 3865-3868.
57. **Gupta, S.** (1988). On the property of balance and the pattern of C-matrix in block designs. *Commun. Statist. - Theor. Meth.*, 17, 3125-3135.
58. **Gupta, S.** (1988). Precision of estimation of treatment contrasts and the intra-block matrix of block designs. *Biometrical J.*, 30, 451-460.
59. **Gupta, S.** (1988). The association matrices of extended group divisible scheme. *J. Statist. Plann. & Inf.*, 20, 115-120.
60. **Gupta, S.** (1987). Generating generalized cyclic designs with factorial balance. *Commun. Statist. - Theor. Meth.*, 16, 1885-1900.
61. **Gupta, S.** (1987). A note on the notion of balance in designs. *Calcutta Statist. Assoc. Bull.*, 36, 85-89.
62. **Gupta, S.** (1987). A note on component-wise Kronecker designs. *Metrika*, 34, 283-286.
63. Singh, G., Singh, M., **Gupta, S.** (1987). Robustness of row and column designs. *Statist. & Prob. Lett.*, 5, 421-424.
64. **Gupta, S.** (1987). On designs for factorial experiments derivable from generalized cyclic designs. *Sankhya B*, 49, 90-96.
65. **Gupta, S.** (1986). Factorial experiments in four-associate class PBIB designs. *Calcutta Statist. Assoc. Bull.*, 35, 17-24.
66. **Gupta, S.** (1986). Interaction efficiencies in Kronecker block designs. *J. Statist. Plann. & Inf.*, 14, 275-279.
67. **Gupta, S.** (1986). Efficiency consistency in designs. *Commun. Statist. - Theor. Meth.*, 15, 1315-1318.
68. **Gupta, S.** (1985). On Kronecker block designs for factorial experiments. *J. Statist. Plann. & Inf.*, 11, 227-236.
69. **Gupta, S.** (1985). Iterative analysis of two-and-three-way designs. *J. Statist. Plann. & Inf.*, 11, 95-102.
70. **Gupta, S.** (1984). An algorithm for constructing nests of 2 factor designs with orthogonal factorial structure. *J. Statist. Comp. Simul.*, 20, 59-79.

71. **Gupta, S.** (1984). The analysis of non-orthogonal designs with many classifications. *Commun. Statist. - Theor. Meth.*, 13, 1483-1492.
72. Nigam, A.K., **Gupta, S.**, Gupta, S. (1983). A new algorithm for extreme vertices designs for linear mixture models. *Technometrics*, 25, 367-371.
73. **Gupta, S.**, Jones, B. (1983). Equireplicate balanced block designs with unequal block sizes. *Biometrika*, 70, 367-371.
74. **Gupta, S.** (1983). A basic lemma and the analysis of block and Kronecker product designs. *J. Statist. Plann. & Inf.*, 7, 407-416.
75. **Gupta, S.** (1983). Some new methods for constructing block designs having orthogonal factorial structure. *J. Roy. Statist. Soc. B*, 45, 297-307.
76. **Gupta, S.** (1983). A new class of matrices with application in experimental design. *Biometrical J.*, 25, 93-97.
77. **Gupta, S.**, Rai, S.C. (1979). Rank analysis of paired comparison design. *J. Ind. Soc. Agric. Statist.*, 32, 87-98.
78. **Gupta, S.**, Pandey, R.K., Sarup, S. (1979). Effects of new technology on employment and income in Indian agricultural. *Golden Jubilee of Indian Council of Agricultural Research*, Souvenir Vol. , 209-221.
79. **Gupta, S.**, Das. M.N. (1977). On some useful chemical balance weighing designs. *J. Ind. Soc. Agric. Statist.*, 29, 77-79.
80. Dey, A., **Gupta, S.** (1977). Singular weighting designs and estimation of total weight. *Commun. Statist. - Theor. Meth.*, 6, 289-295.

