

*Arup Bose*  
Curriculum Vitae

**Address for correspondence**

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Statistics and Mathematics Unit  
Indian Statistical Institute  
203 B. T. Road, Kolkata 700108  
INDIA

email: bosearu@gmail.com abose@isical.ac.in

website: [www.isical.ac.in/~abose](http://www.isical.ac.in/~abose) (only vita)

Department website: [www.isical.ac.in/~statmath](http://www.isical.ac.in/~statmath)

Born April 01 1959, Kolkata, India. Citizen of India.

**Education**

Ph. D. (Stat., 1987), from Indian Statistical Institute (ISI).

M. Stat.(1980), (ISI).

B. Stat.(Hons, 1979), (ISI).

**Professional positions**

Professor in Charge–Stat-Math Division, ISI India. Sept. 2016–August 2018 (ongoing).

Head–Stat-Math Unit Kolkata, ISI India. Sept. 2002–July 2005.

Higher Academic Grade Professor–Stat-Math Unit Kolkata, ISI, since inception, June 2011–

Professor–Stat-Math Unit Kolkata, ISI India June 1995–May 2011.

Associate Professor–Stat-Math Unit Kolkata, ISI India Jan. 1991–May 1995.

Assistant Professor–Dept. of Stat., Purdue University USA Jan. 1987–Dec. 1990.

Distinguished Visiting Professor–Dept. of Econ., Univ. of Cincinnati USA Oct.–Dec. 2005.

Visiting Professor–Dept. of Math., Univ. of California San Diego USA March–June 2001;  
Dept. of Stat., Purdue Univ. USA Jan. 2000–May 2000.

Visiting Associate Professor–Dept. of Stat., Purdue Univ. USA Aug. 1995–May 1996;  
Dept. of Math., Indiana Univ.–Purdue Univ. at Indianapolis USA Aug. 1992–May 1993.

Senior Research Fellow, ISI, July 1982–Dec. 1986.

Junior Research Fellow, ISI, July 1980–July 1982.

## Editorial Activities

Current:

Associate Editor, *Proceedings of Math. Science, Indian Academy of Sciences*, 2015–2017.

Past:

Associate Editor, *Statistical Methodology*, June 2010–Dec. 2016.

Editor–*Sankhyā*, 6 years, Jan. 2002–Dec. 2007.

Co-editor–*Sankhyā A*, 8 years, May 1993–Dec. 2001.

Managing Editor–*Sankhyā A*, 5 years, Jan. 1997–Dec. 2001.

Associate Editor, *Indian Journal of Pure and Applied Mathematics*, 5 years, 2009–2013.

Associate Editor, *Statistics and Probability Letters*, 6 years, Jan. 2008–Dec. 2013.

Associate Editor, *IMS Collection*, Institute of Mathematical Statistics USA, 5 years, 2008–2012.

Editorial Board Member–*Lect. Note Series of Ramanujan Math. Soc.*, 5 years, 2009–2013.

Referee: *FONDECYT (Chile)*, *NSF (USA)*, *US-Israel BSF*, *DST* and *CSIR* proposals. Leading econometrics, probability and statistics journals.

Reviewer for *Mathematical Reviews* since 1985.

## Honours and Awards

- Bernoulli Society Council Member, 2015–2019.
- J. C. Bose Fellow, DST Govt. of India 2009–2013, 2014–2018, 2019–2023. Provides a generous grant and a monthly honorarium.
- Distinguished Lecturer and Invited Session Organizer: *The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting, Tsukuba, Japan, 2012*.
- Invited speaker: *International Congress of Mathematicians* Hyderabad, India 2010.
- Fellow of the National Academy of Sciences Allahabad (elected in 2009).
- Fellow of the Indian National Science Academy New Delhi (elected in 2007).
- Fellow of the Indian Academy of Sciences Bangalore (elected in 2006).
- S.S. Bhatnagar Award in the Mathematical Sciences, CSIR Govt. of India 2004. The most well-known yearly scientific honour for Indian scientists below 45 years. Award conferred by the Prime Minister of India. Cash award and a monthly honorarium till retirement.
- Young Researcher Award, International Indian Statistical Association USA 2004.
- National Award in Statistics, Ministry of Statistics & Programme Implementation, Govt. of India 2002–2003. Biennial award for outstanding contribution to the field of Statistics to Indians below 45 years. Conferred by the Minister. Cash award.
- Fellow of the Institute of Mathematical Statistics USA (elected in 2002).

**Member of Professional Societies:**

American Mathematics Society, USA: Member.

Bernoulli Society for Mathematical Statistics and Probability, Netherlands: Member 2015, Life Member since 2016.

International Indian Statistical Association, USA: Life member.

Institute of Mathematical Statistics, USA: Life Member.

Calcutta Statistical Association: Life Member since 2015.

Cryptology Research Society of India: Life member since 2006.

Indian Mathematical Society: Life member since 2015.

Indian Society for Probability and Statistics: Life member.

Indian Statistical Association: Life member since 2012.

The Indian Econometrics Society: Life member since 2012.

**Current Research Interests:**

**Economics:** Game Theory. Information economics. Moral hazard problems and incentives.

**Econometrics:** Large dimensional time series. Resampling in time series. Asymptotics of autocovariance matrices. Spectral inference.

**Probability:** Large dimensional random matrices. Free Probability. Extreme values.

**Statistics:** High Dimensional Data. Resampling.

**Earlier Research work in:**

Mixed Oligopoly. Income inequality.

Urn models; Generalised confidence intervals; Generalised bootstrap in dependent models; Residual bootstrap in time series; Accuracy of bootstrap in i.i.d. models.

Kernel density estimates;  $U$  statistics; Kaplan-Meier estimates;  $M_m$  estimates.

Second order properties of sequential point and interval estimates; Bernoulli sequential plans.

Law of large numbers for  $U$  statistics and for  $L$  statistics.

Selection problems in multinomials.

Record values.

Rate of convergence in CLT for martingales; Moderate deviation probabilities for martingales.

Statistical estimation in nonlinear parametric diffusion process.

## Publications

### A1. Books in preparation/submitted/accepted for publication

1. Bose, Arup and Saha, Koushik (2017). *Random Circulants*. In preparation, current version 179 pages.
2. Bose, Arup and Chatterjee, Snigdhanu (2016). *U-Statistics,  $M_m$ -Estimates and Resampling* (207 pages), December 2016. Reviewed and accepted for the TRIM SERIES of Hindusthan Book Agency. Final version being readied.

### A2. Articles submitted or under revision (available at arxiv and/or [www.isical.ac.in/~statmath](http://www.isical.ac.in/~statmath))

1. Bose, Arup; Dey, Apratim and Ejsmont, Wiktor (2017). Characterization of free Gaussian variables. **Submitted for publication.**
2. Bhattacharjee, Monika; Bose, Arup and Srivastava, Radhendushka (2017). A white noise test under weak conditions. **Submitted for publication.**
3. Bhattacharjee, Monika and Bose, Arup (2016/17). Joint convergence of sample auto-covariance matrices when  $p/n \rightarrow 0$  with application. **Submitted for publication.**

### A3. Articles accepted/to appear/published (older versions at [www.isical.ac.in/~statmath](http://www.isical.ac.in/~statmath))

**Books:** Chapman & Hall (2: 2018, 2018)

**Journal articles in Probability and Statistics (105):**

Annals of Probability (2: 2011, 1994)

Annals of Statistics (6: 2016, 2005, 1998, 1996, 1993, 1988)

Bernoulli Journal (2: 2014, 2009)

Probability Theory and Related Fields (1: 1991)

Annales de l'Institut Henri Poincaré-Probabilités et Statistiques (2: 2012, 2010)

Electronic Journal of Probability (3: 2012, 2009, 2008)

Journal of Theoretical Probability (7: 2013, 2013, 2012, 2011, 2004, 1999, 1998)

Random Matrices: Theory and Applications (8: 2018?, 2017, 2017, 2016, 2015, 2014, 2013, 2012)

Statistica Sinica (2: 2002, 2000)

Stochastics and Stochastic Reports (1: 1986).

Journal of Multivariate Analysis (2: 2009, 2002)

Journal of Applied Probability (2: 2009, 2003)

Annals of Institute of Statistical Mathematics (6: 2002, 1995, 1995, 1993, 1990, 1985)

Journal of Statistical Planning and Inference (5: 2003, 1997, 1994, 1987, 1986)

Electronic Communications in Probability (6: 2011, 2010, 2010, 2007, 2007, 2007)

Statistics and Probability Letters (7: 2013, 2012, 2011, 2008, 2002, 2001, 1989)

Periodica Math Hungarica (1: 2011)

Acta Physica Polonica B (1:2015).

Science in China Series A: Mathematics (1: 2009 (invited article, special issue in honour of Z.D. Bai))

Extremes (6: 2011, 2011, 2010, 2006, 2005, 2003)

Statistics (2: 2014, 1988)

Statistics and Decisions (3: 1995, 1994, 1988)

Indagationes Mathematicae (1: 2007)

Journal of Australian Mathematical Society (1: 2001)

Statistical Methodology (2: 2014 (invited article, special issue in memory of Kesar Singh), 2013)  
 Sequential Analysis (5: 2001, 1995, 1995, 1994, 1988)  
 Communications in Statistics, Theory Methods (1: 1989)  
 Computers and Mathematics with applications (1: 2001)  
 Journal of Applied Statistical Sciences (1: 2003)  
 Sankhyā A (8: 2003, 2002 (special issue in memory of D. Basu), 1993, 1990, 1987, 1986, 1983, 1983)  
 Calcutta Statistical Association Bulletin (4: 1997, 1995, 1994, 1984)  
 Journal of Indian Statistical Association (2: Invited article, Golden Jubilee issue 2012; Invited article, 2003 (special issue in honour of S.R. Adke))  
 Indian Jour. of Pure and Applied Math. (3: 2017, 2016, 2010 Invited article Platinum Jubilee Vol).

**Journal articles in Economics and Econometrics (17):**

Journal of Law and Economics (1: 2016)  
 Econometric Theory (1: 2011)  
 European Economic Review (2: 2012, 2010)  
 Canadian Journal of Economics (1: 2014)  
 Journal of Economics Management & Strategy (2: 2011, 2010)  
 International Journal of Industrial Organization(1:2017).  
 Journal of Time Series Analysis (3: 2014, 2009, 2003)  
 Southern Economic Journal (1: 2016)  
 The Journal of Economic Inequality (1: 2014)  
 Oxford Economics Papers (1: 2011)  
 Journal of Economics (1: 2013)  
 Economics Letters (1: 2010)  
 Journal of Economic Theory and Social Development (1: 2012).

**Invited Chapters in Books (5):**

Mathematics Unlimited: Essays in Mathematics: Article on Eigenvalues (2012).  
 Statistical Computing: Article on Resampling (2004).  
 Uncertainty and Optimality: Article on  $U$  statistics and  $M_m$  estimates (2002).  
 Stochastic Process and Statistical Inference: Article on Resampling in dependent models (1996).  
 Handbook of Sequential Analysis: Article on Sequential Design and Allocation (1991).

