



Papers Presented and Participation of the Institute at the Conferences/Workshops etc.

PAPERS PRESENTED

- Review Workshop of Network Analysis Project on Market Intelligence at BHU, Varanasi during 07-08 May 2015.
 - Paul, RK. Co-integration Analysis. (Invited talk).
- International Conference on Agriculture, Food Engineering and Environmental Sciences-Sustainable Approaches (AFESA-2015) organized by "Krishi Sanskriti" at Jawaharlal Nehru University, New Delhi during 09-10 May 2015.
 - Grover, M*, Angadi, UB and Sharma, N. Development of models for discovery of novel proteins associated with photosynthesis using machine learning approaches.
- XXXIII Group meeting of AICRP on Vegetable Crops organized at IIVR, Varanasi during May 21-24, 2015.
 - Parsad, R*, Dhandapani, A and Dash, S. Information system for planning and analysis of experiments of AICRP on vegetable crops.
- International Conference on Recent Advances in Mathematics, Statistics and Computer Science organized by the Central University of South Bihar (CUB), Patna held during 29-31 May 2015 at ICAR Research Complex for Eastern Region, Patna.
 - Ahmad, T*, Sud, UC and Sahoo, PM. Status of horticulture statistics in India: A new methodological initiative. (Invited talk).
 - Rathod, S. An improved auto regressive fractionally integrated moving average (ARFIMA) model using artificial neural network (ANN) to forecast spot prices of mustard.
 - Kumar, P. Rank based stability measures for assessing stability of crop varieties.
- 9th Statistics Day organized by Ministry of Statistics and Programme Implementation, Govt. of India at Vigyan Bhavan, New Delhi on 29 June 2015.
 - Chandra, H. Some innovative approaches for small area estimation.(Invited talk).
- 60th International Statistics Institute World Statistics Congress 2015 held at Rio De Janeiro, Brazil during 26-31 July 2015.
 - Chandra, H*, Salvati, N and Chambers, R. Small area prediction for discrete data under spatial nonstationary model. (Invited paper).
- Altair Technology Conference ATCx 2015 held at Le Meridien, New Delhi on July 17, 2015.
 - Rai, Anil, Chaturvedi, KK*, Lal, SB, Anagadi, UB and Jai Bhagwan. CABGRID: Interactive job submission and management portal for Indian agriculture. (Invited talk).
- First Workshop of Nodal Officers of ICAR Research Data Repository for Knowledge Management initiative during 04-05 August 2015 at NASC Complex, New Delhi.
 - Jaggi, Seema* and Sarkar, Susheel Kumar. Information system on designed experiments. (in the technical session IV on Unit Level Data Repository). (Talk).
- International Conference on Recent Trends in Computer and Information Technology Research at BSAITM, Faridabad during 25-26 September 2015.
 - Singh, Arti, Sharma, Anu, Dey, Nilanjan and Ashour, Amira S. Web Recommendation Techniques–Status, Issues and Challenges.

- National Conference on Bioinformatics Panorama in Agriculture and Health (NCBPAH 2015) at SHIATS, Allahabad during 05-06 October 2015.
 - Kumar, Dinesh. Global status of agricultural bioinformatics: Challenges and issues.
 - Gautam, Aditi, Sharma, Asuda, Sarika, Fatma, Samar, Arora, Vasu, Iquebal, MA*, Nandi, S, Sundaray, JK, Jayasnakar, P, Rai, Anil and Kumar, Dinesh. Development of Antimicrobial Peptide Prediction tool for aquaculture industries.
- 6th World Congress on Biotechnology organized at New Delhi during 05-07 October 2015.
 - Meher, PK. A hybrid approach for identifying 5' splicing junction with higher accuracy.
 - Das, S. Gene selection and co-expression module detection common to various abiotic stress responses in Rice and Arabidopsis.
- 29th Annual conference of Indian Society of Agricultural Marketing held at Department of Agricultural Economics & Management, Rajasthan College of Agriculture MPUAT, Udaipur on 28-30 October 2015.
 - Bhardwaj, SP. Price forecast an instrument for Improvement in Agricultural Production and Marketing in Rajasthan- A case study of Rape & Mustard seeds.
- International Conference on Statistics and Related Areas for Equity Sustainability and Development held at University of Lucknow, Lucknow during 28-30 November 2015.
 - Alam, Wasi. Hybrid univariate time series approach for forecasting rice yield.
- 23rd Annual Conference of Agricultural Economics Research Association held at CIFE, Mumbai during 02-04 December 2015.
 - Paul, RK*, Saxena, R, Chaurasia, S, Zeeshan and Rana, S. Examining export volatility, structural breaks in price volatility and linkages between domestic and export prices of onion in India.
 - Ray, Mrinmoy . Quantifying the impact of climate change of Kharif Rice yield in India employing ARIMA-Intervention model.
- 50th Golden Jubilee Annual Convention on "Digital Life" of Computer Society of India (CSI) 2015 held at Bharthi Vidyapeeth, New Delhi during 02-05 December 2015.
 - Chaturvedi, KK*, Khatri, S, Sharma, M, Srivastava, RC and Singh, VB. Mining software engineering repositories: Issues and challenges.
 - Deb, Chandan Kumar, Sudeep*, Arora, Alka and Das, Madhurima. A framework for ontology learning from taxonomic data.
 - Singh Aarti* and Sharma, Anu. A Multi-Agent Framework for Context Aware Dynamic User Profiling for Web Personalization.
- Seventh International Workshop on Big Data Benchmarking held at India Habitat Centre, New Delhi during 14-15 December 2015.
 - Chaturvedi, KK,* Rai, A, Farooqi, MS, Lal, SB and Angadi, UB. Big Data Initiatives in Agricultural Bioinformatics.
 - Parsad, Rajender, Dhandapani, A*, Obi Reddy, GP, Sehgal, VK, Kumar, Mukesh and Choubey, AK. ICAR research data repository for knowledge management.
- 69th Annual Conference of Indian Society of Agricultural Statistics, New Delhi held at University of Kota, Kota, Rajasthan during 14-16 December 2015.
 - Angadi, UB. Feed informatics: Application information technology on animal feed resources.
 - Bhardwaj, SP*, Gurung, Bishal and Singh, KN. Study of market behaviour and price transmission in agricultural commodities.
 - Bhowmik, Arpan*, Varghese, Eldho, Jaggi, Seema and Varghese, Cini. Factorial Experiments with Minimum Changes in Run Sequences.
 - Chandra, H. Estimation of poverty and social exclusion indicators at small area level.
 - Choubey, AK. New Challenges in the field of bioinformatics.
 - Gupta, AK*, Sud, UC, Chandra, Hukum, Ahmad, Tauqueer, Sahoo, Prachi Misra, Aditya, Kaustav and Biswas, Ankur. Estimation of seed, feed and wastage ratios of major food grains crops.
 - Gurung, Bishal* and Singh, KN. Modeling and simulation aspect of technology forecasting.
 - Gurung, Bishal* and Singh, KN. Estimating hedge ratio using time varying approach. (Invited Talk).
 - Jaggi, Seema. Challenges in training and post graduate teaching in agricultural statistics.
 - Kumar, Mukesh*, Bhardwaj, Anshu, Arora, Alka, Marwaha, Sudeep, Rao, N. Srinivasa, Islam, SN, Ahuja, Sangeeta and Choubey, AK. Implementation of supply chain management in ICAR.
 - Kumar, Prakash*, Lal, Krishan, Parsad, Rajender and Gupta, VK. Construction of

