Jamal Mohamed College

Jamal Mohamed College, situated in the heart of Tiruchirappalli, was founded in the year 1951 as a government aided institution by Hajee. M. Jamal Mohamed Sahib and Janab N.M. Khajamian Rowther of revered memory. It is housed in a sprawling campus of 60 acres and is administered by the Society of Jamal Mohamed College. It was first affiliated to the University of Madras and then consequently to the Bharathidasan University upon its formation in 1982. From a humble beginning 74 years ago with 250 students and 12 staff members, the college has now grown as a multi-faculty institution offering 29 UG, 20 PG and 17 research programmes in various disciplines as well as other diploma and certificate programmes. Currently it has on its rolls about 11,000 students and 494 faculty. The college celebrated its Silver Jubilee in 1976, the Golden Jubilee and Diamond Jubilee in 2001 and 2011 respectively and is about to celebrate its Platinum Jubilee next year. The college was provided with financial assistance under the DST-FIST scheme in 2019-2020 and also had five of its science departments selected for financial assistance by the Department of Biotechnology (DBT) under the DBT Star College Scheme during the academic year 2020-2021. The services of the college in the field of higher education have earned it encomiums from the central and state governmental agencies.It was accredited at 'A' Grade with Five Star status by NAAC in 2001, was conferred with the Autonomous Status by the UGC and Bharathidasan University in 2004-2005 and was bestowed with "College with Potential for Excellence" status twice in 2011-2012 and 2016-2017 respectively. The college has been consistently ranked within the top 100 institutions since 2018 in the National Institutional Ranking Framework (NIRF) conducted by the Ministry of HRD, Government of India. Its premier position among academic institutions is attested by the fact that it secured the much-coveted A++ grade with CGPA 3.69 out of 4.0 by NAAC (4th Cycle).

PG and Research Department of Botany

The Department of Botany started offering UG programme upon its inception in 1967 and then PG programme from 1985 onwards. Consequent to its elevation in 2002 as a research department, it started offering M. Phil and Ph. D Programmes. The department boasts of excellent infrastructure facilities, with such advanced instruments as HPLC (Waters), UV-visible spectrophotometer, two dimensional Gel Electrophoresis, Thermocycler, Incubated Shaker, and Plant Tissue Culture Lab Facility etc. to pursue in-house research of high standards. In its pursuit of excellence in teaching, learning and research, the department has been helped in a large measure by way of grants for research projects from different funding agencies to the tune of Rs. 1.6 crore during the period 2006 to 2023 such as the University Grants Commission Sponsored Innovative Programme - PG Diploma in Biodiversity Informatics during 2013-2018,the award of financial support under the DST-FIST scheme (Phase-II)

in 2019, the financial support under the DBT-Star College Scheme in 2019 as well as periodical grants from DST, DBT, UGC, and TNSCST to conduct national level seminars, workshops and hands-on training, internship on various topics of current interest such as Spatial Informatics and Biostatistics etc.Thanks to the constant support of the management, the dedication of the staff, the department carries out high quality research. This is evidenced by the publication of more than 150 quality research articles in peer-reviewed journals and the award of doctoral degrees to 60 students till date. Keeping pace with the current trends, the department has been updating the curriculum regularly. The success of the curriculum is vouched for by the securing of university ranks by its students in the Combined Ranking Examination conducted by the Bharathidasan University every year.

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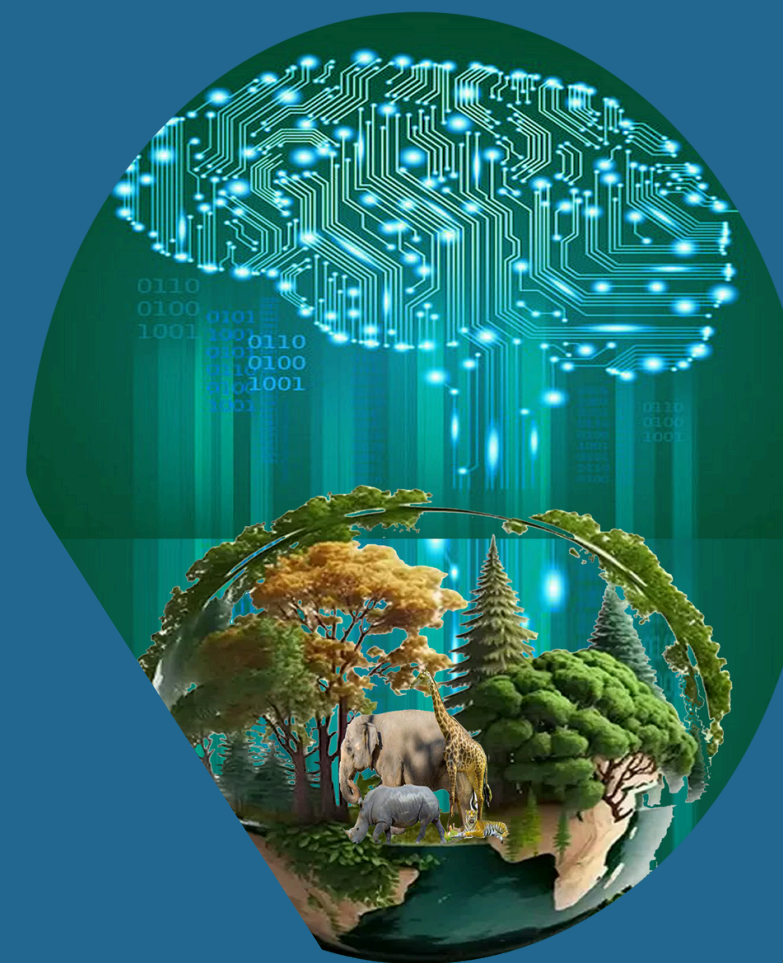**Dr.R. Syed Moideen,** Assistant Professor