**Articles in Conference Proceedings (3)**

Proceedings of the International Congress of Mathematicians: Invited article (2010).  
 Frontiers of Statistics: Conference Proceedings of Triennial Symposium, refereed article (1998).  
 Proceedings of Winter Simulation Conference: Invited article (1988).

Publication details:

1. Bhattacharjee, Monika and Bose, Arup (2018) *Large covariance and autocovariances matrices* (278 pages). Monographs on Statistics and Applied Probability, 162, Chapman & Hall. In press. Expected publication, August 2018.
2. Bose, Arup (2018). *Patterned Random Matrices* (267 pages), Chapman & Hall. In press. Expected publication, June 11, 2018.
3. Adhikari, Kartick and Bose, Arup (2018). Brown measure and asymptotic freeness of elliptic and related matrices. Tentatively accepted for **Random Matrices: Theory and Applications**.
4. Banerjee, Debapratim and Bose, Arup (2017b). Patterned sparse random matrices: A moment approach. **Random Matrices: Theory and Applications**, Vol. 6, No. 3

- (2017) 1750011 (40 pages). DOI: 10.1142/S2010326317500113
5. Banerjee, Debapratim and Bose, Arup (2017a). Largest eigenvalue of block matrices: a combinatorial approach. **Random Matrices: Theory and Applications**, Vol. 6, No. 2 (2017), 1750008 (31 pages). DOI: 10.1142/S2010326317500083
  6. Bhattacharjee, Monika and Bose, Arup (2017). Matrix polynomial generalizations of the sample variance-covariance matrix when  $pn^{-1} \rightarrow y \in (0, \infty)$ . **Indian Journal of Pure and Applied Mathematics**, 48, 4, 575–607.
  7. Bose, Arup; Pal, Debashis and Sappington, David (2017). Pricing to preclude sabotage in vertically-integrated regulated industries. **International Journal of Industrial Organization**, volume 51, March 2017, Pages 162–184.
  8. Banerjee, Debapratim and Bose, Arup (2016). Bulk behaviour of some patterned block matrices. **Indian Journal of Pure and Applied Mathematics**. Special issue on Stochastic Systems and Applications, 47(2) 273-289.
  9. Bhattacharjee, Monika and Bose, Arup (2016). Matrix polynomial generalizations of the sample variance-covariance matrix when  $pn^{-1} \rightarrow 0$ . **Random Matrices: Theory and Applications**, Vol. 5, No. 4, 1650014 (41 pages). DOI: 10.1142/S2010326316500143
  10. Bhattacharjee, Monika and Bose, Arup (2016). Large sample behaviour of high dimensional autocovariance matrices. **Annals of Statistics**, 44, 2, 598–628. DOI: 10.1214/15-AOS1378
  11. Bose, Arup; Pal, Debashis and Sappington, David (2016). On the merits of antitrust liability in regulated industries. **Journal of Law and Economics**, Vol 59, 359–392.
  12. Bose, Arup; Pal, Debashis and Sappington, David (2016). All entrepreneurial productivity increases are not created equal. **Southern Economic Journal**, 82, 3, 952-974. DOI: 10.1002/soej.12032
  13. Basak, Anirban; Bose, Arup and Mukherjee, Soumendu Sundar (2015). Limiting spectral distribution of a class of Hankel type random matrices. **Random Matrices: Theory and Applications**, 4, 3, 1550010 (24 pages). DOI: 10.1142/S2010326315500100
  14. Bose, Arup and Gangopadhyay, Sreela (2015). Convergence of a class of Hankel type matrices. **Acta Physica Polonica B**, Volume 46, 1683-1692. DOI:10.5506/APhysPolB.46.1683
  15. Basak, Anirban; Bose, Arup and Sen, Sanchayan (2014). Limiting spectral distribution of sample autocovariance matrices. **Bernoulli Journal**, 20, 3, 1234–1259.
  16. Bhattacharjee, Monika and Bose, Arup (2014b). Estimation of autocovariance matrices for infinite dimensional vector linear processes. **Journal of Time Series Analysis**, 35, 3, 262–281. DOI: 10.1111/jtsa.12063.
  17. Bhattacharjee, Monika and Bose, Arup (2014a). Consistency of large dimensional sample covariance matrix under weak dependence. **Statistical Methodology**. Special issue in memory of Kesar Singh, 20, 11–26. DOI: 10.1016/j.stamet.2013.08.005.

18. Bose, Arup; Chakravarty, Satya R. and D'Ambrosio, Conchita (2014). Richness orderings. **Journal of Economic Inequality**, 12, 5–22. DOI:10.1007/s10888-013-9249-4.
19. Bose, Arup and Gangopadhyay, Sreela (2014). Pfeifer records process. **Statistics: A Journal of Theoretical and Applied Statistics**, 48, 1, 129–141. DOI:10.1080/02331888.2012.719515.
20. Bose, Arup and Mukherjee, Soumendu Sundar (2014). Bulk behaviour of Schur-Hadamard product of symmetric patterned random matrices. **Random Matrices: Theory and Applications**, Vol. 03, No. 02, 1450007 [25 pages]. DOI: 10.1142/S2010326314500075.
21. Bose, Arup; Pal, Debashis and Sappington, David (2014). The impact of public ownership in the lending sector. **Canadian Journal of Economics**, Vol. 47, No. 4, 1282-1311. DOI: 10.1111/caje.12109
22. Banerjee, Sayan and Bose, Arup (2013). Noncrossing partitions, Catalan words and the semicircle law. **Journal of Theoretical Probability**, 26, 2, 386–409. DOI: 10.1007/s10959-011-0365-4.
23. Bose, Arup and Dutta, Santanu (2013). Density estimation using bootstrap bandwidth selector. **Statistics & Probability Letters**, 83, 1, 245–256. DOI: 10.1016/j.spl.2012.08.027.
24. Bose, Arup and Gangopadhyay, Sreela (2013). A note on concomitants of records. **Statistical Methodology**, 10, 103–112. DOI:10.1016/j.stamet.2012.07.004.
25. Bose, Arup and Gupta, Barnali (2013). Mixed markets in a bilateral monopoly. **Journal of Economics**, 110, 141-164. DOI. 10.1007/s00712-012-0310-8.
26. Bose, Arup; Saha, Koushik and Gangopadhyay, Sreela (2013). Convergence of a class of Toeplitz type matrices. **Random Matrices: Theory and Applications**, Vol 02, No. 03, 1350006 [21 pages]. DOI: 10.1142/S2010326313500068.
27. Bose, Arup and Sen, Sanchayan (2013). Finite diagonal random matrices. **Journal of Theoretical Probability**, 26, 3 819-835. DOI: 10.1007/s10959-011-0378-z.
28. Basu, Riddhipratim; Bose, Arup; Ganguly, Shirshendu and Hazra, Rajat Subhra (2012c). Joint convergence of several copies of different patterned random matrices. **Electronic Journal of Probability**, 17, Paper no. 82, 1–33. DOI: 10.1214/EJP.v17-1970f.
29. Basu, Riddhipratim; Bose, Arup; Ganguly, Shirshendu and Hazra, Rajat Subhra (2012b). Spectral properties of random triangular matrices. **Random Matrices: Theory and Applications**, Vol. 1, No. 3, 1250003 [22 pages]. DOI: 10.1142/S2010326312500037.
30. Basu, Riddhipratim; Bose, Arup; Ganguly, Shirshendu and Hazra, Rajat Subhra (2012a). Limiting Spectral Distribution of Block Matrices with Toeplitz Block Structure. **Statistics & Probability Letters**, 82, 1, 1430–1438.
31. Bose, Arup and Gupta, Barnali (2012). Optimal training, employee preferences and moral hazard. **Journal of Economic Theory and Social Development**, 1, 1, 1–24.
32. Bose, Arup; Pal, Debashis and Sappington, David (2012). Extreme screening policies. **European Economic Review**, 56, 1607–1620. DOI: 10.1016/j.euroecorev.2012.09.001.

33. <sup>1</sup>Bose, Arup and Dey, Alope (2012). The wonderful world of eigenvalues. **Math Unlimited: Essays in Mathematics**, pages 101–127. Invited article. Editors: R. Sujatha, H.N. Ramaswamy and C.S. Yogananda. Science Publishers. CRC Press.
34. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2012b). Extremum of Circulant type matrices: a survey. Invited article in **Golden Jubilee issue of Journal of Indian Statistical Association**, 50, No. 1–2, 21–49.
35. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2012a). Product of exponentials and spectral radius of random  $k$  circulants. **Annales de l'Institut Henri Poincaré–Probabilités et Statistiques**, 48, 2, 424–443.
36. Bose, Arup; Mitra, Joydip and Sen, Arnab (2012). Limiting spectral distribution of random  $k$  circulants. **Journal of Theoretical Probability**, 25, 3, 771–797. DOI: 10.1007/s10959-010-0312-9.
37. Basak, Anirban and Bose, Arup (2011). Limiting spectral distribution of some band matrices. **Periodica Mathematica Hungarica**, 43, 1, 113–150. DOI: 10.1007/s10998-011-7113-5.
38. <sup>2</sup>Bose, Arup (2011). The ET interview: B.L.S. Prakasa Rao. **Econometric Theory**, 27, 2, 373–411. DOI:10.1017/S0266466610000319.
39. Bose, Arup and Gangopadhyay, Sreela (2011). Asymptotic properties of near Pfeifer records. **Extremes**, 14, 253–265. DOI: 10.1007/s10687-010-0108-4.
40. Bose, Arup; Guha, Suman; Hazra, Rajat Subhra and Saha, Koushik (2011e). Circulant type matrices with heavy tailed entries. **Statistics & Probability Letters**, 81, 1706–1716.
41. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2011d). Poisson convergence of eigenvalues of circulant type matrices. **Extremes**. Vol. 14, No. 4, 365–392, DOI: 10.1007/s10687-010-0115-5
42. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2011c). Half independence and half cumulants. **Electronic Communications in Probability**, 16, paper No. 37, 405–422.
43. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2011b). Convergence of joint moments for independent random patterned matrices. **Annals of Probability**, 39, 4, 1607–1620. DOI: 10.1214/10-AOP597
44. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2011a). Spectral norm of circulant type matrices. **Journal of Theoretical Probability**, 24, 2, 479–516. DOI: 10.1007/s10959-009-0257-z.

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<sup>1</sup>Not refereed.

<sup>2</sup>Commissioned interview.