- confounded asymmetrical factorial nested row column designs.
- Lal, SB. Using mobile cloud computing in agriculture.
 - Mandal, BN*, Gupta, VK and Parsad, Rajender. Algorithmic construction of A-optimal balanced treatment incomplete block designs.
 - Mandal, BN. L1 regularized multiplicative iterative path algorithm for non-negative generalized linear models.
 - Paul, RK* and Bhatt, S (2015). Crop insurance and its impact on farm output; A household level analysis in India (Invited talk).
 - Paul, RK. Long memory stochastic volatility model: An application.
 - Rao, AR. Agri-informatics.
 - Rao, NS, Marwaha, Sudeep, Ravisankar, H. and Sivaraju, K. Knowledge base and disease identification system in tobacco.
 - Ray, Mrinmoy, Rai, Anil, Singh, KN, V, Ramasubramanian, Kumar, Amrender and Rathod, Santosh. A novel approach to technology forecasting using time series intervention based trend impact analysis.
 - Sinha, Kanchan* and Gurung, Bishal. An approach to assess price volatility spillover in Indian onion markets.
 - Sud, UC and Gupta, VK. Determination of optimum sample size for crop yield estimation at GP level.
 - Sud, UC and Gupta, VK. On the calibration approach in sample survey estimation.
- 35th Annual Convention International Conference of Indian Society for Probability and Statistics (ISPS), held at University of Lucknow during 28-30 November 2015.
 - Alam, W, Sinha, K, Rathod, S, Singh, KN. Hybrid Univariate Time Series Approach for Forecasting Rice Yield.
 - International Indian Statistical Association Conference 2015 (IISA 2015) at Pune during 20-22 December 2015.
 - Chandra, H, Salvati, N and Chambers, R. Small Area Estimation for Discrete Data under Area Level Spatial Models. (As invited paper).
 - International Indian Statistical Association Conference on Celebrating Statistical Innovation and Impact in a World of Big & Small Data jointly organized at Yashwantrao Chavan Academy of Development Administration (YASHADA) Pune, Maharashtra by Department of Statistics, Savitribai Phule Pune University during 20-24 December 2015:
 - Chandra, H*, Salvati, N and Chambers, R. Small area estimation for discrete data under area level spatial models (Invited Talk).
 - Varghese, Cini*, Kumar, Arvind, Varghese, Eldho and Jaggi, Seema. Statistical designs under three-way blocking structure where experimental units form clumps.
 - 9th International Triennial Calcutta Symposium on Probability and Statistics organized by Department of Statistics, University of Calcutta during 28-31 December 2015.
 - Bhowmik, Arpan*, Varghese, Eldho, Jaggi, Seema and Varghese, Cini. Symmetric factorial experiments with minimally changed run sequences.
 - Mandal, BN, Parsad, Rajender* and Gupta, VK. Construction of incomplete block designs through integer programming. (Invited talk delivered on 29.12.2015).
 - Pal, Soumen. Neural network auto-regression approach for modeling and forecasting of monthly rainfall volume during monsoon.
 - Paul, RK. Long memory in maximum and minimum temperature se.
 - 8th GCRA international conference on Innovative Digital Applications for Sustainable Development at University of Agricultural Science, Bengaluru during 05-07 January 2016.
 - Devi, Lethe and Angadi, UB. "FeedAsist" an expert system for computing least cost balance ration.
 - Workshop-cum-Training programme on "Bioinformatics Techniques for Agricultural Data Analysis" funded by Department of Biotechnology (DBT) and organized at Agricultural Knowledge Management Unit, ICAR-Indian Agricultural Research Institute, PUSA, New Delhi from 11-13 January 2016.
 - Rao, AR. Some recent developments in Agricultural Bioinformatics. (Invited talk)
 - Iquebal, MA. Tools for SSR mining and its application in variety/breed identification. (Invited lecture).
 - National Seminar on Plant Genomics and Biotechnology: Challenges and Opportunities in 21st century held at OUAT, Bhubaneswar, Odisha during 23-24 January 2016.
 - Das, Samrendra*. Differential gene co-expression network analysis for identification of hub genes and gene modules associated

