Ganesh Dutta

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Education:

- Ph.D. in Statistics from University of Calcutta in 2009.

  Title of the thesis: ***Optimum Designs For Covariates Models***.

- M.Sc. in Statistics from University of Calcutta in 2002.

- B.Sc. with Honours in Statistics from University of Calcutta in 2000 [College: Narendrapur R. K. Mission].

- Higher secondary [Pure Science] from West Bengal Council of Higher Secondary Education in 1997 [School: Malda Zilla School]

- Matriculation from West Bengal Board of Secondary Education in 1995 [School: Malda Zilla School]

Other Academic Highlights:

- Qualified for Gate (2001), UGC-CSIR JRF-NET for Lecturer ship (2001), UGC-CSIR JRF –NET (2002).

Professional Positions:

- Assistant Professor (Stage II) in Statistics, Basanti Devi College (affiliated to University of Calcutta), 147B, Rashbehari Avenue, Kolkata-700029, India [through College Service Commission, W.B., Rank: 3]. March 5, 2007-till date.
- Visiting Faculty, Statistics Department at Post Graduate level, Kalyani University. September, 2016-till date.
- Visiting Faculty, School of Mathematical & Computational Sciences, Indian Association for the Cultivation of Science, January, 2024-till date.
- Visiting Scientist, Indian Statistical Institute, North-East Centre, Tezpur, Assam, India,

  June 13, 2011-June 10, 2013 (On lien from Basanti Devi College, Kolkata, India)

- Full-time Research Fellow (Council of Scientific and Industrial Research (CSIR)), Department of Statistics, University of Calcutta, Kolkata, India

  January 1, 2003-March 4, 2007.

Supervision Roles

- **Co-Guide/Co-Chairman**, Ph.D. Student: Mr. Bankim Sarkar, Department of Agricultural Statistics, Bidhan Chandra Krishi Viswavidyalaya *(Status: Ongoing)*
- **Project Supervisor**, Master's Degree Students, Department of Statistics, Kalyani University s*ince 2016.*

Awards/Honour:

- Guest Editor for Volume 24,International Journal of Statistical Sciences [IJSS]

- Best Paper Award in ICSA 2016: 18th International Conference on Statistics and Analysis (Title of the paper: On the optimality of Blocked main effects plans jointly write with Rita SahaRay), International scientific research and experimental development, November 21-22, 2016, Singapore.

- Visiting Scientist, Indian Statistical Institute, North-East Centre, Tezpur, Assam, India from 13 June, 2011-10 June, 2013.

- CSIR Fellowship from 1 January, 2003-04 March, 2007 (both JRF & SRF).

Professional Society Memberships

- Calcutta Statistical Association (Life member).

- Society of Statistics, Computer and Applications (Life member).

Refereeing

- Proceedings of the National Academy of Sciences, Physical Sciences (NASA)

- Journal of Statistical Theory and Practice

- Calcutta Statistical Association Bulletin

- Hacettepe Journal of Mathematics and Statistics

- International Journal of Food Properties

- Sankhya B

- Sankhya A

- Mathematical Reviews/MathSciNet Reviewer number: 119400

- Journal of applied statistics

- Communications in Statistics—Theory and Methods

- Communications in Statistics-Simulation and Computation

- Journal of Statistical Theory and Applications

- Journal of Indian Society of Agricultural Statistics

- Statistics and Applications

Research Interests:

- Design of experiments and related combinatorics, Clinical trials, Statistical Inference and Data Analysis.

Publications:

Total Research articles published/accepted: **34**

Book published:**1**

Area-wise details are given below:

Area: Design of Experiments:

Book Published:

1. Das, P., **Dutta, G.**, Mandal, N. K., Sinha, B. K. (2015). *Optimal Covariates Designs And Their Applications.* Springer, New York.
   (BookID:328364_1_En,BookDOI:10.1007/978-81-322-2461-7,BookISBN:978-81-322-2460-0). **(Visit:http://www.springer.com/us/book/9788132224600)**

Research Papers:

1. Sapam, S., Dutta, G., Sinha, B. K. (2024). Optimal Covariate Allocation in Asymmetrical Factorial Designs: A Comparative Analysis of Design Choices accepted for publication in the 'Professor C.R. Rao Memorial Volume' of the *"International Journal of Statistical Sciences (IJSS)"*, IJSS Vol. 24(2)s, December 2024.