45. Bose, Arup; Pal, Debashis and Sappington, David (2011b). On the performance of linear contracts. **Journal of Economics & Management Strategy**, 20, 1, 159–193. DOI: 10.1111/j.1530-9134.2010.00286.x.
46. Bose, Arup; Pal, Debashis and Sappington, David (2011a). Pareto-improving inefficiency. **Oxford Economics Papers**, 63, 1, 94–110. DOI: 10.1093/oep/gpq009.
47. Bandyopadhyay, Subhadip; Bose, Arup and Sengupta, Debasis (2010). Nonparametric estimation of multivariate density with direct and auxiliary data and application. Invited article in **Special Platinum Jubilee issue of Indian Journal of Pure and Applied Mathematics**, 40, 1, 248–274.
48. Basak, Anirban and Bose, Arup (2010). Balanced random Toeplitz and Hankel matrices. **Electronic Communications in Probability**, 15, 134–148.
49. Bose, Arup and Gangopadhyay, Sreela (2010). Convergence of linear functions of Pfeifer Records. **Extremes**, 13, 89–106. DOI: 10.1007/s10687-009-0087-5.
50. Bose, Arup; Gangopadhyay, Sreela and Sen, Arnab (2010). Limiting spectral distribution of  $XX'$  matrices. **Annales de l'Institut Henri Poincaré-Probabilités et Statistiques**, 46, 3, 677–707. DOI: 10.1214/09-AIHP329.
51. <sup>3</sup>Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2010b). Patterned random matrices and method of moments. **Proceedings of the International Congress of Mathematicians** Hyderabad, India, 2010, 2203–2230. (Invited article). World Scientific, Singapore and Imperial College Press, UK.
52. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2010a). Spectral norm of circulant type matrices with heavy tailed entries. **Electronic Communications in Probability**, 15, 299–313.
53. Bose, Arup; Pal, Debashis and Sappington, David (2010c). Asymmetric treatment of identical agents in teams. **European Economic Review**, 54, 947–961.
54. Bose, Arup; Pal, Debashis and Sappington, David (2010b). Equal pay for unequal work: limiting sabotage in teams. **Journal of Economics & Management Strategy**. 19, 1, 25–53.
55. Bose, Arup; Pal, Debashis and Sappington, David (2010a). On the design of piece-rate contracts. **Economics Letters**, 107, 330–332. DOI: 10.1016/j.econlet.2010.02.011.
56. Bose, Arup (2009).  $L_1$  regression estimate and its bootstrap. **Special issue in honour of Z.D. Bai, Science in China Series A: Mathematics**, 52, 6, 1251–1261.
57. Bose, Arup; Dasgupta, Amites and Maulik, Krishanu (2009b). Multicolor urn models with reducible replacement matrices. **Bernoulli Journal**, 51, 1, 279–295.
58. Bose, Arup; Dasgupta, Amites and Maulik, Krishanu (2009a). Strong laws for balanced triangular urns. **Journal of Applied Probability**, 46, 2, 571–584.

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<sup>3</sup>Not refereed. Conference Proceedings.

59. Bose, Arup; Hazra, Rajat Subhra and Saha, Koushik (2009). Limiting spectral distribution of circulant type matrices with dependent inputs. **Electronic Journal of Probability**. Vol. 14, Paper no. 86, pages 2463–2491.
60. Bose, Arup and Mukherjee, Kanchan (2009). Bootstrapping a weighted linear estimator of the ARCH parameters. **Journal of Time Series Analysis**, 30, 3, 315–331.
61. Roy, Anindya and Bose, Arup (2009). Coverage of generalized confidence intervals. **Journal of Multivariate Analysis**, 100, 7, 1384–1397.
62. Bose, Arup; Dasgupta, Amites and Maulik, Krishanu (2008). Maxima of Dirichlet and triangular arrays of gamma variables. **Statistics & Probability Letters**, 78, 16, 2811–2820.
63. Bose, Arup and Sen, Arnab (2008). Another look at the moment method for large dimensional random matrices. **Electronic Journal of Probability**, 13, 588–628.
64. Bose, Arup; Dasgupta, Amites and Maulik, Krishanu (2007). Maxima of the cells of an equiprobable multinomial. **Electronic Communications in Probability**, 12, 93–105.
65. Bose, Arup; Gangopadhyay, Sreela and Goswami, Alok (2007). A note on random coin tossing. **Indagationes Mathematicae**, 18, 3, 405–416.
66. Bose, Arup and Sen, Arnab (2007b). On asymptotic properties of the rank of a special random adjacency matrix. **Electronic Communications in Probability**, 12, 200–205.
67. Bose, Arup and Sen, Arnab (2007a). Spectral norm of random large dimensional non-central Toeplitz and Hankel matrices. **Electronic Communications in Probability**, 12, 21–27.
68. Bose, Arup; Gangopadhyay, Sreela; Maulik, Krishanu and Sarkar, Anish (2006). Convergence of tail sum for records. **Extremes**, 9, 151–168.
69. Bose, Arup; Gangopadhyay, Sreela and Sarkar, Anish (2005). Partial sum process for records. **Extremes** 8, 43–56.
70. Chatterjee, Snigdhanu and Bose, Arup (2005). Generalised bootstrap for estimating equations. **Annals of Statistics**, 33, 1, 414–436.
71. <sup>4</sup>Basu, Srabashi and Bose, Arup (2004). A gentle introduction to resampling plans. Invited article in **Statistical Computing: Existing Methods and Recent Developments** (Ed. D. Kundu and A. Basu). IIT Kanpur Series of Advanced texts, 253–288. Published by Narosa.
72. Chatterjee, Sourav and Bose, Arup (2004). A new method for bounding rates of convergence of empirical spectral distributions. **Journal of Theoretical Probability** 17, 4, 1003–1019.

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<sup>4</sup>Book Chapter.

73. Bose, Arup and Chatterjee, Snigdhanu (2003). Generalised bootstrap for estimators of minimisers of convex functionals. **Journal of Statistical Planning and Inference**, 11, 225–239.
74. Bose, Arup; Chatterjee, Sourav and Gangopadhyay, Sreela (2003). Limiting spectral distribution of large dimensional random matrices. Invited article. **Special Volume of Journal of Indian Statistical Association** in honour of S.R. Adke. 41,2, 221–259.
75. Bose, Arup; Gangopadhyay, Sreela; Sarkar, Anish and Sengupta, Arindam (2003a). Asymptotic properties of sums of upper records. **Extremes**. 6, 2, 147–164.
76. Bose, Arup; Gangopadhyay, Sreela; Sarkar, Anish and Sengupta, Arindam (2003b). Convergence of lower records and infinite divisibility. **Journal of Applied Probability**, 40, 4, 1–16.
77. Bose, Arup and Mukherjee, Kanchan (2003). Estimation of the ARCH parameters by solving linear equations. **Journal of Time Series Analysis** 24, 2, 127–136.
78. Bose, Arup; Sarkar, Anish and Sengupta Arindam (2003). Infinite product of records. **Journal of Applied Statistical Sciences**, 12, No. 1, 1–10.
79. Bose, Arup and Sengupta, Debapriya (2003). Strong consistency of minimum contrast estimators. **Sankhyā**, 65, 2, 440–463.
80. <sup>5</sup>Bose, Arup (2002).  $U$  statistics and  $M_m$  estimates. Invited article in **Uncertainty and Optimality-Probability, Statistics and Operations Research**. (ed. J.C. Misra), 257–292. World Scientific Publishing, River Edge, New Jersey.
81. Bose, Arup and Chatterjee, Snigdhanu (2002). Comparison of bootstrap and jackknife variance estimators in linear regression: second order results. **Statistica Sinica**, 12, 2, 575–598.
82. <sup>6</sup>Bose, Arup; DasGupta, Anirban and Rubin, Herman (2002). A contemporary review and bibliography of infinite divisible distributions. **Special issue of Sankhyā** in memory of D. Basu, 64, Part 3, 763–819.
83. Bose, Arup and Mitra, Joydip (2002). Limiting spectral distribution of a special circulant. **Statistics & Probability Letters**, 60, 1, 111–120.
84. Bose, Arup and Sen, Arusharka (2002). Asymptotic distribution of the Kaplan-Meier  $U$ -statistics. **Journal of Multivariate Analysis**, 83, 1, 84–123.
85. Chatterjee, Snigdhanu and Bose, Arup (2002). Dimension asymptotics for generalised bootstrap in linear regressions. **Annals of the Institute for Statistical Mathematics**, 54, 2, 367–381.
86. Bishwal, J. P. N. and Bose, Arup (2001). Rates of convergence of approximate maximum likelihood estimators in the Ornstein-Uhlenbeck process. **Computers and Mathematics with applications**, 42, 23–38.

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<sup>5</sup>Not refereed. Book Chapter.

<sup>6</sup>Review article.

87. Bose, Arup (2001). A boundary crossing problem with application to sequential estimation. **Sequential Analysis**, 20, 1, 65–76.
88. Bose, Arup and Snigdhansu Chatterjee (2001a). Generalised bootstrap in non-regular  $M$ -estimation problems. **Statistics & Probability Letters**, 55, 3, 319–328.
89. Bose, Arup and Chatterjee, Snigdhansu (2001b). Last passage times of minimum contrast estimators. **Journal of Australian Mathematical Society**, 71, 1, 1–10. DOI:10.1017/S1446788700002676.
90. Chatterjee, Snigdhansu and Bose, Arup (2000). Variance estimation in high dimensional regression models. **Statistica Sinica**, 10, 2, 497–515.
91. Bose, Arup and Sen, Arusharka (1999). The strong law of large numbers for Kaplan-Meier  $U$  statistics. **Journal of Theoretical Probability** 12, 1, 181–200.
92. Bose, Arup (1998a). Bahadur representation of  $M_m$  estimates. **Annals of Statistics** 26, 2, 771–777.
93. Bose, Arup (1998b). A Glivenko-Cantelli theorem and strong laws for  $L$  statistics. **Journal of Theoretical Probability** 11, 4, 921–933.
94. <sup>7</sup>Bose, Arup and Nagaraj, N. K. (1998). Estimation of autoregressive parameters with systematic but incomplete sampling. **Frontiers in Probability and Statistics** (Ed. S.P. Mukherjee, S.K. Basu and B.K. Sinha), 41–51. Narosa, London.
95. Bose, Arup (1997). A note on the Marcinkiewicz-Zygmund strong law of large numbers. **Calcutta Statistical Association Bulletin** 47, Nos. 187-188, 233–238.
96. Bose, Arup and Boukai, Benzion (1997). Sequential estimation of the mean of the NEF-PVF distribution. **Journal of Statistical Planning and Inference** 63, 1, 55–70.
97. Bose, Arup and Boukai, Benzion (1996). Estimation with prescribed proportional accuracy for a two-parameter exponential family of distributions. **Annals of Statistics** 24, 4, 1792–1803.
98. <sup>8</sup>Bose, Arup and Politis, Dimitris (1996). A review of the bootstrap for dependent samples. Invited article in **Stochastic Processes and Statistical Inference**, (Ed. B.R. Bhat and B.L.S. Prakasa Rao), 39–83, New Age International Ltd., New Delhi.
99. Bishwal, J.P.N. and Bose, Arup (1995). Speed of convergence of the maximum likelihood estimate in the Ornstein-Uhlenbeck process. **Calcutta Statistical Association Bulletin** 45, Nos. 179-180, 245–251.
100. Bose, Arup (1995). Estimating the asymptotic dispersion of the  $L_1$  median. **Annals of the Institute of Statistical Mathematics** 47, 2, 267–271.

