

Indian Statistical Institute

- Bhatia, R. : Fourier series and diagonals of matrices, *conference on Ergodic Theory and Harmonic Analysis*, Mumbai, January 17-21, 1999.
- Bhatia, R. : Diagonals of matrices, *Workshop on Applied Linear Algebra*, Bielefeld, Germany, January 21-23, 1999.
- Khaledi, B. and Kochar, S. : Stochastic orderings between distributions and their sample spacings, *Workshop on Reliability and Survival Analysis*, I.I.T., Bombay, November 23-25, 1998.
- Kochar, S. : Stochastic comparisons of spacings and order statistics, *International conference in Reliability and Survival Analysis*, Northern Illinois University, Dekalb, U.S.A., May 21-24, 1998.
- Kochar, S. : The signature of a coherent system and its applications, *Workshop on Reliability and Survival Analysis*, I.I.T., Bombay, November 23-25, 1998.
- Parthasarathy, T. : Stochastic Games, *Indian Science Congress*, Chennai, January 2-8, 1999.
- Prakasa Rao, B. L. S. : Bayes estimation for some stochastic partial differential equations, *International Workshop on Perspective in Modern Statistical Inference : Parametrics, Semiparametric, Nonparametric*, Charles University, Prague, Czech Republic, August 20-22, 1998.
- Prakasa Rao, B. L. S. and Dewan, Isha. : A General method of density estimation for associated random variables, *Prague Stochastic'98*, Czech Republic, August 23-28, 1998.

Bangalore Unit

- Bhat, B. V. Rajarama, : Minimal dilations of quantum dynamical semigroups to semigroups of endomorphisms of C^* -algebras, *International Congress of Mathematicians*, Berlin, August 18-27, 1998.
- Delampady, Mohan, : What does R^2 mean to a Robust Bayesian ?, *National Seminar on Bayesian analysis : Theory and Applications*, Amravati, January 1999.
- Sitaram, A. : Some questions in integral geometry, *International Conference on Harmonic Analysis and Ergodic Theory*, Mumbai, January 1999.

Applied Statistics Division

Applied Statistics Unit

- Basu, A. : Consistent set estimation in K-dimensions : an efficient approach, *2nd International Workshop on Statistical Techniques in Pattern Recognition*, Bondi Beach, Sydney, Australia, August 1998.
- Basu, A. : Projection of HIV incidence in Calcutta, *XIVth Annual Conference of Indian Society for Medical Statistics*, Department of Biostatistics, Christian Medical College, Vellore, November 1998.
- Basu, A. : Consistent set estimation in k-dimensions : an efficient approach, *International Workshop on Image and Shape analysis*, Indian Statistical Institute, Calcutta, January 1999.
- Biswas, Atanu, : Analysis of truncated bivariate ordinal data - a bayesian outlook, *National Seminar on Bayesian Statistics - Theory and Applications*, Amravati University, Amravati, Maharashtra, January 17, 1999.
- Bose, M. : Optimal RMD's : Further results, *Research Level Workshop on Variance Components Estimation & Optimal Designs*, Indian Statistical Institute, Calcutta, September 11-12, 1998.

Computer and Communication Sciences Division

Advanced Computing Microelectronics Unit

- Ghosh, S., Sur-Koley, S. and Bhattacharya, B. B. : VLSI Chips on Three Dimensional Closed Surfaces, *Workshops on VLSI Design and Test*, New Delhi, August 6-7, 1998.
- Rahman, H., Das, D. K. and Bhattacharya, B. B. : An adaptive BIST to detect multiple stuck-open faults in CMOS circuits, *Conference on Asia and South Pacific Design Automation*, Hong Kong, January 1999.
- Sarkar, D. and Bhattacharya, B. B. : Circuit extraction from switch-level descriptions, *Workshops on VLSI Design and Test*, New Delhi, August 1998.

Electronics and Communication Sciences Unit

- Chanda, A. and Das, J. : On modeling vertical turbulent convection in the atmospheric boundary layer, *National Seminar on Numerical Weather Prediction with Emphasis on Boundary Layer Modeling and Mesoscale Modeling*, Jadavpur University, Calcutta, December 3-5, 1998.
- Chanda, A., Chakraborty, B. and Das, J. : On dimension of strange attractor of chaotic dynamical system, *International Symposium on Recent Advances in Mathematics and Applications*, Calcutta Mathematical Society, December 17-19, 1998.
- Chanda, A. and Das, J. : On self-similarity of directional data of turbulent flow, *International Conference on Combinatorics, Pattern Recognition and Related Areas*, Mysore University, December 28-30, 1998.
- Ray, N., Mukherjee, D. P. and Das, J. : Identification of the Tracer Cloud : A Shape Based Approach, *National Workshop on Indian Indoes Programme*, NPL, New Delhi, November 16-18, 1998.

Machine Intelligence Unit

- Mandal, D. P. and Pal, N. R. : Non-Shannonian entropies for image thresholding, *3rd Annual Conference on Information Theory and Applications*, Amritsar, India, 1999.
- Mandal, D. P. : Multilayer perceptron for DNA sequence analysis, *Workshop on Structure and Sequence : Database Analysis*, Calcutta, India, 1999.
- Mitra, S. K., Murthy, C. A. and Kundu, M. K. : Fractal based image edge extraction, *Annual Conference of Indian Society of Information Theory and Applications (ISITA'99)*, Amritsar, India, 1999.
- Pal, K. and Pal, N. R. : Fuzzy Rule Extraction for Classifier Design, *Third Annual Conference on Information Theory & Applications and National Symposium on Management Science and Statistics - Applications to Trade and Industry*, Amritsar, India, 1999.

Physics and Earth Sciences Division

Geological Studies Unit

- Saha, D., Deb, G. and Datta, S. (1998) : Granite-greenstone relationship in the Sonakhan belt, Raipur district, Central India, UNESCO-IUGS-IGCP368 Seminar in Continental Crust in Eastern and Central India (Bhubaneswar), (extended abstract), p. 25-28, October 29-30, 1998.

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- Saha, D. and Joy, S. (1998) : Comparable structures from the Dhanjori Group the Singhbhum Shear Zone - A linked thrust system model of deformation in the Singhbhum Shear Zone, Eastern India, UNESCO-IUGS-IGCP368, Seminar on

Physics and Applied Mathematics Unit

- Dandapat, B. S. : Spin-coating in presence of transverse magnetic field : a numerical study, *43rd Conference of the Indian Society of Theoretical and Mechanics (ISTAM)*, Coimbatore, December 16-19, 1998.
- Mandal, B. N. : Galerkin technique and its application to water wave and waveguide problems, *One day Seminar on Applied Mathematics*, Calcutta University, March 25, 1999.
- Mridula, Kanoria, : Oblique Wave Scattering by thick barrier, *17th International Conference of Offshore Mechanics and Arctic Engineering, OMAE 98*, Lisbon, Portugal, July 5-9, 1998.
- Mridula, Kanoria, : Water Wave Scattering by rectangular obstacles, *Recent Advances in Fluid Dynamics*, Vidyasagar University, Midnapur, March 31, 1999.

Biological Sciences Division

Anthropology and Human Genetics Unit

- Dasgupta, P., Onis M. De, Saha, S. and Sengupta, D. : Assessment of nutritional and maturational status of the Bengali Adolescent Boys : A validation of the WHO cut offs and changes over time, *National Seminar on Man and Environment : Recent trends of Anthropological Study and Research*, Department of Anthropology, Calcutta University, March 30-31, 1999.
- Gupta, R. : A study on the Food and Nutrition Among The High Altitude Dwellers, *National Seminar on Food and Nutrition Management in Mountaineering*, West Bengal Mountaineers and Trekkers confederation and Department of Food Technology and Biochemical Engineering, Jadavpur University, October 24-25, 1998.
- Majumder, Partha, P. : Peopling of India : Genetical aspects, Invited Lecture in *Dual Congress*, Gun city, South Africa, June 29 - May 3, 1998.
- Majumder, P. P., Roy, B., Balgir, Rs, Dash, BP. : Polymorphisms in the beta-globin gene cluster in some ethnic populations of India and their implications for disease, Invited Lecture in *Rambhadr Science Foundation Symposium*, New Delhi, October 31 - November 1, 1998.
- Majumder, P. P. : Goals, organization and recent results on genome diversity studies in Indian populations, *International Symposium on Genetics, Health and Disease*, Amritsar, December 1-4, 1998.
- Majumder, P.P. : Genomic Studies in ethnic populations of India, *Symposium on Recent Developments in Molecular and Cell Biology*, Calcutta, December 15-16, 1999.
- Majumder, P. P. : Peopling of India : What do our genomes tell us ? , Invited Lecture in *Human Genome Summit, Indian Science Congress*, Chennai, January 3-7, 1999.
- Majumder, P. P. : Human Genetics (Invited lectures series), *Workshop on Clinical and Human Genetics*, BHU, Varanasi, March 23-25, 1999.
- Mukhopadhyay, B. and Mukhopadhyay, S. : Blood pressure and its biocultural correlates among the Lepchas of Sikkim, India : A microlevel epidemiological study, *14th International Congress of Anthropological and Ethnological Sciences*, Williamsburg, Virginia, U.S.A., July 26 - August 1, 1998.

- Mukherjee, B. : Role of traditional medicine in achieving health for all in Sikkim, India : Some Observations, *14th International Congress of Anthropological and Ethnological Sciences*, Williamsburg, U.S.A., July 26-August 1, 1998.
- Mukhopadhyay, B. and Lepcha, C. : A note on medicoethnobotany among the Lepchas of Bonbusti, Kalimpong, *International Symposium on Changing Environmental Scenario in South Asia*, Calcutta, December 20-21, 1998.
- Reddy, B. M. : Asymmetry and canalization : An appraisal based on a-b ridge counts of Indian populations, *Annual Conference of the American Association of Physical Anthropologists*, Salt Lake City, U.S.A., April 1-3, 1998.

Biochemistry Unit

- Sengupta, S., Sengupta, D., Ray, M., Das, T.K., Ghosh, S. and Duttgupta, C. : Human Uterine Cervix Cancer Database : Molecular Epidemiology, *17th Annual Convention, Indian Association for Cancer Research & National Symposium for Breast Cancer*, January 21-24, 1998.

Biometry Research Unit

- Basu, T. K. and Arnab, R. N. : Growth of carp during the early stages of their development, *The XIXth International Biometric Conference*, University of Cape Town, South Africa, December 1998.
- Basu, T. K. : Analysis of the length growth data of a freshwater major carp of India using Rao's polynomial growth curve model, *The XIXth International Biometric Conference*, University of Cape Town, South Africa, December 1998.
- Gupta, S. K. : Diabetes mellitus through an Immunologist's eye, West Bengal State Council of Science and Technology, DST, Government of West Bengal, 1999.

Social Sciences Division

Economic Research Unit

- Coondoo, D. : Taxable Capacity Function : A Note on Specification, Estimation and Application, *Conference on Issues before the Eleventh Finance Commission* sponsored by Eleventh Finance Commission, January 5-6, 1999.
- Das, S. and Sarkar, N. : Estimating Time Varying Risk Premium in Mean-Gini Capital Asset Pricing Model, 1998 *Meeting of the Econometric Society*, South East Asia Chapter, New Delhi, December 15-17, 1998.
- Ghosh, B. : and De, P. : Infrastructure, Economic Growth and Trade in SAARC, *International Conference on Economic Reforms in SAARC* (jointly organised by the Institute of Bangladesh Studies, Rajshahi University and International Institute of Development Studies, Calcutta), Rajshahi University, April 19-20, 1998.
- Ghosh, B. and De, P. : Linkage Between Infrastructure and Income Among Indian States : A Tale of Rising Disparities since Independence, *International Conference on Development, Displacement and Disparity in India in the Last Quarter Century*, Centre for Studies, December 27-29, 1998.
- Kabiraj, T. Providing Protection to Foreign-Owned Patents - A Strategic Decision, *In Theoretical and Empirical Issues in Economic Development*, Department of Economics, Kalyani University, January 28-29, 1999.

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- Kabiraj, T. : Protecting Consumers through Protection : *The Role of Tariff-Induced Technology Transfer* (Co-authored by S. Marjit), Department. of Economics, Jadavpur University, January 8-9, 1999.
- Kabiraj, T. : An Input Joint Venture : Some New Results (Co-authored by M. Chaudhury), *Conference on NIPFP Ford Foundation, NIPFP*, New Delhi, November 6-7, 1998.
- Mazumdar, K. : Measurement of Human Wellbeing of the Countries : Achievement and Improvement Indices : *Conference on Indian Economic Association*, Bangalore University, December 26-28, 1998.
- Mukherjee, R., Das, Pranab, Kr. and Bhattacharya, U. : Growth of Small Scale Industries in West Bengal, *National Conference on Vision 2000 : Small Scale Sector*, Department of Business Management, university of Calcutta, February 5-6, 1999.
- Mukherjee, R., Dasgupta, D., Maiti, Pradip and Sarkar, Subrata. : Growth and Disparities in India . *National Workshop on Inter-State Analysis*, Jadavpur University, Calcutta, January 15, 1999.

Economic Analysis Unit

- Kumar, T. Krishna. : Models of North-South Trade, Growth and Development as Differential Game Problems, *Fourth International Conference on Optimization*, Perth, Australia.
- Rao, K. Surekha. : Nature of Information Arrival Process and Stochastic Volatility, *International Conference on Real Analysis and applications*, Maiori, Italy.

Linguistic Research Unit

- Bandyopadhyay, D. : Computational Linguistics, *National Conference on A Dissenter's Voice*, Dravidian Linguistics Society and International Dravidian Institute, Hyderabad, June 1998.
- Bandyopadhyay, D. : M[other] Tongue Syndrome, *Seminar on the M[other] Tongue Syndrome : For and Against the Learning of English in the Primary Stage of Education in West Bengal*, Linguistic Research Unit, Indian Statistical Institute, Calcutta, July 1, 1998.
- Bandyopadhyay, D. S., Roy, S. and Mitra, S. : Appropriate Techniques of Learning English in Schools, *Seminar on the M[other] Tongue Syndrome : For and Against the Learning of English in the Primary Stage of Education in West Bengal*, Linguistic Research Unit, Indian Statistical Institute, Calcutta, July 1, 1998.
- Bandyopadhyay, D. : Psi-Properties , *2nd International Conference on South Asian Languages*, Patiala, January 8-10, 1999.
- Bandyopadhyay, D. : Language, Literacy and Grammer, *2nd International Conference on South Asian Languages*, Patiala, January 8-10, 1999.

Planning Unit

- Das, Satya, P. and Mehra, Meeta. : North-South Capital Movement and Environment, *Conference on Indian and South East Asia Econometric Society*, Indian Statistical Institute, Delhi, December 15-17, 1999.
- Das, Satya, P. and Sengupta, Sarbajit. : Asymmetric Information and International Mergers, *Conference on India and South Asia Econometric Society*, Indian Statistical Institute, Delhi, December 15-17, 1999.
- Dasgupta, Dipankar. : Lidlai Pricing, Nonrival Infrastructure and Endogenous Growth, *ISI Annual Conference on Economic Theory and Policy*, Indian Statistical Institute, Delhi, March 26-27, 1999.

- Jalan, Jyotsna and Martin Ravallion, : Transfer Benefits from Workfare : A Matching Estimate for Argentina's Trabajar Program, *Annual ISI Conference on Economic Theory and Policy*, March 26-27, 1999.
- Sen, Arijit, : Leasing of Durable Goods and Segmentation, *Annual ISI Conference on Economic Theory and Policy*, March 26-27, 1999.
- Sen, Arijit, : Leasing of Durable Goods and Market Segmentation, *Annual ISI Conference on Economic Theory and Policy*, March 26-27, 1999.

Psychology Research Unit

- Ghosh, Anjali, : Implementation of Decentralized planning in Primary Education, *Conference on Some Basic Issues*, State Planning Board, Government of West Bengal, Calcutta, November 20-22, 1998
- Ghosh, Anjali, : Occupational Stress, Strain and Coping in Physicians and Executives, *National Conference on Research in Clinical Psychology*, New Delhi, February 24-27, 1999.
- Mitra, Subir K. : Standardization of Evaluation of Learning Achievements Throughout the nation and Concept of Item Banking, *Workshop on Basic Education in Eastern India*, I.I.M. Calcutta, 1 August, 1998.

Sociological Research Unit

- Bondyopadhyay, Suraj and Rao, A.R., : Getting help to meet urgent needs : A social network analysis, *Seminar on Decentralized Planning Process*, State Planning Board, Govt. of West Bengal, November 20-22, 1998.
- Bandyopadhyay, Suraj, Dasgupta, Atis, Chakraborti, Snigdha and Chaudhuri, Arijit, : Factors of growth of small scale industries in rural West Bengal : A case study, *Seminar on Decentralized Planning Process*, State Planning Board, Govt. of West Bengal, November 20-22, 1998.
- Chatterjee, Arun, Kumar, : Social Capital as an instrument of peoples development : An experience in a tribal village of West Bengal, *XXII Indian Social Science Congress*, Gandhigram Rural Institute (Deemed University), Gandhigram, Dindigul, Tamilnadu, March 13-18, 1999.
- Dasgupta, Atis and Ghosh, Anjali, : Implementation of decentralized planning in primary education : Some basic issues, *Seminar on Decentralized Planning Process*, State Planning Board, Govt. of West Bengal, November 20-22, 1998.
- Dasgupta, Atis, : Significance of the literacy drive in the context of devolution and participation in the planning process in West Bengal, *Seminar on Decentralized Planning Process*, State Planning Board, Govt. of West Bengal, November 20-22, 1998.
- Ghosh, Bhola, Nath, : Women Leadership in Gram Panchayat : Prospects and Constraints, *86th session of the Indian Science Congress*, Anna University, Chennai, January 3-7, 1999.
- Maiti, Asok, : Democracy, Development and Culture - Emerging Challenge and Initiatives, *XXII Indian Social Science Congress*, Gandhigram Rural Institute, Dindigul, Tamilnadu, March 13-18, 1999.

Statistical Quality Control and Operations Research Division

- Biswas, A. K. : Necessary and sufficient condition for largeness of core of a TU game, *2nd Annual Conference on Economic Theory and Policy*, Jawaharlaloh University, New Delhi, October 8-10, 1998.
- Chawdhury, K. K. and John, Boby, : Estimation of the process Capability of Non normal quality characteristic, *National Conference on Standardisation*, Bangalore, February 19-20, 1999.
- Chawdhury, K. K. : Statistics Experiment, *National Conference on Test Engineering and Metrology: Team 99, STQC*, Department of Electronics Government of India, Bangalore, January 6-8, 1999.

- Chaudhuri, A. K. and Acharya, U.H. : Measuring suitability & effectiveness of a Quality Management System, *National Conference celebrating 50 years of SQC & OR in India*, Chennai, August 6-8, 1998.
- Date, K. M. : A New Approach to Measure and Control Quality System Effectiveness, *National Conference on 50 years of SQC & OR Unit*, Chennai, India, August 6-8, 1998.
- Ghosh, D. T. : The Optimum Continuous Sampling Plan CSP-3 that Minimises Amount of Inspection, *6th Conference on Asia Pacific Quality*, Seoul South Korea, September 14-16, 1998.
- Hegde, S. K. : GRP for Networked, National Conference, Chennai, August 6-8, 1998.
- Joseph, Roshan, V. : Optimum setting for a parameter operating under Trend, *International conference on Operation Research for better tomorrow*, New Delhi, December 24-26, 1998.
- Joseph, Rosnan, V. and B. N. : Robust Design of Inner layer fabrication in PCB Manufacturing, *International Conference celebrating 50 years of SQC & OR in India*, Chennai, August 6-8, 1998.
- Mahesh, C. : Optimisation of Injection molding process parameters using Taguchi Methods - A case study, *National Conference celebrating 50 years of SQC & OR in India*, Chennai, August 6-8, 1998.
- Mohan, S. R. : Hilbert Bases of Polyhedral cones, *International Conference on Operation Research for better tomorrow*, Delhi Chapter of ORSI, December 24-26, 1998.
- Murthy, G. S. R. : Optimisation in 2,3 Factorial Experiments by D. K. Manna & G. S. R. Murthy, *National symposium on recent advances in Design of Experiments*, Departments of Statistics, Kalyani and Calcutta Universities, Kalyani, March 5-6, 1999.
- Murthy, G. S. R. : Lipshitzian and P1 Matrices, *International Symposium on Operation Research for better tomorrow*, ORSI, Delhi, December 24-26, 1998.
- Murthy, A. L. N. : Optimisation of chrome plating process for uniform metal distribution on IC engine valves, *National conference on 50 years of SQC & OR*, Chennai, August 7, 1998.
- Pal, B. K. : Statistics Experiment, *National Conference on Test Engineering and Metrology : Team 99'* STQC, Department of Electronics Government of India, Bangalore, January 6-8, 1999.
- Neogy, S. K. : Algorithms for solving some structured zero-sum stochastic games, *International Conference on Operations Research for a Better Tomorrow*, Delhi Chapter of ORSI, December 24-26, 1998.
- Neogy, S. K. : Development of Process Technology using Industrial Experimentation, *National Conference on Business Competitiveness and Growth through Quantitative Methods*, Chennai, August 6-8, 1998.
- Rai, B. K. : Reducing Weight variation in Tea Pacjets a case study on application of X-R Charts, National Seminar, Motilal Nehru REC, Allahabad, September 15-16, 1998.
- Rao, N. T. V. Ranga, Subhani, S. M. and Sarat, T. L. : Estimation of process capability using Johns on & Person Curves, *National conference on 50 years of SQC & OR*, Chennai, August 7, 1998.
- Rao, Marali, G. : Improving Process Capability at Mounting Flauge boring operation by optimising process parameters also Inter-weaving Quality improvement tools and techniques in software development life cycle, *National conference on 50 years of SQC & OR*, chennai, August 7, 1998.
- Ravindran, G. and Gowda Seetharama, M. : Regularisation of PO functions in Box Variational inequality problems, *International Conference on Non linear programming and Variational inequalities*, Hong Kong, December 15-18, 1998.
- Roy Chowdhury, A. Rao Shankar, K., Holla, N. K. and Mitra, Satabdi, : Optimisation of Wave soldering process parameters, *National Conference celebrating 50 years of SQC & OR in India*, Chennai, August 6-8, 1998.

Part II. Visiting Scientists, Honours and Awards, Scientific Tours and Assignments

8. VISITING SCIENTISTS

A number of distinguished scientists from abroad and India participated in the research, training and other scientific activities of the Institute during the year. Some of them came to the Institute on invitation and spent fairly long periods in the Institute to assist in the regular research and teaching programmes, while others came for short periods and gave lectures and seminars. Most of them were available for consultation by the faculty members of the Institute. Names of the visiting scientists are given below.

1. Alam, Md., Mesbahul, Department of Statistics, University of Rajshahi, Bangladesh, September-October 1998, *Stat Math Unit, Calcutta*.
2. Arkhaya, K. B., Iowa State University, U.S.A., August 6, 1998, *Stat Math Unit, Bangalore*.
3. Babu, G.J., Department of Statistics, Eberly College of Science, The Pennsylvania State University, U.S.A., December 9-26, 1998, *Stat Math Unit, Calcutta*.
4. Banerjee, Pradeep, K., Department of Mathematics & Statistics, University of New Brunswick, Canada, September 1, 1998 and November 30, 1998, *Stat Math Unit, Calcutta*.
5. Basu, Sudeshna, Department of Mathematics, The George Washington University, U.S.A., June 15, 1998 and August 31, 1998, *Stat Math Unit, Calcutta*.
6. Basu, Sanjib, Northern Illinois University, June 19, 1998, *Stat Math Unit, Bangalore*.
7. Bhattacharyya, Tirthankar, Poorna Prajna Institute for Scientific Research, December 1, 1998, *Stat Math Unit, Bangalore*.
8. Bhattacharya, Prabir, Department of Computer Science and Engineering, University of Nebraska-Lincoln, NE, U.S.A., August 11, 1998, *Computer Vision and Pattern Recognition Unit, Calcutta*.
9. Bikhchandani, Sushil, University of California - Los Angeles, January 1999 - April 1999, *Planning Unit, Delhi*.
10. Bryecker, Mare De, European Commission, October 26-30, 1998, *Population Studies Unit, Calcutta*.
11. Budinich, P., ICTP and SISSA, Trieste, Italy, January 15-24, 1999, *Physics and Applied Mathematics Unit, Calcutta*.
12. Chakrabarti, A., Department of Mathematics, Indian Institute of Science, Bangalore, February 16-26, 1999, *Physics and Applied Mathematics Unit, Calcutta*.
13. Chaudhury, Kausik, State University of New York - Albany, August 1998 - April 1999, *Planning Unit, Delhi*.
14. Chaudhuri, Gautam, Institute of Advanced Study in Science and Technology, Guwahati, January 1999, *Statistical Quality Control and Operations Research Unit, New Delhi*.
15. Dani, S. G., Tata Institute of Fundamental Research, Mumbai, December 4, 1998, *Stat Math Unit, Bangalore*.