2. Sapam, S., Dutta, G., Sinha, B. K. (2024). Non-existence of Optimal Covariate Matrices for a Symmetric BIBD with Non-Youden Layout in the Presence of Neighbor Effects. (Accepted in *Communications in Statistics—Theory and Methods* **52** (6), 1668-1675, Taylor and Francis. Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X).

3. Saha, G. M., Sinha, B. K., Dutta, G. (2024). Survey of C.R. Rao's Orthogonal Arrays, Balanced Arrays, and Their Applications. *Statistics and Applications* (Accepted in Special issue in memory of Prof. C. R. Rao), ISSN: 2454-7395 (online).

4. Mandal, M., **Dutta, G.** (2023). Optimality vis-A-vis robustness in mixture models with heteroscedastic error. (Accepted in Communications in Statistics-Simulation and Computation, Taylor and Francis, Print ISSN: 0361-0918 Online ISSN: 1532-4141, Impact factor: 0.9).

5. **Dutta, G.,** Das, P., Mandal, N. K.(2023). Non-existence of Robust Designs against presence of more than one outliers in a restricted class. *Communications in Statistics—Theory and Methods* **52** (6), 1668-1675, Taylor and Francis. Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X, DOI: 10.1080/03610926.2021.1937651.

6. **Dutta, G.,** Saha Ray, R. (2021). Optimal and Efficient Designs for Comparing a Set of Test Treatments with a Set of Controls in a Heteroscedastic One Way Layout with Covariates, Journal of Statistical Theory and Practice **15** (2), Springer, Print ISSN: 1559-8608, Online ISSN: 1559-8616, Impact factor: 0.6, DOI: https://doi.org/10.1007/s42519-020-00157-w.

7. **Dutta, G.,** Das, P., Mandal, N. K.(2020). Designs robust against presence of an outlier in analysis of covariate model. *Journal of the Indian Society for Probability and Statistics* **21** (2), 315–327, Springer, Online ISSN: 2364-9569, Impact factor: 1.2, Manuscript DOI: DOI 10.1007/s41096-020-00084-w.

8. Saha Ray, R., **Dutta, G.** (2019). Optimal and Efficient Treatment Control Design in the Heteroscedastic One Way Layout Set-Up with Covariates. *Statistics* **53** (2), 459-469, Taylor and Francis, Print ISSN: 0233-1888 Online ISSN: 1029-4910, Impact factor: 1.9, Manuscript DOI: 10.1080/02331888.2019.1573821.

9. Saha Ray, R., **Dutta, G.** (2018). On the Optimality of Blocked Main Effects Plans with Even Number of Runs. Special issue of *Journal of Statistical Theory and Practice* under the theme "Contributions to Statistical Planning and Inference" **12** (1), 136-150, Taylor and Francis, Print ISSN: 1559-8608, Online ISSN: 1559-8616, Impact factor: 0.6, DOI: https://doi.org/10.1080/15598608.2017.1378138.

10. Sinha, B. K., **Dutta, G.** (2017). Groups of Latin Square Designs in Agricultural Experiments with Covariates. *RASHI* [the journal of society for application of Statistics in agriculture and allied sciences, www.sasaa.org], Vol. **2**(1), 1-5. Online ISSN: 2581-9755, **URL:** http://www.sasaa.org/complete_journal/vol2__1.pdf.

11. **Dutta, G.**, Sinha, B. K. (2017). Nearly Optimal Covariate Designs - Part I. *Communications in Statistics—Theory and Methods* **46** (19), 9691-9702, Taylor and Francis, Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X, DOI: 10.1080/03610926.2016.1217020.

12. **Dutta, G.**, Sinha, B. K. (2017). Nearly Optimal Covariate Designs - Part II. *Communcations in Statistics—Theory and Methods* **46**(19), 9703-9725, Taylor and Francis, Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X, DOI:10.1080/03610926.2016.1217021.

13. Saha Ray, R., **Dutta, G.** (2016).On the Optimality of Blocked Main Effects Plans. *International Journal of Mathematical, Computational, Physical, Electrical and Computer Engineering* **10**(11), 532-535, International Science Index. (scholar.waset.org/1999.7/10005831).