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<sup>7</sup>Conference Proceedings.

<sup>8</sup>Not refereed. Book Chapter.

101. Bose, Arup and Boukai, Benzion (1995). Bias corrected sequential estimation for the mean of NEF-PVF distribution. **Sequential Analysis** 14, 4, 307–320.
102. Bose, Arup and Mukhopadhyay, Nitis (1995a). Sequential interval estimation via replicated piecewise stopping times and accelerated stopping times in a class of two parameter exponential distributions. **Sequential Analysis** 14, 4, 287–306.
103. Bose, Arup and Mukhopadhyay, Nitis (1995b). A note on accelerated sequential estimation of the mean of NEF-PVF distributions. **Annals of the Institute of Statistical Mathematics** 47, 1, 99–104.
104. Bose, Arup and Mukhopadhyay, Nitis (1995c). Sequential estimation of the mean of an exponential distribution via replicated piecewise stopping number. **Statistics and Decisions** 13, 351–361.
105. Bose, Arup and Chandra, T. K. (1994). A note on the strong law of large numbers. **Calcutta Statistical Association Bulletin** 44, No. 173-174, 115–122.
106. Bose, Arup and Dasgupta, Ratan (1994a). On some asymptotic properties of  $U$  statistics and one sided estimates. **Annals of Probability** 22, 4, 1715–1724.
107. Bose, Arup and Dasgupta, R. (1994b). Speed of convergence of the least squares estimator in autoregressive models. **Journal of Statistical Planning and Inference** 38, 3, 371–380.
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109. Bose, Arup and Mukhopadhyay, Nitis (1994b). Sequential estimation by accelerated stopping time in a two-parameter exponential family of distributions. **Statistics and Decisions** 12, 281–291 (1994).
110. Bose, Arup and Boukai, Benzion (1993). Sequential estimation results for a two-parameter exponential family of distributions. **Annals of Statistics** 21, 1, 484–502.
111. Bose, Arup and Chandra, T. K. (1993). Cesaro uniform integrability and  $L_p$ -convergence. **Sankhyā**, 55, A, 12–28.
112. Bose, Arup and Chaudhuri, P. (1993). On the dispersion of multivariate median. **Annals of the Institute of Statistical Mathematics** 45, 3, 541–550.
113. <sup>9</sup>Basu, A.; Bose, Arup and Ghosh, J.K. (1991). Sequential design and allocation rules. Invited article in **Handbook of sequential analysis** (Ed. B.K. Ghosh and P.K. Sen), 475–501. Marcel-Dekker.
114. Bose, Arup and Babu, G. J. (1991). Accuracy of the bootstrap approximation. **Probability Theory and Related Fields** 90, 301–316.

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<sup>9</sup>Book Chapter.

115. Bhandari, S.K. and Bose, Arup and (1990). Existence of unbiased estimates in sequential binomial experiments. **Sankhyā** 52, A, 1, 127–130. Corrigenda **Sankhyā** A, 55, 2, 327 (1993).
116. Bose, Arup (1990). Bootstrap in moving average models. **Annals of the Institute of Statistical Mathematics** 42, 4, 753–768.
117. Babu, G.J. and Bose, Arup (1989). Bootstrap confidence intervals. **Statistics & Probability Letters** 7, 151–160.
118. Bhandari, S.K. and Bose, Arup (1989). Selecting the t-best cells in a multinomial distribution. **Communications in Statistics, Theory Methods** 18, 9, 3313–3326.
119. Bose, Arup (1988a). Higher order approximations for auto-covariances from linear processes with applications. **Statistics** 9, 2, 259–269.
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122. Dasgupta, Anirban and Bose, Arup (1988).  $\Gamma$ -minimax and restricted-risk Bayes estimation of multiple Poisson means under  $\epsilon$  contaminations of the subjective prior. **Statistics and Decisions** 6, 311–341.
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124. Bhandari, S.K. and Bose, Arup (1987). On selecting the most likely event. **Journal of Statistical Planning and Inference** 17, 227–240.
125. Bose, Arup (1987). Some remarks on the paper “Sums of independent squared Cauchy variables grow quadratically: Applications” by F. Eicker. **Sankhyā** 49, A, 1, 138–140.
126. Bose, Arup (1986a). Berry-Esseen bound for the maximum likelihood estimator in Ornstein-Uhlenbeck process. **Sankhyā** 48, A, 181–187.
127. Bose, Arup (1986b). Certain non-uniform rates of convergence to normality for a restricted class of martingales. **Stochastics** 16, 279–294.
128. Bose, Arup (1986c). Certain non-uniform rates of convergence to normality for martingale differences. **Journal of Statistical Planning and Inference** 14, 155–167.
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132. Bose, Arup (1983b). Asymptotic theory of estimation in non-linear stochastic differential equations for the multiparameter case. **Sankhyā** 45, A, 1, 56–65.

### B. Book Reviews:

1. Bose, Arup (2014). *Bohr-Jessen limit theorem, revisited* by Satoshi Takanobu. **Mathematical reviews**. MR3089124.
2. Bose, Arup (2006b). *Statistical Analysis and Data Display* by Richard M. Heiberger and Burt Holland. **Sankhyā** 68, 3, 510.
3. Bose, Arup (2006a). *An R and S-Plus Companion to Multivariate Analysis* by Brian Everitt. **Sankhyā** 68, 1, 176.
4. Bose, Arup (2005c). *Statistical Inference for Ergodic Diffusion Processes* by Yuri A. Kutoyants. **Sankhyā** 67, 1, 137–139.
5. Bose, Arup (2005b). *Permutation, Parametric and Bootstrap Tests of Hypothesis*, by Philip Good. **Sankhyā** 67, 1, 140–141.
6. Bose, Arup (2005a). *Statistics and Finance* by David Ruppert. **Sankhyā** 67, 1, 148–149.
7. Bose, Arup (2004b). *Multivariate t distribution and their application* by S. Kotz and S. Nadarajah. **Sankhyā**, 66, 3, 590–591.
8. Bose, Arup (2004a). *All of Statistics: A concise course in statistical inference* by L. Wassermann. **Sankhyā**, 66, 3, 588–589.
9. Bose, Arup (2003e). *Mathematical Statistics* by Jun Shao. **Sankhyā**, 65, 3, 714.
10. Bose, Arup (2003d). *Statistical Data Analysis Based on the  $L_1$ -norm and Related Methods. Statistics for Industry and Technology* by Yadolah Dodge (Editor). **Sankhyā**, 65, 3, 712–713.
11. Bose, Arup (2003c). *A distribution free theory of nonparametric regression* by Lázlyo Györfi, Michael Kohler, Adam Krzyjak and Harro Walk. **Sankhyā**, 65, 2, 490–492.
12. Bose, Arup (2003b). *Lévy Processes. Theory and Applications* by Ole E. Barndorff-Nielsen, Thomas Mikosch and Sidney I. Resnick. **Sankhyā**, 65, 2, 488–489.
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14. Bose, Arup (2002b). *The Basics of S-Plus* (Third Edition) by Andreas Kraus and Melvin Olson. **Sankhyā**, B, 64, 3, 357.
15. Bose, Arup (2002a). *Probability for statisticians* by Galen R. Shorack. **Sankhyā** A, 64, 1, 180–181.

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17. Bose, Arup and Rao, B.V. (2000). *Decoupling* by Victor de la Pena and E. Gine. **Sankhyā A**, Vol 62, 2, 282–283.
18. Bose, Arup (2000). *Mathematical Statistics* by George R. Terrell. **Sankhyā A**, 62, 1, 154–156.
19. Bose, Arup (1999b). *Elements of Large Sample Theory* by E.L. Lehmann. **Sankhyā A**, 61, 3, 453–455.
20. Bose, Arup (1999a). *Theory of Point Estimation* by E.L. Lehmann and G. Casella. **Sankhyā A**, 61, 1, 152.
21. Bose, Arup (1997d). *Visual Explanations*, by E. Tufte. **Sankhyā A**, 3, 453.
22. Bose, Arup (1997c). *Astrostatistics*, by G.J. Babu and F.D. Fiegelson. **Sankhyā A**, 3, 452.
23. Bose, Arup (1997b). *Analyzing and modeling rank data*, by J.I. Marden. **Sankhyā A**, 3, 451.
24. Bose, Arup (1997a). *Introduction to Statistical Time Series* by Wayne Fuller. **Indian Society for Medical Statistics Bulletin**, 12, 1, 2–3.
25. Bose, Arup (1996). *Measure Theory and Probability* by V. Guillemin. **Sankhyā A**, 58, 2, 343.
26. Bose, Arup (1995). *Computer intensive statistical methods*, by J.S. Urban Hjorth **Mathematical Reviews**, 95g:62093.
27. Bose, Arup (1993c). *Time Series: Theory and Methods*, Second Edition, by P.J. Brockwell and R.A. Davis. **Sankhyā A**, 55, 2, 326.
28. Bose, Arup (1993b). *Envisioning Information*, by E. Tufte. **Sankhyā A**, 55, 2, 325.
29. Bose, Arup (1993a). *Linear Models* by R. Christensen. **Sankhyā A**, 55, 2, 325.

**Acted as Referee for the following journals:**

*Economics Journals:* Economics Bulletin, Journal of Business and Economic Statistics. Journal of Economics Management & Strategy, Managerial and Decision Economics, Rand Journal of Economics.

*Econometric Journals:* Journal of Time Series Analysis.

*Mathematics Journals:* Electronic Journal of Linear Algebra, Integers–The Electronic Journal of Combinatorial Number Theory, Indian Journal of Pure and Applied Mathematics.

*Probability Journals:* Annals of Probability, Annals of Applied Probability, Stochastics and Stochastic Reports, Stochastic Processes and its Applications.

*Statistics Journals:* Annals of Statistics, Annals of Institute of Statistical Mathematics, Calcutta Statistical Association Bulletin, Communications in Statistics–Theory Methods, Communications in Statistics–Simulation and Computation, Computational Statistics and Data Analysis, Journal of American Statistical Association, Journal of Indian Statistical Association, Journal of Multivariate Analysis, Journal of Nonparametric Statistics, Journal of Statistical Planning and Inference, Mathematical Methods in Statistics, Metron, Sankhyā Series A, Sankhyā Series B, Sequential Analysis, Statistica Sinica, Statistical Methodology, Statistics.

*Statistics and Probability Journals:* Bernoulli, Extremes, Probability and Mathematical Statistics, Statistics and Probability Letters, Latin American Journal of Probability and Mathematical Statistics ALEA.