Indian Statistical Institute

16. Das, Sajal, K., Department of Computer Science, University of North Texas, Denton, U.S.A., December 21, 1998, *Advanced Computing and Microelectronics Unit, Calcutta.*
17. Dave, H.B., Gujarat Agricultural University, January - February 1999, *Statistical Quality Control and Operations Research Unit, New Delhi.*
18. Dey, Suhrit, K. Department of Mathematics, Eastern Illinois University, Illinois, U.S.A., July 21-24, 1998, *Advanced Computing and Microelectronics Unit, Calcutta.*
19. Dryden, I., University of Leeds, U.K., January 4-7, 1999, *Machine Intelligence Unit, Calcutta.*
20. Dutta, Joydeep, P. D. Women College, Jalpaiguri, February - March 1998, *Statistical Quality Control and Operations Research Unit, New Delhi.*
21. Dutta, Basudeb, Indian Institute of Science, Bangalore, August 13, 1998, *Stat Math Unit, Bangalore.*
22. Ghosh, J., University of Texas, Austin, U.S.A., January 12, 1999, *Machine Intelligence Unit, Calcutta.*
23. Ghosh, S., Department of Computer Science, University of Iowa, Iowa, U.S.A. December 30, 1998 - January 5, 1999, *Advanced Computing and Microelectronics Unit, Calcutta.*
24. Gowda, M. Seetharama, Department of Mathematics, University of Maryland at Baltimore County, Maryland, U.S.A., December 24, 1998, *Statistical Quality Control and Operations Research Unit, Bangalore.*
25. Gupta, B., Department of Computer Science, Southern Illinois University, Carbondale, U.S.A., December 30, 1998 - January 5, 1999, *Advanced Computing and Microelectronics Unit, Calcutta.*
26. Habib, Amber, Mehta Research Institute, Allahabad, July 15-24, 1998, *Stat Math Unit, Bangalore.*
27. Hall, Peter, Australian National University, Canberra, Australia, December 30, 1998, *Stat Math Unit, Bangalore.*
28. Huang, Wen Tao, Institute of Statistical Science, Academic Sinica Nankang, Taipei 115, Taiwan, January 4-8, 1999, *Stat Math Unit, Calcutta.*
29. Imon, A.H.M.R., Department of Statistics, University of Rajshahi, Bangladesh, September - October 1998, *Stat Math Unit, Calcutta.*
30. Iyer, Srikanth, I.I.T., Kanpur, December 11, 1998 - December 15, 1999, *Stat Math Unit, Bangalore.*
31. Jain, S. K., Ohio University, Athens, Ohio, U.S.A., July 26, 1998 and August 8, 1998, *Stat Math Unit, Calcutta.*
32. Jaiswal, N. K., January, 1999, *Statistical Quality Control and Operations Research Unit, New Delhi.*
33. Kabadi, S. N., University of New Brunswick, Canada, *Statistical Quality Control and Operations Research Unit, New Delhi.*
34. Kolchinskii, Vladimir, I., Department of Mathematics & Statistics, University of New Mexico, Albuquerque, U.S.A. January 1999, *Stat Math Unit, Calcutta.*
35. Krishnan, T., August 30 - September 25, 1998 and November 9, 1998, *Stat Math Unit, Bangalore.*
36. Kumar, Shuba, Chennai Medical College, October 26-30, 1998 and February 18-20, 1999, *Population Studies Unit, Calcutta.*

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37. Mandrekar, V., Michigan State University, November 25 - December 1, 1998, *Stat Math Unit, Bangalore.*
38. Mitra, Mandar, Cornell University, November 1998 - March 1999, *Computer Vision and Pattern Recognition Unit, Calcutta.*
39. Mohapatra, R. N., University of Central Florida, U.S.A., October 14, 1998, *Stat Math Unit, Bangalore.*
40. Mukherjee, Amar, Department of Computer Science, University of Central Florida, Orlando, December 31, 1998 - January 5, 1999, *Advanced Computing and Microelectronics Unit, Calcutta.*
41. Mykland, Per, Department of Statistics, University of Chicago, March 1999, *Stat Math Unit, Calcutta.*
42. Pensky, Marianna, Department of Mathematics, University of Central Florida, U.S.A., July 27 - August 8, 1998, *Stat Math Unit, Calcutta.*
43. Prabha, Chandra, Senior Research Scientist, OCLC Network, Ohio, U.S.A., December 28, 1998, *Documentation Research and Training Centre, Bangalore.*
44. Prasanna, Viktor, K., Department of Computer Science, University of Southern California, U.S.A., August 18, 1998, *Stat Math Unit, Calcutta.*
45. Pujari, A. K., Department of Computer Science, University of Hyderabad, Hyderabad, July 29, 1998, *Machine Intelligence Unit, Calcutta.*
46. Rao, Peri Bhaskara, IILCA, Tokyo University of Asian Studies, Japan, November 17-18, 1998, *Computer Vision and Pattern Recognition Unit, Calcutta.*
47. Sarkar, Jyotirmoy, Department of Mathematical Sciences, Indiana University - Purdue University Indianapolis, U.S.A., June 4- July 3, 1998 and January 14 - June 10, 1999, *Stat Math Unit, Calcutta.*
48. Sarkar, S. K., National Physical Laboratory, June 21-27, 1998, *Electronics and Communication Sciences Unit, Calcutta.*
49. Sen, Arunabha, Department of Computer Science, Arizona State University, Tempe, U.S.A., August 3-10, 1998, *Advanced Computing and Microelectronics Unit, Calcutta.*
50. Sen, Kasturi, Cambridge University, October 26-30, 1998 and February 17-24, 1999, *Population Studies Unit, Calcutta.*
51. Sen Gupta, Jyoti, Tata Institute of Fundamental Research, Mumbai, October 12 - 29, 1998, *Stat Math Unit, Bangalore.*
52. Sera, Daniel, University of Barcelona, October 26-30, 1998, *Population Studies Unit, Calcutta.*
53. Srimani, Pradip, K., Department of Computer Science, Colorado State University, December 30, 1998 - January 5, 1999, *Advanced Computing and Microelectronics Unit, Calcutta.*
54. Sunder, V. S., Mat. Science, Chennai, April 13-24, 1998, *Stat Math Unit, Bangalore.*
55. Suresh, Sarada, Chennai Medical College, October 26-30, 1998, *Population Studies Unit, Calcutta.*
56. Tan, Shenglan, Liverpool University, February 23-27, 1999, *Population Studies Unit, Calcutta.*
57. Tikkiwal, G. C., University of Jodhpur, June 17, 1998, *Stat Math Unit, Bangalore.*
58. Urs, Shalini, R., Department of Library and Information Science, University of Mysore, Mysore, *Documentation Research and Training Centre, Bangalore.*

9. HONOURS, AWARDS AND SPECIAL ASSIGNMENTS

Theoretical Statistics and Mathematics Division

Calcutta Unit

Bagchi, S.C. served as a member of the National Board for Higher Mathematics.

Bose, Arup served as a Managing Editor of *Sankhyā, Series A*.

Rao, B.V. was appointed as a Distinguished Scientist of ISI.

Rao, T.J. served as a (i) member of the Governing Council, NSSO, (ii) Managing Editor for *Sankhyā, Series B*, (iii) Co-editor for *Calcutta Statistical Association Bulletin* and *Assam Statistical Review*.

Rao, S.B. delivered the 31st Convocation Address on 'Future Technologies for India' in North Bengal University, Siliguri, March 12, 1999.

Delhi Unit

Bhatia, R. had been Winegard Visiting Professor at the College of Physical and Engineering Sciences, University of Guelph during January 1999 in Canada.

Bhatt, A.G. was awarded the "Young Scientist Medal 1998" by the Indian National Science Academy.

Pal, A. was selected as a Young Associate of the Indian Academy of Sciences, Bangalore.

Parthasarathy, T. was appointed as a Distinguished Scientist of ISI.

Prakasa Rao, B. L. S. was awarded Distinguished Service Award by the Mathematical Association of India for the year 1999.

Sinha, K.B. was appointed as a Distinguished Scientist of ISI.

Bangalore Unit

Misra, G. was nominated a Fellow of the Indian Academy of Sciences.

Computer and Communication Sciences Division

Computer Vision and Pattern Recognition Unit

Chaudhuri, B.B. was elected Fellow of the International Association for Pattern Recognition and selected as an Associate Editor for *Pattern Recognition Letters*, Elsevier Science, Amsterdam, Holland.

Advanced Computing and Microelectronics Unit

Sinha, Bhabani, P. was nominated as an Associate Editor of the *IEEE Transactions on VLSI Systems*. He was also elected as a fellow of the Indian National Academy of Engineering.

Electronics and Communication Sciences Unit

Chanda, Bhabatosh received the Computer Engineering Division Medal 1998 from the Institution of Engineers (India).

Pal, Nikhil, R. continued to serve as (i) an Associate Editor of *IEEE Trans on Fuzzy Systems and International Journal Approximate Reasoning*, (ii) a member of the Governing board of the Asian Pacific Neural Assembly. He also acted as a Guest Editor of a special issue on "Soft Computing for Pattern Recognition" for the *Journal of Fuzzy Sets and Systems*, Vol. 103, No. 2, 1999.

Machine Intelligence Unit

Basak, J. was elevated to Senior Member, IEEE in 1999.

Pal, S.K. was appointed (i) Distinguished Scientist of ISI (ii) Guest Editors of a special issue on "Soft Computing" for the journal *Fundamenta Informaticae*, vol. 37, no. 1-2, January 1999, and a special issue on "Pattern Recognition, Image Processing and Computer Vision" for *Proceedings of INSA* and (iii) a member of the Editorial Board of the journal *Fuzzy Sets and Systems*. He received the Shri Om Prakash Bhasin Foundation award in the field of Electronics and Information Technology. He was elected a Fellow of the Third World Academy of Sciences, Trieste, Italy. He continued to serve as (i) IEEE Computer Society Distinguished Speaker for Asia Pacific Region., (ii) an Associate Editor of the journals *IEEE trans. on Neural Networks*, *Pattern Recognition Letters*, *Neurocomputing*, *Far-East Journal of Mathematical Sciences*, *Information Sciences*, *International Journal of Knowledge Based Intelligent & Engineering Systems*, and *Applied Intelligence* (iii) an Executive Advisory Editor of the journals *IEEE Trans. on Fuzzy Systems* and *International Journal of Approximate Reasoning* (iv) a member of the Reviewing Boards of *Mathematical Reviews* (American Mathematical Society) and *IEEE Computer*. He was also selected as Category B speaker under the Theoretical Physics Seminar Circuit (TPSC) Programme of S.N. Bose National Centre for Basic Science for 1998-2000.

Physics and Earth Sciences Division

Physics and Applied Mathematics Unit

Dandapat, B.S. was selected as a member of the Editorial Board, *International Journal of Applied Mechanics & Engineering*.

Kumar, Krishna was selected as a TPSC Speaker (Category B) during 1998-2000.

Mandal, B.N. was selected as (i) a member of the Editorial Board, *International Journal of Mathematics and Mathematical Sciences*, USA, (ii) a member of the *Bulletin of Calcutta Mathematical Society* and (iii) Vice-President, Calcutta Mathematical Society.

Roy, S. was selected a member of the Editorial Board, *Noetic Journal* (Berkeley USA).

Biological Sciences Division

Agricultural Science Unit

Ghosh, Monoranjan was appointed as a member of an Expert Committee on Palms, Department of Science and Technology, Government of India for three years beginning November 1998.

Anthropology and Human Genetics Unit

Gupta, R. was appointed a member of the Editorial Advisory Board, *Journal of Human Ecology*.

Reddy, B.M. was appointed a member of the International Editorial Board of the journal, *Human Biology*.

Indian Statistical Institute

Social Sciences Division

Economic Research Unit

Chakravarty, S.R. was appointed (i) a Consultant to the National Opinion Research Center, University of Chicago, U.S.A., (ii) an External Evaluator of the World Bank, Washington, D. C.

Linguistic Research Unit

Bandyopadhyay, D. was nominated (i) Editor of the Bilingual Journal, *BoHubOcon* (Journal of bhaSabiggEMn gObESONa kendro), Jadavpur, Calcutta. and (ii) Guest Editor for special issue of the Journals *Linguistics Today* and *Indian Journal of Applied Linguistics*.

Choudhury, Amitav was nominated as (i) Guest Editor for special issue of the Journals, *Linguistics Today* and *Indian Journal of Applied Linguistics* and (ii) Editor of a special volume on "Indian Quantitative Linguistics" of the journal *Quantitative Linguistics* published by the International Quantitative Linguistic Association, (Trier, Germany).

10. SCIENTIFIC TOURS AND ASSIGNMENTS ABROAD

Theoretical Statistics and Mathematics Division

Calcutta Unit

Barua, Rana visited the Max Planck Institute for Informatik, Saarbruecken and delivered a talk during March 8-12, 1999.

Basu, Srabashi visited the Australian National University, Canberra, Australia during August 1998 and gave a seminar on (i) Problems of Projection of HIV in Calcutta at the National Centre in HIV Epidemiology and Clinical Research, Sydney, Australia in August 1998 and (ii) Statistical Analysis of DNA Data at the Department of Statistics, University of New South Wales, Sydney, Australia in August 1998.

Chaudhuri, Probal was an invited speaker at the *Workshop on Perspectives in Modern Statistical Inference: Parametric, Semiparametric, Nonparametrics* held in Charles University at Pargue, Czech Republic during August 20-22, 1998.

Ghosh, J.K. was an invited speaker at the *6th annual meeting of the Institute of Mathematical Statistics* at Dallas and at the *International Congress of Mathematicians* at Berlin. He was also an invited discussant at the *Bayesian meeting* at Valencia.

Delhi Unit

Bapat, R.B. visited (i) University of Wisconsin, Madison, U.S.A. as invited speaker at *seventh conference of the International Linear Algebra Society* during June 3-6, 1998, (ii) Oakland University, Rochester, Michigan, U.S.A. as a visiting professor during September 8 - December 22, 1998 and (iii) Ohio University, Athens, Ohio, U.S.A. as an invited speaker at the *International Conference on Algebra and Its Applications* during March 25-28, 1999.

Bhatia, R. visited (i) University of Toronto, Canada, (ii) University of Guelph, Canada and (iii) University of Kentucky, U. S. A. during May - June 1998. He again visited University of Guelph and University of Toronto in Canada and the University of Ljubljana in Slovenia to deliver lectures in February 1999.

Kocher, S.C. visited (i) Department of Statistics and Actuarial Science, University of Iowa, USA to give a colloquium talk during May 26-30, 1998, (ii) Department of Math Sciences, University of Alberta, Canada during June 1- July 10, 1998 and (iii) Division of Statistics, University of British Columbia, Canada for delivering a talk during July 10-17, 1998.

Parthasarathy, T. visited (i) Department of Mathematics during June 18- 30, 1998 and July 1- 14, 1998 and subsequently gave a talk at the *International conference on Game Theory* held at SUNY, Stonybrook, U.S.A. during July 20-24, 1998.

Prakasa Rao, B.L.S. visited (i) Charles University and Mathematical Institute of Czech Academy of Sciences in Prague during August 16-29, 1998 and presented an invited talk at the *International Workshop on "Perspectives in modern statistical inference: parametrics, semiparametrics, nonparametrics,"* held at the University during August 16-29, 1998 and (ii) Université du Maine in Le Mans and Institut de Statistique, Université Pierre et Marie Curie in Paris and presented a talk on "Bayes estimation for some stochastic partial differential equations" during August 30 - September 4, 1998.

Indian Statistical Institute

Sinha, K.B. visited (i) the University of Geneva, Switzerland during June-July 1998 and (ii) the Catholic University of Chile, Santiago, Chile during October - November, 1998. He also gave an invited lecture at the Chilean Mathematical Society in October 1998.

Bangalore Unit

Bhat, B. V. Rajarama visited the Oberwolfach Institute and attended the *International Congress of Mathematicians*, Berlin, Germany, during August 2 - 27, 1998. He also gave a talk at ICM 98.

Delampady, Mohan visited the Department of Statistics, Purdue University, USA and University of Montreal, Canada, during April - May 1998.

Joshi, S. N. visited Department of Statistics, Ohio State University, USA, during September 98 - June 99.

Rao, K. P. S. Bhaskara visited the Department of Mathematics, University of Napoli, Italy, during September 14 - December 12, 1998.

Thangavelu, S. visited the Department of Mathematics, Technion, Israel, during December 21, 1998 to January 4, 1999.

Applied Statistics Division

Applied Statistics Unit

Basu, A. visited (i) School of International Business, Griffith University, Brisbane, Australia in August 1998, (ii) Department of Mathematics, University of Queensland, Brisbane, Australia in August 1998, (iii) Department of Mathematics, University of Sydney, Australia, in August 1998, (iv) Centre for Mathematics and Applications, Australian National University, Canberra in August 1998 and (v) Department of Econometrics, University of New England, Armidale, Australia, in August 1998, to deliver seminars on "Robust estimation in linear regression models via weighted likelihood equations" and "Robust and efficient estimation by minimising a density power divergence".

Dewanji, Anup visited Fred Hutchinson Cancer Research Center, Seattle, USA, during June - September, 1998.

Computer and Communication Sciences Division

Computer Vision and Pattern Recognition Unit

Adiga, P. S. Umesh visited Australia to present a paper at the *International Conference on Pattern Recognition* during August 16-20, 1998. He also visited Monash University, Melbourne and delivered a talk on "Development of an Expert System for Automatic Grading of the Prostate Cancer".

Chaudhuri, B. B. visited GSF-Gesellschaft für Strahlen, Germany, in connection with an Indo-German Collaborative project during August 8 - September 25, 1998.

Advanced Computing and Microelectronics Unit

Bhattacharya, Bhargab B. visited the Institute für Informatik, University of Potsdam, Germany, during June 1 - July 31, 1998.

Sinha, Bhabani P. worked as a Visiting Professor in the School of Computer Science, University of Central Florida, Orlando, Florida, USA, during September 1 - November 30, 1998.

Electronics & Communication Sciences Unit

Mukherjee, Dipri Prasad visited Okhama State University, USA, during September 1, 1998 - August 31, 1999.

Pal, Nikhil, R. visited (i) Meiji University, Japan (ii) University of Kobe, Japan, (iii) Nagoya University, Japan during October 9 - 28, 1999.

Machine Intelligence Unit

Bandyopadhyay, S. has been visiting University of New South Wales, Sydney, Australia.

De, R.K. visited London, U.K. for attending the *Colloquium on Knowledge Discovery and Data Mining* during May 07-08, 1998. He also presented a contributory paper at the Colloquium.

Mitra, S.K. visited Poland during April 27 - May 10, 1998 and presented a contributory paper at the 9th *International Symposium on System Modeling Control*, Jakopane, Poland. He also visited and gave seminars at the Institute of Mathematics, Warsaw University and Institute of Radio Electronics, Warsaw University of Technology.

Pal, K. visited (i) Japan during October 9- 28, 1998 and presented papers in the *Fifth International Conference on Fuzzy Logic and Neural Networks (IIZUKA'98)*, Fukuoka, Japan and the *Fifth International Conference on Neural Information Processing (ICONIPS'98)*, Kokura-ku, Kitakyushu, Japan. She also visited Kyushu University, Kitakyushu, Japan and delivered a talk.

Pal, S.K. visited Singapore, Australia and Hong Kong during October 27 - November 18, 1998, under IEEE (USA) Distinguished Visitor Program and delivered talks in the area of Soft Computing and Pattern Recognition at (i) Royal Melbourne Institute of Technology, Melbourne, (ii) Australian National University, Canberra, (iii) University of New South Wales, Sydney, (iv) University of South Australia, Adelaide, (v) University of Western Australia, Perth, (vi) National University of Singapore, Nanyang Technical University of Singapore and Hong Kong Polytechnic University, (vii) University of Warsaw, Poland during December 1-21, 1998, under an Indo-Polish Programme of Co-operative Research, organized by the Department of Science and Technology, India and the Polish State Committee for Scientific Research (KBN), Poland. He served as a member of the Programme/Advisory Committees of (i) *Computational Engineering in Systems Applications (CESA'98, IEEE-IMACS Multiconference)*, April 1-4, 1998, Tunisia, (ii) *Rough Sets and Current Trends in Computing RSCTC'98*, Poland, (iii) *Application of ANN in Image Processing IV*, CA, USA, (iv) *International Computer Science Conventions (ICSC)*, Canada, (v) *IEE Conference on Image Processing and Applications (IPA-98)*, UK, (vi) *IIZUKA-98*, Japan and (vii) *International Symposium on Neural Computing (NC'98)* during September 23-25, 1998, Vienna. He delivered a tutorial talk at the *Sixth IEEE International Conference on Intelligent Signal Processing and Communication Systems*, Melbourne on November 4, 1998. He also delivered a number of lectures at Warsaw, Zakopane, performed collaborative work, and initiated editing a Special issue on "Neuro-rough Computing" of the journal *Neurocomputing*.

Physics and Earth Sciences Division

Geological Studies Unit

Bhattacharya, S. visited (i) University of Sao Paulo, Brazil under INSA exchange programme (ii) Canadian Geological Survey, (iii) Isotope Laboratory at Ottawa, (iv) University of Arizona at Tucson and (v) Indiana University, Bloomington, during July - August 1998. He also worked at the Isotope Laboratory of Sao Paulo University and delivered lectures on "Multiple granulite facies event in the Eastern Ghats belt, India" and "Structural reworking in the Granulite belt of the Eastern Ghats, India".

Indian Statistical Institute

Ray, S. visited Department of Earth Sciences, University of Cape Town and South African Museum of Cape Town, South Africa (i) to attend the *10th International Gondwana Symposium* (ii) to participate in Il Trau Karoo Field trip and (iii) to study the synapsid fossil collection of South African Museum. during June 25 - July 21, 1998.

Physics and Applied Mathematics Unit

Dandapat, B.S. visited Institute of Thermophysics, Novosibirsk, Russia during September - October 1998. He also gave a seminar talk at University of Novosibirsk, Russia in October 1998.

Mandal, B.N. visited (i) University of Bristol, U.K. during June 17-22, 1998, (ii) University of Loughborough, U. K July 13, 1998 and delivered a seminar on lecture on "A class of mix boundary value problems arising in water wave phenomena" (iii) University of Manchester, U.K. on July 14, 1998 and (iv) Centre of Applied Space Technology and Microgravity (ZARM), University of Bremen, Germany. He also visited some Universities in U. K. during June - July, 1998 under Bilateral Exchange Programme of INSA and the Royal Society.

Roy, S. visited George Mason University, USA as Adjunct Faculty during September 25 1998 - April 30, 1999.

Biological Sciences Division

Agricultural Science Unit

Banik, Pabitra visited (i) Vietnam National University to attend the *International Symposium on Scaling Methodologies in Ecoregional Approaches For Natural Resource Management : Towards Future Research Collaboration* during June 22-24, 1998, (ii) International Rice Research Institute, Philippines, during June 25 - August 31, 1998..

Ghosh, Monoranjan visited Kuwait Institute for Scientific Research, Kuwait to attend the *International Symposium on Mangrove Ecology and Biology* and presented two papers during April 25-27, 1998.

Anthropology and Human Genetics Unit

Majumder, Partha, P. visited (i) South African Institute of Medical Research, Johannesburg and delivered a talk on " Some genetic epidemiological studies in India" during June 25-26, 1998, (ii) University of Pittsburgh, USA, and gave a lecture entitled " Peopling of India and southeast Asia as revealed by molecular genetic studies of contemporary population groups" during November 13-29, 1998 and (iii) Hebrew University, Jerusalem and Weizmann Institute of Science, Rehovot and delivered talks as a member of the Indian delegation of the Indo-Israel Science Co-operation Programme during December 28-31, 1998.

Mukhopadhyay, B. participated and presented two papers as well as chaired a session in the 14th International Congress of Anthropological and Ethnological Sciences, held at the College of William and Mary, Williamsburg, Virginia, USA, during July 26-August 01, 1998. He visited the Department of Anthropology, The Ohio State University, Columbus, Ohio, USA during August 1-15, 1998 and delivered an invited lecture and had discussions concerning research collaborations.

Reddy, B.M. visited (i) Department of Anthropology, University of Kansas, USA, (ii) Institute for Human Biology, University of Humburg, Germany, as invited Alexander-von-Humboldt Fellow, during May 6-July 3, 1998 and (iii) Center for Studies in Demography and Ecology, University of Washington, Seattle and delivered a talk on " Demographic and Nutritional Implications of socio-economic transition among the Manupu tribes" during April 7-10, 1998.

Biochemistry Unit

Duttagupta, C. visited Harvard School of Public Health, Harvard University, Boston, USA, and presented a seminar on "Human Uterine Cervix Cancer Epidemiology in West Bengal, India: Need For A MolecularDatabase?", May 1998. She was re-appointed as visiting assistant professor at the Department of Obstetrics and Gynecology, Albert Einstein College of Medicine, New York, USA.

Biometry Research Unit

Basu, T.K. visited (i) the University of Cape Town, South Africa in connection with the *21st International Biometric Conference* during December 13-18, 1998 where he presented two papers, and (ii) the University of Durban-Westville during December 19-31, 1998.

Embryology Unit

Tapaswi, P.K. visited INRIA, Sophia-Antipolis, France and delivered a series of lectures during October 11 - November 11, 1998.

Social Sciences Division

Economic Research Unit

Neogi, C. visited Institute of Developing Economies, Tokyo, Japan, during October 19, 1998 - March 3, 1999.

Sarkar, A. visited Brigham Young University, Utah, U.S.A. during September 1997- April 1998.

Economic Analysis Unit (Bangalore)

Krishna Kumar, T. visited (i) Department of Statistics and Economics of the National University of Singapore and delivered a seminar on "North-South Trade as a Differential Game Problem", (ii) Department of Economics of Curtin University of Technology, Perth, Australia and attended the *Fourth International Conference on Optimization* during July 1-3, 1998, (iii) Department of Economics, University of New South Wales, Sydney, Australia on July 3-4, 1998.

Rao, K. Surekha visited the Department of Mathematics and Statistics of the University of Naples, Italy during September 21-October 29, 1998.

Linguistic Research Unit

Choudhury, Amitav visited (i) York University during July 8 - August 7, 1998 and presented a paper at the *South Asian Language Analysis Roundtable* held at York during July 18-20, 1998, (ii) Oegstgeest, Netherlands on invitation from the European Cultural Foundation and delivered a talk at a conference on *Which Languages for Europe* during October 9-11, 1998.

Planning Unit (Delhi)

Das, Sanghamitra visited Kobe University, Kobe, Japan, during June 8 - July 15, 1998.

Das, Satya P. visited Kobe University, Kobe, Japan, as Senior Visiting Foreign Scholar during June 1 - August 31, 1998.

Dasgupta, Dipankar visited Hokkaido University as a Visiting Professor of Economics during January 3, 1998 - December 31, 1998.

Indian Statistical Institute

Dutta, Bhaskar visited California State University as a Visiting Professor of Economics during October 1, 1998 - March 31, 1999.

Sociological Research Unit

Bandyopadhyay, Suraj visited Department of Statistics, University of Rajshahi, Bangladesh and delivered the keynote address, "Interface of Statistics and the Social Sciences" at the International Seminar on the *Recent Advances in Statistics and its Applications* during May 29-31, 1998.

Statistical Quality Control and Operations Research Division

Chaudhuri, A.K. visited Mexico for conducting programme on "Taguchi Methods" and to participate in the *8th Mexico Asia Pacific Total Quality Seminar* organised by IMECCA.