- with salinity stress response in rice. (presented in Young Scientist Forum on 23 January 2016).
- Second International Conference on Genomics in Aquaculture (ISGA-II-2016) held in collaboration with Association of Aquaculturist and Asian Fisheries Society, Indian Branch at ICAR- Cantal Institute of Freshwater Aquaculture (CIFA), Bhubaneshwar, Odisha during 28-30 January 2016.
 - Kumar, Dinesh*. Phenomics for GWAS in domestic animals: Relevance in aquaculture. (Invited lecture).
 - Iquebal, MA*, Nandi, S, Jasrotia, RS, Jaiswal, S, Routray, P, Rai, A, Kumar, D, Sundaray, JK and Jayasankar, P. Computational prediction of putative miRNA controlling reproductive genes in rohu (*Labeo rohita* Hamilton). (oral presentation).
 - International Conference on Innovative Research in Biotechnology, Biomedical Sciences, Bioinformatics and Stem Cell Applications (BSC-2016) organised by Krishi Sanskriti at Jawahar Lal Nehru University, New Delhi on 30 January 2016.
 - Sarika*, Vasu Arora, Anil Rai, Dinesh Kumar. MultiProt: a web based computational tool for protein parameters (Oral Presentation)
 - International Conference on Translational Biotechnology at Motilal Nehru National Institute of Technology, Allahabad during 04-06 February 2016.
 - Singh, Indra, Mishra, DC, Kumar Sanjeev and Rai, Anil. Single Nucleotide Polymorphisms in miRNA binding site alters its structure and function.
 - Mishra, DC, Mittal, Shikha, Singh, Indra, Kumar, Sanjeev and Rai, Anil. Identification of co-regulated genes of chick pea under abiotic stress.
 - Majumdar, PG, Niyati, Rai, Mishra, DC, Kumar, Sanjeev, Rai, Anil, Chaturvedi, KK, Lal, SB, Kumar, Anil, Archak, Sunil and Farooqi, Mohammad Samir. Genome Analysis of Rhizobium Species using Codon Usage Bias Tools.
 - Nigam Deepti, Kadimi, Puneet Kumar, Kumar, Sanjeev, Mishra, DC, Singh, Manoj Kumar, Rai, Anil, and Sinha, Subodh Kumar. Meta-analysis of potential miRNA in *Triticum aestivum* reveals their genome biased association with different metabolisms.
 - National Conference on Agro technology, Commerce and Sustainable Use of Medicinal and Aromatic Plants at NASC Complex, New Delhi during 06-07 February 2016.
 - Rao, NS. ICT application in medicinal and aromatic plants: Current status and future challenges. (invited talk).
 - National Workshop on Current Trends in Agricultural Bioinformatics at ICAR-NAARM, Hyderabad during 15-17 February 2016.
 - Rao, AR. Agricultural bioinformatics: Few case studies and my experience. (Invited Talk).
 - 18th Annual Conference of Society of Statistics Computer and Applications (SSCA) on Significance of Statistics as Interdisciplinary Sciences organized at Department of Statistics, University of Jammu, Jammu during 18-20 February 2016.
 - Aditya, Kaustav*, Sud, UC and Chandra, Hukum. District level crop yield estimation under spatial small area model.
 - Arora, Alka*, Sudeep, Rao, AR, Wahi, SD, Chinnusamy, Viswwanathan and Jain, Prachi. Multimedia data management system for Agricultural experiments.
 - Bharadwaj, Anshu* and Jain, Rajni. E learning in agricultural education: Current situation and future challenges. (invited talk)
 - Bharadwaj, Anshu. Supply chain management in ICAR: Issues and Challenges. (invited talk)
 - Das, Samrendra*, Rai, Anil, Meher, Prabina Kumar and Bhar, Lal Mohan. Gene selection, module and hub gene detection for gene co-expression network analysis and application to aluminium stress in soybean. (For Dr.MN Das Young Scientist Award and also awarded as runner up and got appreciation certificate for this).
 - Grover, M. Quantum computing: A tool to handle big data in biological systems.
 - Gurung, Bishal* and Singh, KN. A Markov chain approach to study the dynamics of area substitution of edible oilseeds in India.
 - Kumar*, Mukesh, Choubey, AK, Parsad, Rajender, Bhardwaj, Anshu, Dhandapai, A, Obi Reddy, GP, Sehgal, VK and Chand, Subhash. Information flow process for agricultural research data repositories web portal (Invited Talk).
 - Kumar, Raju* and Bhar, LM. Outliers in incomplete multi response experiment.
 - Kumari, Vandita*, Sud, UC and Aditya, Kaustav. Calibration approach based regression analysis.

- Lal, SB. Cloud infrastructure for on-demand bioinformatics computing. (invited talk)
- Mishra, DC. Genome assembly: A big data perspective. (invited talk)
- Paul, RK. Statistical models for forecasting volatile crop yield data. (invited talk)
- Rao, NS* and Choubey, AK. Agricultural expert systems: Current status and future challenges. (invited talk)
- Rathod, S*, Singh, KN, Alam, MW, Ray, M. ARIMA - Genetic Algorithm approach for forecasting of maize yield.
- Sinha, K* and Gurung, Bishal. Identification of price transmission using threshold cointegration approach.
- 19th ADNAT Convention International Symposium on Microbiome in Health and Disease at NIANP, Bangalore during 23-25 February 2016.
 - Bagath M, Kolte, Atul, Angadi, UB, Grover, Monendra, Sejian, V and Bhatta, Raghavendra. Development of 16s rDNA rumen specific microbes database.
- International Conference on Bioinformatics and Systems Biology at IIT, Allahabad during 04-06 March 2016.
 - Kumar, S, Bansal, KC, Chinusamy, V, Sarika, S and Rao, AR. Genome-wide identification and analysis of abiotic stress responsive transcription factor and MIR genes in bread wheat (*Triticum aestivum* L.).
 - Rao, AR. Random Forest and its applications in genomics: Few case studies. (Invited Talk)
- 10th INDIACom; INDIACom-2016; IEEE Conference ID: 37465 3rd 2016 International Conference on “Computing for Sustainable Global Development”, 16–18 March 2016 Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), New Delhi (INDIA).
 - Kumar, M, Gupta, A, Amrapali, S, Agrawal, PK, Mahajan, V, Kant, L and Bisht, JK, eResource for DUS Characterization of Maize Varieties and Inbreds.
 - Bharadwaj, A, Roychoudhury, I, Islam, SN, Chaturvedi, KK, Sahoo, PM, R.K.Paul. Interpolating Climate Data using wTICD: A web based tool.
- International Conference on ‘Innovative Research in Agriculture, Food Technology, Physical, Chemical Sciences, Ecological, Mathematical/Statistical Applications for Sustainable Development held at Jwahr Lal Nehru University, New Delhi on 13 March 2016.
 - Alam, W*, Sinha, K, Roy, M, Rathod, S and