*Computer Science Journals:* IEEE Signal Processing Letters.

*Multidisciplinary Journals:* Journal of Advanced Research.

### **PhD Thesis supervision:**

1. *Monika Bhattacharjee. Asymptotics of large covariance and autocovariance matrices*, Indian Statistical Institute, 2016. Currently, Post Doc. Fellow, The Informatics Institute, University of Florida, USA.
2. *Koushik Saha. Spectral properties of large dimensional random circulant type matrices*, Indian Statistical Institute, 2011. Currently Assistant Professor and Inspire Fellow, Dept. of Math. Indian Institute of Technology, Mumbai.
3. *Santanu Dutta. Smooth bootstrap estimate of some local and global measures of accuracy of kernel density estimators*, Tezpur University, 2011. Co supervisor. Currently Associate Professor, Dept. of Stat., Tezpur University, Assam, India.
4. *Snigdhanu Chatterjee. Generalised Bootstrap Techniques*, Indian Statistical Institute, 2000. Currently Director, Inst for Research in Statistics and its Applications, University of Minnesota, USA.
5. *J.P.N. Bishwal. Asymptotic theory of estimation of the drift parameter in diffusion processes*, Sambalpur University, 2000. Currently, Associate Professor at Dept. of Math., University of North Carolina, Charlotte, USA.

### **Master's Student Dissertation supervision:**

1. *Sohom Bhattacharya. Random matrices with dependent entries*, M.Stat. Final Year dissertation at ISI, July 2016– May 2017 (in lieu of one full course).  
(following dissertations 2–10, in lieu of two full courses)
2. *Pratyay Dutta, Block Hankel random matrices*, M.Stat. Final Year dissertation at ISI, July 2015– May 2016.
3. *Debapratim Banerjee, Random Matrices with independent and free entries*, M.Stat. Final Year dissertation at ISI, July 2014– May 2015. Currently Graduate student at University of Pennsylvania, Wharton, USA.
4. *Soumendu Sundar Mukherjee, Random Matrices*, M.Stat. Final Year dissertation at ISI, July 2013– May 2014. Currently Graduate Student at University of California, Berkeley, USA.
5. *Riddhipratim Basu, Large Dimensional Random Matrices*, M.Stat. Final Year dissertation at ISI, July 2010–May 2011. Currently Assistant Professor, ICTS, Bengaluru, India.
6. *Shirshendu Gangopadhyay, Large Dimensional Random Matrices*, M.Stat. Final Year dissertation at ISI, July 2010–May 2011. Currently Miller Fellow in Statistics and Mathematics at UC Berkeley, USA.

7. *Sayan Banerjee*, Large Dimensional Random Matrices, M.Stat. Final Year dissertation at ISI, July 2009–July 2010. Currently Assistant Professor, University of North Carolina, USA.
8. *Sanchayan Sen*, Limiting Spectral Distribution of Random Matrices, M.Stat. Final Year dissertation at ISI, July 2009–July 2010. Currently Assistant Professor, Eindhoven University of Technology, Netherlands.
9. *Anirban Basak*, Large Dimensional Random Matrices, M.Stat. Final Year dissertation at ISI, July 2008–June 2009. Currently Assistant Professor Weizmann Institute, Israel.
10. *Arnab Sen*, Large Dimensional Random Matrices, M.Stat. Final Year dissertation at ISI, July 2005–June 2006. Currently Assistant Professor, University of Minnesota, USA.

**One semester Master’s project supervision (each project counts as one full course):**

1. *Suman Chakraborty*, Theory of Large Deviations, M. Stat. Final Year project at ISI, Jan.–May 2013.
2. *Bhaskar Dutta*, *M.Sc. (Statistics), Final year, Presidency University, Kolkata*. Jackknife and Bootstrap on different Statistics, Jan. 2013–June 2013.
3. *Alok Bakshi*, Random Matrices. M.Math. Final Year project at ISI, Jan.–April 2012.
4. *Tamal Ghosh*, GARCH Model and bootstrapping. M.Stat. Final Year project at ISI, Jan.–May 2009.
5. *Abhishek Bhattacharya*, Resampling in time series models, M.Stat. Final Year project at ISI, Jan.–May 2004.
6. *Sourav Chatterjee*, Random Matrices, M.Stat. Final Year project at ISI, Jan.–May 2002.
7. *Soumik Pal*, ARCH Models, M.Stat. Final Year project at ISI, Jan.–May 2002.
8. *Snigdhasu Chatterjee*, Last Passage Time of  $M$  Estimates, M.Stat. Final Year project at ISI, Jan.–May 1995.

**Summer project supervision:**

(jointly with Arijit Chakrabarty, Rajat Hazra and Krishanu Maulik) Ramprasad Kale, B.Sc., Second year NISER, June–July 2017.

(jointly with Arijit Chakrabarty, Rajat Hazra and Krishanu Maulik) Suvadip Sana, B.Math., First year ISI, Bengaluru, June–July 2017.

(jointly with Krishanu Maulik) *Sayantani Bhattacharya*, B.Sc., first year, Chennai Mathematical Institute (CMI), June–July 2016.

(jointly with Krishanu Maulik) *Hridya Dilip*, ??, IISER Trivandrum, June–July 2016.

(jointly with Krishanu Maulik) *Ankita Sarkar*, B.Sc., first year, CMI, June–July 2016.

*Dipankar Mondal, M.Sc., CMI, May–July 2014.*

*Utsab Sarkar, B.Sc., Second year, CMI, May–July 2014.*

*Suman Sadhukhan, B.Sc., First year CMI, May–July 2014.*

*Pranjal Dutta, B.Sc., First year, CMI, May–July 2014.*

*Aditya Aradhye, B.Sc. First year, CMI, June 17–July 27, 2013.*

*Debsoumya Chakraborti, B.Sc. First year, CMI, KVPY project, June 17–July 27, 2013.*

*Debapratim Banerjee, B.Stat. Third year, ISI. KVPY Summer project May–July 2014.*

*Soumendu Sundar Mukherjee B.Stat. Third year, ISI. KVPY project May–July 2013.*

*Sougata Choudhuri, Classification and variable selection in regression modelling, two month Masters Summer Project supported by Jawaharlal Nehru Center for Advanced Scientific Research, done at ISI, 2008.*

#### **Other recent guidance/mentoring of students:**

*Apratim Dey, B.Stat. Third year. Independent study, 2016–. Mentored him for the D. Basu medal competition lecture, 2017. He won the medal.*

*Soham Bhattacharya, B.Stat. Third year. Independent study, July 2014–June 2016. Mentored him for the D. Basu medal competition lecture, 2014.*

*Koulik Khamaru, B.Stat. Third year. Independent study, July–December 2014.*

*Soumendu Sundar Mukherjee, M.Stat. Second year. Mentored him for the PCM Medal lecture, 2014. He won the medal.*

*Debapratim Banerjee, B.Stat. Third year. Independent study on Random Matrices Dec. 2012–July 2014. Mentored him for the D. Basu medal competition lecture, 2013.*

*Soumendu Sundar Mukherjee, B.Stat. Third year/M.Stat. First year. Independent study on Random Matrices June–Oct. 2012. Mentored him for D. Basu medal competition lecture for B. Stat. graduating students, 2012. He was the sole winner of the medal for 2012.*

*Monika Bhattacharya, M.Stat. Second year. Independent study on Inference in Large Dimensional Data, Jan.–Aug. 2012. Her PCM medal lecture was based on this. She was the sole winner of the medal for 2012.*

*Suman Chakraborty, M.Stat. Second year, Independent study on Large Deviations Jan.–Dec. 2012.*

*Sayan Banerjee, M.Stat. Second year. Mentored him for the PCM Medal lecture, 2010. He won the medal.*

*Arnab Sen, M.Stat. Second year. Mentored him for the PCM Medal lecture for M.Stat. graduating students, 2006.*

<sup>11</sup> **Classroom Teaching** (Partial list based on incomplete information).

**Oct. 2012–, Indian Statistical Institute:**

- *Random matrices* M.Stat Second year, January 2017–April 2017.
- *Basic probability* Research course for first year JRF in Mathematics, July 2016–December 2016.
- *Introduction to random matrices* Research course for second year JRF, September 2016–November 2016.
- *Introduction to free probability* Research course for second year JRF, June 2016– September 2016.
- *A few lectures in probability* at NESWAP, May 30–July 04, 2016 at Rajib Gandhi University.
- *Probability* Research course for first year JRF in Mathematics (jointly with Krishanu Maulik), January 2016–May 2016.
- *Measure theory and Probability* Research course for first year JRF in Statistics and Mathematics, August 2015– December 2015.
- *U statistics* Research course (half), January–February, 2015.
- *Combinatorics of Free Probability IV* Research course, January–April 2015.
- *Combinatorics of Free Probability III* Research course, September–December 2014.
- *Resampling* Research course, August–December 2014.
- *Combinatorics of Free Probability II* Research course, May 2014–August 2014.
- *Combinatorics of Free Probability I* Research course, October 2013–March 2014.
- *Two lectures on resampling*, January 2014, at Indian Statistical Institute, North East, for Diploma students.
- *Random Matrix Theory* Research course, June 2013–Aug. 2013.
- *Advanced Probability* Research course, Feb. 2013–April 2013.
- *Time Series* Research course, Oct. 2012–Jan. 2013.

**July 2012, Calcutta University, Kolkata:**

- Three hours of lecture on *Resampling* conducted by UGC Staff College, University of Calcutta, July 20, 2012.

**Oct. 2007–April 2012, ISI, Kolkata:**

- *Random Matrices*, LSD for different matrices. Stieltjes transform in random matrices. Research course (and also for one M.Math project student), Jan. 2012–April 2012.
- *Introduction to Random Matrices*. Research course. Sept. 2011–Oct. 2011.
- *Spectral density and periodogram of univariate time series*. Research course, July 2011–Sept. 2011.
- *Asymptotic Theory* ( $U$  statistics,  $M$  estimates and efficiency of estimators). Research course, Jan. 2011–May 2011.
- *Time Series*. Research course, July 2010–Dec. 2010.
- *Asymptotic Theory* ( $U$  statistics,  $M$  estimates and resampling). Research course, Jan. 2010–May 2010.
- *Patterned Random Matrices and Free Probability*. Research course (and also for two M.Stat. Project students), Jan. 2010–April 2010.
- *Measure Theory and Probability*. M.Stat. First Year, July 2008–Dec. 2008.

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<sup>11</sup>Other forms of teaching as defined by the Indian Statistical Institute is not included here.

· *Limiting Spectral Distribution of Large Dimensional Random Matrices*. Seminar course for Research Scholars, Oct. 2007–Dec. 2007.

**Oct. 2007, Reserve Bank of India, Mumbai:**

· *Resampling and Nonparametrics*, a course of twelve sessions to RBI Officers and trainees, Oct. 2007.