Chowdhury, K.K. visited M/S. Philips, Semiconductors, PSPI plant, Cabuya, Philippines for QS 9000 Surveillance Audit during March 8-12, 1999 and audited M/s. ASE, Penang, Malaysia for QS 9000 Surveillance Audit during December 1-4, 1998.

Ghosh, D.T. visited (i) National University of Seoul, (ii) Suwon University Seoul, South Korea and (iii) National Institute of Development Administration, NIDA, Bangkok, Thailand and gave a series of seminars on Quality Management, SQC application in India and recent advances in SQC methods.

Majumdar, A. visited Mexico for conducting programme on "Taguchi Methods" and to participate in the *8th Mexico Asia Pacific Total Quality Seminar* organised by IMECCA.

Pal, B.K. attended Pakistan's *Fourth International Convention on Quality Improvement* at Lahore during October 26-27, 1998 and acted as a panelist in a panel discussion on "Achieving Business Excellence and Competitiveness - Lessons Learnt".

Perumallu, P.K. visited M/S. Philips, Semi Conductor Divisions of Thailand for QS Surveillance Audit in January 1999 and audited M/s ASE, Penang, Malaysia for QS 9000 Surveillance Audit during December 1-4, 1998.

Rajagopal, A. visited leading textile units in Columbia, South America with a view to develop the quality requirement of cloth from polyester blended yarn.

Ravindran, G. visited Hongkong and presented a paper in the *International Conference on Non Linear Programme and Variational Inequalities* and chaired a technical session.

II. SCIENTIFIC ASSIGNMENTS IN INDIA

Theoretical Statistics and Mathematics Division

Calcutta Unit

Bandyopadhyay, Pradipta visited (i) IIT, Chennai as a Resident Faculty teaching Analysis at the Level II of the Mathematics Training and Talent Search Programme (MT & TS) during May 18-June 13, 1998 and (ii) Department of Mathematics, Pondicherry University during January 21 - February 2, 1999.

Chaudhuri, Probal was an invited speaker at the Workshop on Structure and Sequence: Database Analysis in the Bioinformatics Centre, Bose Institute, Calcutta during March 11-12, 1999.

Dutta, Arun Kumar visited School of Mathematics, Tata Institute of Fundamental Research, Mumbai during August 9 - October 9, 1998.

Ghosh, J.K. was an invited speaker at the Indian Science Congress, Chennai and invited discussant at the Bayesian meeting at Amravati.

Mukherjee, Amiya gave lectures on Differential Geometry in Sambalpur University in October 1998.

Rao, T.J. was an invited speaker at the seminar on *Statistics in Practice since Independence* at the NSSO, Calcutta, held in August 1998 and an invited joint-author at a conference on *Decentralization: Devolution and Participation*, organized by Government of West Bengal in November 1998. He participated on the international seminar on the same topic in December 1998.

Srivastava, S.M. continued as Regional Coordinator for West Bengal in *Regional Mathematical Olympiad and Indian National Mathematical Olympiad*.

Delhi Unit

Bapat, R.B. delivered lectures at *International Math Olympiad Training Camp* at Homi Bhabha Centre for Science Education, Mumbai, during May 11-22, 1998.

Bhatia, R. acted as a (i) member of the National Board for Higher Mathematics and (ii) chairman of its North Zone Library Committee.

Bhat, A.G. participated in the *Discussion meeting on Stochastic Differential Equations* under the auspices of the Indian Academy of Sciences, at the Orange County, Coorg, Karnataka, during 2-7 December, 1998.

Borkar, V.S. participated in the *Discussion meeting on Stochastic Differential Equations* under the auspices of the Indian Academy of Sciences, at the Orange County, Coorg, Karnataka, during 2-7 December, 1998.

Karandikar, R.L. participated in the *Discussion meeting on Stochastic Differential Equations* under the auspices of the Indian Academy of Sciences, at the Orange County, Coorg, Karnataka, during 2-7 December, 1998.

Kocher, S.C. visited the Department of Statistics, Punjab University for four days and gave seminar talks in December 1998.

Prakasa, Rao, B.L.S. has continued to function as (i) chairman of the Programme Advisory Committee on Scientometrics, Department of Science and Technology, Government of India during 1996-2000, (ii) member of

Indian Statistical Institute

Emeritus Scientist scheme and one time research grant committee, CSIR, Government of India during 1994-1999, (iii) member of UGC Panel on "Statistics" during 1994-1999.

Roy, Rahul was a speaker in the *Discussion meeting on Stochastic Differential Equations* under the auspices of the Indian Academy of Sciences, at the Orange County, Coorg, Karnataka, during 2-7 December, 1998.

Bangalore Unit

Bhat, B.V. Rajarama visited University of Tirunelveli and gave talks at the 13th annual conference of the Ramanujan Mathematical Society during June 4 - 6, 1998, (ii) Indian Academy of Sciences, Bangalore to participate in the mid-year meeting of the Academy during July 17-18, 1998 and (iii) Homi-Bhabha Centre for Science Education, Mumbai as a member of training faculty for the International Math Olympiad Training Camp during May 7-22, 1998.

Misra, G. visited (i) University of Tirunelveli and gave talks at the 13th annual conference of the Ramanujan Mathematical Society during June 4-6, 1998, (ii) Government College, Bhawanipatna and gave lectures to students at the training camp funded by DST during November 22-24, 1998, (iii) University of Pune and gave talks at the Department of Mathematics during December 7-9, 1998, (iv) University of Goa and gave talks at *UGC Instructional Conference* during December 10-12, 1998 and (v) Homi-Bhabha Centre for Science Education, Mumbai and gave a talk at the *International Conference on Ergodic Theory and Harmonic Analysis* during January 17-22, 1999.

Padmawar, V.R. visited (i) Statistics Department, Bangalore University and gave a talk on the "assessment of an adapted estimation strategy" during July 1998, (ii) attended the Bayesian workshop organized by Stat.-Math. and EAU ISI, Bangalore and gave a talk during March 1999.

Rajeev, B. visited (i) Orange Country, Coorg, Karnataka to give series of five lectures at the *Discussion meeting on Stochastic Differential Equations* under the auspices of the Indian Academy of Sciences, during 2-7 December, 1998, (ii) Department of Statistics, Mysore University and gave a series of three lectures on Stochastic Calculus at a UGC workshop organised by Department of Statistics, Mysore University (UGC-DRS Programme) during March 11-13, 1999, (iii) Dhvangaoka, Mysore and gave lectures at a *Discussion meeting on Physics and Probability* organised by the Kumari L.A. Meera Memorial Trust on January 25, 1999 and (iv) Centre for Theoretical Studies, Indian Institute of Science, Bangalore and gave a lecture on "Objectivity, Randomness and Scientific Method" in April 26, 1999.

Ramasubramanian, S. visited (i) Department of Statistics, Mysore University and gave a series of lectures on "Brownian motion and Differential equations" during March 11-13, 1999 and (ii) Orange Country, Coorg, Karnataka and gave two lectures at the *Discussion meeting on Stochastic Differential Equations* under the auspices of the Indian Academy of Sciences, during 2-7 December, 1998.

Rao, T.S.S.R.K. visited Department of Mathematics, Pondicherry University for 2 weeks in February 1999. He also gave several lectures on "Geometry of spaces of operators".

Sastri, N.S.N. visited (i) Department of Mathematics, Manasa Gangotri, Mysore and gave a series of five lectures on "Coding theory and geometry" at the *4th Refresher's Course for College Teachers* at Mysore University during November 19, 20 and 21, 1998 and (ii) Department of Mathematics, Central College, Bangalore and gave a lecture at a refresher's course organised by Bangalore University on March 15, 1999.

Sitaram, A. visited (i) University of Hyderabad and gave a talk on "Some questions in Integral Geometry" on January 27, 1999, (ii) University of Hyderabad and gave a talk on "The exponential map on a compact Lie group" on March 30, 1999.

Thangavelu, S. visited (i) University of Mumbai and gave a talk at the *International Conference on Ergodic Theory and Harmonic Analysis* during January 17-22, 1999, (ii) Gobi Arts and Science College.

Gobichettipalayam and gave a talk at the *National Conference on Mathematics* during February 27-28, 1999 and (iii) Calicut University and delivered the *16th P. Kesava Menon Memorial Lecture* during January 29-30, 1999.

Applied Statistics Division

Applied Statistics Unit

Adhikary, Arun Kumar visited Department of Statistics, Utkal University and delivered a series of lectures on "Survey Sampling" during January 5-9, 1999.

Bandyopadhyaya, S. served as a member of an expert committee on *Natural Resources Data Management System (NRDMS)* projects of the Department of Science and Technology, Government of India. He also participated in the (i) workshop on *Modernisation of the Statistical System in India*, organised by the Department of Statistics, Government of India, Delhi during September 11-16, 1998 and (ii) the *National Workshop on Ecological Responsibility*, organised by the Council for Social Development, Delhi during November 16-18, 1998.

Bose, M. gave a number of lectures in the area of Design of Experiments, at Utkal University in January 1998.

Dewanji, Anup delivered a lecture at the Workshop on *Reliability and Survival Analysis* at IIT, Mumbai during November 23-25, 1998 and gave a talk on "Risk Assessment : an Introduction" at Sivatosh Mukherjee Science Centre, Calcutta on January 2, 1999 and March 18, 1999.

SenGupta, A. delivered (i) two lectures on "Analysis of Directional Data - I & II" at Bangalore University during January 1999, (ii) a short course on "Multivariate analysis" at the *Workshop on Computer and Graphical Assisted Multivariate Data Analysis*, Indian Agricultural Statistics Research Institute, New Delhi, in February 1999. He chaired the invited lectures session on "Directional data analysis" and organised the invited lectures session on "Stable Distributions" in the *International Conference on Combinatorics, Statistics, Pattern Recognition & Related Areas* held during December, 1998 under the auspices of the International forum for interdisciplinary mathematics. He was also the Chief Guest and delivered the inaugural address at the *National workshop on Biostatistics and Biometry* during December 1998 at Banaras Hindu University.

Sengupta, D. delivered lectures at the (i) Workshop on *Reliability and Survival Analysis* at IIT, Mumbai during November 23-25, 1998 and (ii) *International Conference on Combinatorics, Statistics, Pattern Recognition and Related Areas* at Banaras Hindu University in December, 1998.

Computer and Communication Sciences Division

Computer Vision and Pattern Recognition Unit

Chaudhuri, B.B. delivered invited talk (i) at the *National Seminar on Bengali : Teaching, Translation & Dialects* organized by ISDL, Kerala at Bharatiya Bhasa Parisad, Calcutta and (ii) at the *DIGIVISION* conference organized by Allahabad University. He was invited to attend the experts meeting (i) at DST, Government of India, New Delhi, (ii) on Computerized Dictionary in Bangla at Bangla Academy, Calcutta, (iii) at DOE, Government of India, New Delhi. He visited Indian Institute of Port Management, Calcutta and gave lectures at the *Workshop on Information Technology*. He attended *ICVGIP*, New Delhi and presented a paper and acted as a Session Chair. He participated in a panel discussion in the *National Symposium on Computational Linguistics*, organized by LRU, ISI, Calcutta. He also went to Pune to review the Devnagari OCR Project of C-DAC, Pune. He also served as a member of (i) Programme Committee of *ICKBCS-98*, NCST, during December 17-18, 1998 at Mumbai and (ii) Programme Committee of *ICVGIP-98*, during December 21-23, 1998 at IIT, Delhi.

Indian Statistical Institute

Dash, N.S. visited Punjabi University, Patiala and attended *ICOSAL-II* and read a paper on Morphological Word Parsing on January 9, 1999.

Garain, U. visited Pune to attend the *SAARC Conference on Extending Use of Multilingual Multimedia Technology* and delivered a talk on Language Products on September 3, 1998.

Pal, T. visited Indian Institute of Port Management, Calcutta and gave lectures in a workshop on *Information Technology*.

Pal, U. visited Indian Institute of Port Management, Calcutta and gave lectures in a workshop on *Information Technology*.

Advanced Computing and Microelectronics Unit

Bhattacharya, Bhargab, B. attended the *12th International Conference in VLSI Design*, Goa, as a member of the program committee in January 1999.

Chakrabarti, M.K. visited NSSO, Nagpur during October 22-24, 1998.

Das, N. attended the *International Conference on High Performance Computing 1998 (HiPC'98)*, Chennai and presented a paper during December 17-20, 1998.

Ghosh, Satrajit attended (i) the *12th International Conference in VLSI Design*, Goa during January 1999 and (ii) the *VLSI Design and Test Workshop*, New Delhi and presented a paper during August 6-7, 1998.

Machine Intelligence Unit

Ghosh, A. delivered an invited talk at the Indian Academy of Sciences, Bangalore in November 1998

Kundu, M.K. delivered an invited talk at a workshop on *Frontiers of Electronics (FRONTEL)*, at the Institute of Radio Physics and Electronics, Calcutta University, Calcutta on March 27, 1999. He was selected as a member of the programme committee for the *13th International Conference on VLSI design (VLSI Design 2000)* to be held in January 2000.

Mandal, D.P. delivered an invited talk at the workshop on *Structure and Sequence : Database Analysis* at the Bose Institute, Calcutta on March 12, 1999. He also presented an article at the *3rd Annual Conference on Information Theory and Applications*, Amritsar during February 12-14, 1999.

Mitra, S. has been serving as a member of the program committee for *NAFIPS 99, USA*.

Murthy, C.A. delivered (i) an invited talk at the Department of Mathematics of the Utkal University, Orissa on February 2, 1999 (ii) a series of lectures at the Department of Mathematics, Sambalpur University, Orissa in March 1999.

Pal, S.K. delivered an invited talk at the Department of Mathematics of the Utkal University, Orissa, India on February 2, 1999. He also delivered a plenary talk and chaired a session at *ICVGIP-98*, IIT Delhi, India on December 23, 1998. He also served as a member of (i) the Planning and Programming Committee of Birla Industrial and Technology Museum (BITM), India, (ii) the Engineering Sciences Research Committee of the Council of Scientific & Industrial Research (CSIR), (iii) the Programme/Advisory Committee of *International Conference on Evolutionary Computing*, India.

Physics and Earth Sciences Division

Physics and Applied Mathematics Unit

Bandyopadhyay, P. visited (i) North Bengal University, Siliguri during September 25-26, 1999, (ii) Darjeeling Government College and delivered a lecture on "Recent Development in Physics" on the Occasion of the Golden Jubilee Celebration of the College on March 10, 1999.

Dandapat, B.S. visited (i) Indian Institute of Science, Bangalore and gave a talk in May and November 1998 and (ii) Bangalore University and delivered a series of lectures on "Thin film" in August 1998.

Kumar, Krishna visited (i) Institute of Mathematical Sciences, Chennai as an invited speaker under TPSC Programme during October 27- November 2, 1998, (ii) S. N. Bose Centre for Basic Sciences, Calcutta and delivered an invited talk at the *International Conference on Statistical Physics, Calcutta III*, 1999.

Mandal, B.N. visited the Indian Institute of Science, Bangalore during November 22 - 29, 1998. He was also invited as a Resource Person at Visva Bharati, Santiniketan to deliver a course of lectures on Water Waves in the *Third Refresher Course in Mathematics* during August 29-31, 1998.

Mazumder, B.S. was selected as a member of the International Scientific Advisory Committee of *8th International Symposium on Stochastic Hydraulics*, China, 2000.

Roy, S. was selected a member of the Organising Committee of (i) *International Conference on Consciousness*, USA, 1999 (ii) *International Conference Vigier 2000*, Berkeley, 2000.

Roychoudhury, R.K. visited the Centre of Theoretical Physics, I.I.T., Kharagpur and delivered an invited talk on KdV and Modified KdV solitons in Plasma on October 21, 1998.

Biological Sciences Division

Agricultural Science Unit

Ghosh, Monoranjan visited University of Bombay and University of Pune during February 10-24, 1999 and gave a seminar there.

Anthropology and Human Genetics Unit

Basu, A. visited North- Eastern Hill University, Department of Anthropology and presented a special lecture at the seminar on "Anthropology and Allied Disciplines in the North-East : The Last Fifty Years", jointly organised by NEHU and ANSI Shillong during March 26-27, 1999.

Biochemistry Unit

Duttgupta, C. acted as a resource person in a DBT-sponsored Winter School organized by ISI, Indian Institute of Chemical Biology and Saha Institute of Nuclear Physics in January 1998. She also participated as an invitee in a workshop organized by the Indian Association for Cancer Research, Calcutta Chapter in January 1998.

Indian Statistical Institute

Sengupta, S. participated in a workshop organized by the Indian Association for Cancer Research, Calcutta Chapter in January 1998.

Embryology Unit

Chattopadhyay, J. delivered a talk at the *Fourth National Conference on Mathematical Modelling of Ecological and Environmental Systems* organised by Department of Mathematics, Jadavpur University, Calcutta on March 28, 1999.

Tapaswi, P.K. delivered an invited talk at the *Fourth National Conference on Mathematical Modelling of Ecological and Environmental Systems* organised by Department of Mathematics, Jadavpur University, Calcutta on March 26, 1999.

Social Sciences Division

Economic Research Unit

Mukherjee, Robin, attended as an expert the *Project Development Workshop* under the World Bank aided "India : Environmental Management Capacity Building Technical Assistance Project" held during March 11-13, 1999 at Indira Gandhi Institute of Development Research (IGIDR).

Linguistic Research Unit

Bandyopadhyay, D. worked as a visiting lecturer at the Department of Folklore, Kalyani University during July 1994 - December 1998. He acted as Chairperson of a session on "Applied Linguistics" in the *2nd International Conference on South Asian Languages*, Patiala, during January 8-10, 1999.

Choudhury, Amitav acted as Project Co-ordinator (in collaboration with CALTS, Hyderabad Central University and Centre for Social Sciences, Calcutta) of an International Project "European Union - India Economic Cross Cultural Programme" sponsored by the European Commission.

Planning Unit (Delhi)

Jalan, Jyotsna attended (i) the Conference on *Income and Wealth* held in New Delhi in November 1998, and (ii) *World Bank Conference on WDR 2000* held in New Delhi in February 1999 as a discussant.

Population Studies Unit

Bhattacharya, B.N. visited (i) International Union for the Scientific Study of Population (Deemed University) during May 3-5, 1998 and (ii) Calcutta Metropolitan Development Authority (Health) to brief findings from the Mid-term review on beneficiaries to the policy planners and workers of IPP-VIII project during December 1-3, 1998.

Majumdar, P.K. visited Calcutta Metropolitan Development Authority (Health) to brief findings from Mid-term Review regarding grass root functionaries at various level up to Health and Medical Officers during December 1 - 3, 1998.

Psychology Research Unit

Dutta Roy, D. participated in a workshop organised by the CMDA on the Mid-term review of the IPP-VIII project activities during December 1- 3, 1998. He also gave lecture on (i) educational problem of children to the teachers and guardians of Maria's Day School, Howrah on December 20, 1998 and (ii) human development and

psychology to the teachers of Rehabilitation Council of India's bridge course in the area of mental retardation at Bikhshayan during March 3 - 4, 1999.

Ghosh, Anjali participated in a workshop on *Formulation of Strategy for Basu-line Study for the Development of Primary Education*, Howrah during September 19 - 20, 1998 and in a panel discussion on *Understanding AIDS* at the Indian Chamber of Commerce on December 3, 1998. She was also nominated a member of the State Resource Group for District Primary Education Programme, West Bengal.

Gupta, Rumki was invited to participate in a panel discussion on *Understanding AIDS* at the Indian Chamber of Commerce on December 3, 1998.

Mitra, Subir, K. participated in the workshop on *Basic Education in Eastern India* organised by Indian Institute of Management, Calcutta as a panelist on August 1, 1998, (ii) on the Mid-term review of the IPP-VIII project activities organised by the CMDA during December 1 and 3, 1998.

Sociological Research Unit

Bandyopadhyay, Suraj participated as a member in (i) Strategic Planning Cell, Department of Health and Family Welfare, Government of West Bengal, (ii) Ad-hoc Committee for the West Bengal Board of Primary Education, Government of West Bengal, (iii) West Bengal Board of Primary Education, Government of West Bengal (iv) Core Committee, West Bengal Commission for Women, Government of West Bengal and (v) Editorial Board, Indian Science Congress Association.

Chatterjee, Arun Kumar visited Gandhigram Rural Institute, Tamil Nadu, during March 13-18, 1999 and delivered a lecture at *XXII Indian Social Science Congress*.

Dasgupta, Atis was elected a member of (i) the Advisory Committee of the State Archives of Government of West Bengal, (ii) the Advisory Committee of the State Archaeology, Government of West Bengal, (iii) the Advisory Committee of the District Gazetteers, Government of West Bengal, (iv) the Governing Body of Netaji Institute of Asian Studies, Government of West Bengal, (v) the Governing Body of the Calcutta Museum to be set up in the historic Town Hall, (vi) the Advisory Committee set up by the Government of West Bengal for Netaji Subhas Chandra Bose Open University, (vii) the State-level Committee for publication on the occasion of 50 years of Independence, (viii) the Advisory Committee and a Working Group for collection and preservation of important source materials from police records of the Detective Department and the Special Branch of Calcutta Police and the Intelligence Branch and CID, West Bengal and (ix) the State-level Committee on Heritage Buildings of West Bengal. He also delivered the *Biplibi Surya Sen Memorial Lecture* on "Life and contribution of Surya Sen to the struggle for freedom of India from the British rule" in Calcutta University on November 17, 1998.

Maiti, Asok has been elected Vice-President of Indian Academy of Social Sciences, Allahabad for 1999-2000 and Managing Editor of *Bharatiya Samajik Chintan*. He visited Gandhigram Rural Institute Dindigul, Tamil Nadu and delivered a lecture at the *XXII Indian Social Science Congress* during March 13-18, 1999.

Statistical Quality Control and Operations Research Division

Chowdhury, K.K. served as the Chief Proctor of the Certification Board of the American Society for Quality (ASQ) for conducting the ASQ examinations in Bangalore.

Mandal, P. delivered an invited lecture "Quality and SPC and Six-Sigma Quality" at Alembic Chemical Works Co. Ltd., Baroda during June 11- December 28, 1998. He also served as a member of the Western Regional Evaluation Committee for Rajiv Gandhi National Quality Award (1995-1996) during July-October 1998.

Roy Chowdhury, A. served as a Chief Proctor of the Certification Board of the American Society for Quality (ASQ) for conducting the ASQ examinations in Bangalore.

Indian Statistical Institute

Dasgupta, D. delivered three lectures on "Statistics in Industries" at Department of Statistics, Sardar Patel University, Vallabh Vidyanagar for the students and the faculty members during November 26-27, 1998.

Majumder, S.K. delivered invited talk on (i) 'Quality Cost' in the seminar on 'Quality Management and Quality Cost' organised by BIS and Institute of Standards Engineers, Calcutta during January 18, 1999 and (ii) QS-9000 at Small Industries Service Institute, Calcutta during October 27, 1999. He was also selected as a member in the State (West Bengal) Committee on QC and also attended the meeting under the chairmanship of the Chief Secretary, Government of West Bengal in Writer's Building at Calcutta during August 27, 1998.

Chakravarty, S.C. gave a short course of lectures on Quantitative Techniques to students of FORE School of Management, New Delhi.

Goel, Rajiv, served as faculty member in Winter Course on DOE held at Hyderabad during February, 1999.

Lakshminathan, P.R. delivered lectures on "Statistical Methods for Building Engineering" at School of Planning & Architecture, New Delhi.

Majumder, B. delivered (i) an invited lecture on Statistical Methods to participants of Management Programme conducted by First Computers, New Delhi, (ii) invited talk to the members of Foreign Delegates at NPC, (iii) talks to the participants of training programme organised by SISI. He also served as (i) a member of the Western Regional Evaluation Committee for Rajiv Gandhi National Quality Award (1995-1996) during July-October 1998 and (ii) a faculty member in Winter Course on DOE held at Hyderabad during February, 1999.

Seth, Arvind delivered lectures on (i) "Design of Experiments" and "Multivariate Analysis" for DRDO's Scientists, (ii) "Statistical Methods" at All India Manufacturers Association, New Delhi, (iii) "Research Methodology" at International Management Institute, New Delhi, (iv) "Statistical Analysis of Proficiency Testing" under NABL Programme. He also gave a short course of lectures on "Quantitative Techniques" to students of FORE School of Management, New Delhi.

Library, Documentation and Information Science Division

Documentation Research and Training Centre

Madalli, Devika P. was invited by Indira Gandhi Memorial Library, University of Hyderabad, as a resource person and delivered lectures on "Information Retrieval Systems", "Bibliographic Database Management Systems and "CD-ROM Database" during October 24-25, 1998.

Prasad, A.R.D. was invited by (i) the Karnataka University for counselling on Karnataka University Campus Wide Network during October 13-15, 1998, (ii) the Academic Staff College, Andhra University to deliver lectures on Artificial Intelligence during November 9-13, 1998 and (iii) the Academic Staff College, Mangalore University to deliver special lecture on "Bibliographical Database System" during January 11-14, 1999. He attended *INFLIBNET for CALIBER -99* and presented an invited paper during February 18-19, 1999.

Rao, I.K. Ravichandra was invited by (i) the Central Secretariat Library, Ministry of Human Resource Development, Government of India, New Delhi and attended the Expert Committee Meeting to monitor the IFLA savings for the Development of Library and information Services as well as for the Welfare of Librarians in India during July 15, 1998, (iii) the Madras Library Association for attending the Refresher Seminar and presented a paper entitled "Need for a Change in the Library and Information Science Curriculum" at Madras during November 25, 1998, (iv) the Institute of Information Studies, Bangalore to deliver special lectures on PASCAL Programming to participants of the course on CDS/ISIS; during January 10-11, 1999 and (v) the Mangalore University to deliver special lectures on "Application IT and on Information Management". He also attended the *IASLIC Conference* held at Kerala Agricultural University, Trichur during December 21-23, 1998, and chaired a Technical Session there.