14. **Dutta, G.**,Saha Ray, R., (2015). D-and E-Optimal Blocked Main Effects Plans with Unequal Block Sizes when n is odd. *Statistics and Probability Letters*, **107**, 37-43, Elsevier, Impact factor: 0.8, Print ISSN: 0167-7152 Online ISSN: 1879-2103, DOI: http://dx.doi.org/10.1016/j.spl.2015.08.001.

15. **Dutta, G.**, Das,P., Mandal,N.K.(2014). D-Optimal designs for covariate models. *Communications in Statistics—Theory and Methods*, **43** (1), 165–174, Taylor and Francis, Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X, DOI: https://doi.org/10.1080/03610926.2012.657327.

16. **Dutta, G.**, SahaRay, R. (2013). Optimal Choice of Covariates in the Set-up of Crossover Designs. *Statistics and Applications* (Special Issue in Memory of Professor M N Das)**11** (1&2),93-109. ISSN: 2454-7395 (Online). (Visit:http://www.ssca.org.in/journal.html, URL: http://www.ssca.org.in/media/Paper7.pdf).

17. **Dutta, G.**, Das, P.(2013).Optimum design for estimation of regression parameters in multi-factor set-up. *Communications in Statistics—Theory and Methods*,**42** (24), 4431–4443,Taylor and Francis, Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X, DOI:10.1080/03610926.2011.654038.

18. **Dutta, G.**, Das, P. (2013). Optimum designs for estimation of regression parameters in a balanced treatment incomplete block design set-up. *Journal of Statistical Planning & Inference,***143** (7),1203-1214, Elsevier, Impact factor: 0.9, Print ISSN: 0378-3758 Online ISSN:1873-1171, DOI: https://doi.org/10.1016/j.jspi.2013.01.006.

19. **Dutta, G.**, Das, P., Mandal, N. K.(2010).Tables for Optimum Covariate Designs in PBIBD set-ups. *Journal of the Indian Society of Agricultural Statistics* **64** (3), 375-389. Print **ISSN** 0019-6363.
(Visit: http://isas.org.in/isa/volume/vol64/issue3/06-GaneshDutta.pdf)

20. **Dutta, G.**, Das, P., Mandal, N. K. (2010). D-Optimal Designs for Covariate Parameters in Block Design Set Up. *Communications in Statistics—Theory and Methods*,**39** (19), 3434–3443, Taylor and Francis, Impact factor: 0.8, Print ISSN: 0361-0926 Online ISSN:1532-415X, DOI: 10.1080/03610920903269970.

21. **Dutta, G.**, Das, P., Mandal, N. K.(2010). Optimum Covariate Designs in a Binary Proper Equi-replicate Block Design Set-up. *Discrete Mathematics*, **310** (5),1037-1049, Elsevier, Impact factor: 0.8, Print ISSN: 0012-365X Online ISSN:1872-681X, DOI: https://doi.org/10.1016/j.disc.2009.10.025.

22. **Dutta, G.**, Das, P., Mandal, N. K.(2009).Optimum covariate designs in Partially Balanced Incomplete Block (PBIB) design set-ups. *Journal of Statistical Planning & Inference*, **139** (8), 2823-2835, Elsevier, Impact factor: 0.9, Print ISSN: 0378-3758 Online ISSN:1873-1171, DOI: https://doi.org/10.1016/j.jspi.2009.01.009.

23. **Dutta, G.**,Das, P.,Mandal,N. K.(2009).Optimum covariate designs in Split-plot and Strip- plot design set-ups. *Journal of Applied Statistics*, **36** (8), 893-906, Taylor and Francis, Impact factor: 1.5, Print ISSN: 0266-4763 Online ISSN: 1360-0532, DOI: http://dx.doi.org/10.1080/02664760802520777.

24. **Dutta, G.**, Das, P., Mandal, N. K.(2007).Optimum choice of covariates for a series of SBIBDs obtained through projective geometry. *Journal of Modern applied Statistical methods,* **6** (2), 649-656, ISSN:1538-9472,

DOI: 10.22237/jmasm/1193891280.

25. **Dutta, G.** (2004). Optimum Choice of Covariates in BIBD set up. *Calcutta Statistical Association Bulletin*, **55** (1&2), 39-55, Sage, Print ISSN: 0008-0683, Online ISSN: 2456-6462. DOI: https://doi.org/10.1177/0008068320040104.