**July 2007, Indian Institute of Astrophysics–Pennsylvania State University Astrostatistics School at Kavalur:**

· *Estimation and Testing*. A few lectures, July 2007.

**July 2002–Sept. 2007, ISI, Kolkata:**

- *Infinitely Divisible Laws*. Research course, July 2007–Sept. 2007.
- *Probability Theory and Stochastic Processes*. M.Math. Second year, Jan. 2007–May 2007.
- *Measure Theoretic Probability*. M.Math. First year, July 2006–Dec. 2006.
- *Nonparametric Inference*. M.Stat. Final Year, Jan. 2006–May 2006.
- *Statistical Computing* (jointly with Arnab Chakraborty) M.Stat. July 2005–Dec. 2005.
- *Time Series Methods*. M.Stat. First Year, Jan. 2005–May 2005.
- *Asymptotic Theory of Inference*. M.Stat. Final Year, Jan. 2004–May 2004.
- *Nonparametric Statistics*. M.Stat. Final Year, July 2003–Dec. 2003.
- *Time Series Methods*. M.Stat. Final Year, Jan. 2003–May 2003.
- *Large Sample Statistical Methods*. M.Stat. First Year, July 2002–Dec. 2002.

**April 2001–June 2001, Univ. of California at San Diego, USA:**

· *Statistical Methods* (undergraduate) April 2001–June 2001.

**June 2000–March 2001, ISI, Kolkata:**

- *Asymptotic Theory of Inference*. M.Stat. Final year, July 2001–Dec. 2001.
- *U Statistics and M Estimates*. UGC Refresher course, Feb. 2001–March 2001.
- *Time Series*. M.Stat. Final Year and M.Stat. First Year, Jan. 2001–May 2001.
- *Nonparametric Statistics*. M.Stat. Final year, Aug. 2000–Dec. 2000.

**Jan. 2000–May 2000, Purdue University, USA:**

· *Statistics for Life Sciences*. Two sections, Jan. 2000–May 2000.

**June 1996–Dec. 1999, ISI, Kolkata:**

- *Decoupling*. Seminar course for Faculty and Research Scholars. 1999.
- *Nonparametric Statistics*. M.Stat. Final year, Aug. 1999–Dec. 1999.
- *Inference II*. B.Stat. Third year, Jan. 1999–May 1999.
- *Time Series* (jointly with S. Chatterjee). UGC Refresher Course, Feb. 1999.
- *Inference I*. B.Stat. Third year, Aug. 1998–Dec. 1998.
- *Statistical Decision Theory*. M.Stat. Final year, Aug. 1997–Dec. 1997.
- UGC refresher course, December 1996.

**Aug. 1995–May 1996, Purdue University, USA:** Four full courses including

- *Probability* (undergraduate)
- *Statistical Methods* (undergraduate).

**June 1993–July 1995, ISI, Kolkata:**

- *Time Series*. M.Stat. First Year, Jan. 1995–May 1995.
- *U Statistics*. SERC School, Oct. 1994–Nov. 1994.

- *Time Series*. M.Stat. Final Year and M.Stat. First Year, Jan. 1994–May 1994.
- *Bayesian Statistical Methods*: M.Stat. First Year, July 1993–December 1993.

**Aug. 1992–May 1993, Indiana University Purdue University at Indianapolis, USA:**

- *Sample Surveys*. Masters level, Jan. 1993–May 1993.
- *Probability*. Masters level, Jan. 1993–May 1993.
- *Statistical Methods* (dual level), two sections, Aug. 1992–Dec. 1992.

**Jan. 1991–July 1992, ISI, Kolkata:**

- *Summer School on Regression Techniques and Multivariate Statistical methods*. Organiser (jointly with S. DasGupta), June 04–June 16, 1992.
- *Time Series*. M.Stat. First Year and B.Stat. Third Year, Jan. 1992–May 1992.
- *Bayesian Inference* (jointly with Debapriya Sengupta). M.Stat. Final Year and M.Stat. First Year, July 1991–Dec 1991.
- *Sequential Estimation*. M.Stat. Final Year, Jan. 1991–May 1991.

**Jan. 1987–December 1990, Purdue University, USA.** *Twenty* courses in all, including

- *Measure Theoretic Probability*. Masters level.
- *Probability*. Masters level.
- *Design of Experiments*. Masters level.
- *Statistical Inference*. Masters level.
- *Introduction to Probability*. Undergraduate level.
- *Statistical Methods*. Dual/undergraduate level.

**July 1982–December 1986, ISI, Kolkata** Taught as an SRF (Graduate student):

- *Applied Stochastic Process*. M.Stat. Final year. Aug. 1986–Dec. 1986.
- *Summer School on Analysis and Probability*, two lectures on conditional probability. For Lecturers and Research Scholars, May 1986–June 1986. Tutorial.
- *Markov Processes and Stochastic Integrals*. Research course.
- *Asymptotic Theory* (part). M. Stat.
- *Nonparametric estimation* (part). M.Stat.

**Service**

**Academic, External:**

*Bernoulli Society Council Member*, July 2015–June 2019.

*Award Committees*: CSIR Bhatnagar Prize; NASI-SCOPUS Young Scientist 2009; International Indian Statistical Association Young Scientist 2009; Young Scientist Screening Committee for Indian Science Congress Association.

*Fellows and Associates Committee*: Inspire Fellows Selection Committee. Indian Academy of Sciences Fellows, 2016– (Convener), 2015, 2014, 2013. Indian Academy of Sciences Associates 2016, 2017. INSA Fellow and INSA Young Scientist 2010 and 2011.

*Nominating Committee*: for Office Bearers of Institute of Mathematical Statistics USA 2010. Karl Pearson Prize committee of Bernoulli Society.

*Grant award and grant implementation Committee*: Mathematical Sciences Research Committee, CSIR 2015–; FIST DST; Advisory Committee of DSA programme in Statistics, Calcutta University, 2010–.

*Curriculum development and/or syllabus committees*: Central University Bihar 2009; Central University Sikkim 2010; Utkal University 2010.

*Faculty promotion/selection/re-employment committees:* IIT Palakkad 2018, IIT Mumbai 2017, 2014; Central University Hyderabad 2017, 2007; Central University Panjab, Bhatinda, 2016, 2015; IIT Kharagpur, 2016; Central University Bihar, Patna, 2015, 2013, 2011; Visitor's (President of India's) nominee Rajiv Gandhi University Arunachal Pradesh 2012–2015; Visitor's (President of India's) nominee Tezpur University 2012–2015; Institute of Mathematical Sciences, Chennai, 2014; Chancellor's nominee, Calcutta University 2013; Institute of Advanced Study in Science and Technology Guwahati; NIT, Sikkim, 2012; University of Calcutta, 2012; IISER Kolkata 2010; IISER Mohali 2008; Lucknow University, 2008; Visva Bharati University, Shantiniketan 2004.

*Other committees:* External Review Committee, NISER 2017; Board of Post Graduate Studies, School of Mathematical Sciences, Tezpur University, 2016–2019; D.S. Kothari Post Doctoral Fellowship Scheme, UGC, 2014–; Visitor's (President of India's) nominee Court of Mizoram University 2012–2015; External Review Committee, IIT Mumbai, 2014; Central University Hyderabad School Board Member 2012–; Selection of scholars for Science Academies' Summer Research Fellowship Programme for Students and Teachers 2013; IISc Mathematics (IMI) thematic programme committee on Probability Theory and Applications. August 2012–July 2013.

*Examination Committees/Question paper setter:* Govt. organizations; Universities; CSIR Shyamaprasad Mukherjee Fellowship test committee, 2004, 2010.

#### **Academic committees at ISI, 1991–:**

##### **Entrance Exam committees:**

Junior Research Fellows (JRF) in Mathematics, 2016, 2015, 2010, 2008, 2007.

Master of Mathematics, 2016, 2014, 2008.

Post Graduate Diploma in Business Administration, 2016.

Mathematics for Master of Stat., Master of Tech. in SQC and in Computer Science, 2013, 1995.

JRF in Computer Science, 2013.

Bachelor of Statistics, 2006, 2002, 1997, 1996, 1993.

JRF in Statistics, 2003, 1999, 1992, 1991.

Master of Statistics, 2001, 1995, 1992.

JRF in Theoretical Computer Science, 1992.

Master of Technology in Computer Science, 1991.

##### **Other academic committees:**

Department Visiting Scientist selection Committee, 2015–2017.

PGDBA Committee, Chairman, 2015.

PCM Memorial Lecture Committee, 2018–2019, 2017–2018, 2016–2017, 2015–2016, 2014–2015.

Department Research Fellow Advisory Committee: 2012–2015, 2003–2010, 1998–2002, 1994–1996.

D. Basu Memorial Medal Committee, 2012.

M.Math. Syllabus Review Committee, 2008–2009.

Sankhyā committee, 2006.

PhD. D.Sc. Committee 2004–2006.

Committee for recruitment in Statistics/SQC, 2004.

Mahalanobis Symposium Prize committee, 2002–2003.

Department Standing Search Committee, 2000–2001.

Examinations Committee for professional examinations, 1996.

Dean's Research Associate Selection Committee, 1994.

Introduction of Master's programme in Economics, Syllabus committee, 1991.  
M.Stat. Syllabus Review Committee.

**Academic committees at Purdue University, USA. 1987–1990:**

Ph.D. Examinations Committee of three students, 1989–1990.  
Masters Examination Committee of one student, 1989.  
Ph.D. Qualifying Examinations Committee, 1988–1990.

**Non-academic committees at ISI:**

Professor In Charge and Heads Committee, Chairman, November 2016–  
PC Mahalanobis Museum Committee, Chairman, 2016–  
Memorandum of Association Committee, Joint convener, 2016–2017 (had offered to recuse))  
Campus Network Committee Vice-Chairman, 2004–2005  
Chief Librarian selection committee, 2004  
Administrative workers review 2003, 2001, 1999  
Committee on Revision of Scientific Positions and selection criteria, 1999–2000.