Part III. Administration And Office Bearers

12. GENERAL ADMINISTRATION

Administrative Services Division

The Administrative Services Division at the headquarters caters to the various needs of the scientific workers of the Institute engaged in various scientific research and academic activities and provides them with necessary infrastructural facilities in their pursuit of excellence. The centres at Delhi and Bangalore, each having a number of science units are, by and large, self-sufficient in providing administrative support to the scientific workers there. The division has different units in Calcutta as mentioned below:

Accounts Section : The Accounts Section keeps the accounts of all financial transactions made by the Institute and admits claims including personal claims preferred by workers and outsiders after proper check. This section is responsible for final closure of accounts and preparation of Income and Expenditure Account and Balance Sheet of each financial year. They are also to interact with the Statutory Auditors in the course of audit of final accounts. The Provident Fund Unit (PF) under this section maintains the accounts of provident fund of individual workers of the Institute and deals with PF loans and withdrawal and final payment of PF balance.

The Internal Audit Unit, in addition to their routine jobs, undertakes various audit assignments, by visiting different Service Units of the Institute at Calcutta and outlying Centres. The Unit plays an important role to ensure financial and accounting disciplines and statutory compliances; maintain system and procedures and bring out audit observations and suggest audit recommendation thereon.

Council Section : The Institute is a registered society with a large number of Ordinary and Life members. The Section maintains liaison with the members and satisfies their requirements including sending of Sankhya, the Indian Journal of Statistics, published by the Institute, to the members of the Institute. The Section arranges holding of meetings of General Body, the Council, Finance Committee, Section 8(1) Committee etc. This section is attached to CAO's Office.

Director's Office and CAO's Office : Director is the principal executive officer of the Institute and the head of all its academic and administrative activities while Chief Administrative Officer (CAO) is in over-all charge of General Administration, Financial and Personnel Management in respect of Administrative Services Division. Both the offices are entrusted with the task of providing all help and support to these two very important functionaries of the Institute. They are required to maintain confidential records, issue circulars, interact with various research and administrative divisions and maintain liaison with outside centres and branches of the Institute.

Engineering Unit : The Unit is responsible for day to day maintenance of the office/staff quarters and supply of water in the buildings housing various divisions and staff quarters. The Unit also looks after all new constructions.

Electrical Maintenance Unit : The Unit is responsible for supply of electricity to all buildings including staff quarters and the day to day maintenance of the electrical equipments in these buildings.

Estate Office : The Institute has a very big campus comprising buildings, ponds and vacant space. The Estate Office looks after all the estates and properties of the Institute and also maintains regular conservancy services.

Medical Welfare and Reimbursement Unit : The workers of the Institute are entitled to medical claims as per CSMA rules of the Government of India. Besides there is a small dispensary with facilities for consulting general physicians and specialists for the campus residents and also for the workers residing nearby. The medicines are supplied free. At present there are three regular doctors and several part-time specialist doctors attached to the dispensary. The Medical Reimbursement Unit is entrusted with the payment of all medical claims submitted by

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workers as per CSMA rules and the Medical Welfare Unit looks after the functioning of the dispensary with all attendant activities.

Personnel Unit : The Personnel Unit deals with all service matters like appointments, promotions, transfers, disciplinary action, redressal of grievances, retirements etc. in respect of all the workers of the Institute and maintains all records in connection thereto. The Retirement Benefit Cell attached to the Unit deals with the payment of retirement benefits to workers like pension, death-cum-retirement gratuity etc.

Public Relations Unit : All sorts of public relations activities are being carried out by the Unit on behalf of the Institute. During the year, the Unit arranged for media coverage of (i) Seminar on "Rao's Score, Neyman's β and Silvey's L.M. Tests : An Essay on Historical Developments and Some New Results" held on May 15, 1998, (ii) Seminar on "[M]other Tongue Syndrome : The case for or against the learning of English at the primary level of education" held on July 01, 1998, (iii) Mathematical Olympiad'98 held on December 06, 1998, (iv) International Workshop on "High Performance Computing" during December 30, 1998- January 05, 1999, (v) International Workshop on "Image and Shape Analysis" during January 8-10, 1999, (vi) Exhibition of Paintings by Mr. B.R. Panesar held on January 27, 1999, (vii) Media Meet in connection with the visit of Sir Walter Fred Bodmer on February 01, 1999, (viii) Annual Convocation of ISI held on February 02, 1999, (ix) "P.C. Mahalanobis Memorial Lectures" during March 1-3, 1999, (x) Annual Convocation of International Statistical Education Centre (ISEC) held on March 26, 1999. The Unit issued a number of press releases during the year in connection with various scientific programmes/research activities. Institute visits for the students of Gokhale Memorial Girls High School and Konnagar Hindu Girls High School were organised by the Institute.

Another important job of the Unit is to prepare and publish the Annual Report each year under the guidance of an Editorial Board and arrange for its distribution to different universities in India and abroad and also to the Government departments. The unit is also responsible for Institute's WEBSITE information maintenance.

Publication and Printing Unit : The Unit was formed in August, 1991 when Statistical Publishing Society was formally taken over by the Institute according to a Govt. of India order. It undertakes printing/binding work of the Institute and outside agencies. It also looks after the distribution of the journal, Sankhya throughout the World. Steps have been taken to modernise the existing letter press into an Offset printing press. As recommended by the modernisation committee, an Offset printing machine and a printing down frame have been installed and started working. Procurement of D.T.P. set up has also been made which is likely to be in operation shortly.

Another important activity of the Unit is to prepare and maintain separate accounts for it including monthly disbursement of salary, other payments, reply of audit para etc.. The Unit has cells for sales and despatch of the journal, Sankhya and other publications of the Institute.

Binding Unit : The Institute has a large library with books and journals which are required to be bound regularly. Besides, various research divisions bring out research proposals, administrative division brings out booklets on budget for presentation to the Ministry. All such and many other documents are bound throughout the year in the Binding Unit.

Central Office : The Central Office is in charge of receipts and despatch/distribution of all official correspondence, circulars/office orders etc. of the Institute. Despatch Section of Central Office is now well equipped with the latest electronic franking machine for timely mailing of all kinds of communication of the Institute. Maintenance and service of all typewriters and duplicators of the Institute are done by the Unit through Annual Maintenance Contract (AMC) with respective agency. Another important job of Central Office is to arrange condolence meetings at the demise of Institute workers and send resolutions of the meeting to their bereaved families.

Central Stores Unit : All stationery and articles including furniture required for use in various divisions of the Institute are procured through Central Stores Unit. They also procure and store materials required for day to day maintenance of buildings, and for the water and power supplies. A small Tailoring Unit is attached to it.

Security Unit : Security Unit is entrusted with the important task of maintaining security of the whole campus of the Institute and its properties.

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Telephone Unit : The Unit manages two electronic exchanges installed by Crompton Greaves Ltd. in the Institute's premises at Calcutta. The main one (NE-1100) is housed at 202, B.T. Road and a small one (NE 20M) is housed at 205 B.T. Road. The two are interconnected. The NE 1100 is manned by operators during working hours and works in automatic mode otherwise. The NE 20M operates in the automatic mode.

Transport Unit : Besides a fleet of vehicles, the Institute has four buses and an ambulance. The vehicles are for use by the visiting scientists and dignitaries and by the workers in carrying out the activities of the Institute. The buses are used for transporting workers from eastern and southern part of Calcutta and its suburbs. The ambulance is used to carry ailing workers or members of their families to and from hospital for emergency treatment on recommendation of the doctors attached to Medical Welfare Unit. The Transport Unit looks after the use and maintenance of the vehicles.

Guest House : The New Guest House of the Institute has started functioning from December 1997. It has 6 A/C suites, 2 A/C single rooms, 6 Non-A/C double rooms, and 21 Non-A/C single rooms. There is also an A/C VIP lounge, a nicely decorated conference room with a modern public address system on the 1st floor of the guest house and an A/C dining hall on the ground floor of the guest house. All the rooms are well furnished with 24 hrs. telephone facilities.

Besides the Institute guests and visitors, scientists and representatives from Institutes/Organisations like NSSO, NIOH, SSI, Rabindra Bharati University, Calcutta University etc. are being provided Guest House facilities on payment. Guest House service during the year 1998-99 went on in full swing.

Apart from the Units mentioned above, there are some small cells dealing with, Budget, Import, Travel and House Building Advances etc. to take care of the specific needs of the Institute. The Administrative Services Division also looks after the running of hostels for students, research scholars and International Statistical Education Centre (ISEC) trainees and also the running of Canteen for the workers and students of the Institute. The other outlying Units numbering eight are controlled directly by the headquarters at Calcutta. The Administrative Services Division takes the responsibility for all new construction activities of the Institute at its headquarters and also at outlying centres/branches. A brief report on the construction activity in the current year is given later.

The activities of the Administrative Services in the two Centres, namely Delhi and Bangalore, and in other outlying branches of the Institute are more or less the same but on a much smaller scale. Depending on the needs of the branches/centres the units have been truncated and merged into fewer units.

Staff of the Institute

The Government of India agreed that ISI might continue with the staff strength, the various posts, scales of pay, promotional policies and other service conditions as were existing in the past before imposing embargo. They also allowed revision of the pay scales as approved by the Council for all categories including categories of posts for non faculty workers where certain anomalies existed. As a result of the clearance from the Government, the Institute has undertaken measures to recruit workers in various categories where there are acute shortages. The following senior members of the staff worked in the posts indicated against their names during the year.

<i>Director :</i>	S.B. Rao
<i>Dean of Studies :</i>	P.S.S.N.V.P. Rao
<i>Head, Delhi Centre :</i>	Aloke Dey, from 1.01.98 to 31.7.98 (Acting) K.B. Sinha, from 1.8.98 to 17.8.98 (Acting) Aloke Dey, from 18.8.98 to 31.12.98 (Acting) Dipankar Dasgupta, from 1.1.1999
<i>Head, Bangalore Centre :</i>	Gadadhar Misra, from 1.4.98 to 30.6.98 (Acting) Gadadhar Misra, from 1.7.98

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In-Charge, Administration & Finance : Anup Majumdar, from 1.02.1998 (AN)

New Appointments

List of workers (Scientific/Technical/Administrative) recruited in the pay-scale of Rs.2200-4000 or above (pre-revised) during the year :

1. Anish Sarkar, Lecturer
2. Arup Kumar Pal, Lecturer
3. Arjit Sen, Lecturer
4. Jyotsna Jalan, Lecturer
5. Chandan Chakraborty, Associate Professor
6. Aniruddha C. Naolekar, Lecturer
7. Sanjit Kumar Ray, Officer on Special Duty

List of workers (Scientific/Technical/Administrative) in the pay-scale of Rs.2200-4000 or above (pre-revised) during the year who retired/resigned/died from the services of the Institute during the year.

1. Bijoy Kumar Saha (1621), Executive Officer (S.G.)
2. S.R. Chakraborty (7711), Professor
3. Prafulla Chakraborty (2777), Associate Professor
4. Dhiraj Kumar Rudra (2862), Professor
5. B.L. Kumar (3081), Executive Officer
6. B.B. Sahoo (8436), Research Assistant
7. Amaresh Kumar Dutta (T/248), Officer on Special Duty
8. Rabindra Nath Banerjee (2080), Research Assistant
9. R.J. Pandey (3333), Senior Technical Officer (SQC)
10. Nirendra Nath Moitra (3393), Senior Technical Assistant
11. Chiranjib Lal (3082), Executive Officer
12. Kohinur Hazra (8607), Associate Professor
13. Prandhan Nandy (3342), Executive Officer
14. Dilip Sengupta (7064), Input Output Controller

Number of workers in the Institute as on 31 March, 1999 :

(i) Scientific and Technical Workers	-	501
(ii) Non-Scientific Workers	-	1072
Total :		<u>1573</u>

Budget and Finance

For the year 1998-99 the Institute's budget was estimated to be Rs. 2238.50 lakhs (excluding the impact of revision of pay of faculty) and Rs. 1562.12 lakhs towards Non - plan and plan respectively at the BE stage. The Govt. after considering the report of the section 8(1) Committee approved a sum of Rs 2058.25 lakhs including internal receipts and Rs. 900 lakhs for non-plan and plan expenditure respectively. At the revised estimate stage in 1998-99, the institute sought a grant of Rs.4071.55 lakhs (including Additional fund required to meet Fifth CPC recommendation Rs. 952.20 lakhs) and Rs.900 lakhs in non-plan and plan estimates respectively. After considering the revised pay scales of Faculty and also the impact of increased Dearness Allowance, Section 8(1) Committee recommended a sum of Rs.3964.62 lakhs on non-plan (including the amount that is to be met for expenditure on implementation of pay scales) in RE for 1998-99 and Rs.900 lakhs in plan estimate for 1998-99. However, Government released a sum of Rs.3200 lakhs during 1998-99 under Non-plan. The expenditure during the year under report was well within the budget allocation sanctioned by the Government.

Land and Construction

The following major activities were undertaken by the Institute during the year 1998-99.

Calcutta

Construction of 'A' type Qtrs.

The Civil, sanitary and plumbing work has been awarded to M/S. D.M.P. Nirman(P) Ltd. through work-order dated 26.10.98. The construction work is in full swing and concrete work upto 2nd floor roof with allied brickwork has been completed. An amount of Rs.21,19,101.22 (Gross) has been paid to the contractor through two R/A bills and Rs.1,08,682.00 has been paid to the consultant, M/S. DCL, as their fees in this financial year. It is expected that the project would be completed before the scheduled time of completion.

Bank and Post Office Building

Site and building plans have been sanctioned by Baranagar Municipality against payment of Rs.26000.00 as sanction fees. Tender for civil, sanitary and plumbing works were invited through press advertisement and were opened in February 1999. Selection of contractor has been completed and work-order is to be issued soon. An amount of Rs.1,81,077.48 has been paid to the consultant, M/S. DCL, as fees.

Canteen Building

Site and building plans were sanctioned by Baranagar Municipality against payment of Rs.25100.00 as sanction fees. Tender for civil, sanitary and plumbing works were invited through press advertisement and were opened in February 1999. A final decision on the selection of the contractor will be taken soon. An amount of Rs.3,51,772.30 has been paid to the consultant, M/S. DCL, as fees.

Academic Building

Site and building plans were sanctioned by Baranagar Municipality against payment of Rs.78,875.00 as sanction fees. Consultant, M/S. Dulal Mukherjee & Associates have submitted detailed estimate and working drawings. The same is under scrutiny.

Construction of boundary walls, temporary accommodation and renovation of old buildings

Renovation of various offices, stores, residential quarters etc. were carried out during the year and the allocated fund was exhausted. The detailed investigation report and cost estimate submitted by consultant, M/S. DCL, in connection with renovation of several old buildings of the Institute has been examined in detail and various items of work have been segregated according to their importance for taking them up in a phased manner in the next financial year.

Road connecting G.L.T. Road

The work has been completed. Involved expenditure is Rs.3,39,341.35.

C & D Type Quarter (including Giridih)

Construction works could not be taken up owing to problems with acquisition of land (non-availability of clear title) at Baranagar.

Hostels

A field survey work was carried out at the proposed location of construction of a new hostel building for Boys inside the Institute premises at a cost of Rs.9676.00. Selection of Architect for appointment as consultant for construction of a Boy's Hostel and a Ladies' Hostel is to be finalised soon.

Delhi

The construction work of Administrative Building which was entrusted to CPWD, is in progress.

Bangalore

Additional 2 floors on Ladies' wing (850 sqm.) and 1 floor on Gents' wing (350 sqm.) constructed in the Hostel Block.

SOCIETY TYPE ACTIVITIES

Membership : April 1998-March 1999

During the period 97 persons became Ordinary Members of the Institute and 8 Ordinary Members became Life Members.

The membership position as on 31st March 1999 is as follows :

Ordinary Members	-	1649
Life members	-	457
Institutional members	-	14

Total :		2120

Finance Committee Meeting : The Finance Committee met twice, on 17 September 1998 and 28 October 1998, during the period under report. Apart from taking various decisions on financial matters, the committee recommended RE 1998-99 and BE 1999-2000 (Plan and Non-Plan) in their meeting on 17 September 1998 and considered and recommended the Annual Report including Audited Statement of Accounts for the year 1997-98 in their meeting held on 9 December 1998.

Council Meeting : The Council met six times during the period under report to take decisions on administrative and scientific matters. In the Council meeting held on 13 October 1998, the budget proposals both for Plan and Non-Plan (RE for 1998-99 and BE for 1999-2000) as recommended by the Finance Committee in its meeting held on 17 September 1998 were approved. In the meeting dated 19 November 1998 the Annual Report including the Audited Statement of Accounts for the year 1997-98 were considered by the Council and was approved.

A list containing the names of the President of the Institute, Chairman and members of the Council of the Institute and also a list of members of different committees constituted by the Council are given elsewhere in the report.

Annual General Meeting : The General Body of the Institute met on 14 September 1998 and 9 December 1998 during the period under report. The Annual Report of the Institute for the year 1997-98 and Audited Statement of Accounts for the year 1997-98 together with the Auditor's comments and replies of the Administration thereto were adopted in the meeting of the General Body on 9 December, 1998.

13. LIST OF MEMBERS

(Academic Council and Other Committees as on March 31, 1999)

Academic Council

1. S. B. Rao, Director - Chairman

2. P.S.S.N.V.P. Rao, Dean of Studies - Convener

Theoretical Statistics and Mathematics Division

3. T. Parthasarathi, 4. K. B. Sinha, 5. B.L.S. Prakasa Rao, 6. B.V. Rao, 7. Alope Dey, 8. G.M. Saha, 9. Rajendra Bhatia, 10. R.L. Karandikar, 11. S.M. Srivastava, 12. Tapas Chandra, 13. Kalyan Kr. Mukherjee, 14. R.B. Bapat, 15. A.R. Rao, 16. B.K. Sinha, 17. K.P.S. Bhaskara Rao, 18. A. Sitaram, 19. Sm. H. Sarbadhikari, 20. T.J. Rao, 21. A.K. Roy, 22. N.S. Narasimha Sastry, 23. S. Natarajan, 24. K. Ramamurthy, 25. S. Ramasubramaniam, 26. G. Mishra, 27. J.K. Ghosh, 28. S. Thangavelu, 29. S.C. Kochar, 30. R. Dasgupta, 31. T.S.S.R.K. Rao, 32. Bhaskar Bagchi, 33. K. Balasubramanian, 34. Arup Bose, 35. P.L. Muthuramalingam, 36. C.G. Bhattacharya, 37. Pradipta Bandyopadhyay (Elec. Rep.) 38. Sumitra Purkaystha (Elec. Rep.)

Applied Statistics Division

39. Ajoy Kr. Adhikari, 40. Shibdas Bandyopadhyay, 41. K.S. Vijayan, 42. Arijit Chaudhuri, 43. C. H. Sastry, 44. A.C. Mukhopadhyay, 45. Asish Sengupta, 46. Debasish Sengupta (Elec. Rep.), 47. Mousumi Bose (Elec. Rep.)

Social Sciences Division

48. Abhirup Sarkar, 49. Biswanath Bhattacharya, 50. S.R. Chakraborty, 51. N.S.S. Narayana, 52. Subhassis Gangopadhyay, 53. D. Coondoo, 54. Atul Sarma, 55. Satya P. Das, 56. Parkash Chander, 57. Dipankar Dasgupta, 58. Sanjit Bose, 59. Pradip Maiti, 60. Bhaskar Dutta, 61. R. N. Mukherjee, 62. P. N. Mukherjee, 63. Atis Dasgupta, 64. M. Chattopadhyay, 65. T. Krishna Kumar, 66. Arunava Sen, 67. Tarun Kabiraj (Elec. Rep.), 68. Anjali Ghosh (Elec. Rep.)

Biological Sciences Division

69. P.P. Majumdar, 70. R. Gupta, 71. D.K. Bagchi, 72. P.K. Tapaswi, 73. S. Maitai, 74. K.C. Malhotra, 75. Sharmila Sengupta (Elec. Rep.), 76. T.K. Bose (Elec. Rep.)

Physics and Earth Sciences Division

77. Subrata Bhattacharya, 78. B.N. Mondal, 79. T.S. Kutty, 80. B.S. Majumder, 81. Sisir Roy, 82. Asru Kr. Chaudhury, 83. B.S. Dandapat, 84. R.K. Roychoudhury, 85. H. Pai Majumder, 86. Bidyut Kr. Paul (Elec. Rep.), 87. Subrata Gangopadhyay (Elec. Rep.)

Indian Statistical Institute

Computer and Communication Sciences Division

88. Sankar Pal, 89. M.K. Kundu, 90. N.R. Pal, 91. B.B. Bhattacharya, 92. M.K. Chakrabarti, 93. B.P. Sinha, 94. J Das, 95. A.K. Dey, 96. K.S. Roy, 97. B. Chanda, 98. B.B. Chaudhury, 99. Sm. Jayashree Dutta Gupta, 100. Jayanta Basak (Elec. Rep.), 101. Nabanita Das (Elec. Rep.).

Statistical Quality Control and Operations Research Division

102. Arvind Seth, 103. S.S. Handa, 104. S.K. Majumder, 105. K.K. Chaudhury, 106. B. Majumder, 107. D.T. Ghosh, 108. S.R. Mohan, 109. K.N. Anand, 110. A.K. Chaudhury, 111. C.Y. Krishnamurthy, 112. N.T.V. Ranga Rao, 113. P.K. Perumallu, 114. Amitava Bandyopadhyay, 115. S.P. Mukherjee, 116. S.C. Chakraborty, 117. S. Sengupta, 118. Anup Majumdar, 119. J. Venkatappaiah.

Library, Documentation and Information Sciences Division

120. Chitta Bhattacharya, 121. I.K. Ravichandra Rao.

Computer and Statistical Services Centre (CSSC)

122. Aditya Bagchi, 123. S.C. Kundu.

Member-Secretary, ISEC

124. Parimal Mukhopadhyay.

Secretary, Examination Committee

125. A.C. Mukhopadhyay.

Other Committees of the Institute

A. Finance Committee

1. Director (Chairman), 2. Government Representative (Department of Statistics), 3. Government Representative (Ministry of Finance), 4. Shri A.K. Adhikari, 5. Dr. D.K. Bose, 6. Dr. M.K. Chakrabarti, 7. Shri A.K. Ghosh, 8. Shri B.S. Chatterjee, 9. Dr. S. Matai, 10. Dr. Robin Mukherjee, 11. Shri B.K. Pal, 12. Dr. A.R. Rao, 13. Dr. Rajkumar Roychoudhury, 14. Dr. P.N. Roy, 15. Dean of Studies, 16. Chief Administrative Officer-In-Charge, Administration & Finance, 17. Head, Bangalore Centre or his nominee, 18. Head, Delhi Centre or his

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nominee, 19. Head, SQC & OR Division, 20. Chief Librarian, 21. Head, CSSC, 22. In-Charge, Internal Audit, 23. Sri S.S. Panja (Non-Member Secretary).

B. Editorial Committee

Editors : Sankhya A and B

Dr. S. Dasgupta, Dr. J.K. Ghosh

Co-Editors : Sankhya A

Prof. P.K. Bhattacharya, Dr. Sujit Kumar Basu, Dr. Arup Bose, Dr. Anirban Dasgupta, Dr. Mohan Delampady, Dr. R.L. Karandikar, Dr. Hiralal Koul, Dr. Kesar Singh.

Co-Editors : Sankhya B

Dr. Bimal Kumar Sinha, Dr. Dipankor Coondoo, Dr. Aloke Dey, Dr. S.R. Mohan, Dr. T.J. Rao, Dr. Anup Dewanji.

Managing Editors

Dr. Arup Bose (*Sankhya A*); Prof. T.J. Rao (*Sankhya B*)

C. Advisory Members

Prof. Aman Ullah, Prof. D. Dasgupta, Prof. G. Jogesh Babu, Prof. G. Kallianpur, Prof. K.R. Parthasarathy, Prof. B.L.S. Prakasa Rao, Prof. C.R. Rao, Prof. J. Roy, Prof. P.K. Sen, Prof. J. Sethuraman, Prof. N. Bhattacharya, Prof. R.R. Bahadur, Prof. S.K. Mitra, Prof. S.R.S. Varadhan, Prof. Malay Ghosh.

D. Works Advisory Committees

Calcutta

1. Dr. P.N. Roy (Chairman), 2. Dr. M.K. Chakrabarti (Vice-Chairman), 3. Shri A.K. Adhikari (Vice-Chairman), 4. Dr. Somesh Bagchi, 5. Dr. P.P. Majumdar, 6. Dr. S.K. Majumdar, 7. Dr. Robin Mukherjee, 8. Shri Anup Majumder, 9. Dean of Studies, 10. Dr. Shibdas Bandyopadhyay, 11. Shri A.K. Ghosh, 12. Shri B.S. Chatterjee, 13. Chief Administrative Officer/In-Charge, Administration & Finance, 14. In-Charge, Engineering

Indian Statistical Institute

Unit, 15. Shri S.S. Panja (Accounts Officer), 16. Outside Expert (Civil Engineer), 17. Outside Architect, when needed, 18. Shri S. Lahiri (Convener).

Delhi

1. Chairman (to be decided by the Director), 2. Shri Karunakaran (Chief Engineer, CPWD), 3. Shri B.K. Sen, 4. Head, Delhi Centre, 5. Chief Administrative Officer/In-Charge, Administration & Finance, 6. Dr. R.L. Karandikar, 7. Shri B. Mazumdar, 8. Dr. Bhaskar Dutta, 9. Administrative Officer, Delhi Centre (Convener).

Bangalore

1. Shri B.K. Pal (Chairman), 2. Professor M.K. Prapulla Chandra, Head, Department of Civil Engineering, R.V. College, Bangalore, 3. Head, Bangalore Centre, 4. Chief Engineer (C & B), Government of Karnataka or his nominee, 5. Outside Expert (Architect), 6. Chief Administrative Officer/In-Charge, Administration & Finance, 7. Head, SQC & OR Unit, Bangalore, 8. Head, DRTC, Bangalore, 9. Head, Stat-Math. Unit, Bangalore, 10. Head, Economic Analysis Unit, Bangalore, 11. Administrative Officer, Bangalore Centre (Convener).