Clinical Trials, Statistical Inference:

26. Basu, J., Bandyopadhyay, U. and **Dutta, G.** (2017). Nonparametric testing under crossover design for ordered categorical response. *Journal of the Korean Statistical Society* **46** (4), 539–550, Elsevier, Impact factor:0.6, **Print ISSN:** 1226-3192, Online ISSN: 2005-2863. DOI: http://doi.org/10.1016/j.jkss.2017.03.003.

27. Bhattacharjee, S. K.,Biswas, A.,**Dutta, G.**, Jammalamadaka, S. R., Ali, M. Masoom (2017). Predictive influence of variables in the log-odds ratio and the logistic model. *Biometrics & Biostatistics International Journal* **5**(1), 1-15, MedCrave, Online ISSN: 2378-315X, DOI:10.15406/bbij.2017.05.00125.

28. Bandyopadhyay,U.,Basu, J. and **Dutta, G.** (2015).Crossover Design in Clinical Trials for Binary Response. *Journal of Applied Statistics* **42**(10), 2100-2114, Taylor and Francis, Impact factor: 1.5, Print ISSN: 0266-4763 Online ISSN: 1360-0532, DOI:http://dx.doi.org/10.1080/02664763.2015.1018675.

29. **Dutta, G.**, Sinha, Bikas K. (2013). Some Further Aspects of Assessment of Agreement involving Bivariate Normal Responses. *International Journal of Statistical Sciences* **13**, 1-19, Print ISSN: 1683-5603 **[URL:**

https://www.researchgate.net/profile/Ganesh_Dutta/publication/272817240_Some_Further_Aspects_of_Assessment_of_Agreement_involving_Bivariate_Normal_Responses/links/54f4998a0cf2f28c1361fa77.pdf]

Application Area and collaborated with other sciences:

30. Das, R., Pal, A., **Dutta, G.**, Maiti, D.K. and Paul, A.K. (2018). Application of Weighted Response Surface Methodology for Enhanced Poly (3-hydroxybutyrate) Production by Endophytic *Bacillus cereus* RCL 02. Journal of Applied Biotechnology & Bioengineering **5** (1), 1-10, MedCrave, Online ISSN: 2572-8466, DOI: 10.15406/jabb.2018.05.00117.

31. Biswas, J.,**Dutta, G.** and Paul, A. K.(2016). Optimization of cultural conditions for production of extra cellular polysaccharide by *Halomonas Xianhensis* SUR308 using weighted response surface methodology. *Journal of Advanced Biology and Biotechnology* **8**(3), 1-11, DigitalArchiving:PORTICO, Print **ISSN:**2394-1081, DOI: 10.9734/JABB/2016/27839.

32. Das Purkayastha, M., **Dutta, G.**, Barthakur, A., Mahanta, C. L.(2015).Tackling Correlated responses during process optimization of rape seed meal protein extraction. *Food Chemistry*, **170** (1), 62–73, Elsevier, Impact factor: 8.8, Print ISSN: 0308-8146, Online ISSN: 1873-7072, DOI: https://doi.org/10.1016/j.foodchem.2014.08.053.

33. Goswami, L., Patel, A.,**Dutta, G.**, Bhattacharyya, P.,Gogoi, N., Bhattacharya, S. S. (2013). Hazard remediation and recycling of Tea industry and Paper mill bottom ash through vermiconversion. *Chemosphere,* **92** (6),708-713, Elsevier, Impact factor: 8.8, Print ISSN: 0045-6535, Online ISSN: 1879-1298. DOI:http://dx.doi.org/10.1016/j.chemosphere.2013.04.066.

34. Barua, S., **Dutta, G.**, Karak, N.(2013).Glycerol based hyper branched epoxy: Synthesis, statistical optimization of curing condition sand property evaluation. *Chemical Engineering Science,* **95** (24),138-147, Elsevier, Impact factor:4.7, Print ISSN: 0009-2509, Online ISSN: 1873-4405,

Note:
My Mathscinet Page Author Link:
http://www.ams.org/mathscinet/search/author.html?mrauthid=764970
Google Scholar: https://scholar.google.co.in/citations?user=TshUwjoAAAAJ&hl=en
Research gate: https://www.researchgate.net/profile/Ganesh_Dutta?ev=hdr_xprf

Invitations and Travel funding:

➢ Visit Bayesian and Interdisciplinary Research Unit (BIRU) of the Indian Statistical Institute during May 4-June 4, 2012 to start joint collaborative research Work with Prof. G. M., Saha (Retired Professor of Statistics, ISI, Kolkata), Prof. Rita Saharay (Head, BIRU, ISI, Kolkata). Travel supported by I.S.I., North-East Centre.