**Conferences, workshops, special invited talks**

1. *2nd BRICS Mathematics Conference*, Foz do Iguasu, Brazil, July 22–27, 2018. Plenary speaker.
2. *ISI + NETWORKS workshop*, Indian Statistical Institute, Kolkata, India, Jan. 29–Feb. 02, 2018. Member, Scientific organizing committee. Also gave an invited talk.
3. *Workshop on Econometrics*, Indian Statistical Institute, Kolkata, India, January 2018 (five days), by Anil Bera. Organiser. Funded by my J C Bose Fellowship.
4. *Workshop on Astrostatistics*, Indian Statistical Institute, Kolkata, India, January 05, 2018, by G.J.Babu and his colleagues. Organiser. A PCM 125th Birth Anniversary activity.
5. *International Conference on Statistics and Probability*, Indian Statistical Institute, Kolkata, India, January 2–4, 2018. Vice-chairman, Organizing Committee. A PCM 125th Birth Anniversary activity.
6. *IISA 2017 International Conference on Statistics* Hyderabad, India, December 28-30, 2017. Special Invited Lecture. Also organised a session on Random Matrices.
7. *International Conference on Linear Algebra and its Application*, Manipal University, Manipal, India, December 11–15, 2017. Member, National Organising committee and Invited speaker. Could not attend.
8. *Workshop on current issues and applications of statistical methods* Central University of Hyderabad, India, October 16, 2017. Invited Lecture.
9. *Random Days*, Stat-Math Unit Kolkata, Aug 31–Sept 01, 2017. Joint organiser.
10. *Workshop on Applied Probability*, TIFR, Mumbai, India March 31-April 02, 2017. Invited speaker.
11. Invited lecture *Bits of Statistics*, for undergraduates, at St. Xavier's College, Kolkata, India, March 15, 2017.
12. *7th Workshop on Digital Pictorial Photography (WDPP-2017)*, Indian Statistical Institute, February 13-14, 2017. Invited talk: Wide angle travel.
13. *The TIMC-AMS conference*, Benaras Hindu University, Dec. 14–17, 2016. Organiser (with Richard Davis) of a Probability Symposium. Also chaired a Plenary session.



14. *Simposio de Inferencia y Modelación Estadística*, CIMAT, Guanajuato, Mexico, November 21–23, 2016. Invited speaker for a short course (approx four hours) on *Random matrices and high dimensional time series*.
15. *Hokkaido International Symposium on Recent Developments in Statistical Theory in Statistical Science*, Sapporo, Japan, Oct. 27–29, 2016. Invited speaker.
16. *Waseda International Symposium on High Dimensional Statistical Analysis for Time Spatial Processes, Quantile and Empirical Likelihood Analysis for Time Series*, Waseda, Japan, Oct. 24–26, 2016. Invited speaker. Also chaired a session.
17. *The 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting*. The Chinese University of Hongkong, June 27–30, 2016. Invited speaker. Also chaired a session.
18. *North-East Summer Workshop in Analysis and Probability*, May 31–June 04, 2016, Rajib Gandhi University. Five lectures in probability.
19. *A random day*, Indian Statistical Institute, Kolkata, April 18, 2016. Organizer (with Krishanu Maulik and Parthanil Roy). Also gave a talk.
20. *6th Workshop on Digital Pictorial Photography (WDPP-2016)*, Indian Statistical Institute, January 04–05, 2016. Invited talk: Feather touch.
21. *Conference in Analysis and Probability, celebrating Professor B V Rao's 70th Birthday*, November 27–29, 2015, Indian Statistical Institute, New Delhi. Invited talk.
22. *Workshop on Free Probability Theory*, Oberwolfach, Germany, June 07–13, 2015. Invited participant. Also gave a short talk.
23. *Two random afternoons*, Indian Statistical Institute, Kolkata, May 29 and June 02, 2015. Organizer (with Rajat Hazra and Parthanil Roy). Also gave a talk.
24. Indo-US Workshop on Time Series Analysis, Indian Institute of Science Education and Research (IISER), Pune May 25–30, 2015. Invited speaker.
25. *5th Workshop on Digital Pictorial Photography (WDPP-2015)*, Indian Statistical Institute, February 02–03, 2015. Invited talk: Don't leave home without it.
26. *Ramanujan Distinguished Lecture* speaker, CR Rao Advanced Institute of Mathematics, Statistics & Computer Science Hyderabad, January 30, 2015.
27. *Random matrices and their applications*, The University of Hong-Kong, January 6–9, 2015. Invited speaker.
28. *International Conference on Linear Algebra and its Application*, Manipal University, Manipal, India, December 18–20, 2014. Invited speaker.
29. *Stochastic Analysis and Applications*, Indian Institute of Science, Bengaluru, India, September 8–11, 2014. Invited speaker. Also chaired a session.
30. *One Day Symposium on Probability Theory and its Applications*, Indian Statistical Institute, Kolkata, August 28, 2014. Invited speaker. Also chaired a session.
31. *16th Workshop: Non-commutative harmonic analysis: Random Matrices, representation theory and free probability, with applications*, Bedlewo, Poland, July 06–12, 2014. Invited speaker.
32. *Random Matrix Theory: Foundations and Applications*. Jagiellonian University, Cracow, Poland, July 01–06, 2014. Invited speaker.
33. *STATQUEST 2014* (Seminars for research scholars). Calcutta University, March 27, 2014. Special invited talk.

34. *4th Workshop on Digital Pictorial Photography (WDPP-2014)*, Indian Statistical Institute, March 03–04, 2014. Invited talk: Creating Memories.
35. *Statistics 2013*, C R Rao Advanced Institute of Math., Stat. and Comp.Sc, Dec. 28–31, 2013. Invited speaker and chairman of a session.
36. *Workshop on Multivariate Analysis and Random Matrices: New Tendencies*. CIMAT, Guanajuato, Mexico, Sep. 19–21, 2013. Invited speaker, mini course on *Limiting spectral distribution of patterned random matrices*.
37. *Advanced School and Workshop on Random Matrices and Growth Models*. ICTP, Trieste, Italy, Sept. 02–13, 2013. Invited speaker.
38. *CRM Colloque in Statistics*. Montreal, April 12, 2013. Invited speaker.
39. *CRM Colloque in Probability*. Montreal, April 04, 2013. Invited speaker.
40. *STATQUEST-III* (Seminars for research scholars). Calcutta University, March 05, 2013. Special invited talk.
41. *Workshop on Heavy-tailed Distributions and Extreme Value Theory*. ISI, Kolkata, Jan. 14–17, 2013. Invited speaker.
42. *Conference on Topics in Probability*. Chennai Mathematical Institute (CMI) Organised by CMI, Institute of Mathematical Sciences and Statistical and Mathematical Sciences Institute, December 18–20, 2012. Invited speaker.
43. *World Congress in Probability and Statistics*. Istanbul, Turkey, July 9–12, 2012. Invited Session organizer (did not attend, only organised) in Random Matrices.
44. *The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting*. Tsukuba, Japan, July 02–04, 2012. Distinguished Lecturer and Invited Session organizer on Random Matrices and Applications.
45. *Economic Theory and Policy Conference*. National Institute of Public Finance and Policy, New Delhi and Jawaharlal Nehru University, New Delhi, March 29–31, 2012. Invited speaker and chairman of a session.
46. *National Seminar on Econometrics and Development Statistics*. Department of Statistics, University of Calcutta, Kolkata, India, Feb. 09–10, 2012. Invited speaker.
47. *Random Matrix Theory and its Applications*. Indian Institute of Science, Bengaluru, India, Jan. 26–Feb. 01, 2012. Conference supported by International Centre for Theoretical Sciences, TIFR. Invited speaker.
48. *Twelfth Discussion Meeting on Harmonic Analysis*. Stat.-Math. Unit, ISI, Kolkata, India, December 27–29, 2011. Invited speaker.
49. *Seminar on Random Matrices*. Stat.-Math. Unit, ISI, Kolkata, India, July 21–22, 2011. Organizer. Seminar supported by J.C. Bose Fellowship of Arup Bose.
50. *Fourth Annual Conference on Entrepreneurship and Innovation*. Northwestern University, Chicago, USA, June 16–17, 2011. Coauthor presented our joint invited paper. I was discussant to two papers.
51. *Seventh Annual Conference on Models and Methods in Economics*. Economics Research Unit, ISI, Kolkata, India, Feb. 02–03, 2011. Member, organizing committee. Conference supported by J.C. Bose Fellowship of Arup Bose.
52. *Seminar on Probability and Statistics*. Stat.-Math. Unit, ISI, Kolkata, Jan. 06–07, 2011. Joint Organiser (with Probal Chaudhuri). Seminar supported by J.C. Bose Fellowship of Arup Bose.

53. *International Congress of Mathematicians*. Hyderabad, India, Aug. 18–27, 2010. Invited speaker.
54. *ICM Satellite Conference on Probability and Stochastic Processes*. ISI, Bengaluru, India, Aug. 13–17, 2010. Invited speaker. Also organised a session on Random Matrix. Member, Local Organizing Committee.
55. *Conference on Economic Theory, Markets and Institutions of Governance*. Jawaharlal Nehru University and National Institute of Public Finance and Policy, New Delhi, India, March 22–24, 2010. Invited speaker.
56. *International Colloquium on “Perspectives in Fundamental Research”, in celebration of the birth centenary of Dr. Homi J. Bhaba*. Tata Institute of Fundamental Research, Mumbai, India, March 03–06, 2010. Invited speaker.
57. *One day seminar in memory of Sir Clive Granger*. Economics Research Unit, ISI, Kolkata, India, Jan. 12, 2010. Invited speaker.
58. *Conference on Advances in Statistics in honor of Professor Bai Zhidong on his 65th birthday*. National University of Singapore, July 20, 2008. Invited speaker.
59. *7th World Congress in Probability and Statistics*. National University of Singapore, July 14–19, 2008. Chair of an invited session.
60. *Workshop on High-Dimensional Data Analysis*. Institute of Mathematical Sciences, National University of Singapore, Feb. 27–29, 2008. Member, Organizing committee. Also gave an invited talk and chaired a session.
61. *Hyderabad Symposium in Probability and Statistics*. University of Hyderabad, India, December 17–19, 2007. Invited speaker.
62. *Conference on Recent Advances in Probability*. ISI, Kolkata, India, December 11–15, 2007. Member, Organizing committee.
63. *Statistics Day celebration at Reserve Bank of India*. Mumbai, India, occasion of May 29, 2007. Invited lecture.
64. *First Lectures on Probability and Stochastic Processes*. ISI, New Delhi, Nov. 25–27, 2006. Six lectures on Random Matrices. Invited lecturer.
65. *Workshop on Large Dimensional Random Matrices*. Institute of Mathematical Sciences, National University of Singapore, March 04–15, 2006. Invited speaker, two talks.
66. *A.K.Basu Memorial Seminar on Statistical Modelling and Applications*. University of Calcutta, India, March 02–03, 2006. Invited speaker.
67. *National Conference on Statistical Inference*. Pune University, Pune, India, Jan. 08–10, 2006. Invited speaker and chairman of a session.
68. *ISI-Academia Sinica Conf. on Probability and Statistics*. Kolkata, ISI, Kolkata, India, Jan. 04–06, 2006. Member, Organizing committee.
69. *Sixth Annual Conference on Mathematical Methods in Economics*. Economics Research Unit, ISI, Kolkata, India, Dec 28–30, 2005. Chaired a session.
70. *Asian Mathematical Conference*. National University of Singapore, Singapore, July 18–23, 2005. Invited speaker.
71. *National seminar on order statistics and concomitants*. University Mysore, India, Nov. 26–28, 2004. Invited speaker and chairman of a session.