E. Ph.D. & D.Sc. Committee

1. Director (Chairman), 2. Prof. B.L.S. Prakasa Rao, 3. Prof. B. V. Rao, 4. Prof. A.C. Mukhopadhyay, 5. Prof. T.J. Rao, 6. Prof. Shibdas Bandyopadhyay, 7. Prof. P.P. Majumdar, 8. Prof. K.B. Sinha, 9. Prof. G. Mitra, 10. Prof. A.K. Roy, 11. Prof. Atul Sarma, 12. Prof. Dipankar Coondoo, 13. Prof. Pradip Maiti, 14. Prof. S.K. Pal, 15. Prof. B.P. Sinha, 16. Dean of Studies, 17. Prof. A.R. Rao (Convener).

F. Technical Advisory Committees of different Divisions

Theoretical Statistics and Mathematics Division

1. Director (Chairman), 2. S.R. Adke, Department of Statistics, Pune University, Ganeshkhind, Pune-411007, 3. Prof. V. Borkar, Department of Electrical Engineering, IISc, Bangalore-560012, 4. Prof. S.G. Dani, School of Mathematics, TIFR, Colaba, Mumbai-400005, 5. Prof. V. Kannan, House No.B73, Third Main, KEB Layout, BTM First Stage, Bangalore-560076, 6. Prof. Rahul Mukerjee, IIM, Joka, Calcutta, 7. Prof. M.G. Nadkarni, University of Bombay, Centre for Advanced Study in Mathematics, Vidyasagar Marg, Mumbai-400098, 8. Prof. M. Sreehari, M. S. University of Baroda, Baroda, 9. Prof. U. B. Tewari, I. I. T., Kanpur, 10. Prof. Somesh Chandra Bagchi, Professor-in-Charge (Convener).

Applied Statistics Division

1. Director (Chairman), 2. Prof. S. Pattanayak, School of Mathematical Sciences, Sambalpur University, Jyoti Vihar, Sambalpur, Orissa, 3. Prof. J.V. Deshpande, Department of Statistics, University of Pune, Ganeshkhind, Pune-411007, 4. Dr. P.S.S. Sundar Rao, Schieffelin Leprosy Research and Training Centre, Kangevlore District, Tamil Nadu-632106, 5. Prof. Sujit Kumar Basu, Director, National Institute of Management,

Calcutta, Building No.117, Command Hospital Complex, P.O. Box 16710, Calcutta-700027, 6. Dr. N.S. Sastry, DG and CEO, NSSO, Ministry of Planning and Programme Implementation, Sardar Patel Bhavan, Sansad Marg, New Delhi-110001, 7. Prof. S.D. Sharma, Director, Indian Agricultural Statistics Research Institute, New Delhi, 8. Prof. K.S. Vijayan, Professor-in-Charge (Convener).

Computer and Communication Sciences Division

1. Director (Chairman), 2. Dr. S.S. Agarwal, Speech Technology Group, Central Electronics Engg. Research Institute, Delhi Centre, C.S.I.R. Complex, New Delhi-110012, 3. Prof. Somenath Biswas, Department of Computer Sc. and Engg., Indian Institute of Technology, Kanpur-208106, 4. Prof. B.L. Deekshatulu, F.N.A., Director, Centre for Space Science and Technology Education in Asia and the Pacific, IIRS Campus, 4, Kalidas Road, Dehradun-248001, 5. Prof. S.C. Dutta Roy, F.N.A., Department of Electrical Engineering, Indian Institute of Technology, Hauz Khas, New Delhi-110016, 6. Prof. A.K. Majumder, Department of Computer Sc. and Engg., Indian Institute of Technology, Kharagpur-721302, 7. Prof. B.R. Nag, F.N.A., Institute of Radio Physics and Electronics, University of Calcutta, 92, A.P.C. Road, Calcutta-70009, 8. Prof. A. Pal, Department of Computer Sc. and Engg., Indian Institute of Technology, Kharagpur-721302, 9. Prof. L.M. Patnaik, F.N.A., Microprocessor Applications Laboratory, Indian Institute of Science, Bangalore-560012, 10. Dr. B.M. Reddy, F.N.A., Emeritus Scientist, National Geophysical Research Institute, Uppal Road, Hyderabad-500007, 11. Prof. Mohit K. Roy, Department of Computer Sc. and Engg., Jadavpur University, Calcutta-700032, 12. Prof. R. Sangal, Centre of Applied Linguistics and Translation Studies, University of Hyderabad, Hyderabad - 500134, Andhra Pradesh, 13. Prof. V.V.S. Sharma, F.N.A., Dept. of Computer Science and Automation, Indian Institute of Science, Bangalore-560012, 14. Prof. V.I. Subramoniam, Director, International School of Dravidian Linguistics, Mettupalam, Thiruvananthapuram-86, Kerala, 15. Prof. B.P. Sinha, Professor-in-Charge (Convener).

Physics and Earth Sciences Division

1. Director (Chairman), 2. Prof. S.N. Sen, FNA (Retired Professor of Geology, Calcutta University), 36/18, N.S.C. Bose Road, Calcutta-700047, 3. Prof. S.M. Sengupta, FNA, Department of Ocean Engineering & Naval Architecture, IIT, Kharagpur-721302, 4. Prof. Ahok Sahni, FNA, Director, Centre of Advanced Study in Geology, Department of Geology, Punjab University, Chandigarh-160014, 5. Dr. S.K. Acharyya, FNA, Director General, Geological Survey of India, 27, Jawaharlal Nehru Road, Calcutta-700016, 6. Prof. D. Chattoraj, FNA, Department of Food Technology & Biomedical Engineering, Jadavpur University, Calcutta-700032, 7. Prof. S.K. Tandon, FNA, Department of Geology, Delhi University, Delhi-110006, 8. Prof. A.N. Mitra, FNA, (Retd. from Dept. of Physics, Delhi University), 244, Tagore Park, Delhi-110009, 9. Prof. R.K. Varma, FA, FNASC, PRL, Navrangpur, Ahmedabad - 380009, 10. Prof. S. R. Malik, CAS, Punjab University, Chandigarh - 160011, 11. Prof. Karmeshu, School of Computer & Systems Sciences, Jawaharlal Nehru University, New Delhi-110067, 12. Prof. Samir Mullick, Saha Institute of Nuclear Physics, Salt Lake, Calcutta, 13. Prof. S.N. Gupta, Department of

Indian Statistical Institute

Biomedical Engineering, Institute of Technology, Banaras Hindu University, Banaras-221005, 14. Dr. Dilip Saha, Professor-in-Charge (Convener).

Biological Sciences Division

1. Director (Chairman), 2. Prof. N. Appaji Rao, Department of Biochemistry, Indian Institute of Science, Bangalore - 560012, 3. Prof. A. B. Roy, Department of Mathematics, Jadavpur University, Calcutta - 700032, 4. Prof. Ajoy Chatterjee, Physiology Department, University College of Science & Technology, Calcutta-700009, 5. Prof. Anil K. Gupta, Indian Institute of Management, Vastrapur, Ahmedabad-380015, 6. Prof. B.M. Das, Chandra Kumar Road, Panoazar, Guwahati-781001, 7. Prof. B.P. Chatterjee, Department of Biological Chemistry, Indian Association for the Cultivation of Science, Jadavpur, Calcutta-700032, 8. Prof. Dipika Mohanty, Director, Institute of Immunohaematology (ICMR), New Multistoreyed Building, 13th Floor, K.E.M. Hospital Campus, Parel, Bombay-400012, 9. Prof. G.S. Paliwal, Head Department of Botany, H.N.B. Garhwal University, P. Box No.22, Srinagar-246174, Pauri (U.P.), 10. Dr. P. Das, Deputy Director General (Extn.), Krishi Annusandhan Parishad, New Delhi-110012, 11. Prof. Kamala Krishnaswamy, Director, National Institute of Nutrition (ICMR), Jamai - Osmania P.O., Hyderabad - 500007, 12. Prof. Mahadeb Adhikari, AE 829, Salt Lake, Calcutta-700064, 13. Prof. V. Nanjundiah, Developmental Biology & Genetics Laboratory, Indian Institute of Science, Bangalore-560012, 14. Prof. R.K. Mondal, Department of Bio-Chemistry, Bose Institute, P-1/12, C.I.T. Scheme VIIM, Calcutta-700054, 15. Prof. R.N. Joshi, Head, Department of Botany, Marathwada University, Aurangabad-431004, 16. Dr. Dipak Tyagi, Jt. Director, Anthropological Survey of India, 27, Jawaharlal Nehru Road, Calcutta-700016, 17. Prof. Samir Bhattacharya, Department of Zoology, Viswa Bharati University, Santiniketan-731235, 18. Prof. D.K. Bagchi, Professor-in-Charge (Convener).

Social Sciences Division

1. Director (Chairman), 2. Prof. K.L. Krishna, Department of Economics, Delhi School of Economics, Delhi University, Delhi-110007, 3. Prof. Alok Roy, Indian Institute of Management, Joka, Diamond Harbour Road, Post Box 16757, Calcutta-700027, 4. Prof. Ashok Lahiri, National Institute of Public Finance and Policy, 18/2, Satsang Vihar Marg, Special Institutional Area, New Delhi-110067, 5. Prof. M.J. Monohar Rao, Department of Economics, University of Bombay, Kalina, Mumbai-400098, 6. Prof. U. Sankar, Madras School of Economics (Behind Govt. Data Centre), Gandhi Mandapam Road, Chennai-600025, 7. Prof. R.P. Sengupta, Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067, 8. Prof. B. Ramakrishna Reddy, Registrar, Dravidian University, Kuppam, Andhra Pradesh, 9. Prof. Pabitra Sarkar, Vice Chairman, W.B. State Council of Higher Education, 147-A, Rashbehari Avenue, Calcutta-700029, 10. Prof. K.B. Pathak, Director, International Institute for Population Sciences (IIPS), Govandi Station Road, Deonar, Bombay-400088, 11. Prof. S. Krishnamoorthy, Department of Population Studies, Bharathiar University, Coimbatore-641046, Tamil Nadu, 12. Prof. Arun Kumar Sen, Department of Psychology, Delhi University,

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Delhi - 110007, 13. Prof. Amitava Chatterjee, 35, Biswambhar Banerjee Lane, Konnagore-712235, Hooghly, 14. Prof. Barun De, Director, Maulana Abul Kalam Azad Institute for Central Asian Studies, 'Brojonandini' 55/2, Ballygunge Circular Road, Calcutta-700019, 15. Prof. Ramkrishna Mukherjee, 17/3, Moore Avenue, Calcutta-700040, 16 Prof. Prabhat Pattnaik, Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110067, 17. Prof. Atis Dasgupta, Professor-in-Charge (Convener).

Statistical Quality Control and Operations Research Division

1. Director (Chairman), 2. Dr. S.P. Mukherjee, Centenary Professor of Statistics, Department of Statistics, University College of Science, 35, Ballygunge Circular Road, Calcutta-700019, 3. Prof. Sujit Kr. Basu, Director, National Institute of Management Calcutta, Building No.117, Command Hospital Complex, Post Office Box No.16710, Alipore, Calcutta-700027, 4. Dr. Annoottam Ghosh, Director, Initiating Explosive System, ICI India Limited, 34, J.L. Nehru Road, Calcutta-700071, 5. Shri Gandhi Prasad, Director, Quality, Whirlpool of India Limited, 28, N.I.T., Faridabad-121001, Haryana, 6. Shri Dipankar Dutta Gupta, East India Pharmaceutical Works Limited, 6, Little Russel Street, Calcutta-700071, 7. Mr. R.C. Sarangi, Former M D, Indal Electronics, Bangalore, 8. Shri B. Majumder, Head, 7, S.J.S. Sansanwal Marg, New Delhi-110016 (Convener).

Library, Documentation and Information Sciences Division

1. Director (Chairman), 2. Dr. Bhubaneswar Chakraborty, Ex-Head, Department of Library and Information Sciences, Calcutta University, Calcutta, 3. Dr. Pulin Barua, Professor, Library and Information Science, Burdwan University, Burdwan, 4. Mrs. Kalpana Dasgupta, Director, Central Secretariat Library, Ministry of Human Resource Development, Govt. of India, 'G' Wing, Shastri Bhavan, New Delhi-110001, 5. Shri A.C. Mitra, Director, CALIBNET, Regional Computer Science Building, Jadavpur University Campus, Calcutta-700032, 6. Shri J.C. Chowdhury, Scientist in Charge, INSDOC, 4, Raja Subodh Mullick Road, Calcutta-700032, 7. Prof. K.S. Raghavan, Head of the Department of Library and Information Science, University of Chennai, Chennai-600005, 8. Prof. Prabir Roychoudhuri, Retd. Professor, Dept. of Library & Information Science, Jadavpur University, 25/2, Chakraberia Road (South), Calcutta-700025, 9. Dr. Ganesh Bhattacharya, Bangalore, 10. Shri C. Bhattacharya, Chief Librarian (Convener).

INDIAN STATISTICAL INSTITUTE

SIXTY SEVENTH ANNUAL REPORT: 1998-99

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**AUDITOR'S REPORT ON THE ACCOUNTS OF THE INDIAN STATISTICAL INSTITUTE
FOR THE YEAR ENDED 31ST MARCH 1999 AND COMMENTS OF
THE ADMINISTRATION (IN ITALICS) THEREON AS PER SET OUT BELOW**

1. We report that we have audited the attached Balance Sheet of Indian Statistical Institute (called hereinafter as "Institute") as at 31st March, 1999 along with the Income & Expenditure Accounts for the year ended on that date in which canteen, printing & Publishing accounts and under noted 13 (Thirteen) ISI fund accounts as per Schedule IV thereof of the Institute and the Income & Expenditure Accounts of 105 externally funded projects as per schedule V thereof are merged in the Balance Sheet of the Institute as on that date.

The Annual Accounts of the Institute are prepared and portrayed as per the convention and age old consistent practice followed in the Institute. Balance Sheet and Income and Expenditure Accounts of Canteen, Printing and Publication Unit are drawn separately and audited (as in previous years).

2. (i) We have obtained all informations and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit, and

(ii) The Balance Sheet and Income & Expenditure Accounts of the Institute and Schedules thereto together with those of funds accounts and also externally funded 105 accounts referred to above are in agreement with the books of accounts maintained

Noted.

3. (i) In schedule I (Fixed Assets) column 3 described wrongly "written down value as on 1.4.1998" whereas no depreciation is charged after 1.4.1986 and column 5 in schedule I the cost of total fixed assets as on 31.3.1999 is again described as value as on 31.3.1999

(ii) Schedule 1A (Fixed Assets) is for Fixed Assets acquired from 1/4/1986 onwards on which no depreciation is charged.

(iii) The description of all the Fixed Assets in both Schedule I and Schedule 1A do not identify and describe particular position of assets viz. "Land with Buildings" or "vacant land" and description of particulars of quantity of Fixed Assets.

(iv) In view of the same Fixed Assets as per Schedule I and 1A and the total cost thereof and its position on 31st March, 1999 as appearing in the Balance Sheet as Fixed Assets, in our opinion, do not reflect the actual position thereof and the mode of valuation

3.(v) The excess of project wise Income and Expenditure Account up to 31st March, 1998 and also up to 31st March, 1999 thereof in Schedule V annexed to the Balance Sheet as at ISI

March, 1999 and in Appendix A, A-1, to A-62 (forming part of Schedule V) could not be verified by us.

The system of charging depreciation on fixed assets has been discontinued with effect from the year 1986-87 in terms of the suggestion in this regard given by the CAG and accepted by the Council by the Institute. Accordingly for the assets procured during the year 1986-87 and thereafter no depreciation has been charged and actual cost of acquisition has been shown in Schedule 1A. For all other assets procured till 31.3.86 written down value as on 31.3.86 has been shown in Schedule 1A.

In Schedules of Fixed Assets broad head of accounts of assets are displayed. In addition, the location of land and building are also mentioned in the Schedules of Fixed Assets, as per practice.

Since the assets of the Institute as mentioned in Schedule 1 and 1A are acquired out of Government Grant, there is no system of charging depreciation (since 1.4.86) or revaluating the Fixed assets of the Institute.

The Institute maintains separate Project Accounts for each externally funded project. The amount of excess of Income over Expenditure/ excess of Expenditure over Income are shown in the respective Project Account namely, Appendix A A1 to A62 and also in the Schedule V. Same is exhibited on the Balance Sheet in the Assets side (item no. 7) and on the Liabilities side under (item no. 6).

4. (i) Accounting system followed by the Institute of treating the cost of Assets sold by deductions from General fund and taking credit of sales proceeds of Assets as income, is against the normal method of accounting for profit or loss in Income & Expenditure Account. Fixed Assets Register after 1986 is being compiled as declared in Accounting Policy No.2(b).

ii) There has been no verification of Fixed Assets during the year.

(iii) Buildings under construction are accounted for as building.

The Institute is wholly funded by the Government of India. As per the norms of Government, disposal of assets is considered as Miscellaneous Internal Receipts and is credited to Income and Expenditure account.

The comments made in 4(ii) is noted.

The position regarding Building under construction are mentioned in detail in Schedule X (Notes on Accounts) under Clause 1.4.

5. The Institute is not following uniform basis of accounting although it appeared that normal basis of accounting is generally followed excepting in certain cases referred in salient accounting policy (Schedule - X) adopted by the Institute .

Salient accounting policy and practices is mentioned in II of Schedule X.

6. It was not ascertained by us whether the ISI is registered u/s 12A of the Income Tax Act to derive any benefit of Sec. 11(2) of the said Act or its income is exempted by the Central Board of Taxes in absence of any positive information made available to us. No provision for Income Tax liability, if any, has been made in these accounts.

The Auditors were informed that income of the Institute is not exempt by the Central Board of Direct Taxes. On the basis of Income tax return filed for the year ended 31st March 1997, a notice was issued by D.D.I.T.(E) Spl Range, Calcutta to the Institute.

A Tax consultant appeared before D.D.I.T.(E) to represent the case on behalf of the Institute Assessment order is yet to be received by us. On receipt of the same necessary measures will be taken to obtain exemption certificate in this regard.

7. In I.S.I. Funds Accounts (Schedule - IV) and externally funded project accounts (Schedule-V) capital expenditure including books and journals are treated as revenue expenses and no control register is also maintained. This is contrary to normal accounting standard. Further, the accountability for returning those assets in case of externally funded projects are not provided for in the accounts. In externally funded project capital expenditures including books and journals exceeding Rs. 50 lakhs are treated as Revenue Expenditure.

The accounts for every externally funded projects list all revenue and capital items of expenditure as well as income for that project and no explicit distinction is made between Capital and Revenue items. This practice is being followed for a long time and no funding agency has ever objected to it.

The Capital Assets acquired out of Fund Accounts under Schedule IV are shown in the respective Fund Account and details of such assets were shown to the Auditors.

Technically speaking all assets acquired from externally funded project belongs to the funding agency until and unless they explicitly permit the Institute to retain this as its assets.

8. (i) The Printing & Publishing unit in Calcutta was taken over in May, 1991 as per decision of Government of India, Ministry of Planning under M-1701 1/21/90-coord, dated 17th May, 1991 but assets and corresponding General Fund Balance as on that date were not yet merged with ISI while the said unit is reported as being managed and controlled by ISI.

(ii) It has been explained to us that a short credit of grant-in-aid in immediate previous year amounting to Rs.2,92,998.11 has been adjusted in P.P.Unit accounts during the year.

The Statistical Publishing Society at Calcutta was taken over by ISI in 1991 and the corresponding accounts are in the process of merging. Formal process of dissolution of the Society (SPS) and its merging with ISI has not yet been completed. See also Clause 11.3 of Notes on Accounts, Schedule X of Annual Accounts.

9. In this connection attention is drawn to the Balance Sheet as on 31st March, 1999 of Director's Contribution Fund wherein due loan to S.P.S. for Rs. 1,16,000/- and accrued interest thereon of Rs.2,01,945.70, the aggregate being Rs.3,17,945.70 is appearing as due from S.P.S. (Statistical Publishing Society) in director's Contribution Fund Account but no corresponding liability of SPS unit appears in the accounts of PPU Unit.

At the time of merging of SPS with ISI, the matter will be looked into. See also Clause 11.3 of Notes on Accounts, Schedule X of Annual Accounts.

10. (i) Closing Cash and Bank Balances appearing in the Institute's different Fund Accounts viz. Annexure "A" to "J" and L,M, as indicated in Schedule VI to the Balance Sheet and as appearing in these accounts, in our opinion, are not cash and bank balances as they appear in respective Balance Sheets of the fund accounts but balances lying with Statistical Institute.

10.(ii) No separate Cash and Bank Accounts are maintained by the Institute for the fund accounts referred to above and the statement in the second part Schedule VI explaining break up of bank balances of I.S.I. for the above referred funds, in our opinion, are not correctly displayed

10. (iii) Cash and Bank balances includes Cash at Bank in the Institute Balance Sheet is shown as Rs.30,214,010.04 while the aggregate of the Bank Balances as per Schedule VI is Rs. 41,344,585.0 which is explained in Schedule VI as of the Institute amounting to Rs. 30,214,010.04 and the balances are accounted for and identified in the annexure to the Balance Sheet belonging to the aggregate of different fund accounts narrated in Schedule VI as also appearing in respective fund accounts, which in our opinion, is not correct and contrary to factual position since these bank accounts stand in the name of the Institute and the balances appearing in fund Account are balance due from the Institute. Management's explanations in this respect is worth noting as under :-

"Bank Balance of various funds as shown in all annex ures. (A to L) is the balancing figure and are in agreement in the schedule VI in Cash and Bank balances of the Institute. This is

being shown and disclosed in the Annual Accounts of the Institute for more than two decades and has been accepted by all previous Statutory Auditors including government Auditors they have not raised any objection to it. Such accounts are all along accepted/approved by the Finance Committee & Council of the Institute. Still if changes in our long practice as suggested by auditor is felt necessary, ISI will place auditor's suggestion at appropriate forum and, if necessary, action will be initiated".

10 (iv) We refer to other Fund as per Schedule IV contra (excluding ISI contributory Provident Fund and General Provident Fund) amounting to Rs. 9,27,54,527.42 and corresponding item no 6 of the assets side of the Balance Sheet called as Net assets of other funds as per Schedule IV contra excluding Director's Contributory Fund and C.P.F. and G.P.F.) for Rs. 9,27,54,527.42 and the later is total assets and not net assets which according to the statement includes balances lying with the Indian Statistical Institute but wrongly claimed as bank balances.

As regards paras 10.(i), (ii) & (iii) no further comments, in view of our explanation, already furnished, as quoted above by the Auditors.

As regards para 10.(iv), total of Liabilities and Assets of all funds under Schedule IV of Annual accounts are shown in the Liabilities and Assets sides respectively on the Balance Sheet of the Institute at item 6 under Assets and at item 2 under Liabilities.

11 (i) The Institute does not prepare separate balance sheet in all 105 externally funded project accounts in the absence of which the cash and bank balances and other assets and liabilities as on the date of the Balance sheet of the Institute are not ascertained since they are merged into the Institute's accounts.

11(ii) The statement of Income and Expenditure for the year of all externally funded project accounts include receipts of grants as income for the year irrespective of the period for which the grant is to be utilised and further capital expenditures are treated as revenue expenditure in those accounts.

11.(iii) The Institute is charging on account of overhead charges on the basis of grant received during the year irrespective of the period of utilisation of the grant.

11 (iv) According to the prevalent practice fifty percent of the above overhead charges as referred to in 11(ii) above is credited to Miscellaneous Receipts account and balance fifty percent in S.Q.C Development Fund, as a result of which income of the Institute for the year is understated although justifiability of the same were not understood.

11.(v) About forty Externally funded projects in Schedule V out of one hundred five externally funded projects had no activity during the year. We could not ascertain whether these

projects are abandoned or not and also consequent liability of the Institute for the same was not given effect to in accounts.

The Institute maintains separate account for each of externally funded project but normally no separate bank accounts are opened for each project. The statements of Income and Expenditure Accounts on Externally funded projects are being prepared as per practice of the Institute being followed over several years. The grant released by the funding agencies, includes expenditure both for revenue and capital items. As per terms and conditions of the funding agencies, Institute is required to submit Utilization Certificates together with statements of Income and Expenditure to the funding agencies. Accordingly ISI prepares and send those to the funding agencies and they have never raised any objection.

Overhead Charges on externally funded projects are being charged as per the decisions of the council of the Institute from time to time wherein it is specified that 50% of Overhead charges as recovered from the concerned externally funded project is being booked to Internal receipts and 50% is being booked to the Development Fund of the Institute, but not to the S.Q.C Development Fund as stated by the Auditors.

12. Expenses like electric, telephones, maintenance expenses, salaries and pension of canteen staff are debited to ISI's main account and not in canteen account.

As per existing policy, the Institute bears these expenses for Canteen. See Clause II, item 2(c) of para II of Schedule X.

13. (i) Suspense Advance in I.S.I. accounts amounting to Rs.53,11,386.5 to outside parties out of which Rs. 40,25,666.07 are outstanding for more than three years which appeared to us as debts not recoverable for which no provision for doubtful debts has been made.

13. (ii) Loans and Advances (Sch. III) includes irrecoverable Sundry Debtors of Rs.81,350.80, students benefit fund of Rs.350/- and no provision has been made in these accounts.

Suspense advance includes an amount of Rs. 29,09,384.58 paid to erstwhile Statistical Publishing Society (SPS) on account of advance from time to time. Since SPS has been taken over by the ISI with both assets and liabilities it may not be possible to recover the outstanding amount.

For the remaining amount and long outstanding Loans and Advances as mentioned at 13(ii) detailed scrutiny and age wise analysis is being done. Appropriate action including writing of, if necessary, will be taken.

14. We have observed that in the following cases action is warranted by the management:-

(i) Theft of a computer system in earlier year of Rs. 7,00,000/- (Approx).

(ii) No provision has been made for unadjustable/irrecoverable of LTC advances amounting to Rs. 75,000/- lying for more than 2 years and TA advance Rs. 5,68,671.33 includes substantial old balances remaining unadjusted.

(iii) Flood and Drought advance amounting to Rs.43,061.64 is old and may be considered doubtful for which no provision has been made.

(iv) Old advances and suspense account (staff) both debit and credit remain unadjusted during the year.

(v) No confirmation certificate could not be produced to us for verification of stock of cement, steel and other materials lying with contractors.

(vi) No provision or adjustment has been made for earnest money and security deposit lying as such for a long period and for which no contractual obligation at present exists.