Arya, P. Artificial neural network approach for forecasting nonlinear components of linear time series models.

INVITED LECTURES DELIVERED

Dr. UC Sud

- A lecture on Use of various sampling techniques and their applications in Agricultural Surveys during Workshop on Research Methodology for Science Research Scholars/College and University Teachers of University of Kashmir held at UGC-Human Resource Development Centre, University of Kashmir, Hazartbal, Srinagar during 25-31 August, 2015.

Dr. Anil Rai

- A lecture on Bioinformatics and its applications in agriculture during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July- 05 August 2015.
- A lecture on Research methodology during Executive training program entitled “Applied Statistics for Coffee Research and Development” at Indian Institute of Plantation Management, Bangalore on 28 December 2015. (Invited lecture).
- A Lecture on “ Activities of Agricultural Bioinformatics and Computational Biology in ICAR-IASRI” to the Participants of FOCARS on 22 September 2015 in ICAR-NAARM Hyderabad.

Dr. Tauqueer Ahmad

- A lecture on Area estimation under agroforestry using remote sensing and GIS during Training Programme on Role of Agroforestry in Increasing Tree Cover for the IFS Officers held at the Amity University, Noida during 16-20 November 2015.

Dr. Seema Jaggi

- Two lectures on i) Testing of hypothesis and ii) Testing of hypothesis using SPSS during Training Programme on Research and Technology, Statistical Analysis and Use of SPSS for Analyzing Statistical Data at Jagannath International Management School (JIMS), Vasant Kunj, New Delhi on 18 December 2015.
- A lecture on Statistical techniques for analysis of gender desegregated data during CAFT training programme on Gender Analysis and Mainstreaming in Agriculture organized by

Division of Agricultural Extension, ICAR-IARI, New Delhi from 02-22 January 2016.

Dr. Hukum Chandra

- A lecture on Various elementary concepts of sample surveys during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July - 05 August 2015.
- Two lectures on Data management and statistical computing using R software during Winter School on Advanced Tools and Techniques for Precise Input Application System organized at CIAE, Bhopal during 05-25 January 2016.
- Two lectures on An Overview of R during CAFT training programme on “Quantitative Techniques for Agricultural Policy Research” at Division of Agricultural Economics ICAR-IARI, New Delhi during 18 February - 09 March 2016.
- A lecture on System of Agricultural Statistics in India and its challenges- Challenges faced and scope of research. (2 lectures on February 24, 2016.) during Training for Trainers (ToT) course on “Official Statistics” organized by the National Statistical Systems Training Academy (NSSTA), CSO, Noida during 22-26 February 2016.

Dr. Rajender Parsad

- Two lectures on SAS: An overview during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during July 16 – August 05, 2015.
- Four lectures on Fundamentals of Design of Experiments and Web Resources on Designed Experiments during Workshop on Research Methodology for Science Research Scholars/ College and University Teachers of University of Kashmir held at UGC-Human Resource Development Centre, University of Kashmir, Hazartbal, Srinagar during 25-31 August, 2015.
- Six lectures on (i) Fundamentals of Design of Experiments; (ii) Augmented Designs; (iii) Analysis of Covariance; (iv) Diagnostics and Remedial Measures; (v) Design Resources Server and (vi) Indian NARS Statical Computing Portal during Training Programme on Laying out Quality Experiments/Field Trials of Rapeseed-Mustrad for Precise Evaluation under Different Conditions held at Directorate of Rapeseed-

Mustard Research, Sewar, Bharatpur during 14-15 September 2015.

- Two lectures on (i) Advancement in statistical tools and techniques for effective data analysis and (ii) Web resources on experimental designs including Indian NARS Statistical Computing portal during Training Programme on Tillage and Nutrient Dynamics for Better Crop Production held under the aegis of Centre of Advanced Faculty Training, Department of Agronomy, Pantnagar during 10-30 October 2015.
- Two lectures on (i) Basics of SAS and descriptive statistics using SAS and (ii) Tests of significance and analysis of variance using SAS during Training Programme on SAS for Statistical Procedures on 17 October 2015 at ICAR-IARI, New Delhi.
- A lecture on Design and analysis of diallel cross experiments during Training Programme on Quantitative Techniques for Analysis of Breeding Experiments held at National Acaedmy of Agricultural Research Management, Hyderabad during 02-07 November 2015. (Invited lecture delivered through google hangouts)
- A lecture on Design Resources Server and other web resources on statistical sciences during SAARC Regional Training on Smart Practices for Climate Resilient Agriculture: Agroforestry Options organized by ICAR, IFPRI and SAC at New Delhi during 16-20 November 2015.
- A lecture on Design Resources Server and Indian NARS Statistical Computing Portal during Training Programme on SAS for Statistical Procedures at Agricultural Economics, ICAR-IARI, New Delhi on 28 November 2015.
- A lecture on SAS : An Overview (02 invited lectures were delivered on February 24, 2016) during CAFT training programme on “Quantitative Techniques for Agricultural Policy Research” at Division of Agricultural Economics ICAR-IARI, New Delhi during 18 February - 09 March 2016.
- A lecture on ICAR Research Data Management Policy and ICAR Research Data Repository for Knowledge Management during Workshop on ‘ICAR-KRISHI Geoportal’ for experts organized at ICAR-NBSS&LUP, Nagpur during 11-12 March 2016.
- A lecture on ICAR Research Data Management Policy and ICAR Research Data Repository for Knowledge Management during Workshop on ‘ICAR-KRISHI Geoportal’ for users organized at

ICAR-NBSS&LUP, Nagpur during 28-30 March 2016 and ICAR-NAARM, Hyderabad during 29-30 March 2016.