National Seminar on Data Science and Emerging Computational Applications for Sustainable Management of Biodiversity and Environment (DCASMBE 2024)

Blended Mode

Sponsored by

Tamil Nadu State Council for Science & Technology Government of Tamil Nadu

10 & 11 December 2024

PG and Research Department of Botany
JAMAL MOHAMED COLLEGE (Autonomous)
Accredited with A++ Grade by NAAC (4th Cycle) with CGPA 3.69 out of 4.0
(Affiliated to Bharathidasan University)
TIRUCHIRAPPALLI – 620 020

Role of Data Science and Computational Tools in Biodiversity Management

The loss of biodiversity is one of the greatest environmental crises facing humanity. Acquisition of baseline data, monitoring and implementation of innovative analysis would facilitate the understanding of the drivers of biodiversity loss and implementation of conservation measures. In the year 2023 meeting of G20 countries held in New Delhi, the following policy instruments that G20 countries could adopt to foster meaningful business engagement in biodiversity conservation were outlined. They are a)Formulation of favourable investment policies and curbing of biodiversity-harming subsidies b) Regulation for the selection of sites for manufacturing and infrastructure development c) Mandating of value-chain level disclosures about business dependencies and impacts on biodiversity d) Promotion of Industry 4.0 applications for biodiversity conservation e) Ensuring inclusivity and community benefits. These measures can enable conditions to fully harness the immense potential of businesses in abating biodiversity decline while ensuring that the interests of vulnerable communities are well-protected. Among the policies outlined, the Promotion of Industry 4.0 applications such as Artificial Intelligence (AI), Internet of Things (IoT), Big data, Machine Learning (ML) are useful for setting conservation priority zones, predicting species migration, invasive species, urban and natural landscape changes, time series assessment of deforestation and impact of climate change to nature. The current generation of ML, AI and IoT technologies heavily rely on large amounts of training data such as environmental and biological big data, which can be obtained through the earth observation satellites (e.g., time series data, climate, topography) and, biological big data (e.g., GBIF, India biodiversity portal, NCBI geocoded species nucleotide data) along with real time data. Industry 4.0 applications therefore become popular tools for conservation biologists, ecologists, and environmental managers. Applied data scientists, computer application developers, conservation biologists, and natural resource managers work together to develop interdisciplinary advanced computational applications that improve the understanding of mechanisms underlying biodiversity losses and develop the optimal strategies for sustainable biodiversity and environment management.

Application areas

Biodiversity Data Integration for conservation, Bio-invasion and its prediction, Biological databases Utilization, Development of early warning systems using Biosensors and IoT, Setting Conservation Priority regions, Climate Change and their impact prediction, Ecosystem modelling for conservation management, Habitat suitability analysis of organisms, Natural Disaster Management, Geospatial technologies for natural resource assessment and management, Identification of species, Industry 4.0 and Agriculture, Time series data analysis for deforestation and land use changes.

Thrust areas

- Biodiversity (Terrestrial and Marine) and Conservation in all aspects
- Biological Data Science
- Cloud computing
- Computational ecology
- Ecological informatics
- Invasion biology
- Machine Learning
- Landscape ecology
- Pollution control and management
- Urban ecology

Registration

UG & PG Students	: Rs. 300
Ph.D Scholars	: Rs. 500
Faculty/Professionals	: Rs. 750

Registration fee includes conference kit and refreshment and lunch. No TA/DA will be provided. Payment should be made in favour of Account details

A/C No	: 046702000000009
IFSC Code	: IOBA0000467
MICR no	: 620020010
Account name	: JAMAL MOHAMED COLLEGE
Branch:	Indian Overseas Bank, JMC Branch, Trichy

Submission of Abstracts

The participants who present their papers orally or through posters are to submit an abstract of their research findings along with registration form or through email **(bbg@jmc.edu)**, on or before 2nd December 2024.The abstracts should be typed in MS word, Times New Roman, font size 12 and 1.5 line spacing with the title, name and address of the author(s).

Paper presentations (Hybrid Mode) and Poster presentation (Offline Mode) covering the broad areas of the conference are invited. Best Presentation Awards for both oral and posters will be given. Participants who want to present papers in online mode are to mention their preferences in the registration form. E-Certificates will be issued to all the registered participants who attend the full duration of the conference.

ONLINE REGISTRATION LINK:

https://forms.gle/As19ZGfeUjwjnyLn8

Last date of submission of abstract:& Registration fee 02.12.2024

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