(vii) Old outstanding liabilities have not been adjusted with corresponding advances which are lying as such.

(viii) We have observed that there are no normal control system in case of purchase procedure for fixing purchase rates and ensuring quality.

Regarding 14 (i) the matter is pending before the Court.

Regarding 14(ii) to 14(iv), balances of some old TA advance, LTC Advance, Flood and Drought Advance and old advances and suspense account have come down. Necessary actions have been initiated for early settlement of these advances including writing off, if necessary.

The matter raised in para 14(v) is noted.

As regards para 14(vi), the earnest money and security deposit received/recovered from the suppliers/contractors are being refunded as and when claimed by the suppliers/contractors. Action will be initiated soon, for adjustment of Earnest Money/Security Deposit lying for a long period and not coming under contractual obligation.

As regards para 14(vii) old outstanding liabilities for an amount of Rs.72,432.00 has been adjusted during the year under audit and has been shown to the Auditors.

As regards para 14(viii) the Institute generally makes purchase by following elaborate purchase procedures which are being regularly monitored by Purchase Committees appointed by the Director. This was explained to the auditors and relevant documents were shown to the Auditors.

15. From the records made available to us it was not possible for us to verify the actual performance with regard to the receipt of grant & expenditure of the various projects scheme etc as against the budgetary estimates and as such reasons for wide variances between the actual and budget provision could also be not verified. Similarly the basis for allocation of indirect charges to the cost of various schemes and projects whether on equitable basis or not can not be judged by us also. The allocation of expenses between plan & Non Plan is made by the Institute according to its own convention. Such allocation has not been checked by us.

The recommendations of the Section 8(1) Committee and all records of the approved budgets thereon, were shown to the Auditors together with grant-in-aid memos issued by the Government of India.

16. Assets appearing in Schedule I covers written down value of those assets as on 1.4.1986 and thereafter no depreciation is charged and schedule IA describes additions thereafter including such additions during the year ended 31st March, 1999 on which no depreciation is charged since the dates of acquisition. In view of the above situation we have observed that both valuation of fixed assets as per Balance Sheet and balance of General Fund are overstated to the extent of depreciation not written off after 1.4.1986 which could not be quantified.

The system of charging depreciation on Fixed Assets has been discontinued from the year 1986-87 in terms of the suggestion in this regard given by the CAG and accepted by the Council of the Institute. Accordingly for assets procured during the year 1986-87 and thereafter no depreciation has been charged and actual cost of acquisition has been shown in Schedule IA. For all other assets procured till 31.3.86, written down value as on 31.3.1986 have been shown in Schedule I.

17. The Institute has an Internal audit section, strength of which, in our opinion, should be enhanced and coverage of such audit and follow up action requires re-orientation to ensure strict internal control.

The Internal Audit wing is being activated, suggestion of Auditors is noted.

18. Subject to our above observation and read with notes on accounts and accounting policy in Schedule X of the Balance Sheet of the Institute and in particular to the explanation of the management quoted above as balance figures in regard to Bank Balances in fund accounts, give a true and fair view:-

(a) in the case of Balance Sheet of the state of affairs of the Institute as on 31st March, 1999.

And

(b) In the case of Income and Expenditure Account of the Institute of the excess of Income over Expenditure, for the year on that date

And

(c) In the case of thirteen ISI fund accounts covered by Schedules IV of the Balance Sheet of the Institute the state of affairs of the same and in the case of Income and Expenditure Accounts of those funds, the excess of Income over expenditures as they appear thereto.

And

(d) Also in the case of 105 externally funded projects accounts, Income and Expenditure Account, the excess of expenditure over income or excess of income over expenditures as they appear thereto subject to specific comments made by us for not preparing Balance Sheet and Capital Expenditure treated as revenue expenditure .

for SARMA & CO.
CHARTERED ACCOUNTANTS

B. SINHA .
PARTNER

8/2, Kiran Sankar Roy Road,
Calcutta 700 001.
Dated, the : 13th October, 1999

**INDIAN STATISTICAL INSTITUTE
BALANCE SHEET**

As at 31st March 1998 Rs. P	Fund and Liabilities	Rs. P.	As at 31st March 1998 Rs. P.
431,444,204.81	1 GENERAL FUND: As per Schedule VII		508,775,212.38
82,584,154.12	2 OTHER FUNDS: As per Schedule IV Contra (excluding I.S.I Contributory Provident Fund and General Provident Fund)		82,754,527.42
720,000.00	3 GRANT-IN-AID FOR FLOOD ADVANCE TO STAFF : As per least account		720,000.00
	3.1 GRANT-IN-AID FOR HOUSE BUILDING ADVANCE TO STAFF: As per least account	7,350,000.00	
	Add: received during the year	500,000.00	
		7,850,000.00	
9,325,657.48	3.2 INTEREST ON HOUSE BUILDING ADVANCE REALISED FROM STAFF:	2,529,534.48	
500,000.00	3.3 CONVEYANCE ADVANCE		10,379,534.48 500,000.00
74,485,233.31	4 DEPOSITS AND OTHER LIABILITIES: As per Schedule VIII		81,980,891.73
81,058.53	4.1 ADDITIONAL EMOLUMENTS COMPULSARY DEPOSIT :		81,058.52
519,281.50	5 EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF PLAN REVENUE GRANT :		508,824.80
	As per Schedule IXB		
8,983,852.85	8 EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF MISC. PROJECT ACTIVITIES		7,783,227.88
	As per Schedule V		
1,058.89	7 EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF GRANT RECEIVED FROM GOVERNMENT OF INDIA (NON-PLAN)		11,502.04
	As per Schedule IXD		
114,011.10	8 EXCESS OF RECEIPTS OVER EXPENDITURE IN RESPECT OF PLAN CAPITAL		227,831.14
	As per Schedule IX		
	9 NOTES ON ACCOUNTS		
	As per Schedule X enclosed		
<u>608,748,520.20</u>			<u>683,172,210.39</u>

S Sengupta
Accounts Officer

S S Panja
Accounts Officer

8/2 Kirin Sankar Roy Road
Calcutta-700001.
13 October 1998

AS ON 31 MARCH 1999

As at 31st March 1998 Rs. P.	Property and Assets	Rs. P.	As at 31st March 1999 Rs. P.
	1. FIXED ASSETS:		
	As per Schedule I	58,804,357.48	
420,341,123.06	As per Schedule IA	438,474,779.65	487,279,137.11
	2. INVESTMENT AT COST:		
	Interest accrued on above	3,420,000.00	
3,509,044.00	As per Schedule II	79,688.00	3,489,688.00
757,376.72	3. STOCK OF SUNDRY MATERIALS:		721,088.43
68,603.32	4. REGIONAL PROVIDENT FUND COMMISSIONER		68,603.32
	5. LOAN AND ADVANCES:		
	As per Schedule III	2,908,384.58	
41,387,111.99	Statistical Publishing Society		
	Others	37,711,178.14	40,820,562.72
7,309,805.88	5.1 HOUSE BUILDING ADVANCES TO STAFFS :		8,243,628.88
	6. NET ASSETS OF OTHER FUNDS:		
	As per Schedule IV Contra (excluding		
82,564,154.12	I.S.I Provident Fund both C.P.F and G.P.F)		92,754,527.42
	7. EXCESS OF EXPENDITURE OVER RECEIPTS OF MISC. PROJECT AND ACTIVITIES ON BEHALF OF THE GOVERNMENT OF INDIA AND OTHER BODIES :		
1,547,256.69	As per Schedule V		2,038,320.03
	8. EXCESS OF EXPENDITURE OVER RECEIPTS IN RESPECT OF NON-PLAN REVENUE EXPENDITURE GRANT		
3,088,196.61	As per Schedule IXA		3,088,196.61
	9. EXCESS OF EXPENDITURE OVER RECEIPTS IN RESPECT OF PLAN REVENUE :		
857,952.77	As per Schedule IXC		857,952.77
	10. CASH AND BANK BALANCE:		
	As per Schedule VI		
43,405,318.97	Cash in hand	893,398.09	
	Cash at Bank	30,214,010.04	31,107,406.13
1,912,575.07	11 ISI PRINTING AND PUBLICATION UNIT		2,895,095.97
808,748,520.20			683,172,210.39

Anup Majumdar
In-Charge
Administration & Finance

S B Rao
Director

For Sarma & Co.
Chartered Accountants

In terms of our separate report of even date.

B Sinha
Partner

INDIAN STATISTICAL INSTITUTE

PREVIOUS YEAR		INCOME AND EXPENDITURE ACCOUNT		CURRENT YEAR	
PLAN RS. P.	NON-PLAN RS. P.	EXPENDITURE		PLAN RS. P.	NON-PLAN RS. P.
SALARY AND ALLOWANCES					
2,030,250.00	157,738,516.41	1. Salary & Allowances (DA, HRA, CCA, Transport allowances, Bonus Leave Salary, Extra Remuneration etc., LTC, Medical Reimbursement and Welfare Exps.)		2,099,970.00	224,738,803.74
-	27,220,573.62	1.1 Pension, graded relief & commuted value of Pension		-	42,425,181.50
614,140.00	1,486,019.20	2. Overtime Allowances		865,840.00	1,585,008.30
-	34,410.00	3. Children Education Allowance		-	39,810.00
-	1,891,477.40	4. Employer's Contribution to Provident Fund		-	5,030,480.00
-	4,743,188.20	5. Gratuity Payment		-	9,910,089.50
539,150.00	287,122.20	6. Visiting Professors, Foreign Scientists, Fellows etc.		343,600.00	217,008.00
62,190.00	5,419,319.25	7. Scholarship, Stipend and other assistance to trainees		70,210.00	7,790,145.94
NON-SALARY ITEMS					
2,532,570.00	1,791,338.93	8. Travelling Expenses		3,906,790.00	1,880,236.31
410,820.00	770,558.10	9. Printing and Publication		421,080.00	780,706.63
484,100.00	221,600.40	10. Society type activities Seminar and Conference etc.		345,000.00	152,215.15
9,010,490.00	7,169,483.36	11. Books, Journals, etc.		11,846,000.00	7,314,696.53
4,543,155.00	3,551,210.52	12. Repairs, Replacement and Maintenance of Office Equipment, Computers and accessories etc.		5,713,000.00	3,275,419.76
3,361,410.00	4,234,182.08	13. Stationaries, Consumable Stores, Adver- tisement, Insurance, Labour charges, conveyance Examination expenses and petty expenses		4,332,000.00	3,351,227.23
23,588,275.00	216,558,999.67			29,943,490.00	308,507,541.11

FOR THE YEAR ENDED 31st MARCH 1988

PREVIOUS YEAR		INCOME	CURRENT YEAR	
PLAN RS. P.	NON-PLAN RS. P.		PLAN RS. P.	NON-PLAN RS. P.
		1. Grant-in-Aid from Government of India		
	224,805,000.00	.1 For Non-Plan Current Expenditure		320,000,000.00
	500,000.00	Less: Earmarked for House Bldgs Loan		500,000.00
	1,200,000.00	Less: Grant to ISI P P Unit		2,500,000.00
	500,000.00			317,000,000.00
	222,405,000.00	2. For Plan Current Expenditure	37,248,000.00	
30,700,000.00		.1 In respect of SQC training fees etc.	5,797,451.95	
	700,000.00	Less: Transferred to SQC Dev. Fund	5,097,451.95	700,000.00
	52,719.00	2 Internal Receipts:		
		(a) Membership Fees		39,573.00
	1,280,006.50	(b) Fees for Training course and sale proceeds of Syllabus etc.		1,808,882.00
	11,164.00	(c) Examination Fees & other receipts		21,125.00
	32,659.18	(d) Receipts from sale of farm products at Girdih		43,528.55
	48,640.00	(e) Service charges for work done by Psychometry and Computer Sc. Unit		149,589.85
	3,616,937.73	(f) Miscellaneous Receipts		3,581,129.57
21,285.00	31,775.88	3. Excess of Expenditure over Income transferred to Balance Sheet		
30,721,285.00	228,178,902.08	Carried over	37,248,000.00	323,343,825.77

INDIAN STATISTICAL INSTITUTE

INCOME AND EXPENDITURE ACCOUNT

PREVIOUS YEAR		EXPENDITURE	CURRENT YEAR	
PLAN RS. P.	NON-PLAN RS. P.		PLAN RS. P.	NON-PLAN RS. P.
23,588,275.00	218,558,999.87	Brought Forward	29,943,480.00	308,500,854.81
944,810.00	1,216,477.91	14. Postage and Telephone	1,020,010.00	1,528,003.58
3,857,400.00	4,520,390.46	14.1 Electricity charges	3,851,080.00	5,880,503.00
-	50,356.00	15. Audit Fees and Expenses	-	71,188.00
-	229,826.35	16. Interest and Bank charges	-	203,428.51
-	1,829,413.09	17. House Rent and Taxes	-	2,788,822.88
-	1,726,853.65	18. Repair and Maintenance of Building, Land etc., Petty Construction etc.	-	2,007,366.78
596,050.00	781,831.81	19. Transport Expenses	518,010.00	977,108.39
250,740.00	896,262.17	20. Workers' and Students' Welfare and amenities (excluding medical expenses)	307,010.00	1,038,802.23
1,662,180.00	338,621.45	21. Laboratory and Reprography Stores, consumables, Tools and Minor Accessories	1,713,958.70	301,038.55
21,810.00	26,185.53	22. Expenditure of Giridih Agricultural Farm	17,900.00	47,080.20
-	1,684.00	23. Expenses for National Professor	-	-
-	-	24. Excess of Income over Expenditure transferred to Balance Sheet	79,543.30	10,436.35
30,721,265.00	228,178,902.09		37,249,000.00	323,343,625.77

S Sengupta
Accounts Officer

S S Panja
Accounts Officer

8/2 Kiran Sankar Roy Road
Cacutta -700001
13 October 1999

FOR THE YEAR ENDED 31st MARCH 1999

PREVIOUS YEAR		INCOME	CURRENT YEAR	
PLAN RS. P.	NON-PLAN RS. P.		PLAN RS. P.	NON-PLAN RS. P.
30,71,265.00	228,178,902.09	Brought Forward:	37,248,000.00	323,343,625.77

30,71,265.00 228,178,902.09

37,248,000.00 323,343,625.77

Anup Majumdar
In-Charge
(Administration & Finance)

S B Rao
Director

Chartered Accountants
For Sama & Co.

In terms of our separate report of even date.

B Sinha
Partner

INDIAN STATISTICAL INSTITUTE
SCHEDULE I
Schedule of Fixed Assets as on 31st March 1999
(Acquired upto 31st March 1986 for which Depreciation provided
Except on Land and Land Development)

Sl.No.	Particulars	Written down Value as on 1st April 1998	Deletions/ Adjustment made during the Year	Value as on 31st March 1999
(1)	(2)	(3)	(4)	(5)
A.	Land and Land Development			
1.	<u>Calcutta:</u>			
.1	At 153 Gopal Lal Tagore Road (adjoining 203 B T Road)	65,545.90		65,545.90
.2	Development of above Land	40,524.76		40,524.76
.3	At 205 B T Road(including cost of Development)	422,906.70		422,906.70
.4	At 156, 164, 165&161/1 GLT Rd.	96,663.71		96,663.71
.5	Development of above lands	6,618.51		6,618.51
.6	At 206 B T Road (including cost of Development)	2,136,174.64		2,136,174.64
.7	At 202 B T Road	579,104.75		579,104.75
.8	At 203 B T Road	97,556.95		97,556.95
.9	At Bidyatan Sarani	50,000.00		50,000.00
.10	169 G L T Road	103,855.00		103,855.00
2.	<u>Girdih:</u>			
.1	Farm Land	24,175.67		24,175.67
.2	Development and Fencing	114,171.40		114,171.40
.3	Farming Development	10,682.00		10,682.00
.4	Irrigation and Water Supply	28,215.00		28,215.00
.5	In Village 'Mkakatpur' Girdih	134,636.67		134,636.67
.6	Purchased from Smt. Prakriti Devi Gangapadhyay	14,000.00		14,000.00
.7	Rose Villa	107,502.72		107,502.72
.8	Biroja Kutir	7,445.19		7,445.19

3.	Delhi:		
.1	Leave-Hold	2,472,764.12	2,472,764.12
2	Development of above land	90,967.57	90,967.57
4.	Baroda	27,811.32	27,811.32
5.	Bagalore	427,568.78	427,568.78
6.	Hyderabad	114,385.00	114,385.00
7.	Madras	71,562.50	71,562.50
8.	Takda Planters Club(Lease hold) Darjeeling	9,628.22	481.42
			9,146.80
	Sub Total:	7,254,267.08	481.42
			7,253,785.68
8	Buildings:		
1.	Calcutta:		
.1	Partly at 203 B T Road and partly at 153 G L T Road	593,919.51	593,919.51
2	At 153 G L T Road	719,183.45	719,183.45
3	At 205 B T Road	1,523,510.85	1,523,510.85
4	At 206 B T Road	54,335.67	54,335.67
5	Boys Hostel at 206 B T Road	2,040,752.07	2,040,752.07
6	At 202 B T Road	45,002.60	45,002.60
7	Purchase of flats of Palpara Housing	238,094.84	238,094.84
8	Composite Library Building at 202 B T Road	6,627,120.14	6,627,120.14
9	Boundary Wall	43,228.56	43,228.56
10	Generators House at 203 BT Rd.	23,489.58	23,489.58
11	At 169 G L T Road	14,160.70	14,160.70
12	At Bidyatan Sarani, Baranagar	6,814.62	6,814.62
2.	Girdih:		
.1	Rose Villa	233,311.12	233,311.12
2	Health Home	9,194.39	9,194.39
3	Delhi Construction	8,458,563.82	8,458,563.82
4	Hyderabad Wall	1,187.26	1,187.26
5	Boundary Wall at Baroda	62,341.11	62,341.11
	Sub-Total:	20,694,210.29	20,694,210.29

C. Sheds and Structures:			
1.	Calcutta		
.1	203 B T Road and 153 GLT RD.	20,372.87	20,372.87
.2	At 205 B T Road	46,459.25	46,459.25
.3	At 156, 164, 165&168/1 GLT Rd.	12,484.27	12,484.27
.4	At 202 B T Road	105,420.98	105,420.98
.5	At 5 R N Tagore Rd for(UNTAA) Workshop situated on rental Premises	73,239.40	73,239.40
.6	Car Shed at 169 G L T Road	55,919.72	55,919.72
.7	Staff Quarter at Bidyayatan Sarani	221,739.53	221,739.53
.8	Students Hostel at 206 B T Rd.	29,668.22	29,668.22
.9	Post Office at 204 B T Road	123.17	123.17
.10	Bidyayatan Sarani, Baranagore	320.22	320.22
.11	Construction of Security Goomty	34,220.00	34,220.00
12	Construction of Rest Room for Pump Operator	9,859.43	9,859.43
2.	Girdih:		
.1	Petty Construction	93,462.39	93,462.39
.2	Staff Quarters	177,282.98	177,282.98
.3	Farm's Wall	1,830.24	1,830.24
3.	Delhi :		
.1	Partitions, Structures etc.	26,642.83	26,642.83
.2	Hut for a Chowkidar	409.35	409.35
.3	Boundary Wall	19,772.68	19,772.68
.4	Road Construction	13,322.84	13,322.84
4	Hyderabad: Hut for Chowkidar	1,547.18	1,547.18
5	Bangalore: Temporary Structures(Office Shed)	29,208.87	29,208.87
Sub-Total:		973,306.42	966,955.29
			906,351.13

D.	Machinery Equipment:			
.1	Calculating and other Tabulating Equipment	315,026.76		315,026.76
.2	Other Machinery and Equipment	886,219.22	2,165.89	894,053.33
.3	Workshop Machinery and Equipment	2,624.13		2,624.13
.4	Microfilm Photo, Reprography and optical equipment	496,667.46		496,667.46
.5	Laboratory equipment	2,410,192.34		2,410,192.34
.6	Construction equipment	6,147.74		6,147.74
.7	UNTAA Workshop Machinery and Equipment	2,740.99		2,740.99
.8	Mini Computer at Delhi&Madras	92,176.24		92,176.24
.9	Electronic Computer at Baranagore	890,997.24		890,997.24
.10	Honeywell Computer(H-400)	24,216.85		24,216.85
	Sub-Total:	5,137,008.97	2,165.89	5,134,843.08
E.	Passenger Lift	12,602.03		12,602.03
F.	Electrical Equipment and Installations:			
1	High tension Electricity	136,447.73		136,447.73
2	Electrical Equipment&Fittings	2,332,983.93	281.62	2,332,702.31
3	High Tension Electricity for UNTAA Workshop	8,726.83		8,726.83
4	Electrical Installation for Flume Lab.	5,146.50		5,146.50
5	Equipment for air conditioning for Composite Lib. Bldg.	302,225.06		302,225.06
6	Electrical Installation and Fittings for Comp. Lib. Bldg.	297,599.48		297,599.48
.7	Electrical Installations and Fittings for Boys Hostel at 206 B T Road	75,696.93		75,696.93
	Sub-Total:	3,158,826.46	281.62	3,158,544.84

G.	Furniture & Fittings	3,218,404.96	5,277.03	3,213,127.93
H. 1.	Books and Journals	16,816,319.90		16,816,319.90
2.	Books and Journals acquired out of Ford Foundation Grant	45,483.85		45,483.85
I.	Motor Car Vehicles	812,086.41	7,234.23	804,852.18
J.	Library Equipment (including equipment procured through from Foundation Grant and Rockefeller Foundation Grant)	16,487.62		16,487.62
K.	Water Supply Arrangement	437,890.40		437,890.40
L.	Overbridge: Calcutta	2,144.46		2,144.46
M.	Soviet Printing Machine	138,604.25		138,604.25
N.	S R C Equipment	14,549.18		14,549.18
O.	F A I Project Equipment	480.24		480.24
P.	Investigation of Statistical problem connected with sediment Transportation Project: Laboratory equipment acquired out of grant from National Science Academy	5,806.05		5,806.05
Q.	PABX Installation: Delhi	12,823.96		12,823.96
	PABX Installation: Calcutta	134,559.09		134,559.09
	Internal Telephone: Calcutta	577.04		577.04
R.	Survey Research Methodology Project: Calculating equipment acquired out of Grant from ICSSR	314.28		314.28
GRAND TOTAL ;		58,886,752.94	82,395.48	58,804,357.46

S Sengupta S S Panja
Accounts Officer Accounts Officer

Anup Majumdar
In-Charge
Administration & Finance

S B Rao
Director

For Sarma & Co.
Chartered Accountants

8/2 Kiran Sankar Roy Road,
Calcutta - 700001.
13 October 1999

B Sinha
Partner

**INDIAN STATISTICAL INSTITUTE
SCHEDULE IA**

Schedule of Fixed Assets as on 31st March 1999
(Acquired from 1st April 1986 onwards on which no depreciation)

Sl. no.	Particulars	Original Cost as on 1.4.88	Addition during the year	Deletions/adjustmen during the year	Original Cost as on 31st March 1999
(1)	(2)	(3)	(4)	(5)	(6)
1.	Assets acquired out of Capital Grant				
A.	Land & Land Development:				
1.	Calcutta:				
1.	Adhoc Payment for acquisition of land at Gupta Niwas	3,000,000.00			3,000,000.00
2.	Campus Development	1,894,914.57	441,464.02		2,336,378.59
1.	Girdih:				
1.	Farm Land	359,328.57			359,328.57
2.	Rose Villa	383,219.30			383,219.30
3.	Health Home	10,000.00			10,000.00
1.	Bangalore:	1,068,948.26			1,068,948.26
4.	Delhi:	480,536.13	90,630.00		571,166.13
1.	Hyderabad-boundary Wall	83,812.92			83,812.92
	Sub-Total:	7,280,759.75	532,094.02		7,812,853.77
B.	Buildings:				
1.	Calcutta:				
1.	Boys Hostel at 206 B T. Road	327,889.70			327,889.70
2.	Composite Lib. Bldg. at 202 B T Road	11,285,883.97			11,285,883.97
3.	Staff Quarter at Delux Garden, 169 GLT Road (1st to 4th Block)	3,555,787.57			3,555,787.57

.4	Faculty Bldg.at 205 B T Road	2,317,818.43		2,317,818.43
.5	Administrative Bldg. at 202 B T Road	4,670,595.84	139,026.05	4,809,621.89
.6	Medical Welfare at 205 BT Rd	845,700.00		845,700.00
.7	Hostel Bldg.(2nd) Sr.Students Hostel	6,697,530.98		6,697,530.98
.8	RTSBldg.(Renovation)	3,735,241.01		3,735,241.01
.9	ISEC Bldg.(Old Renovation)	96,636.43		96,636.43
.10	Staff Quarter at Delux Garden (2nd Phase) (5th Block)	2,173,552.02	189,297.00	2,362,849.02
.11	New Guest House at 205 B T Road	11,860,580.41	10,530.00	11,871,110.41
.12	Amrapali Bldg.	622,671.04		622,671.04
.13	Renovation and Face Lifting of different Premises	3,082,668.35	709,990.12	3,792,658.47
.14	P C Terminal Room at various Buildings	186,353.00	116,907.49	303,260.49
.15	A' Type Qrt. 205 Bt Rd.	108,932.00	2,119,324.12	2,228,256.12
.16	Academic Bldg. 202 Bt Rd.	804,660.00	78,875.00	883,535.00
.17	Bank & P.O. Bldg. 204 Bt Rd.	656,269.00	76,507.00	732,776.00
.18	Staff Qrt.(D Type) 6th Block	19,690.00		19,690.00
.19	Canteen Bldg. 203 Bt Rd.	19,490.00	196,201.00	215,691.00
2.	Girdih:			
.1	Rose Villa	297,951.47		297,951.47

APPENDIX-A49

Statement of Income and Expenditure for the year ended 31st March 1999
in connection with the project "A study of Mathematical Techniques in Water
Problems" Funded by Council of Scientific & Industrial Research, Govt. of India.
(Forming part of Schedule V) A/c.282, Sl.No.38

Expenditure	Amount	Income	Amount
To Contingent Expenditure	237.50	By Grant in aid received during the year	900.00
" Excess of Income over Expenditure	662.50		
	900.00		900.00

