



SCHOOL OF MATHEMATICS & STATISTICS



MAHATMA GANDHI UNIVERSITY, KOTTAYAM

NEWSLETTER

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FROM THE EDITOR'S DESK

Dear Members of the University Community, We are excited to present the new edition of the School of Mathematics and Statistics Newsletter, highlighting the remarkable achievements and activities of our students, faculty, and staff.

Here's a berif overview of the events that transpired over the acedemic year that was 2023-2024.

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**National Conference on Emerging Developments in Medical Statistics
and Biostatistics in the Era of Data Science &
41st Annual Conference of Indian Society for Medical Statistics 2023**



The School of Mathematics & Statistics jointly with the School of Data Analytics hosted a National Conference on Emerging Developments in Medical Statistics and Biostatistics in the Era of Data Science as part of the 41th Annual Conference of the Indian Society for Medical Statistics (ISMS) during 2-4 November 2023 in conjunction with the Ruby Jubilee Celebrations of the Mahatma Gandhi University, Kottayam. The Conference was inaugurated at 9.30 am on 2-11-2023 by Prof. Dr. C.T. Aravinda Kumar, Vice Chancellor, Mahatma Gandhi University, Kottayam in a meeting presided by Prof. Dr. S. N. Dwivedi, President, ISMS. The Keynote address on 'Modeling and Analysis of Panel Count Data with Multiple Modes of Recurrence and its applications in Medical and Biostatistical contexts' was delivered by Prof. Dr. P. G. Sankaran, Vice Chancellor, Cochin University of Science and Technology, Kochi. Prof. Dr. B. Prakash Kumar, Registrar, M.G. University released the Souvenir and Book of Abstracts. The Presidential Address was delivered by Prof. Dr. S. N. Dwivedi, President of Indian Society for Medical Statistics. Prof. Dr. B. Binukumar, General Secretary, ISMS, presented a brief Report of Activities of ISMS during the past. The various awards of ISMS was presented by Dr. S. N. Dwivedi and Dr. C.T. Aravindakumar. The Organizing Secretary Prof. Dr. K. K. Jose welcomed the guests and delegates. Prof. Dr. C. Satheesh Kumar, President Kerala Statistical Association and General Secretary, ISPS and Director, School of Mathematical Sciences, University of Kerala felicitated the gathering. Prof. Dr. R. Sreekumar expressed vote of thanks. It was followed by High Tea.

The first technical session in memory of the founder President Prof.S.K.Bhattacharya was held at 11.00am. The Prof.S.K.Bhattacharya Oration on 'Machine Learning Based Statistical Approaches for Multi-Omic Data' was delivered by Prof. Dr. P. Venkatesan, Former Scientist F and Head of the Dept. of Statistics, National Institute for Research in Tuberculosis (ICMR-NIRT) Chennai in a session chaired by Prof. Dr.S.N.Dwivedi.

It was followed by the second technical session in memory of Professor Dr. C. R. Rao, the legendary Statistician who passed away on 22 August 2023. There were three Plenary Speakers. The first speaker was Prof. Dr. Abhaya Indrayan, founder Professor and Head of the Department of Biostatistics, AIMS, New Delhi and Consultant to



WHO and IMF. He delivered a very informative talk on 'Personalized Statistical Medicine'. The second talk was by Prof. Dr. M. Vishnu Vardhana Rao, former Director, National Institute for Medical Statistics (ICMR-NIMS), New Delhi. His talk was on 'Applications of Statistical Methods in Big Data Analytics and Artificial Intelligence'. This session was chaired by Prof. Dr. Karan Singh, Professor and Chair, Dept. of Epidemiology and Biostatistics, Tyler School of Medicine, University of Texas, USA and Prof. N. Sreekumaran Nair, Professor and Head, Dept. of Biostatistics, JIPMER, Pondicherry.

After lunch break, the third technical session in memory of Prof. P. P. Talwar was held. It was chaired by Prof. Dr. Babu L. Verma. The speaker was Prof. Dr. Sanjay Zodpey, President Public Health Foundation of India (PHFI), New Delhi who delivered the P. P. Talwar Lecture on 'Shaping the Agenda for Epidemiology in India'. The poster presentations by more than 10 research scholars was held during the AN.