➢ Visit Bayesian and Interdisciplinary Research Unit (BIRU) of the Indian Statistical Institute during November 12-30, 2012 to continue joint collaborative research Work with Prof. Rita Saharay (Head, BIRU, ISI, Kolkata). Travel supported by I.S.I., Kolkata Centre.

➢ Visit Bayesian and Interdisciplinary Research Unit (BIRU) of the Indian Statistical Institute during May 13-31, 2013 to continue joint collaborative research Work with Prof. Rita Saharay (Head, BIRU, ISI, Kolkata). Travel supported by I.S.I., North-East Centre.

Teaching Experience:

➢ **Institute/University/College:** Indian Statistical Institute, North-East Centre Tezpur, Assam, India

Course: PG Diploma in Statistical Methods with Applications

Topic dealt:

1. Linear Algebra (First Semester (2011-2012)) (Main Course, Total Points=100)

2. Design of Experiments (Module-II, Special Topics I) (Second Semester (2011-2012), Total Points=30)

3. Numerical Methods (First Semester (2012-2013)) (Main Course, Total Points=60)

4. Linear models (Module-I, Special Topics I), Design of Experiments(Module-II, Special Topics I), Sample Surveys (Module-III, Special Topics I) (Second Semester (2012-2013)

Total Points=100 (Special Topics I)

➢ **Institute/University/College:** Kalyani University

    Course: Linear Algebra and Linear Models at Post Graduate level, Advanced Data Analytic Techniques at Post Graduate level.

➢ **Institute/University/College:** Indian Association for the Cultivation of Science

    Course: Statistics with R for Integrated Master's-PhD program.

➢ **Institute/University/College:** Basanti Devi College (affiliated to University of Calcutta), Kolkata, India

    Course: B.Sc. (Honours and General) in Statistics (University of Calcutta, Kolkata, India)

        Topic dealt:

1. Analysis of Variance (From 2007, March-2011, June; 2013, July-)

2. Design of Experiments (From 2007, March-2011, June; 2013, July-)

3. Sample Survey (From 2007, March-2011, June; 2013, July-)

4. Bivariate and Multivariate Analysis (From 2007, March-2011, June)

5. Statistical Inference (From 2007, March-2011, June)

6. Linear Algebra (From 2007, March-2011, June; 2013, July-)

7. Real Analysis (From 2007, March-2011, June)

8. Mathematical Statistics (From 2007, March-2011, June).

9. Mathematical Methods (From June; 2013, July-)

10. Probability Theory (From 2007, March-)

11. Sampling distribution (From 2007, March-)

Seminar/ Workshops/Career Advancement Program Attended:

Invited Presentations:

➢ Resource person in the workshop on Quantitative and Qualitative Techniques in Geospatial Sciences, jointly organized by the Department of Geography, University of Calcutta and Institute of Landscape Ecology and Ekistics (IEEE), Kolkata, 16-22 May 2018.

➢ Participated and delivered a invited talk entitled "D- and E-Optimal Blocked Main Effects Plans with Unequal Block Sizes When n is Odd" in the seminar on "Two Day National Seminar on Probability and Statistics" organized by Department of Statistics, West Bengal State University, W.B., 28th and 29th March, 2016.

- Participated and delivered a invited talk entitled "Hadamard Matrices with applications Part I and Part II" in the Seminar on "National Seminar on Combinatorial And Enumerative mathematics" sponsored by Ranchi University and organized by Department of Mathematics, Ranchi University, Ranchi, December 14-16, 2015.

- Participated and delivered a invited talk in the Seminar on "Optimum Covariates Designs and Their Applications" sponsored by DST-PURSE and organized by Department of Statistics, University of Kalyani, Kalyani, West Bengal, India, 28th February, 2014.
- Resource person in the workshop entitled "Training programme on basics of data handling and sample survey designs" Organised by Indian Statistical Institute, North East Centre, Tezpur March 13-17, 2012.