Dr. Dinesh Kumar

- Dr. Dinesh Kumar: Importance of Biological Science with multi-disciplinary research and career opportunities in 21st Century at Sanatan Dharama College (Lahore), Ambala Cantt, Affiliated College of Kurukshetra University, Haryana, on 03 September 2015.
- A Lecture on Lectures and Hands on sessions on Allele mining for identifying novel variants during Summer School on “Novel genomic tools and modern breeding approaches for enhancing productivity and nutritional quality of pulse crops” at ICAR-IIPR, Kanpur from 05-25 September 2015.
- Three lectures on i) Molecular marker discovery, ii) Genome annotation and iii) Metagenome analysis during Training-cum-Workshop on Biological Data Analysis through Computational Approach organized at CSIR-North East Institute of Science and Technology, Jorhat, Assam during 08-10 December 2015. (lectures and hands-on training).
- A Lecture and conducted hands-on session on Genome Annotation during National Workshop on “Bioinformatics-based Genomic and Proteomic Data Analysis in Microbial Domain” during 04-09 March 2016.

Dr. Sudeep

- A lecture on Project monitoring through FMS-MIS and HYPM in training programme on Management Developing Programme on Priority Setting, Monitoring and Evaluation (PME) organized at NAARM Hyderabad during 02-06 June 2015.
- A lecture on Online Decision Support System and b) Expert System in Agriculture during Training programme on Website Management and Online Reporting at Rajmata Vijayraje Scindia Krishi Vishwa Vidyalaya, Gwalior, M.P. on during 15-16 January 2016.

Dr. Prachi Misra Sahoo

- Two lectures on Overview & Applications of GIS during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July - 05 August 2015.

- A lecture on Hill area crop assessment during FAO sponsored Study tour on Use of Remote Sensing Technology for Producing Better Quality Crop Statistics for the officials of Ministry of Agriculture, Irrigation and Livestock (MAIL), Afghanistan held at Mahalonobis National Crop Forecasting Centre (MNCFC), Govt. of India, Ministry of Agriculture & Cooperation during 26-31 October 2015.
- Two lectures on i) Fundamentals of geographic information system and ii) Statistics for spatial data analysis during Training Programme on Geoinformatics in Natural Resource Management and Climate Change Mitigation held at ICAR-Indian Institute of Soil Science, Bhopal during 20-29 November 2015.

Dr. Cini Varghese

- Two lectures on Statistical Analysis using Excel during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July - 05 August 2015.

Dr. MA Iquebal

- A lecture and hands-on on Data cleaning and pre-processing, genome assembly and metagenome analysis in the Workshop on Accelerating Data-intensive Genome Analysis in Wheat jointly organized by ICAR-IIWBR, Karnal and ICAR-IASRI, New Delhi at ICAR-IIWBR, Karnal during 12-14 May 2015.
- A lecture and Hands on sessions on NGS data analysis: Transcriptome analysis in chickpea and its applications during Summer School on “Novel genomic tools and modern breeding approaches for enhancing productivity and nutritional quality of pulse crops” at ICAR-IIPR, Kanpur from 05-25 September 2015.
- Five lectures and Hands on sessions on i) Data Cleaning and Pre-Processing, ii) Genome Assembly, iii) Genome Annotation (Structural and functional), iv) Transcriptome Analysis (Reference and denovo) and v) Metagenome Analysis during National Workshop on Current Advances on Agricultural Bioinformatics held at ICAR-National Academy of Agricultural Research Management, Hyderabad during 22-24 September 2015.
- Four lectures on i) Data cleaning and pre-processing, ii) Genome assembly, iii) Transcriptome sequence analysis and iv)

miRNA prediction and its target identification during Training-cum-Workshop on Biological Data Analysis through Computational Approach organized at CSIR-North East Institute of Science and Technology, Jorhat, Assam during 08-10 December 2015. (lecture and hands-on training)

- A lecture and hands-on session on Genome Assembly, Transcriptome Analysis and Metagenomic analysis during National Workshop on “Bioinformatics-based Genomic and Proteomic Data Analysis in Microbial Domain” during 04-09 March 2016.

Dr. AR Rao

- Three lectures on i) Use of R for multivariate data analysis (ii) Use of R in genetics and plant breeding and (iii) Use of R in genomics and bioinformatics in training programme on “R-software” at Chaudhary Charan Singh University, Meerut during 09-10 January 2016.

Dr. UB Angadi

- Two lectures on i) Case study: Database and expert system in Animal feed resources and ii) ICT in Agriculture during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July - 05 August 2015.

Dr. N. Srinivasa Rao

- A lecture on Data center and its services in ICAR during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July - 05 August 2015.
- Dr. N. Srinivasa Rao : A lecture on “Creating own webpages: Google Sites” during 21days CAFT training programme on “Communication and management tools and approaches for agricultural extension” during 02-22 September, 2015 at IARI, New Delhi.

Dr. Sarika

- A lecture on Genome annotation during DBT sponsored Workshop-cum-Training programme on “Bioinformatics Techniques for Agricultural Data Analysis” at Agricultural Knowledge Management Unit, IARI, PUSA, New Delhi on 12 January 2016.
- Lecture and Hands on Molecular Marker Discovery, Transcriptome Sequence Analysis,

Genome Annotation. in the Workshop on Accelerating Data-intensive Genome Analysis in Wheat jointly organized by ICAR-IIWBR, Karnal and ICAR-IASRI, New Delhi at ICAR-IIWBR, Karnal during 12-14 May 2015.