The fourth Technical session was a Plenary Session in memory of Prof. Dr. C. M. Pandey, former President of ISMS and President of International Epidemiological Association who passed away on 1 October 2023. It was chaired by Prof. Dr. Sairu Philip, Professor and Head, Dept. of Community Medicine, Govt. Medical College, Kottayam and Prof. Dr. L. Jayaseelan, former President ISMS and Head of the Dept. of Biostatistics, C.M.C. Vellore. There were three speakers. The first speaker was Prof. Dr. Roy Abraham Kallivayalil, former President, World Association for Social Psychiatry and Secretary General of World Psychiatric Association, Geneva. His talk was on 'Mental Health in an Unequal World: The Role of Social Determinants and Medical Statistics'. The second speaker was Prof. Dr. Johny Joseph, Senior Consultant Cardiologist and Director of the Caritas Heart Institute, Caritas Hospital, Kottayam. His talk was on 'Ten Learning Points in Research perspective of a clinician rooted in Community'. The next speaker was Prof. Dr. Aleyamma Mathew, Head of the Department of Cancer Epidemiology and Biostatistics, Regional Cancer Centre Thiruvananthapuram. Her talk was on 'Transition of Cancer and Related Epidemiological Research in the Populations of India'. It was followed by Tea break.

International Students from the School

We encourage international students. We had 2 international students in SMS for M.Sc. Statistics. Mr. Ekisa Collins Etyang (2021-23) and Mr. Byron Ishepai (2023-25) from Kenya. Mr. Collins Etyang has passed M.Sc. Statistics with B+ scoring 72.7% marks and has joined the Higher Education Department of Govt. of Kenya.



The fifth technical session was Plenary talks chaired by Prof. Dr. P.Venkatesan and Prof. Dr. K.K.Singh. There were two speakers. The first speaker was Prof. Dr. C. Satheesh Kumar, former Head of the Dept. of Statistics and present Director of the School of Mathematical and Physical Sciences, University of Kerala. His talk was on 'Generalized Families of Logit Models and Their Applications in Biostatistics'. The second speaker was Prof. Dr. Karan P. Singh, Professor and Chair, Dept. of Epidemiology and Biostatistics, Tyler School of Medicine, University of Texas, USA. His talk was on 'Addressing Health Equity Challenges in Rural Communities'. After this session, the Annual General body Meeting of ISMS was held. It was followed by a Cultural Program and Banquet.

On 3-11-2023, the programs started at 9.00am with three parallel Technical Sessions in which about 25 contributed papers were presented. The Dr. R. N. Srivastava Award paper presentations were held from 10.15 am to 11.00am. After tea break, the Plenary session was

held. There were three speakers namely, Prof. Dr. L. Jayaseelan, Prof. Dr. S. N. Dwivedi and Prof. Dr. N. Sreekumaran Nair. The session was chaired by Dr. C.B. Tripathi and Dr. K. K. Singh. Prof. Jayaseelan delivered his talk on 'Opportunities and Challenges in the Application of Artificial Intelligence in



Biomedical Research'. Prof. Dr. S.N. Dwivedi delivered his talk on 'Statistics in Evidence Based Health Care: Prompting Points'. Prof. Dr. N. Sreekumaran Nair spoke on 'Multivariate Meta Analysis Methods in Evidence Based Medicine'. It was followed by two parallel sessions of Invited Talks by 6 experts.

After Lunch Break, the AN session started at 2.00pm by three parallel Technical Sessions of contributed papers in which about 25 scientists presented their research papers. From 3.30pm to 4.30pm a Panel Discussion on Continuing Medical Education: The Growth and Development of Biostatistics Specialty in India, organized and moderated by Prof. Dr. B. L. Verma was held. There were 7 eminent speakers. From 4.45 pm to 6.00pm three parallel Technical Sessions of contributed papers were held and about 25 young researchers presented their research papers. At 8.00pm there was a Special Dinner for the delegates in Excalibur Hotel, Thellakom, Kottayam.

On 4-11-2023, there were three parallel Technical Sessions of contributed papers from 9.00am to 10.30am and about 25 young research scholars and post graduate students presented their research papers. It was followed by two parallel sessions of Invited Talks by 6 eminent experts from 11.00 to 12.30. The Valedictory Session was held from 12.30 to 13.30. The Chief Guest was Prof. Dr. Sabu Thomas, former Vice Chancellor of Mahatma Gandhi University Kottayam. The Conference was sponsored by SERB, DST, Govt. of India and KSCSTE, Govt. of Kerala.

National Statistics Day Celebration

The National Statistics Day 2023 was celebrated with invited experts and various competitions for the students. The Program was inaugurated on 26th June 2023 by our Vice Chancellor Dr. C.T. Aravindakumar. The Chief Guest was Dr.M. R. Sindhumol, Head of the Dept. of Statistics, Madras University. Dr.K.K.Jose, Honorary Director Presided. Dr. Ancy Joseph welcomed the guests and audience. The Quiz Competition was held on 26th AN and the Quiz Master was Dr. Manu Mariam Thomas, B.K. College, Amalagiri. The Power Point Presentation Competition on Indian Statisticians and Their Contributions was held on 27th June. The Essay Writing Competition on various topics was held on 27th AN. Attractive prizes were given to the students.