Income during the year 1998-99	900.00
Expenditure during the year 1998-99	237.50
Total Income upto 31.3.99	338,688.00
Total Expenditure upto 31.3.99	338,326.30

S Sengupta
Accounts Officer

S S Panja
Accounts Officer

Anup Majumdar
In- Charge
Administration & Finance

(S B Rao)
Director

In terms of our Separate report of even date

For Sarma & Co.
Chartered Accountants

8/2 Kiran Sankar Roy Road,
Calcutta-700001.
13 October 1999

B Sinha
Partner

Sixty Seventh Annual Report : 1998-99

25	SPC	June 1998	IFB	30
26	7 Simple Tools	June 1998	RHW	20
27	TOPS	June 1998	RHW	10
28	ISO 9000	June 1998	M/S Palani Andavar Cotton & Synthetic Ltd.	700
29	SPC	July 1998	KEC	25
30	SPC	July 1998	CII	30
31	IQA Programme	July 1998	Deldot	15
32	3 Week programme on Quality Management	July 1998	KEC	22
33	TIPS	July 1998	IFB	20
34	6 Sigma Approach	July 1998	Hical Magnetics	10
35	Training programme on SPC	July 1998	Exide Industries Ltd.	15
36	One -day training programme on 'Quality Function Deployment'	July 1998	Lucas-TVS Limited	23
37	6 Sigma Approach	August 1998	Hical Magnetics	12
38	Six Sigma	August 1998	Hical Magnetics	20
39	SQC/SPC Technique for Engineers	August 1998	Tata Engineering and Locomotive Co. Ltd.	30
40	Process Improvement	September'98	KEC	18
41	DOE	September'98	IFB	20
42	Vendor Quality Assurance	September'98	RHW	25
43	Project /Selection Techniques	October 1998	Hical Magnetics	10
44	Acceptance Sampling Methodology	September'98	Rifle Factory, Ichapur	16
45	Performance Measurement report	September '98	J. K. Tyres	25
46	Six Sigma Green and Black Belt	September'98	G.E. International Corpn. Inc.	25
47	ISO awareness	October'98	Yokogawa Blue Star	10
48	Regression Analysis for Process Control	October'98	Grasim Industries, Harihar	25
49	Defect Prevention	October'98	KEC	12
50	6 Sigma Concepts	October'98	KEC	15
51	Six Sigma Green and Black Belt (Wave III) - 2 Programmes	October'98	G.E. International Corpn. Inc.	50
52	TQM	November'98	Centum Electronics Ltd.	30
53	Simple QC Tools for Operations	November-December'98	India Meters, Hosur	60
54	Problem Solving Tools	Nov'98 -Feb'99	TAFE, Bangalore	60
55	FMEA	November'98	Hical Magnetics	18
56	Control Plan	November'98	Hical Magnetics	8

Indian Statistical Institute

57	Reliability Engineering	November'98	IFB Autoliv	15
58	Waste elimination	November'98	IFB Autoliv	10
59	SQC/SPC Techniques	November'98	Indian Aluminium Co. Ltd.	16
60	Design of Experiments and Taguchi Methods	November'98	Vam Organics Chemicals Ltd., Gujraula	25
61	Basic of TQM	December'98	Otto Biltz	10
62	Q7 Tools	December'98	Weldcraft Pvt. Ltd.	15
63	TOPS	Sept, Nov & December'98	Hical Magnetics	30
64	Seven tools of QC	December'98	Hical Magnetics	17
65	Preventive and breakdown maintenance	December'98	Hical Magnetics	10
66	ISO 14001	December'98	IFB Autoliv	25
67	Statistical Application for Diagnosing quality issues	December'98	M/S Sambandam Spg. Mills	35
68	Internal Audit Training	June 1998 December'98	M/S Palani Andavar Cotton & Synthetics (PACS)	40
69	Statistical Techniques for ISO 9000	December '98	M/S Universal Radiators	13
70	An Advance level Programme on Tests of Significance	December'98	GE Medical Systems Ltd., Pune	25
71	Module on Six Sigma Green and Black Belt (2 programmes)	December'98 & January'99	Telco, Pune	25
72	QC for Operations	Jan & Feb'99	Modi Paper, Mumbai	50
73	ISO 9000 awareness	January 1999	Lincoln Helios	60
74	Three day programme on Engineering Statistics	January 1999	MICO	15
75	SPC	Sept 1998 & J January 1999	Hical Magnetics	20
76	Waste Elimination	January 1999	Hical Magnetics	8
77	Reliability Engineering	January 1999	Hical Magnetics	15
78	TOPS	January 1999	IFB, India Ltd.	15
79	QS 9000 (1998) requirements	February 1999	Stumpp, Schele & Somappa Ltd	45
80	Statistical Process Control	February 1999	IFB, India Ltd.	20
81	Internal Quality Audit for ISO 9000 & ISO 14000	February 1999	Grasim Industries, Harihar	40
82	QFD & Pokayoke	February 1999	Grasim Industries, Harihar	50
83	Training Programme on 'QS 9000 Quality System Standards'	February 1999	Hindustan Motors Ltd.	47
84	ISO 9000 implementation	March 1999	Mormugoa Port Trust	33
85	ISO 9000 Awareness	March 1999	Mormugoa Port Trust	25

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86	Sampling Plan	March 1999	INDAL, Nanjangud	12
87	SQC TECHNIQUES IN ISO 9000	March 1999	CICB	20
88	Management Appreciation Programme on SQC/SPC Techniques	March 1999	Indian Aluminium Co. Ltd.	30

General Training Programmes

Sl. No.	Title of the Programme	Duration	Place	No. of Participants
1.	Programme on Taguchi Methods for Quality and Productivity		Delhi	16
2.	Statistical Techniques for ISO 9000 and QS 9000		Delhi	31
3.	Part-time Programme on Statistical Process Control	April - May, 1998	Chennai	35
4.	Statistical Tools for QS 9000	17-18 April, 1998	Chennai	21
5.	Part-time Programme on Statistical Process Control	May - June, 1998	Chennai	15
6.	Taguchi Methods for Quality and Probability	July 1998	Delhi	16
7.	Workshop on QS 9000 implementation	4-5, August, 1998	Chennai	6
8.	Workshop on Problem Solving Techniques	9 August, 1998	Chennai	15
9.	Workshop on Quality in Service Sector	9 August, 1998	Chennai	6
10.	Part-time programme on Statistical Process Control	October, 1998	Chennai	15
11.	One day programme on Benefits of Quality Systems and improvement process exclusively for Leather industry	15 January, 1999	Chennai	30
12.	Part-time programme on Design of Experiments	February- March, 1999	Chennai	6
13.	Statistical Techniques for ISO 9000 & QS 9000	February, 1999	Delhi	32

A partial list of factories served under consultancy programmes are given below :

Raja Palayam Mills (Raja Palayam), Ganambikai Miller (Coimbatore), Thambbi Modm Spinning Mills (Salem), Sudarsanam Spinning Mills (Raja Palayam), Sri Vishnu Shankar Mills (Raja Palayam), Sambandam Spinning Mills (Salem), Sunrise Jewellers (Madras), Rajnarayan Textile Mills, Technova Imaging Systems Ltd. (Bombay), Tata SSL Ltd, Coates of India Ltd., Gabriel India Ltd. (Nasik), Asian Paints (India) Ltd., Eicher Motors Ltd. (Indore), Apidor Abrasiers Pvt. Ltd. (Pune), DGP Hinoday Industries Ltd. (Pune), Auto Comp. Corporation (Pune), Clariant (India) Ltd. (Thane), Jeju Plast Ltd. (Tejuri), Kinetic Engg. Ltd. (Ahmednagar & Pune), Panse Auto Comp Pvt. Ltd (Pune), Paranjape Auto Cast Pvt. Ltd. (Pune), Paranjape Metal Shapes Ltd. (Shirwal), Jai Ltd. (Hosiarpur), Samtel India (Bhiwadi), Int. Electron Devices Ltd., GAPP Industries Ltd., Eicher Tractors Engg. Whirlpool (I) Ltd., Ester Indo Ltd., Samtel Electron Devices, Eicher Motors Ltd., Cosmo Ferrites Ltd., BHEL, Power Sector, Southern Region & Project Engg. Mgt. (Delhi), Engine Valves Ltd. (Chennai), Heavy Alloy Penetration Project, Ordnance Factory (Trichy), The KCPP Ltd. (Macherla), Indo National Ltd. (Nellore and Tada), Enfield India Ltd. (Ennore), Integral Coach Factory (Chennai), Royal Enfield Motors (Chennai), ITC Ltd. (Printing & Packaging) (Chennai), Dupont (Madurai), ECIL (Hyderabad), FGP Ltd. (Thimapur), Anna Puma Electronic Pvt. Ltd. (Hyderabad), Engine Valves Ltd. (Hyderabad), Wipro Consumer Products Ltd. (Ahmed Nagar), BANCO Products India Ltd. (Baroda), CG Glass Ltd. (Baroda), Operations Research Group (Baroda, IFB Industries Ltd. (Bangalore), Fastener Pvt. Ltd., IFB Autoliv Ltd. (Bangalore), RHW India Ltd. (Bangalore), HAL (Bangalore), MICO (Bangalore, Thunga Bhadra Steel Products Ltd. (Hosspet), ARB (Bangalore), KEC (Tumkur), INDAL (Nangangudi), INDAL (Belgaum), WIPRO Fluid Power Ltd., Aspect Development India Pvt. Ltd., Gabriel India Ltd. (Bangalore), J. K. Tyres Ltd., KEC (Bangalore), WIPRO-IT Support Division, TAFE, Wipro fluid power Howlett Packard (Bangalore) Baker Gages, DGP Hinoday Industries, Ispat Alloys, Indian Aluminum (8 Units), Hyderabad Batteries, National Ship Research Development Center, Eveready Industries India Ltd., Corborandum Universal, Sunrise Jewellery, Britannia Industries, Tata Consultancy, Vam Organics Ltd., Central Electronics Ltd., GE International Corpn., GE Lighting Ltd., GE Med System Ltd., TELCO Ltd., Sangeeth Textiles (Annur), Medallion Knitwear (CBE), Gnanambikai Mills Ltd. (CBE), Corborandum Universal (Palakkad), Palani Andavar C.S (Udumal), CaNaC Udyog, Shindewadi, M/S, Naturic Agro Products Ltd., M/S, Wipro Ltd., Amalner, Indo National Ltd., Nellore and Tada, Autoplast, Tumber, Exide Industries Ltd., Lucas TVS Ltd., Imagine Technologies, Chennai, Hindusthan Motors Ltd., Tiruvallur, Royal Enfields Motors, Chennai, Britannia Industries, ITC Ltd., (ILTD), Tata Cummins, ICI (Initiating Explosive).

Research Activities

The research activities of the Division covered areas like Optimum Sampling Plans for detection of defects in defect interference, Fuzzy Goal Programming, Constructions of Repeated Measurement Designs, Sensitivity Analysis of Decision Plans, Continuous Sampling Plans, Sensitivity of S/N Ratios, Inference in Linear Models, LCP, Stochastic Games, Symmetric Games, Pivoting Algorithm, Convex Quadratic Games, Matrix and Binomial Games, Co-operative, Non Co-operative and Weighted Majority Games, Study of properties of Certain Matrices Like P , P_0 , Z , N , N_0 etc., linear fractional Programming, Integer Programming, Sequencing & Scheduling, Consecutive k-out-of-n systems, Software reliability, Perfect-information Stochastic Games, Multivariate Calibration Methods, Optimal Sampling of Bulk Material with Multi Characteristics etc.

Other Activities

National Conference

The Division celebrated 50 years of Independence which also coincided with 50 years of SQC & OR services in India by organising a National Conference at Chennai during 6-8 August, 1998. The theme of the conference was 'Business Competitiveness and growth through Quantitative Methods'. The objectives were (i) to review the development and application of SQC & OR in India since the establishment of first SQC Unit in India following the visit of Professor Walter Shewhart during November, 1947 - March, 1948 (ii) to have a look at the current scenario in the development and application of SQC & OR in Indian Organisations and (iii) to discuss the possibility of an interface between Industry and Academia and chart out future directions of the Division. While inaugurating the conference, Mr. R. Seshasayee, Managing Director, Ashok Leyland Ltd. stressed the need of using quantitative techniques ahead of competition. Sixteen technical sessions were arranged covering topics like

Business Process Improvement, Operations Research, Quality Management System, Process Control and Improvement, Total Quality management, Taguchi Methods, Quantitative Methods, Education and Training in SQC & OR, Design of Experiments and Reliability, with emphasis on SQC & OR in service sectors and in Software industry. In all 63 technical papers were presented. There was a pre conference workshop on QS 9000 system Implementation. There were two post conference workshops on

- a. Problem Solving in Industries
- b. Quality in the service sector

Publications

Quarterly News Letter of the Division is being published regularly. The readership had shown gradual increase over the year.

Surveys

On completion of the survey on postal traffic and revenue a report entitled 'Sample survey Methodology for Estimation of Volume of Postal Traffic and Revenue - report on implementation in Delhi & West Bengal' has been submitted to the department of Posts, Govt. of India.

The Customer Perception survey from clientele organisations for further improving services of SQC & OR Division has been taken up and organisations belonging to Hyderabad, Bangalore, Madras and Coimbatore have been covered.

A survey on the application of Statistical Methodologies in Small Scale Industry has been undertaken.

Collaboration

Collaborative works were undertaken with the American supplier Institute, IAPQR, NIQR, KEMA (Holland), BIS, Dept. of Transport Planning, Reserve Bank of India, CII, FICCI, Central Road Research Institute, Productivity Councils, CSIR, NABL, DRDO, International Management Institute, School of Planning and Architecture, All India Manufacturers Association etc.

Staff Development Programme

25 faculty members attended the Staff Development Programme on Object Oriented Programming organised by the Division at Calcutta during July, 1998.

A Staff Development Programme on Computer Applications was held during 15-20 March, 1999 with active cooperation of C'SSC, Stat-Math, Geology and ASU Unit of the Institute. 26 staff members from various SQC & OR Units participated in the programme.

Library, Documentation and Information Science Division

Documentation Research and Training Centre (DRTC), Bangalore

The DRTC regularly conducts a course of 24 months duration leading to the award "Associateship in Documentation and Information Science" (ADIS). This award is recognised by the Govt. of India and several other universities, such as equivalent to Master's Degree in Library and Information Science.

Apart from the research, teaching and training activities, DRTC also has the following programmes : (i) Advisory services programme, (ii) Publication programme, (iii) Employment information programme, (iv) Continuing educational and training programme and (v) Faculty development programme.

Research Activities

The main areas of research in which the different members of the DRTC Faculty were engaged during the period, April 97 to March 98 are (i) The study of various methods of knowledge representation, such as, semantic nets, frames, and predicate calculus, etc. (ii) The application of the "Modern scientific management techniques to the planning and management of information system, centers and services, (iii) The study of the methodologies of information analysis and consolidation, (iv) The development of bibliometric and scientometric measures for evaluating the use of library and information services and scientific output respectively, (v) The preparation of guidelines and actual development of software and application packages for library house keeping operations, such as, circulation control service control and acquisition control.

Projects Undertaken

A. Externally Funded Projects

Short-Term Course on Computer Applications to Library and Information Field

The DRTC has been conducting a six-week course on "Computer Applications to Library and Information Work" since 1986, under the sponsorship of the National Information System for Science and Technology (NISSAT) of the Department of Scientific and Industrial Research (DSIR), Govt. of India, New Delhi. The course was specially designed for the professionals in the field of information work and services. This year, the DRTC conducted the 20th Short-term course.

OCR project

This project was also sponsored by NISSAT sponsored Project at DRTC. The project was concerned with the application of Optical Character Recognition technology in building bibliographic databases.

B. Plan Projects

Decision Support System for Library Planning

Library and Information Centre Planning is the process of identifying aims and setting up of objectives of a library and designing activities to accomplish these objectives. This process of setting up a new library and information centre for any organisation is the most crucial task. Planning for a library and information center from the scratch is quite a complicated process. Studies in the area of Library Planning are being done, procedures and process of planning a library and information center have been given by library managers. There are also attempts to automate some of the procedures and process.

This present project is an application of research in and development of models and tools to support decision-making in library and information planning. The general approach is that, the library management systems manage the physical process and operations of the library very much according to traditional models, but the approach here is to automate the process of planning. It is an effort to automate the decision processes involved in planning a library and information centre.

Decision support systems are tools for the managers to support the decision making in the management process. To develop a decision support system which will be of use to managers in a library and information system/centre, it is necessary to consider the context in which it will be used or employed. With this approach, DSS for library planning is designed to be a supportive tool in the process of planning and designing of a new Library and Information Centre.

Development of Expert System for Classifying Documents using Dwey Declmal Classification (DDC) System

The objective of the project is to design and develop an expert system for classifying documents in accordance with the DDC classification system. The scope of the project cover the area of enumerative classification and tools techniques of artificial intelligence / expert systems and natural language processing. The result of the project will help in classifying documents automatically. The work is expected to contribute to the theory of the intelligent information retrieval system, and to have a wide use in libraries and information centres.

Library (Calcutta)

With the addition of 984 books and 1626 bound journals to the stock, the total collection of the Library rose to 2,1,204.

Acquisition

The library accessioned 984 books during the period of which 838 books were purchased and 146 books were received on complimentary basis. Out of 838 purchased books, 133 books were funded by National Board of Higher Mathematics (NBHM). Besides this, the library accessioned 600 books which belong to different units of the Institute as Project Collection.

Periodicals

The library received 705 journals out of which 456 were purchased, 169 in exchange and 80 as gift. 40 journals were subscribed under NBHM Grant. It accessioned 1626 bound volumes and completed the technical processing of 794 volumes. 697 set of journals were processed for binding. Monthly Bulletin of Current Journals were prepared and circulated to the users of the Institute and other organisations.

Circulation & Stack Maintenance

The library issued 65260 books and journals to the users on loan and reference. The total membership of the library was 1894 which includes ISI staff, Research Scholars, Project Assistants, degree and diploma course students, ISEC Trainees etc. as well as outside students and institute members. 1438 readers were given special permission to use the library for a short period. 96 books and journals were borrowed from other libraries and 86 books and journals were loaned to other libraries under the inter-library loan arrangement.

Reports & Records

The library processed 800 titles. 650 titles were issued to the borrowers for reference. 500 documents were collated and sent for binding.

Circulating Library

The Workers Circulating Library acquired 221 new titles bringing the total collection to 36,828. It issued 23500 books to the members.

Technical Processing

The library classified and catalogued 1797 books and developed the database on LYBSIS. The Unit issued 12 issues of current addition to the library.

Documentation

The library has been issuing current contents list services to the users on the following group of subjects : (a) Statistics and Mathematics, (b) Electronics and Communication Science, (c) Geology, (d) Life Sciences, (e) Economics, (f) Recent addition of books to the ISI Library.

Reprography & Photography

The Reprography and Photography Unit of the library provided 6, 87, 883 photocopies for the users. 795 frames of photographs of different nature, 1902 photographic enlargements, 28 frames of lecture slides were made during the period. 2,02,715 pages off-set prints were done during the period.

Projects Undertaken

Development of Computerised Catalogue

The Project initiated in August 1996 is in progress. Data base of books in the areas of Mathematics, Computer Science, Economics, Biology etc. have been completed. The work is in progress in other subjects.

Reclassification of Books on Statistics and Mathematics

The Project has been completed. Mathematics, Statistics and Computer Science subjects have been reclassified.

Identification and Selective Rectification of Gaps in Periodicals Collection

Updated the inventory of incomplete journals covering the period 1988-94. Completed the verification of cataloguing data of more than 2100 titles. Completed the OPAC (On-line public access catalogue) of periodical collection using CDS/ISIS. This database is now available in LIBSYS.

Computerisation of Library Activities

To provide information support and increase efficiency of library services, the Central Library at Calcutta has started the process of providing computerised library services. It is expected that in the near future, the library will be hooked to national and international databases through various library networks and internet. The E-Mail facilities are now being used directly from the Library's computer Room for contacting universities and research institutions as publishers and book-sellers.

CDS-ISIS, a software package developed by the UNESCO for information storage and retrieval has been acquired. The Library has acquired LIBSYS - software for computerisation of its activities. The Math Science Disc., CD-ROM version of Mathematical Reviews and Current Mathematical Publications acquired by the Library covers the international research literature in Mathematics and related areas such as statistics, computer science, econometrics etc. The library's collection also includes the 1991 Census Data on Floppy. To provide the computerised services to the users, the library has acquired necessary hardwares.

The library has already initiated the process of creating of database of its holdings and completed inputting of about one lakh of its holdings of journals, reports on records as well as books in the areas of Mathematics, Computer Science, Physical and Earth Sciences and Social Sciences. The Library's OPAC is now in operation and readers can access the database from the library as well as from campus-wide network system.

Library (Delhi)

Acquisition

Due to budget constraints, only 204 new books could be purchased and added to the stock during the period April 1, 1998 to March 31, 1999. 95 publications received as gift from various sources. 528 sets of loose issues of periodicals, duly bound, have been added to the stock, thus raising the stock to 35653 volumes. About 220 Technical reports, Discussion papers, Reprints etc. in Economics, Mathematics and Statistics have been received during the above period in exchange for our Discussion Papers in Economics.

Standing order for the series "Lectures on Mathematics and Physics (TIFR)" has also been renewed during the period.

Periodicals

238 titles of journals, both Foreign as well as Indian have been renewed for the year 1998-99. 528 sets of loose issues of journals duly bound have been added to the stock.

Ten Journals are being received under the exchange programme established with different institutions in exchange for Journal Sankhya, Journal of Maulana Azad College of Technology, and publications in the series "Texts and Readings in Mathematics." Eighteen Journals, both Foreign as well as Indian are being received in the library as gift from various sources.

Circulation

During the period April 1, 1998 to March 31, 1999 185 members availed the lending facilities as permanent members. About 460 members availed the reference facilities as temporary members. More than 3390 publications were circulated during the period among members. Under the Inter Library Loan program, about 25 publications were lent out to the neighbouring institutes and libraries and 20 publications were borrowed from them.

Reprographic Service

Approximately 23650 photocopies were made during the period on the request of users. Reprographic facilities have also been provided to researchers of other institutes on a nominal payment.

Other Activities

Since 1994, Delhi Centre Library has been designated as Regional Library by The National Board of Higher Mathematics, Department of Atomic Energy, Govt. of India.

Under the scheme, an annual grant of Rupees 10.00 lakhs has been received for the period April 1, 1998 to March 31, 1999, for the purchase of new books in the field of Mathematics and Statistics. 138 new books have been purchased and added to the stock during the period under review. 26 Journals are being subscribed from the said grant.

Like every year this year too, library trainees with remuneration were appointed. At the end of their training, each trainee was given an experience certificate.

ISI Delhi Centre Library had purchased and got installed a library automation package named "LIBSYS." The retro-conversion of library records has been successfully completed and the system has been opened for use for all under LAN network. Complete library work such as acquiring new books, recommendation, approval, rejection, accessioning, invoicing etc., renewal of journals, expenditure analysis, technical processing of publications, charging and discharging, inter-library loan, issue of No Due Certificates, and over due reminders etc. is being done through the said package. The Package has been updated by getting Y2K software installed. All the staff members have been adequately trained in the use of the package by undergoing 1st level and 2nd level training programmes provided by LIBSYS Corporation. A WEB page for ISI, Delhi Centre Library is under construction.

Library (Bangalore)

Acquisition

During the above period 500 books were added to the library by purchase, 148 books were received on gratis.

Stock position : The total stock position as on 31st March 1999 is as follows : Books 15487, Books on gratis 11576, Bound volume of Periodicals 78200, No. of periodicals subscribed 270, No. of periodicals, received on gratis 15.

Indian Statistical Institute

Technical Processing

About 500 books were classified and catalogued during the period nearly 2100 catalogue cards were filed.

Circulation

During the period library facilities were enjoyed by 411 users. 224 of them availed the lending facilities. 6 visiting professors of different units of ISI were also provided with the lending facilities. A total of about 142000 books and periodicals (including loose issues) were circulated by the library. The in-house use of books and periodicals were around 41000. About 79 inter-Library loan transactions were registered.

The membership includes ISI Staff, Research scholars, Project Asst., M. Stat students, M-Tech Students, SDP fellows, DRTC students, Trainees of DRTC short term courses etc.

Inter-Library Loan Service

Inter-library loan facilities were availed by the ISTBC library.

Reprographic Service

Library provided 120000 photocopies to the users during the period April 1998 to March 1999.

Documentation Service

The following publications were brought out regularly from the library : (i) Bimonthly addition list of books, (ii) Monthly list of current periodicals, (iii) Current contents of journals, (iv) Periodicals Holding list.

Computer and Statistical Services Centre

The Computer and Statistical Service Centre (CSSC) manages the central computing facilities of the institute at Calcutta. The Internet facility is also managed by CSSC. It serves about 500 users including students, research scholars and scientific workers with inhouse computer systems VAX 8650, SUN Enterprise 3000 Server. Six SUN ULTRA 30 workstations, DEC Alpha 4100 Server and IBM AS-400 Server. BMDP, NAG, SPSS, DMSL, SHAZAM software are available on VAX 8650.

SAS and MATLAB (Base), and C/C++ compiler have been acquired and installed on the SUN E 3000 Server.

Installation of Campuswide Networking has been completed during the year. Four SUN ULTRA - 10 and two SUN ULTRA - 60 workstations have been acquired and installed in different units as departmental servers. 200 PCs have been acquired for faculty members and students. All the machines are connected to the campuswide network.

Statistical and Computational services are provided by CSSC. Six external scientists were provided statistical services by CSSC during the year.

Computer Training Programme for the Administrative workers of the Institute has been organised by CSSC during the year.

CSSC staff members have served as faculty in the training programme organised by SQC for their Technical Officers. The computer facility for the training programme was provided by CSSC.

Like in all other years, the staff members of CSSC have served as faculty in various courses of the institute and supervised dissertation carried out by the students. The staff members of CSSC are also involved in research in database and knowledge bases, image processing, computational geometry, Cryptology, etc.