Dr. KK Chaturvedi

- A lecture on Mining Software Engineering Repositories: Issues and Challenges during UGC Sponsored National Seminar on “A Step Towards Soft Computing: Techniques and Applications” at Department of Computer Science, Deen Dayal Upadhyay College (University of Delhi) during 18-19 March 2016.

Dr. SK Sarkar

- A lecture on Testing of hypothesis in Refresher course in Basic Sciences organised during 05-25 May 2015 in the UGC-Academic Staff College of Jamia Millia Islamia. (Central University)

Dr. PK Mehar

- A lecture on Biological sequence analysis and secondary structure prediction using R-software in Workshop on Computational Identification of MicroRNA (miRNA) for Biotic & Abiotic Stress Tolerance in Plants organized by Uttarakhand Council of Biotechnology during 09-11 June 2015 at Dehradun.
- A lecture on R-software during Workshop on “Genetical Data Analysis Using R-software” in the Division of plant Breeding and Genetics of CCS University, Meerut, during 09-10 January 2016.

Dr. Eldho Varghese

- Two lectures on Overview of SPSS during Summer School on “Analytical Techniques for Decision Making in Agriculture” held at ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) during 16 July - 05 August 2015.
- Two lectures i) SPSS: An overview and ii) Descriptive statistics and exploratory data analysis using SPSS during Training Programme on Research and Technology, Statistical Analysis and Use of SPSS for Analyzing Statistical Data at Jagannath International Management School (JIMS), Vasant Kunj, New Delhi on 18 December 2015.

Dr. RK Paul

- A lecture on Statistical models for forecasting volatile crop yield at Department of Agriculture

and Food Engineering, IIT-Kharagpur on 13 October 2015.

Dr. Sukanta Dash

- A lecture on JMP Genomics an overview during Training Programme on Genomics and Proteomics Analysis using High Throughput Computing Software organized at NBFGR, Lucknow on 24 November 2015.

Sh. Kanchan Sinha

- A lecture on Time series analysis using SAS during Training Programme held at Division of Agricultural Economics, ICAR-IARI, New Delhi on 19 December 2015.

Dr. Arpan Bhowmik

- Seven lecture (a.) Basic concept and some important terminology, b.) Basic design of experiments including designs for field experiment, c.) Analysis of variance, d.) Comparison of means through DMRT, Tukey's test, e.) Principle component analysis, f.) Cluster analysis and g.) Data diagnostics) during Training programme on Advances in Plant Growth Promoting Rhizobacteria: Diversity to Utility at ICAR-NBAIM during 11-20 January 2016.

Participation

Conferences/Workshops/Trainings/Seminars/Symposia etc.

- Workshop on Impact Assessment of Agricultural Research and Development on 17 March 2015 at National Institute of Agricultural Economics and Policy Research (NIAP), New Delhi. (Dr. RK Paul)
- Workshop on Making Engineering Scientists Contribution More Meaningful to Stake Holders and the Nation at New Delhi on 13 April 2015. (Dr. Hukum Chandra)
- Engineer's Meet organized by the Agricultural Division of ICAR on 13 April 2015 at NASC Complex, New Delhi. (Dr. Seema Jaggi)
- Workshop on "Advanced Persistent Threats" at Electronic Niketan, CGO Complex organized by CERT.IN. (Dr. Mukesh Kumar)
- International conference on Low Temperature Science and Biotechnological Advances on 27 April 2015 at NASC Complex (Dr. UC Sud)
- Annual Day of National Institute of Agricultural Economics and Policy Research (NIAP) followed

by 8th Professor Dayanatha Jha Memorial Lecture by Dr. Kirit S. Parikh on 02 May 2015 at NIAP, IASRI campus, New Delhi. (Dr. UC Sud)

- Methodology Workshop of APEDA funded project entitled "Effect of Buffaloes Slaughter and Meat Export Policy on Livestock, Meat, Milk, Draught Power And Eco-Balance" held on 08 May 2015 at NRC Meat Hyderabad to finalize the sampling methodology. (Dr. AK Choubey)
- Workshop on "Accelerating Data-intensive Genome Analysis in Wheat" jointly organized by ICAR-IIWBR, Karnal and ICAR-IASRI, New Delhi at ICAR-IIWBR, Karnal during 12-14 May 2015. (Dr. Dinesh Kumar as Resource Person)
- Annual Vice-Chancellors' (VC) conference of the State Agricultural Universities (SAUs) and Interface meeting with ICAR Directors held from 14-16 May 2015 at NASC Complex, New Delhi (Dr. UC Sud)
- ICAR Directors' Conference held at NASC Complex, New Delhi during 14-16 May 2015. (Dr. UC Sud, Dr. AK Choubey and Dr. Mukesh Kumar)
- ICAR-AGRI SEARCH 2050 on 18 May 2015 at NASC Complex, New Delhi. (Dr. UC Sud)
- Workshop on Advanced Web Application Security on 22 May 2015 at Electronic Niketan, CGO Complex organized by CERT.IN. (Sh Rakesh Kr Saini)
- Workshop on Impact Assessment of Agricultural Research in India at ICAR-NCAP, New Delhi during 25-29 May 2015. (Dr. RK Paul)
- Fourth Annual Review Workshop of National Agricultural Science Fund during 28-29 May 2015 at A.P. Shinde Symposium Hall, NASC Complex, New Delhi. (Dr. AR Rao and Sh. Sanjeev Kumar)
- International Conference on Recent Advances in Mathematics, Statistics and Computer Science (ICARMSCS-2015) during 29-31 May 2015 at the School of Mathematics, Statistics and Computer Science, Central University of South Bihar, Patna, India. (Prakash Kumar)
- National Academy of Agricultural Sciences Silver Jubilee followed by lectures of Prof. MS Swaminathan, Former Member of Rajya Sabha, Govt, of India: UNESCO Cousteau Chair in Ecotechnology and Chairman, MSSRF, Chennai, Dr. David Begvinson, Director General, ICRISAT, Hyderabad & Dr. K.H.M. Siddique, Hackett Professor & Director. UWA Institute of