Merit Day Celebration

A Merit Day and Pass Out Program was organized to congratulate the outgoing first batch of students. The Vice Chancellor Prof. Dr. C. T. Aravindakumar inaugurated the program. The former Vice Chancellor Prof. Dr. Sabu Thomas delivered the convocation address and distributed the certificates. Prof. Abraham K. Samuel, DSS delivered the Keynote address. Dr. K. K. Jose, the Director of SMS and SDA presided. Dr. R.Sreekumar welcomed the guests and audience. Student

representatives Ms. Devika Santhoshkumar, Ms. Amrutha B., Ms. Khadeeja R., Ms. Nihala R.I. and Mr. Ekisa Collins Etyanag spoke on their experience and thanked the teachers for their love and guidance. Merit Scholarships, Medals and Prizes and Cash Awards were given to the top ranking students. All outgoing students and their parents attended the function. The junior students hosted the program with cultural programs. It was a memorable event for all.



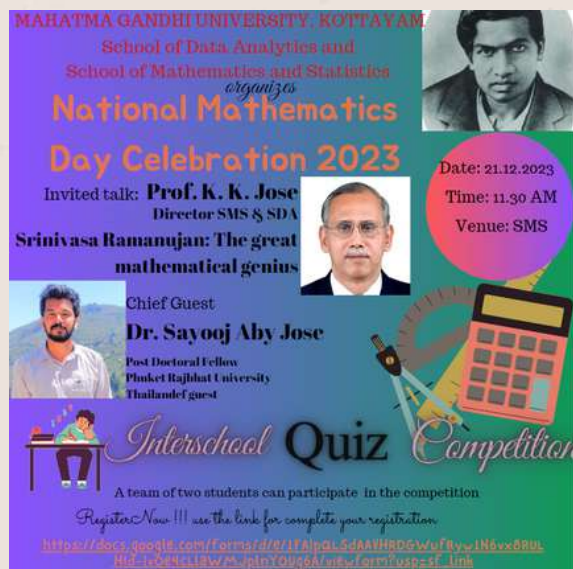
First Batch M. Sc. Mathematics students



First Batch M. Sc. Statistics students

National Mathematics Day Celebration

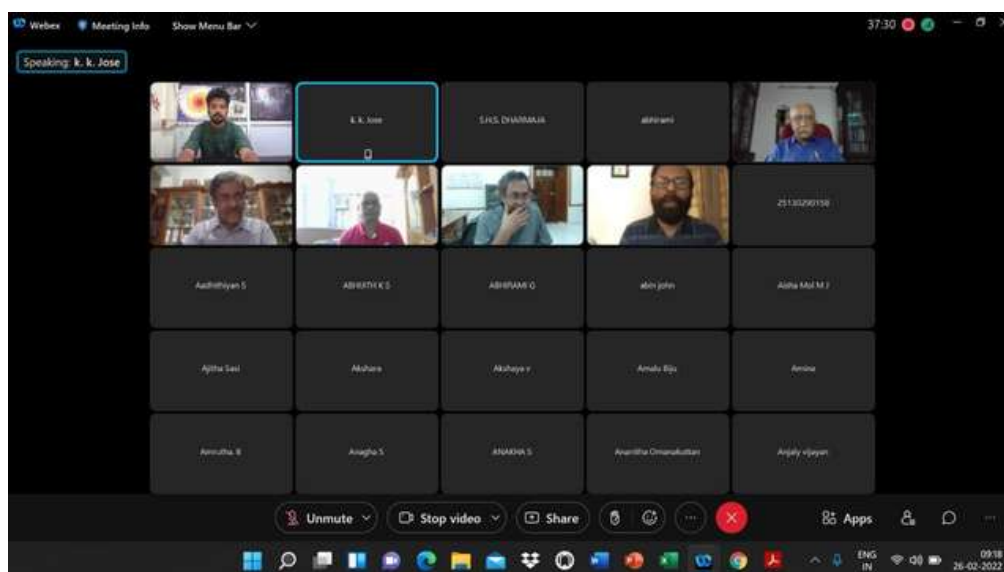
The Birth Day of the great Mathematician Sreenivasa Ramanujan was celebrated on 21st December 2023 with various programs. Dr. Sayooj Aby Jose, IMU Breakout Fellow was the chief guest to inaugurate the program. There was an invited talk by Dr. K. K. Jose on Sreenivasa Ramanujan and his contributions to Mathematics. It was followed by a Mathematics Quiz conducted by the faculty members jointly. Prizes were given to the winners. Mr. Shamil E. and Ms. Hamna Mariam were given certificates for completing the international project works.