72. *Conference of the International Chinese Statistical Association.* National University of Singapore, Singapore, July 20–24, 2004. Invited speaker and chairman of a session.
73. *Fifth Triennial Calcutta Symposium on Probability and Statistics.* University of Calcutta, Kolkata, India, Dec. 28–31, 2003. Invited speaker.
74. *Annual conference of the Indian Society for Probability and Statistics.* Pune University, Pune, India, Jan. 2002. Invited speaker and chairman of a session.
75. *Statistics and Mathematics Conference in honour of J.K. Ghosh and K.R. Parthasarathy.* ISI, New Delhi, India, Jan. 18–21, 2002. Invited speaker.
76. *N.M. Bhatt Lecture Series* speaker, M.S. University, Vadodara, July 27, 2002–July 29, 2002.
77. *International Conference in honour of eightieth birthday of Professor C.R. Rao.* ISI, Kolkata, India, Dec 29–30, 2000. Organised and chaired a session for Young Researchers.
78. *Workshop on Limit Theorems in Probability.* Department of Statistics, University of Mysore, India, Sept. 04–07, 2000 Invited speaker.
79. *International Workshop on Statistics and Probability.* ISI, New Delhi, India, Dec. 17–21, 1999. Invited speaker and chairman of a session.
80. *XVIII Annual Conference of Indian Society for Probability and Statistics.*, Sambalpur University, India, Jan. 27–30, 1998. Invited speaker and chairman of a session.
81. *Joint International Conference of the Bernoulli Society and ISI.* Calcutta, India, Dec. 29, 1997–Jan. 01, 1998 Organised and chaired a session.
82. *Third Triennial Calcutta Symposium on Probability and Statistics.* Calcutta, India, Dec. 26–28, 1997. Invited speaker.
83. *International conference on stochastic and numerical modelling and applications.* Utkal University, Bhubaneswar, India, Jan. 06–08, 1997. Invited speaker.
84. *Workshop on life testing and reliability.* Calcutta University, Kolkata, India, June 23–24, 1995. Invited speaker.
85. *Eightysecond Session of the Indian Science Congress.* Jadavpur University, Kolkata, India, Jan. 03–08, 1995. Invited speaker.
86. *Second Triennial International Symposium on Statistics.* Calcutta University, Kolkata, India, Dec. 30, 1994–Jan. 02, 1995. Invited speaker.
87. *XV Annual Conference of Indian Society for Prob. and Stat.* Dec. 21–23, 1994, Manonmaniam Sundarnar University, Tirunelveli, India. Invited speaker and chairman of a session.
88. *Fifth Purdue symposium on Statistical Decision Theory and related Topics.* Purdue University, West Lafayette, USA, June 14–19, 1992. Invited speaker and chairman of a session.
89. *Seventyninth session of Indian Science Congress Association.* M.S. University, Baroda, India, Jan. 03–08, 1992. Invited speaker.
90. *Discussion meeting on Stochastic Differential Equations.* Indian Institute of Sciences, Bangalore, India, June 10–12, 1991. Invited speaker.
91. *Seventy Third Session of Indian Science Congress Association.* Delhi University, India, Jan. 03–08, 1986. Invited speaker.
92. *National Seminar on Statistical Inference, Stochastic Processes and Sample Surveys.* Sambalpur University, Sambalpur, India, Dec. 21–26, 1985. Invited speaker.

93. *XIII International Conference on Stochastic Processes and their Applications*. Banaras Hindu University, Varanasi, India, Dec. 17–21, 1983. Invited speaker.

**Selected Short visits/lectures (in alphabetic order)**

*Chennai Mathematical Institute*, India, September 2017.  
*Concordia University*, April 2013.  
*Florida State University*, Tallahassee, USA; March 1987.  
*George Washington University*, Washington D.C., USA; March 1988.  
*Indian Institute of Management*, Ahmedabad, India: Feb. 2012.  
*Indian Institute of Technology*, Mumbai, India: march 2017; January 2014; April 1995.  
*Indian Institute of Technology*, Guwahati, India: March 2005.  
*Indian Statistical Institute*, Chennai, India, September 2017.  
*Indian Statistical Institute*, Delhi, India, September 2017.  
*Indian Institute of Science*, Bengaluru, India: Oct. 2009; Oct. 2011.  
*Indiana University-Purdue University at Indianapolis*, USA: Dec. 2013; Sept. 2012; Oct. 2010; Sept. 2009; Oct. 2005; April 2000; Feb. 2000.  
*Indiana University*, Bloomington, USA, Nov. 2010.  
*Institute of Mathematical Sciences*, National University of Singapore: March 2006.  
*Lehigh University*, Bethlehem, Pennsylvania, USA, March-April 2016; July 2015; Sept. 2012.  
*Miami University*, Oxford, Ohio, March 2016; July 2015; April-May 2014.  
*M.S. University*, Vadodara, July 2002. Delivered the N.M. Bhatt Lecture Series.  
*Michigan State University*, East Lansing, USA: May 2013; May 2012; March 2000.  
*National Institute of Biomedical Genetics*, Kalyani, India: February 2014  
*National Institute of Science education and Research*, Bhubaneswar, India: April 2017  
*National University of Singapore*: Nov. 2007; July 2005; July 2004; May 2000.  
*Northern Illinois University*, DeKalb, USA: March 2000; Dec. 1989.  
*Panjab University*, Chandigarh, India, Oct. 2003.  
*Pune University*, India: March 1995; 1991;  
*Purdue University*, West Lafayette, Indiana, USA; Jan. 1993.  
*Rutgers University*, Camden, New Jersey, USA; March 1996.  
*Rutgers University*, New Brunswick, New Jersey, USA: April 2000; March 1996.  
*Stanford University*, Stanford, California, USA: May 2001.  
*University of California*, Davis, USA: June 2001.  
*University of California*, Riverside, USA: May 2001.  
*University of California*, San Diego, USA: March 2000. Prestigious *Week Long Visitor*.  
*University of Cincinnati*, Ohio, USA: Feb.-March, 2018; Nov. 2016; March 2016; July 2015; April-May 2015; April 2014; Nov. 2013; June 2013, March 2013; Sept. 2012; May 2012; Dec. 2011; Oct. 2010; May 2010; May 2009; Aug. 2009; April 2008; June 2006; Oct. 2005; May 2000.  
*University of Connecticut*, Storrs USA; Oct. 1995; Oct. 1992.  
*University of Florida*, Gainesville, USA, Feb.-March 2018;  
*University of Georgia*, Athens, USA: April 2000; April 1993.  
*University of Hyderabad*, India: Feb. 2009; Jan. 1998; March 1997.  
*University of Illinois*, Urbana Champaign, USA; Feb. 2000 (delivered the annual joint colloquium of the Dept. of Statistics, Purdue University and Urbana Champaign); April 1996; March 1990 (delivered the annual joint colloquium).  
*University of Louisville*, USA, May 2013.  
*University of Maryland*, Baltimore County, USA: June 2008; April 1996; Nov. 1995; June 1992.  
*University of Minnesota*, USA; May 2016; July 2015; Dec. 2013; Aug. 2012; Nov. 2011.  
*University of Mysore*, India.  
*University of Paris East*, June 2017.  
*Yale University*, Connecticut, USA: Sept. 2009.

**Research Collaborators (current):**

*Kartick Adhikari*, Post doctoral Fellow, ISI, Kolkata, India  
*Monika Bhattacharjee*, University of Florida, USA  
*Arijit Chakrabarty*, ISI, Kolkata, India  
*Snigdhasu Chatterjee*, University of Minnesota, USA  
*Apratim Dey*, M.Stat student, ISI, Kolkata, India  
*Wiktor Ejsmont*, Wroclaw Univ. of Economics, Poland  
*Barnali Gupta*, Miami University, Ohio, USA  
*Waled Hachem*, University of Paris East, France  
*Jamal Najim*, University of Paris East, France  
*Debashis Pal*, University of Cincinnati, Ohio, USA  
*Rupayan Pal*, Indira Gandhi Development Institute of Development Research, Mumbai, India  
*Koushik Saha*, Indian Institute of Technology, Mumbai, India  
*David Sappington*, University of Florida, USA  
*Arusharka Sen*, Concordia University, Canada  
*Radhendushka Srivastava*, Indian Institute of Technology, Mumbai, India  
*Iryna Topolyan*, University of Cincinnati, USA

**Research Collaborators (previous):**

*G.J. Babu*, Pennsylvania State University, USA  
*Debapratim Banerjee*, Graduate student, University of Pennsylvania, Wharton, USA  
*Sayan Banerjee*, University of Warwick, England  
*Anirban Basak*, Duke University, USA  
*Atasi Basu*, Utica College, New York, USA  
*Riddhipratim Basu*, University of California, Berkeley, USA  
*Srabashi Basu*, Kolkata, India  
*S.K. Bhandari*, ISI, Kolkata, India  
*J.P.N. Bishwal*, University of North Carolina, Charlotte, USA  
*Benzion Boukai*, Indiana University-Purdue University at Indianapolis, USA  
*Satya Ranjan Chakraborty*, ISI, Kolkata, India  
*T.K. Chandra* (deceased)  
*Sourav Chatterjee*, Stanford University, USA  
*Probal Chaudhuri*, ISI, Kolkata, India  
*Conchita D'Ambrosio*, Università Di Milano-Bicocca and Università Bocconi, Italy  
*Amites Dasgupta*, ISI, Kolkata, India  
*Anirban DasGupta*, Purdue University, Indiana, USA  
*Ratan Dasgupta*, ISI, Kolkata, India  
*Aloke Dey*, ISI, New Delhi, India  
*Santanu Dutta*, Tezpur University, Assam, India  
*J.K. Ghosh* (deceased)  
*Shirshendu Ganguly*, USA  
*Alok Goswami*, ISI, Kolkata, India  
*Suman Guha*, Graduate student, ISI, Kolkata, India  
*Rajat Subhra Hazra*, ISI, Kolkata, India  
*Kanchan Mukherjee*, Lancaster University, UK  
*Soumendu Sundar Mukherjee*, Graduate student, UC Berkeley, USA  
*Krishanu Maulik*, ISI, Kolkata, India  
*Joydip Mitra*, Management Development Institute, Gurgaon, India  
*Nitis Mukhopadhyay*, University of Connecticut, Storrs, USA  
*N.K. Nagaraj*, University of Maryland, Baltimore, USA  
*Dimitris Politis*, University of California, San Diego, USA  
*Anindya Roy*, University of Maryland, Baltimore County, USA

*Herman Rubin*, Purdue University, Indiana, USA  
*Anish Sarkar*, ISI, New Delhi, India  
*Arnab Sen*, University of Minnesota, USA  
*Sanchayan Sen*, Eindhoven University of Technology, Netherlands  
*Arindam Sengupta*, University of Calcutta, India  
*Debapriya Sengupta*, ISI, Kolkata, India  
*Debasis Sengupta*, ISI, Kolkata, India  
*Bikas K. Sinha*, Kolkata, India  
*T.N. Sriram*, University of Georgia, Athens, USA.