- Agriculture, Australia on 03 June 2015. (Dr. UC Sud)
- One day Conference on Museum Maintenance at India International Centre , Max Muller Marg, New Delhi on 06 June 2015. (Sh. Pal Singh)
 - Launch of CRP-Genomics by DG, ICAR, New Delhi at ICAR-NBFGR, Lucknow on 12 July 2015 at Lucknow. (Dr. UC Dud and Dr. Anil Rai)
 - Altair Technology Conference ATCx 2015 held at Le Meridien, New Delhi on July 17, 2015. (Dr. UB Angadi, Dr. SB Lal, Mr. Jai Bhagwan)
 - Popular talk on Monitoring Agricultural ResourceS (MARS): Experience of European Union by Dr. Jacques Delincé, Senior Statistician, FAO, Rome organized by Indian Society of Remote Sensing (Delhi Chapter) & Indian Society of Agrophysics on 24 July 2015 at IARI, New Delhi. (Dr. Ankur Biswas and Mr. Kanchan Sinha)
 - First workshop of Nodal Officers of KRISHI: Knowledge based Resources Information Systems Hub for Innovations in Agriculture (ICAR Research Data Repository for Knowledge Management) held at NASC Complex, New Delhi during 04-05 August 2015 . (Dr. UC Sud, Dr. Seema Jaggi, Dr. Rajender Parsad, Dr. AK Choubey Dr. Mukesh, Kumar, Dr. Anshu Bhardwaj, Dr. Alka Arora Dr. Ajit, Dr. Anil Kumar, Dr. Susheel Kumar Sarkar, Dr. Arpan Bhowmik, Ms. Vandita Kumari Choudhary and Sh. Raju Kumar)
 - 54th All India Wheat & Barley Research Workers' Meet held at SD Agricultural University, Sardarkrushinagar, Dantiwada, Gujrat during 21-24 August 2015. Actively participated in the session on Crop Improvement and discussed the issues relating to designing and analysis of varietal trials and criterion of promotion of entries. (Dr. Rajender Parsad)
 - National Conference on Bioinformatics Panorama in Agriculture and Health (NCBPAH 2015) at SHIATS, Allahabad during 05-06 October 2015. (Dr. MA Iquebal)
 - 15th National IT Seminar on Cyber Security: Issues and Challenges organized by Management Education and Research Institute (MERI) and Computer Society of India(CSI), Delhi Chapter on 10 October 2015. (Dr. Alka Arora and Dr. Sudeep)
 - International Conference on Extension Research Interface - Promoting Exportable Rice Varieties and Evolving a Sustainable Development Model held at New Delhi during 16-18 October 2015. (Dr. KN Singh)
 - Workshop on Vigilance Awareness week on the theme of Preventive Vigilance as a tool of Good Governance on 28 October 2015 at NASC Complex, New Delhi. (Dr. UC Sud)
 - Review workshop of Network project on Market Intelligence at ICAR-NIAP, New Delhi during 30-31 October 2015. ((Dr. RK Paul)
 - 42nd Foundation Day Function of ASRB on 03 November, 2015 at Dr BP Pal Auditorium, ICAR-IARI, New Delhi. (Dr. UC Sud, Dr. AK Gupta and Dr. Mukesh Kumar)
 - Workshop on Foresight Mehodologies - Theory and Practices organized by TIFAC at Vigyan Bhavan Annex, New Delhi on 27 November 2015. (Mr. Mrinmoy Ray and Mr. Santosha Rathod)
 - International Conference on Statistics and Related Areas for Equity, Sustainability and Development (SRAESD-2015) and delivered PV Sukhatme lecture during 28-30 November 2015 at Department of Statistics, University of Lucknow, Lucknow (Dr. UC Sud)
 - ESRI Users conference from 02-04 December 2015 held at New Delhi. (Dr. Prachi Misra Sahoo)
 - Seven International workshop on Big Data nahchmarking held at India habitat Centre, New Delhi during 14-15 december 2015. (Dr. K K Chaturvedi and Sh. Soumen pal)
 - 103rd Indian Science Congress held in Mysuru from 03-07 January 2016 (Dr. Anil Rai)
 - 31st Annual Conference of the AICRP on PHT at TNAU, Coimbatore on 06 January 2016. (Dr. AK Choubey)
 - ICAR Director's Conference held at NASC Complex, New Delhi on 23-24 January 2016. (Dr. UC Sud, Dr. AK Choubey, Dr. Rajender Parsad and Dr. Mukesh Kumar).
 - 54th Convocation programme of PG School, IARI, New Delhi held on 05 February 2016 (All Faculty Members)
 - National Workshop on Appraisal cum Data Validation of NISAGENET at Indira Gandhi Krishi Vishwavidyalaya, Raipur during 18-19 February 2016. (Dr. Sudeep and Sh Pal Singh)
 - 18th Annual Conference of Society of Statistics Computer and Applications (SSCA) organized

at Department of Statistics, University of Jammu, Jammu during 18-20 February 2016. (Dr. Rajender Parsad, Dr. LM Bhar, Dr. Hukum Chandra, Dr. RK Paul, Dr. Mukesh Kumar, Dr. Alka Arora and Dr. Sangeeta Ahuja and Dr. Raju Kumar)