International Lecture Series

An online International Lecture series was organized by the school. The Inaugural talk was delivered by Prof. Dr. Ovidiu Carja, Professor of Mathematics, Al. I. Cuza University of Iasi and Mathematical Institute of Romanian Academy, Romania on 6th March 2023 in the School of Mathematics & Statistics. The Vice Chancellor Prof. Dr. Sabu Thomas presided. Prof. Dr. Gabriela Carja, Dept. of Chemical Engineer, Technical University of Georghe Pisachi of Iasi, Romania spoke on Research Opportunities at Global level. Dr. K. K. Jose welcomed the guests and Dr. R. Sreekumar recorded the vote of thanks. The Vice Chancellor honored the guests by wrapping ponnada.

The second talk in the Lecture Series was delivered by Dr. Ankush Kumar Garg, ISI Bangalore on 4-5-2023. His talk was on Sampling and Reconstruction Problems over shift Invariant Spaces. It was widely appreciated by the students.



Workshop on Bayesian Computing and MCMC Methods

A Preconference Workshop on Bayesian Computing and Markov Chain Monte Carlo (MCMC) Techniques for Clinical Data Analysis was held on 1-11-2023 in collaboration with ISMS and Caritas Hospital and Institute for Medical Research, Thellakom, Kottayam. Prof. L. Jayaseelan, former Professor &



Head, Dept. of Biostatistics, CMC Vellore inaugurated the program. Rev.Fr. Dr. Bins Kunnath, Director, Caritas Hospital, presided. Dr. Johny Joseph, Senior Cardiologist narrate the importance of Statistical Data Analysis and Interpretation in Medical Research. Dr. Sebastian George, Professor and Head, Department of Statistics, Kannur University discussed on Bayesian Computing and Inference. Dr. B. Binukumar, Professor of Biostatistics, NIMHANS Bangalore discussed on MCMC Methods. Mr. Jeswin Baby, Ms. Ambily Natarajan, and Mr. K. Krishnakumar, Biostatisticians in the Caritas Research Institute gave hands on training in the Data Analytics Lab. The Workshop concluded at 5.00pm. More than 100 delegated participate.

Roll of Honour

Congratulations to the top-scoring rank holders in the 2021-23 batch across various programs, namely Devika Santhoshkumar and Amrutha B securing the first rank, Arya H and Ananitha Omanakuttan securing the second rank in Mathematics and Statistics. Special recognition to Devika Santhoshkumar, the Best Outgoing Student.

Onam Celebration 2023

Under the auspices of the Students Association of the School of Mathematics and Statistics & School of Data Analytics Onam Celebrations was held.



Dr. C. R. Rao Obituary and Exploring Research Opportunities in the Global Horizon

On 7th September 2023 we paid tributes to Prof. C.R.Rao who left us for heavenly abode on 22 August 2023. Dr.K.K.Jose talked about Prof. Dr. C. R. Rao, the legendary Statistician and his contributions. The students made presentation on his important contributions and their applications.

It was followed by an International colloquium by three eminent speakers. The first speaker was Dr. Jisha C.R., Post-doctoral Fellow, Department of Mathematics, Ulsan National Institute of Science and Technology, South Korea. The second speaker was Mr. Jahid Hassan, Doctoral Fellow, Dept. of Computer Science and Information Technology, Purdue University, USA. He talked on his success story in getting research grant in USA. The third speaker was Mr. Nakul G. Kumar, Special Research Fellow, Dept. of Artificial Intelligence and Data Informatics, Hiroshima University, Japan. He narrated his experience in getting grants for internship and project work in various institutes at global level.

Dr. Sayooj Aby Jose, IMU Breakout Fellow at Alagappa University, India spoke on various research opportunities and grants. It was very informative and motivating for students. There were interactive sessions with these young researchers and it has inspired our students.

Forthcoming Programs

Dr. Amrita George, School of Management, Georgia State University, Atlanta, USA is expected to be in the School of Data Analytics during 2024-25 as a Fulbright Fellow under the Indo-US Exchange Programme. She will undertake teaching and research works in collaboration with our faculty members and research scholars. The following are some of the Courses agreed.

Course 1: Unstructured Data Management

Course 2: Introduction to Cyber Psychology

The following research studies will also be carried out in collaboration with our faculty and research scholars..

Study 1: “Examining the implications of recent AI traffic monitoring on privacy and cybersecurity risks”

Study 2: “Impact of Environmental Enrichment using Sports Analytics on Game Outcomes”

Study 3: “Examining the Impact of the Digital Divide on Social and Educational Outcomes in an AI Era”

Study 4: “CSR Outcomes, Greenwashing, and Digitization: Impact Analysis through Digital Document Summarization & CSR Reports”

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