CONFERENCE AND COLLOQUIUM PRESENTATIONS:

Invited:

- 2005 Joint Statistical Meetings, Minneapolis, MN
- 2005 International Conference on Statistics, Hong Kong
- 2005 International Conference on Design of Experiments, Memphis, TN
- 2003 Statistics seminar, Department of Statistics, Seoul National University, Seoul, S. Korea
- 2003 International Conference on Statistics, Combinatorics and Related Areas, Portland, Maine

- 2001 International Conference and Workshop on Recent Developments in Statistics and Its Applications, Kuala Lumpur, Malaysia
- 2001 International Conference on Design of Experiments - Recent Trends and Future Directions, Delhi, India
- 2000 International Conference on Teaching and Research in Statistics for the 21st Century, Delhi, India
- 2000 Statistics colloquium, Department of Mathematics and Statistics, Wright State University, Dayton, Ohio
- 2000 Statistics colloquium, Department of Statistics and Actuarial Science, University of Central Florida, Orlando, Florida
- 1999 Statistics seminar, Department of Computer Science and Statistics, Chosun University, Gwangju, S. Korea
- 1998 International Conference on Combinatorics, Statistics, Pattern Recognition and Related Areas, Mysore, India
- 1998 IISA International Conference, Hamilton, Canada
- 1997 Third Triennial Calcutta Symposium on Probability and Statistics, Calcutta, India
- 1997 International Conference on Combinatorics, Information Theory & Statistics, Portland, Maine
- 1997 Statistics seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois, Chicago, Illinois
- 1995 R.C. Bose Memorial Conference on Statistical Design and Related Combinatorics, Fort Collins, Colorado
- 1995 International Conference on Statistical Methods and Statistical Computing for Quality and Productivity Improvement, Seoul, S. Korea
- 1992 Conference on Optimal Combinatorial Structures on Discrete Mathematical Models, Kyoto, Japan
- 1992 Statistics seminar, Department of Electronics and Computer Engineering, Gifu University, Japan
- 1992 Statistics seminar, Mathematical Sciences Faculty, Hiroshima University, Hiroshima, Japan

- 1992 Statistics colloquium, Department of Mathematics and Statistics, Old Dominion University, Norfolk, Virginia
- 1992 Statistics colloquium, Department of Statistics, University of South Carolina, Columbia, South Carolina
- 1992 Statistics colloquium, Department of Mathematics, University of North Carolina, Charlotte, North Carolina
- 1991 Statistics colloquium, Department of Statistics, University of California, Riverside, California
- 1991 Statistics seminar, National Institute of Child Health and Human Development, Bethesda, Maryland
- 1991 Statistical Issues in Clinical Trials for Treatment of Drug Dependence, National Institute on Drug Abuse, Bethesda, Maryland
- 1990 Design of Experiments and Its Applications, Kurashiki, Japan
- 1990 Seminar, Radiation Effects Research Foundation, Hiroshima, Japan
- 1990 Statistics seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois, Chicago, Illinois
- 1989 Statistics colloquium, Department of Statistics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia
- 1988 Statistics colloquium, Department of Mathematics and Statistics, Wright State University, Dayton, Ohio
- 1986 Statistics seminar, Department of Mathematical Sciences, Indiana University - Purdue University at Fort Wayne, Fort Wayne, Indiana

Contributed:

- 2000 18th Nordic Conference on Mathematical Statistics, Grimstad, Norway
- 1995 International Triennial Conference on Probability and Statistics, Calcutta, India
- 1991 119th Annual Meeting of the American Public Health Association, Atlanta, Georgia
- 1990 Symposium on Biostatistics and Statistics in Honor of Charles W. Dunnett, Hamilton, Canada

1988 First International Conference - Workshop on Optimal Design and Analysis of Experiments, Neuchatel, Switzerland

EDITORIAL BOARDS:

- Associate Editor, Journal of Nonparametric Statistics, 1998-present.
- Associate Editor, Journal of Statistical Planning and Inference, 1995-present
- Associate Editor, Communications in Statistics, 1992-present.
- Co-Editor of a special issue of the Journal of Statistical Planning and Inference on Statistical Design of Medical Experiments III, currently editing.
- Joint Editor of a special issue of the Journal of Statistical Planning and Inference, currently editing (based on the papers presented at the International Conference on Design of Experiments, Memphis, 2005).
- Joint Editor of a special issue of the Journal of Statistical Planning and Inference (IISA 2002 Conference Volume), Volume 129, Numbers 1/2, 2005.
- Co-Editor of a special issue of the Journal of Statistical Planning and Inference on Statistical Design of Medical Experiments II, Vol. 96, Number 1, 2001.
- Co-Editor of a special issue of the Journal of Nonparametric Statistics (First NIU Statistical Sciences Symposium Volume), Volume 11, Numbers 1-3, 1999.
- Joint Editor, Journal of Combinatorics, Information and System Sciences: J.N. Srivastava Felicitation Volume 23, 1998.
- Co-Editor of special issue of the Journal of Statistical Planning and Inference (First NIU Statistical Sciences Symposium Volume), Volume 78, Numbers 1/2, 1998.
- Editor of a special issue of the Journal of Statistical Planning and Inference on Statistical Design of Medical Experiments, Vol. 42, Number 1/2, 1994.

PROFESSIONAL ORGANIZATIONS:

Elected Member, International Statistical Institute
Member, American Statistical Association

CITATION TO MY WORK:

My work has been widely cited in the literature including the following books:

Calinski, T. and Kageyama, S. (2003). Block Designs: A Randomization Approach. Volume II: Designs. *Lecture Notes in Statistics*, Volume 170. Springer.

Calinski, T. and Kageyama, S. (2000). Block Designs: A Randomization Approach. Volume I: Analysis. *Lecture Notes in Statistics*, Volume 150. Springer.

Cornell, J.A. (1990). Experiments with Mixtures: Designs, Models, and the Analysis of Mixture Data. Second Edition. John Wiley: New York.

Shah, Kirti R. and Sinha, Bikas K. (1989). Theory of Optimal Designs. *Lecture Notes in Statistics*, Volume 54. Springer-Verlag: New York.

Nigam, A.K., Puri, P.D. and Gupta, V.K. (1988). Characterizations and Analysis of Block Designs. Wiley Eastern: New Delhi.

Box, G.E.P. and Draper, N.R. (1987). Empirical Model Building and Response Surfaces. John Wiley: New York.

John, J.A. (1987). Cyclic Designs. Chapman and Hall: New York.

Khuri, A.I. and Cornell, J.A. (1987). Response Surfaces: Design and Analysis. Marcel Dekker: New York.

Street, A.P. and Street, D.J. (1987). Combinatorics of Experimental Design. Oxford Science Publishers: New York.

SERVICE AS A REFEREE:

Annals of Statistics, Biometrics, Biometrika, Calcutta Statistical Association Bulletin, Communications in Statistics, Computational Statistics and Data Analysis, Journal of American Statistical Association, Journal of Nonparametric Statistics, Journal of Statistical Planning and Inference, Journal of the Royal Statistical Society, Metrika, Sankhya, Statistics Sinica, Statistics and Probability Letters, Technometrics, Utilitas Mathematica

DIRECTION OF THESES AND DISSERTATIONS:

Directed 3 M.S. theses

Committee member: 3 M.S. theses and 3 Ph.D. dissertations

2 Ph.D. students are currently working on their dissertation under my direction. One student is working on cross-over designs for factorial experiments and the other student is doing research on design of cdna microarray experiments.

GRADUATE COURSES TAUGHT:

Design and Analysis of Experiments

Logistic Regression

Linear Models

Mathematical Statistics

Regression Analysis

Biostatistics

Cross-Over Trials

Epidemiology

Categorical Data Analysis

CONSULTING/GRANTS:

\$60,000 research grant awarded by National Institutes of Health, 1990-91.

Provided several statistical consulting services to Monsanto, 1999-2001.