- National Workshop on Strengthening and Sustainability of E-Granth during 26-27 February 2016 at NASC, New Delhi. (Dr. Rajender Parsad, Dr. Susheel Kumar Sarkar and Dr. Mukesh Kumar)
- National Science Day Celebration at the Institute on 27 February 2016. (Director, All Scientists and Technical Officers)
- International Conference on Informatics, Management and Technology of Solar Energy-Issues and Opportunities (ICIMTSE-2016), organized by MERI College of Engineering and Technology Management Education And Research Institute at IIC, Lodhi Estate, New Delhi during 01-02 March 2016. (Dr. Anshu Bharadwaj, Dr. Alka Arora and Dr. N Srinivasa Rao)
- Leadership Workshop on Enhancing Organizational Productivity through Management of People at Work organized by NAARM at NASC Complex, New Delhi on 02 March 2016. (Dr. Seema Jaggi and Dr. AK Gupta)
- National Seminar on Recent Advances in Statistical Tools for Agriculture and Allied Sciences organized by Society for Application of Statistics in Agricultural and Allied Sciences (SASAA) in collaboration with Department of Agricultural Statistics, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur and Indian Institute of Science Education and Research, Kolkata (<http://www.iiserkol.ac.in/>) during 03-05 March 2016. (Dr. RK Paul and Dr. MA Iquebal).
- Review workshop of the Network Project on Impact Assessment of Agricultural Research and Development held during 07-09 March, 2016 at NIAP, New Delhi. (Dr. RK Paul)
- Workshop on ICAR-KRISHI Geoportal-Experts organized at NBSS&LUP, Nagpur during 11-12 March 2016 under KRISHI Project. (Dr. Anshu Bharadwaj)
- 10th INDIACom-2016; IEEE International Conference on Computing for Sustainable Global Development, 16-18 March 2016 Bharati Vidyapeeth's Institute of Computer Applications

and Management (BVICAM), New Delhi. (Dr. Anshu Bharadwaj, Dr. Mukesh Kumar and Dr. Alka Arora)

- Brainstorming Session on Spreading Quality Teaching organized by INSA, New Delhi on 29 March 2016. (Dr. Seema Jaggi)
- National Workshop on Geospatial Analysis in Agriculture under ICAR-KRISHI, NAARM, Hyderabad during 29-30 March, 2016 under KRISHI Project. (Dr. Anshu Bharadwaj)

Krishi Unnati Mela

- The Institute participated in the Krishi Unnati Mela 2016 organised by IARI, New Delhi during 19-21 March 2016 and elevated a stall to exhibit its significant research findings and software. The stall attracted a huge number of visitors including farmers, students and entrepreneurs. Through live demonstrations and posters, the developed technologies were explained to the visitors.
- The institute participated in the celebration of Jai Vigyan Jai Kisan Program jointly organized by Delhi based ICAR institutes on December 25, 2015 as a part of Kisan week celebration during 23-29 December 2015 at ICAR-IARI, New Delhi. A stall was elevated to demonstrate the farmer oriented technologies.

Trainings Attended

- One month Orientation Training at IASRI from 17 April to 16 May 2015. Familiarized with the organizational structure of IASRI. Interacted with scientists from all the divisions and gathered valuable information related to their various activities - research, training and teaching. Visited IARI, NIAP, NCIPM and NBPGR under this training. Got familiarized with their research activities. Also visited NASM and gathered a brief idea about the museum and various agricultural practices of ancient civilizations. (Sh. Sunil Kumar)
- Three months Professional Attachment Training at Department of Statistics, Calcutta University, Kolkata from 03 August to 02 November 2015. (Sh. Sunil Kumar Yadav)
- Training programme on Geospatial analysis for natural resources management using statistical tools at NAARM, during 02-11 September 2015. (Dr. Prawin Arya)

VISIT ABROAD

Dr. UC Sud

- Visited FAO, Rome during 15-18 April and 23 June to 01 July, 2015 to attend Expert meeting on Improving methods for estimating area, yield and production under mixed and continuous cropping and Improving methods on estimating post harvest losses held at Food and Agriculture Organization (FAO) Headquarter, Rome, Italy.
- Visited Jakarta, Indonesia as Resource Person for imparting training to Enumerators and Supervisors for primary data collection and to supervise live data collection under the project "Research on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping" during 18-23 December, 2015.
- Visited the Rwanda as Resource Person for imparting training to Enumerators and Supervisors for primary data collection and supervise live data collection under the project "Research on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping" in Kigali, Rwanda during 03-09 January, 2016.
- Visited Jamaica as Resource Person for imparting training to Enumerators and Supervisors for primary data collection and supervise live data collection under the project "Research on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping" in Kingston, Jamaica during 27 January to 04 February 2016.

Dr. Tauqueer Ahmad

- Visited FAO, Rome during 15-18 April 2015 to attend Expert meeting on Improving methods for estimating area, yield and production under mixed and continuous cropping and Improving methods on estimating post harvest losses held at Food and Agriculture Organization (FAO) Headquarter, Rome, Italy.
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Dr. Hukum Chandra

- Visited Sri Lanka as International Consultant, for short term FAO consultancy under Global Strategy to Improve Agricultural and Rural Statistics in Sri Lanka during 16-26 June 2015.
- Visited Daejeon, Republic of Korea during 13-17 July 2015 for attending the Regional Workshop on "Statistical Literacy".
- Visited Rio De Janeiro, Brazil during 26-31 July 2015 to attend the 60th International Statistics Institute World Statistics Congress 2015 as Invited speaker. Dr Hukum Chandra acted as Chairman of Technical Session on Survey Statistics at the Congress.
- Visited Japan to attend Regional Workshop on Training of Trainers for Official Statistics and Second Expert Group Meeting of the Network for the Coordination of Statistical Training in Asia and the Pacific during 29 February - 04 March 2016.
- Visited Jakarta, Indonesia for supervision of data collection work under the Food and Agriculture Organization of United Nations funded project entitled "Research on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping" during 13-19 March 2016.

Dr. Man Singh

- Visited Jakarta, Indonesia for supervision of data collection work under the Food and Agriculture Organization of United Nations funded project entitled "Research on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping" during 13-19 March 2016.