- Presented a paper entitled "Optimum designs for covariate models" in the UGC sponsored national seminar on "Quantum information theory and computer science" held during February 14-15, 2012 at the Jogesh Chandra Chaudhuri College, Kolkata, India.
- Attended as a Discussant (Technical Session V) in the Workshop on "Mixture Experiments: Theory and Applications" during December 21-22, 2009 organised jointly by the UPE project in the Department of Statistics, University of Calcutta and Department of Statistics, University of Kalyani. Venue: Farmer's Training Centre (BCKU), Kalyani.

- Presented a paper entitled " Optimum Choice of Covariate values in a Split-plot and Strip- plot designs" in the DST & CSIR sponsored National Workshop on the topic entitled, "Uniform Hyper Graphs and their Applications" held during January 30 to February 5, 2008 at Sir CRR Institute of Mathematics and PG Department of Mathematics, Sir CRR Autonomous College, Eluru-534007, A.P., India.

Contributed Presentations:

- Presented a paper entitled " Optimum Choice of Covariate values in a Split-plot and Strip- plot designs" in the "6th International Triennial Calcutta Symposium on Probability and Statistics" held during December 29 - 31, 2006 at Department of statistics, University of Calcutta, Calcutta, India.

- Presented a paper entitled "Optimum Choice of Covariates in a BIBD's obtained through PG (n, s)" in the Seventh Annual Conference of Society of Statistics, Computer and Application organized by the Department of Statistics, Sri Venkateswara College, New Delhi held during December 22-24, 2004.

- Presented a paper entitled "Optimum Choice of Covariates in a BIBD's obtained through PG (n, s)" in the "5th International Triennial Calcutta Symposium on Probability and Statistics" held during December 28-31, 2003 at the Department of statistics, University of Calcutta, Calcutta, India.

- Presented a paper entitled "Optimum Choice of Covariates in a BIBD set up" in the "XXIII Annual Conference of Indian Society for Probability and Statistics (ISPS)" held during December 18-20, 2003 at the Department of statistics, Nagarjuna University, Guntur, A.P., India.

Career Advancement Program:

- Participated in the UGC-Sponsored Refresher Course in Environmental Studies and Sustainability organized by Malaviya Mission Teacher Training Centre, The University of Burdwan from July 25 to August 07, 2024 and obtained *Grade A+*.

- Participated in the UGC-Sponsored Refresher Course organized by Academic Staff College, University of Calcutta, in the subject *Mathematics* from January 02 to January 22, 2014 at Department of Pure Mathematics, University of Calcutta, India and obtained *Grade A*.

- Participated in the UGC-Sponsored Orientation Program, No. 85 organized by Academic Staff College, University of Calcutta, from July 05 to July 31, 2010 and obtained *Grade A*.

Miscellaneous:

Computer Skills:	Languages: R, LATEX.
	Operating systems: Windows

Personal Profile:

Name	:	Ganesh Dutta
Father's Name	:	Mr. Amarendra Prasad Datta
Sex	:	Male
Marital Status	:	married
Nationality	:	Indian
Permanent Address (corresponding Address)	:	1/B Ashoke Road, First Floor, **P.O.** Garia, P.S. Patuli, 24 Parganas(South), W.B. India. Pin Code: 700 084
Date of Birth	:	13th August, 1978

Languages Known   :   Bengali, English and Hindi

Declaration:

        I hereby declare that the above-mentioned information is correct to the best of my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.

Ganesh Dutta

Place: Kolkata, INDIA   GANESH DUTTA
Date: 20.11.2024

References:

- Prof. Bikas K Sinha, Retired Professor of Statistics, Math-Stat Division/Applied Statistics Division, Indian Statistical Institute, Calcutta, India and Ex-Member, National Statistical Commission, Govt. of India

  Email: bikassinha1946@gmail.com

- Prof. Nripes Kumar Mandal, Retired Professor of Statistics, Department of Statistics, University of Calcutta, Kolkata

  Email: mandalnk2001@yahoo.co.in

- Prof. Premadhis Das, Department of Statistics, Retired Professor of Statistics, University of Kalyani, Kalyani-741235, West Bengal, India.

  Email: dasp50@yahoo.co.in