4. EXTERNALLY FUNDED PROJECTS

Ongoing Projects

1. Title of the Project : Risk Analysis of Long Term Agreement
Project Coordinators : B.K. Sinha, G.M. Saha and D. Sengupta
Units involved : Stat.- Math., Appl. Stats., C S S C, SQC (T&P) and SRU
Funded by : Coal India Limited
2. Title of the Project : Strengthening Local Government in Madhya Pradesh (ISI-PWC Project)
Principal Investigator : J.K. Ghosh
Co-Principal Investigators : A. K. Adhikari and P. Maiti
Chief Consultant : J. Roy
Units involved : Stat.- Math., and Appl. Stats.
Funded by : Prince Water House and Asian Development Bank
3. Title of the Project : Development of Statistical Technique as an Aid to Geological Mapping
Principal Investigator : J.K. Ghosh
Project Co-ordinator : Tapas Samanta
Unit involved : Stat.-Math. and Appl. Stats.
Funded by : Council of Scientific and Industrial Research , New Delhi
4. Title of the Project : Markov Processes, Martingale Problems and Their Applications to Filtering Theory
Project Co-ordinators : R.L. Karandikar and A.G. Bhat
Unit involved : Stat.- Math., Delhi
Funded by : Department of Science and Technology
5. Title of the Project : E_{*}-semigroups and Dilation Theory (INSA Young Scientist Project)
Project Co-ordinator : B.V. Rajarama Bhat
Unit involved : Stat.- Math., Bangalore
Funded by : Indian National Science Academy, New Delhi
6. Title of the Project : Software Development for Cryptanalysis
Project Leader : B. K. Roy
Unit involved : Applied Statistics
Funded by : Defence Research and Development Organisation, New Delhi
7. Title of the Project : Development of CAD Tools for Identification of Logical Equivalence of Library Elements and Identification of False Paths in a Switch-Level Network
Project Co-ordinators : B.B. Bhattacharya and P. Palchaudhuri
Unit involved : Advanced Computing and Microelectronics
Funded by : Motorola India Electronics Ltd., Bangalore
8. Title of the Project : Compilation and Optimization for Reconfigurable Co-Processors
Project Co-ordinators : B.B. Bhattacharya, B.P. Sinha, Susmita Sur-Kolay and S. Rajopadhye
Unit involved : Advanced Computing and Microelectronics and IRISA, France
Funded by : Indo-French Center for Promotion of Advanced Research

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9. Title of the Project : New Techniques for Fast Image Compression based on Human Vision Systems and Geometric Data Structures
Principal Investigators : B.B. Bhattacharya and M.K. Kundu
Co-investigator : C.A. Murthy
Units involved : Advanced Computing and Microelectronics and Machine Intelligence
Funded by : Intel Corporation, USA
10. Title of the Project : Bilingual (Bangla & Devnagari) OCR System Development
Project Leaders : B.B. Chaudhuri and S.K. Parui
Unit involved : Computer Vision and Pattern Recognition
Funded by : Department of Science and Technology , New Delhi
11. Title of the Project : Development of a Spell Checker and Morphological Processor in an Indian Language with Speech Output for the Blind
Project Leaders : B.B. Chaudhuri, P. Sengupta and U. Pal
Unit involved : Computer Vision and Pattern Recognition
Funded by : Department of Electronics , New Delhi
12. Title of the Project : Speech Synthesis in South Indian Languages for Application to the Blind and Speech output for Machine Translation
Project Leaders : B.B. Chaudhuri and V.I Subramoniam
Unit involved : Computer Vision and Pattern Recognition and ISDL, Kerala
Funded by : Department of Science and Technology , New Delhi
13. Title of the Project : Application of Fractal and Multifractal Technique in the Processing of Atmospheric Data Images
Principal Investigator : J. Das
Co-Principal Investigators : A.K. De and D. P. Mukherjee
Unit involved : Electronics and Communication Sciences
Funded by : Department of Science and Technology, New Delhi
14. Title of the Project : Development of Image Processing Techniques for Improved Wind Estimation using INSAT Cloud and Water Vapour Imageries.
Principal Investigator : J. Das
Co-Principal Investigator : A. K. De and D.P. Mukherjee
Unit involved : Electronics and Communication Sciences
Funded by : ISRO, Bangalore
15. Title of the Project : Development of Methodologies for Self-organizing Fuzzy Logic Controllers with special emphasis on Neuro-fuzzy Techniques, Genetic Algorithms and Stability Analysis.
Principal Investigator : N. R. Pal
Unit involved : Electronics and Communication Sciences
Funded by : Department of Science and Technology, New Delhi
16. Title of the Project : Development of a Real-time Intelligent Decision Making System for Range-safety.
Principal Investigator : N. R. Pal
Unit involved : Electronics and Communication Sciences
Funded by : Department of Science and Technology, New Delhi
17. Title of the Project : Cancer Management in Soft Computing Paradigm
Chief Investigator : S.K. Pal
Unit involved : Machine Intelligence
Funded by : Council of Scientific and Industrial Research , New Delhi

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18. Title of the Project : Khagen Babu II
Project Coordinator : S. K. Paul
Unit involved : Machine Intelligence
Funded by : ISI-Birla Industrial and Technological Museum, Calcutta
19. Title of the Project : Structural and Petrological Constraints on the Evolution of Granulite-greenstone relations around Paikmal, Orissa.
Name of the Principal Investigator : S. Bhattacharya
Unit involved : Geological Studies
Funded by : Department of Science and Technology, New Delhi
20. Title of the Project : Interaction of Water Waves and Structures
Project Leader : B.N. Mandal
Unit involved : Physics and Applied Mathematics
Funded by : Council of Scientific and Industrial Research, New Delhi
21. Title of the Project : Large Amplitude Ion and Electron Acoustic Waves in Relativistic Plasma
Project Leader : R.K. Roychoudhury
Unit involved : Physics and Applied Mathematics
Funded by : Department of Science and Technology, New Delhi
22. Title of the Project : Topological Investigations of Quantum Field Theory and Statistical Mechanics
Project Leader : P. Bandyopadhyay
Unit involved : Physics and Applied Mathematics
Funded by : Council of Scientific and Industrial Research, New Delhi
23. Title of the Project : Development of Thin Film on a Rotating Disk
Project Leader : B.S. Dandapat
Unit involved : Physics and Applied Mathematics
Funded by : Council of Scientific and Industrial Research, New Delhi
24. Title of the Project : Sustainable Livelihood Studies under Environmental Stress in Eastern Plateau of India
Principal Investigator : D.K. Bagchi
Unit involved : Agricultural Sciences and University of East Anglia, U.K.
Funded by : University of East Anglia, U.K.
25. Title of the Project : Studies on Sustainability Criteria of Rice Based Cropping System in (rainfed regions of) Eastern States of Indian Plateau
Principal Investigator : D.K. Bagchi
Unit involved : Agricultural Sciences and International Rice Research Institute, Philippines
Funded by : International Rice Research Institute, Philippines
26. Title of the Project : Genomic Diversity in Indian Populations Project : Investigations through Biotechnological Tools, with special reference to Eastern India
Principal Investigators : Partha P. Majumdar and Bidyut Roy
Unit involved : Anthropology and Human Genetics, Saha Institute of Nuclear Physics and Indian Institute of Chemical Biology
Funded by : Department of Biotechnology
27. Title of the Project : Molecular Genetic Study of Schizophrenia and Bipolar Disease
Principal Investigator : Partha P. Majumdar
Unit involved : Anthropology and Human Genetics, National Institute of Health and Neuro Sciences (Bangalore) and Centre for Biochemical Technology (Delhi)
Funded by : Department of Biotechnology

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28. Title of the Project : Environmental Management Capacity Building Technical Assistance Project - Environmental Economics Component
Principal Investigator : Robin Mukherjee
Unit involved : Economic Research
Funded by : World Bank
29. Title of the Project : Road Safety and Road User Behaviour in Delhi
Project Co-ordinators : Sanghamitra Das and G.Tiwari
Unit involved : Planning , Delhi
Funded by : Association of Indian Automobile Manufacturers
30. Title of the Project : Health Sector Reforms : An Evaluation of Impact and Patterns of Utilisation among Vulnerable Groups in Three Indian States (Andhra Pradesh, Tamil Nadu and West Bengal)
Project Coordinators : B.N. Bhattacharya and S.Guha Roy
Unit involved : Population Studies
Funded by : European Commission
31. Title of the Project : Evaluation of Base-line Study on District Primary Education Planning (DPEP) in five districts of West Bengal
Project Leader : Atis Dasgupta , Anjali Ghosh and Suraj Bandyopadhyay
Unit involved : Sociological Research and Psychology Research,
Funded by : Paschim Banga Rajya Prathamik Siksha Unnayan Sanstha, Govt. of West Bengal
32. Title of the Project : Gender Study of District Primary Education Programme (DPEP)
Project Co-ordinators : Anjali Ghosh, Atis Dasgupta and Suraj Bandyopadhyay
Unit involved : Sociological Research and Psychology Research
Funded by : Paschim Banga Rajya Prathamik Shiksha Unnayan Sanstha, Govt. of West Bengal.
33. Title of the Project : Guidance and Consultancy Services in Data-Processing
Project Co-ordinator : Asoke Maiti
Unit involved : Sociological Research
Funded by : Indian Council of Social Sciences Research, New Delhi.
34. Title of the Project : Concurrent Evaluation of Total Literacy Campaign in the district of Uttar Dinajpur
Project Co-ordinator : Atis Dasgupta
Unit Involved : Sociological Research
Funded by : Government of West Bengal
35. Title of the Project : Change in livelihood trajectories
Project Co-ordinators : D.K. Bagchi and Ajay Kr. Ghosh
Unit involved : Agricultural Science Unit and Sociological Research Unit
Funded by : University of East Anglia, U.K.
36. Title of the Project : Manpower Development Programme in the area of Computer Applications to Library and Information Field
Project Coordinator : I.K. Ravichandra Rao
Unit involved : Documentation, Research and Training Centre, Bangalore
Funded by : National Information Systems for Science and Technology, New Delhi

Completed Projects

1. Title of the Project : A Knowledge Based Framework for Diagnosis and Therapeutic Planning using Multimodality Medical Imaging
Principal Investigator : D. Dutta Majumder
Co-Principal investigators : J. Das and P. Raghunathan
Unit involved : Electronics and Communication Sciences
Funded by : Department of Science and Technology, New Delhi
2. Title of the Project : Unsteady Surface Water Waves in Ocean
Principal Investigator : B.N. Mandal
Co-Investigator : Uma Basu
Unit involved : Physics and Applied Mathematics
Funded by : University Grants Commission, New Delhi
3. Title of the Project : Estimation of Infant and Maternal Mortality Rates and Identification of their Determinants in rural North 24 Parganas, West Bengal
Project Coordinators : P. Bharati, B.N. Bhattacharya, M.Pal, A. Chowdhury, and R.N.Das
Unit involved : Anthropology and Human Genetics, Population Studies , Economic Research, Applied Statistics.
Funded by : United Nations International Children Educational Fund
4. Title of the Project : Mid-term Review of Family Welfare (Urban Slum) Project in Calcutta Metropolitan Areas India Population Project - VIII.
Project Leader : Biswanath Bhattacharya
Project Coordinator : N. Bhattacharyya
Unit involved : Population Studies and Economic Research
Funded by : Calcutta Metropolitan Development Authority
5. Title of the Project : Selection Test for the Admission of Students to the B.Lib. (Sc.) course for the Calcutta University
Project Leader : S.N. Banerjee
Unit involved : Psychology Research
Funded by : University of Calcutta
6. Title of the Project : Selection Test for the Admission of Students to the B.lib and Information Science course for the Rabindra Bharati University
Project Leader : S.N. Banerjee
Unit involved : Psychology Research
Funded by : Rabindra Bharati University, Calcutta
7. Title of the Project : Evaluation of Rainfed Farming Project (RFP)
Project Co-ordinator : Atis Dasgupta
Unit involved : Sociological Research , Population Studies , Psychology Research, Agricultural Science
Funded by : Hindustan Fertilizer Corporation Ltd.
8. Title of the Project : Application of Optical Character Recognition Technology in Building Bibliographic Databases
Project Leader : A.R.D. Prasad
Unit involved : Documentation, Research and Training Centre, Bangalore
Funded by : National Information Systems for Science and Technology, New Delhi

50. SYMPOSIA, CONFERENCES, WORKSHOPS, LECTURES AND SEMINARS ORGANISED

Symposia, Conferences and Workshops

Winter School on "Statistical Methods in Medicine, Public Health and Environment" was organised by Stat-Math Unit, Calcutta during October 26 - November 18, 1998 at ISI, Calcutta.

Winter School on "Transformation Groups" was organised by Stat-Math Unit, Calcutta during December 8-26, 1998 at ISI, Calcutta.

Mini Workshop on "Probability Theory" was organised by Stat-Math Unit, Bangalore during November 26 - December 01, 1998 at ISI, Bangalore.

Workshop on "Recent Advances in Operator Theory and Operator Algebras" was organised by Stat-Math Unit, Bangalore during December 21, 1998 - January 2, 1999 at ISI, Bangalore.

Workshop on "Recent Developments in Bayesian Inference and Applications" was organised by Stat-Math Unit, Bangalore during March 4 - 10, 1999 at ISI, Bangalore.

The International Workshop on "High Performance Computing based on Parallel and Distributed Processing" was organised by Advanced Computing & Microelectronics Unit, Calcutta during December 30, 1998-January 5, 1999 at ISI, Calcutta.

One day Seminar on "Knowledge based Framework for Diagnosis and Therapeutic Planning using Multimodality Medical Imaging" was organised by Electronics and Communication Sciences Unit, Calcutta on April 2, 1998 at ISI, Calcutta.

International Workshop on "Image and Shape Analysis" was organised by Machine Intelligence Unit, Calcutta during January 08-10, 1999 at ISI, Calcutta.

Conference on "Environmental Economics" was organised by Economic Research Unit, Calcutta during January 18 - 23, 1999 at ISI, Calcutta.

Conference on "Theories of National and Social Accounting" was organised by Economic Research Unit, Calcutta during February 4 - 5, 1999 at ISI, Calcutta.

Conference on "Application of Recent Advanced Quantitative Techniques to Indian Economic Issues" was organised by Economic Analysis Unit, Bangalore during December 4 - 5, 1998 at ISI, Bangalore.

Workshop on "Applications of Bayesian Methods in Econometrics" was organised by Economic Analysis Unit, Bangalore, during March 4 - 10, 1999 at ISI, Bangalore.

Seminar on "[M]other Tongue Syndrome: The Case for or Against the Introduction of English in the Primary Level of Education in West Bengal" was organised by Linguistic Research Unit, Calcutta on July 1, 1998 at ISI, Calcutta.

National Symposium on "Computational Linguistics: Prospects and Implications" was organised by Linguistic Research Unit, Calcutta on March 9, 1999 at ISI, Calcutta.

Conference on "India and South East Asia Econometric Society" was organised by Planning Unit, Delhi during December 15-17, 1998 at ISI, Delhi.

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Annual ISI Conference on "Economic Theory and Policy " was organised by Planning Unit, Delhi during March 26-27, 1999 at ISI, Delhi.

Workshop on "Applied Regression Modelling" was organised by Statistical Quality Control and Operations Research Unit, Hyderabad during April 26-30, 1998 at ISI, Hyderabad.

Winter School on "Design and Analysis of Experiments" was organised by Statistical Quality Control and Operations Research Unit, Hyderabad during February 16-25, 1999 at ISI, Hyderabad.

National Conference on "Business Competitiveness and Growth through Quantitative Methods" was organised by Statistical Quality Control and Operations Research Unit, Chennai during August 6-8, 1998 at ISI, Chennai.

Workshop on "Information Management" was organised by Documentation Research and Training Centre, Bangalore during January 6-8, 1999 at ISI, Bangalore.

Workshop on "Optical Character Recognition Technology to Library and Information Work" was organised by Documentation Research and Training Centre, Bangalore during March 23-24, 1999 at ISI, Bangalore.

Lectures and Seminars

Lectures/Seminars organised by the Institute and delivered by visiting scientists are listed below.

Theoretical Statistics and Mathematics Division

Calcutta Unit

- Ali, Q. M., Department of Statistics, Aligarh Muslim University (12.01.1999) : A New Discriminant Function.
- Babu, G.J., Pennsylvania State University, U.S.A. (22.12.1998) : Random Permutations and the Ewens Sampling Formula in Genetics.
- Banerjee, P. K., University of New Brunswick, Canada (14.09.1998) : Airline Pricing Problem.
- Chatterjee, Kashinath, Asutosh College (30.6.1998) : Henderson's Method III of Estimation of Variance Components.
- Dani, S.G., The School of Mathematics, Tata Institute of Fundamental Research (21.11.1998 and 25.2.1999) : (i) Probability Distributions On Lie Groups, (ii) The Exponential Map of a Lie Group.
- Dasgupta, Somesh, INSA Senior Scientist (16.11.1998) : Gini Association and Pseudo Lorenz Curve.
- Dasgupta, Abhijit, Formerly of University of Berkeley, U.S.A. (03.12.1998) : Universal Coanalytic Linear Order.
- Ghosh, Molay, University of Florida, USA (20.07.1998) : Hierarchical Bayesian Analysis of Matched Pairs Data.
- Ghosal, Subhashis, Free University, Amsterdam (28.10.1998) : Convergence Rates of Posterior Distributions..
- Gore, A.P., University of Poona (18-20.11.1998) : (i) Modelling Innovation Diffusion (ii) Measuring Biodiversity, (iii) Statistics For Information Intensive and (iv) Ecofriendly Agriculture And Dynamic Programming Model For Egg Laying.

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- Guivarc'h, Y., Université de Rennes, France (25.02.1999) : Equidistribution on Some Homogeneous Spaces and Harmonic Analysis.
- Koltchinskii, Vladimir. I., University of New Mexico, Albuquerque, USA (18.01.1999) : Random Matrix Approximation of Spectra of Integral Operators.
- Lahiri, S.N., Department of Statistics, Iowa State University, U.S.A. (21.12.1998) : On Empirical Choice of the Optimal Block Size for Block Bootstrap Methods.
- Macpherson, H. D., University of Leeds, UK (26.02.1999) : Homogeneous Structures.
- Majumdar, A., BCKV, Kalyani (30.6.1998) : Best Linear Unbiased Predictor.
- Musili, B. (3.12.1998) : Schubert's Enumerative Calculus.
- Mykland, Per, A., Department of Statistics, University of Chicago, USA (15.2.1999 and 22.02.1999) : (i) Options Hedging and Statistical Uncertainty (ii) Likelihood and Martingales.
- Pal, Nabendu, University of Southwestern, Louisiana, U.S.A., (28.07.1998) : Shrinkage Estimation of Various Correlations.
- Patil, G.P., Department of Statistics, Pennsylvania State University, U.S.A. (28.12.1998) : General Environmental Issues.
- Pensky, Marianna, Department of Mathematics, University of Central Florida, U.S.A. (04.08.1998 and 06.08.1998) : (i) Estimation of a Density and a Deconvolution Density Via Wavelets (ii) Application of Wavelets in Non Parametric Empirical Bayes Estimation.
- Ranjan, Akhil, Department of Mathematics, IIT, Bombay (30.12.1998) : Milnor's Construction of Exotic 7-Sphere.
- Ratihalli, N.R., Shivaji University Kolhapur (25.11.1998) : Estimation of Symmetric Distribution Function.
- Roy, Amit, The School of Mathematics, Tata Institute of Fundamental Research (21.11.1998) : Projective Modules - Serre's Conjecture.
- Sankaran, P., SPIC Mathematical Institute, Chennai (22.5.1998) : Dolbeault Cohomology of Homogeneous Spaces
- Sarkar, Jyotirmoy, Indiana University - Purdue University, Indianapolis (27.07.1998, 22.02.1999 and 15.03.1999) : (i) System Availability Under Perfect Repair, (ii) Limiting Availability of a (l,s,r) Systems and (iii) Availability of a (l,s,r) System, $r = 1, 2$.
- Singh, Balwant, TIFR, Mumbai (03.12.1998) : Resolution of Singularities Of An Algebraic Variety : An Introduction.
- Simha, R.R., The School of Mathematics, Tata Institute of Fundamental Research (21.11.1998) : Sullivan's No-Wandering-Domains Theorem.
- Srivenkataramana, T., Bangalore University, Bangalore (30.11.1998) : Ordered Relations Between Selection and Inclusion Probabilities For PPSWOR Schemes.
- Viahwanath, P. A., SPIC Mathematical Institute, Chennai (06.7.1998) : Rationality of Certain Moduli Spaces.

Delhi Unit

- Bhattacharya, Alok , J.N.U., New Delhi (19. 02.1999) : DNA, Genes and Genome : A Hunting Ground for Mathematicians - I.
- Chanduka, K.K., I.I.T., Kanpur (22.01.1999) : Group Covering Design and its applications.
- Dedania, V. H., (24.04.1998) : Weighted Discrete Semigroup Algebras.
- Gupta, Rameshwar, D., University of New Brunswick (24 .09.1998) : Multivariate Liouville Distributions.
- Kannan, Ravi, Yale University (29.07.1998) : Low-Rank Approximations of Matrices.
- Moeschlin, O., Fern University, Germany (10.03.1999) : An Ergodicity Concept for Traffic Control.
- Mukerjee, Rahul, I.I.M., Calcutta (8.12.1998) : Comparison of Test Statistics via Expected Lengths of Associated Confidence Intervals.
- Parashar, Preeti, University of Burgas, Spain (22.12.1998) : $gl(2)$ Lie Bialgebras and their Quantization.
- Ramaswamy, Ramakrishna, J.N.U., New Delhi (19.02.1999) : DNA, Genes and Genome: A Hunting Ground for Mathematicians - II.
- Sarkar, Abhinanda, M.I.T. (12.01.1999) : Interfacing Statistics and Computing Adventures in Physics and Finance.
- Sharma, Vinod, Indian Institute of Science, Bangalore (24.07.1998) : Estimation of Traffic Parameters in Communication Networks.
- Shmueli, Galit, (22.09.1998) : Deriving k-Order Probability Functions from Their Generating Functions.
- Srivastava, Muni, University of Toronto, Canada (06.01.1999) : One sided multivariate tests with applications in clinical trials.
- Tipnis, Shailesh, Illinois State University (21.07.1998) : On the List Colouring of Graphs.
- Wills, Stephen, Nottingham University, England (18.11.1998, 20.11.1998, 23.11.1998 and 05.03.1999) : (i) CP-Flows on a C^* - algebra-I, (ii) CP - Flows on a C^* - algebra - II, (iii) CP-Flows on a C^* - algebra - III and (iv) Solution of right q-stochastic differential equations with unbounded coefficients.

Bangalore Unit

- Athavale, Ameer, University of Pune (22.12.1998 and 01.01.1999) : (i) Spherical isometric dilations and (ii) Completely hyperexpansive operator tuples.
- Athreya, K. B, Iowa State University, USA (06.08.1998) : Random Logistic Maps.
- Angers, J. F., University of Montreal, Canada (06.03.1999 and 09.03.1999) : (i) Bayesian Linear Models and (ii) Hierarchical Bayesian Analysis.
- Basu, Sanjib, Northern Illinois University (19.06.1998) : Estimation of Undetected Errors.
- Bhatt, Subhash J., Sardar Patel University, Gujarat (24.12.1998) : Stinespring representability and Kadison's Schwarz inequality on non-unital Banach*-algebras and Applications and O^* -algebras.

Indian Statistical Institute

- Bhattacharyya, Tirthankar, Poorna Pranjna Institute for Scientific Research (23.12.1998) : Strum-Liouville problems to co-algebras.
- Borkar, V. S., Indian Institute of Science, Bangalore (26.11.1998) : Sequential source coding.
- Dani, S. O., Tata Institute of Fundamental Research, Mumbai (04.12.1998) : The Exponential map of a Lie group.
- Datta, Basudeb, Indian Institute of Science, Bangalore (13.08.1998) : Pseudomanifolds with Complementarity.
- Ghosh, M. K., Indian Institute of Science, Bangalore (26.11.1998) : Stability of random diffusion with linear drift.
- Sen Gupta, Jyoti, Tata Institute of Fundamental Research, Mumbai (16.10.1998) : Fourier analysis on Riemannian Symmetric spaces.
- Guivarch'h, Y., Universite d Rennes, France (01.03.1999 and 03.03.1999) : (i) Harmonic analysis and equidistribution on some homogeneous spaces and (ii) Harmonic functions on symmetric spaces, and the Martin boundary.
- Habib, Amber, Mehta Research Institute, Allahabad (30.07.1998 and 20, 23, 24, 7, 1998) : (i) A Survey of Representation Theory of Semisimple Lie Groups and (ii) Unitary representations of semi-simple Lie groups.
- Hall, Peter, Australian National University, Canberra, Australia (30.12.1998) : Fractal Approach to Statistical Inference.
- Iyer, Srikanth, IIT, Kanpur (14 - 15.12.1998) : Super processes.
- Krishnan, T., Visiting Scientist of ISI (21 and 22.10.1998) : (i) Em Algorithm : An Introduction and (ii) Neural Networks : A Statistician's Perspective.
- Krishna, M., Mathematical Science, Chennai (30.12.1998 and 31.12.1998) : Spectral theory of Schrodinger operators.
- Kumar, Ajay (26.12.1998 and 28.12.1998) : Operator space projective tensor product of C^* - algebras.
- Kunte, S., University of Pune, (05 - 08.03.1999) : 1-3, Markov Chain Monte Carlo Methods.
- Mandrekar, V., Michigan State University (27.11.1998) : The existence and uniqueness of weak solutions of SDEs in Hilbert space.
- Mohapatra, R. N., University of Central Florida, U.S.A. (14.10.1998) : On solutions of some non-linear differential equations.
- Mukherjee, C., Indian Institute of Science, Bangalore (09.03.1999) : Bayesian Reliability Study.
- Padmawar, V.R., (10.03.1999) : Bayesian Small Area Estimation.
- Pisier, Gilles, Texas A. and M. University, U.S.A. and Universite Paris 6, France (23.12.1998 and 24.12.1998) : (i) Joint similarity problems and (ii) Generation of operator algebras with bounded length.
- Sen, Pranab. K., University of North Carolina, Chapel Hill, U.S.A. (01.01.1999) : Detection of correlated mutations : Statistical Perspectives.
- Sholapurkar, V., University of Pune (01.01.1999) : Completely and alternatingly hyperexpansive operators.