



The Benchmark of
Knowledge & Excellence
in Life Sciences

FACULTY MEMBERS

Dr. EM Shankar
Dean of School & Head of Department

Dr. Jayalakshmi Krishnan
Assistant Professor

Dr. Meganathan Kannan
Assistant Professor

Dr. Indranil Chattopadhyay
Assistant Professor

Dr. Dinakar Challabathula
Assistant Professor

Dr. Latchoumycandane Calivarathan
Assistant Professor



CENTRAL UNIVERSITY OF TAMIL NADU
DEPARTMENT OF LIFE SCIENCES

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Department Brochure

YOUR AMBITION STARTS HERE

Department of Life Sciences
School of Life Sciences
Central Lecture Complex-II Building
Central University of Tamil Nadu
Thiruneelakudi, Thiruvavur 610 005

DEPARTMENT OF LIFE SCIENCES



YOUR AMBITION STARTS HERE

VISION

To help students understand the genesis, diversity, & functioning of living organisms in order to conserve, & coexist in concert with nature.

MISSION

To contribute to the improvement of knowledge in life sciences through research, education & creative analysis, innovative teaching & learning for addressing problems affecting human health & global environmental issues.

ABOUT

Founded in 2012, the Department of Life Sciences (DLS) offers two programs, a 5-year-integrated MSc & PhD. DLS is supported by a team of faculty members who are committed to the highest standards both in academics & research. DLS represents one of the most vibrant & visible departments of CUTN in terms of competition for admission, faculty ratio, internationally-trained faculty members, high-impact publications & extra-mural research grants from various national & international funding agencies. The aim of DLS is to provide a strong platform for the various interdisciplinary/research oriented/advanced higher education in life sciences for translating the standards of personal & societal living. DLS has excellent research infra-structure & offers state-of-the-art pedagogical experience to its students, which explains the testimony of its success story as a vibrantly evolving & productive department.

The integrated master's program comprises of various subjects including plant sciences, animal sciences, biochemistry, biophysics, biotechnology, developmental biology, immunobiology, neurobiology, microbiology, molecular biology, genetics, cell biology, pharmacology, environmental sciences etc. Apart from these, it also offers novel computational approaches to develop newer biomarkers & identification of novel drug targets. Student-teacher interactive seminars in new biology, hands-on practical sessions, problem-based learning (PBL), tutorials, journal clubs, science café, & field visits for reputed research institutions & industries across the country represent some of the prospective agenda planned for the course with an aim to transform teaching & research into a more contemporary & vibrant phenomenon.

The department is actively involved in organizing various national & international workshops, Science Café seminars & documentary clubs, Spring School Symposia & conferences to provide a better learning platform for its student community. The students are given opportunities to interact with leading scientists/professors from various national & international institutions, industries & medical schools during their visit to the department. DLS students are also actively taking part in various summer internship programs offered by prestigious national institutions like IISc, IISERs, THSTI, NII & ICMR labs. The faculty members of DLS have earned several national & international distinctions & laurels in terms of fellowships, awards, recognitions & publications. The faculty members are actively engaged in research & outreach projects/programs at various agencies, & collaborate with global leaders of research & innovation. DLS, in a nutshell, inspires cutting-edge research/teaching & foster creativity in the next generation scientists & academicians.

COURSES OFFERED

Integrated MSc (Life Sciences) (5 Years)
Doctoral Program (Life Sciences)

ELIGIBILITY CRITERIA

Integrated Master of Science (Life Sciences)

A pass in the Plus 2 Examination or equivalent of any recognized board in India with 60% marks (Biology, Physics & Chemistry) for General Category, 55% marks for OBC (Non-Creamy Layer) and 50% marks for SC/ST/PWD candidates.

Doctor of Philosophy (Life Sciences)

A consistently good academic record possessing a Master's Degree (two years duration) with a minimum of 55% marks [50% for OBC (Non-Creamy Layer)/SC/ST/PWD candidates] in Life Sciences/Zoology/Animal Sciences/Biomedical Sciences/Biological Sciences/Biochemistry/Biotechnology/Genetics/Botany/Plant Sciences, preceded by a Bachelor's Degree of three years duration from a recognized University/Institute.





IMSC LIFE SCIENCES SYLLABUS

SEMESTER 1

LIF111 Botany: Biodiversity
LIF112 Botany: Practicals-1
LIF113 Zoology: Animal Diversity
LIF114 Zoology: Practicals-1
CHE111 General Chemistry
CHE112 General Chemistry: Practicals
ENG111 English Communications

SEMESTER 2

LIF101 Botany: Plant Ecology & Taxonomy
LIF102 Botany: Practicals-II
LIF103 Zoology: Comparative Anatomy & Developmental Biology of Vertebrates
LIF104 Zoology: Practicals-II
CHE101 Physical Chemistry
CHE102 Physical Chemistry: Practicals
LIF001 Environmental Sciences

SEMESTER 3

LIF211 Botany: Plant Anatomy & Embryology of Angiosperms
LIF212 Botany: Practical-III
LIF213 Zoology: Animal Physiology
LIF214 Zoology: Practicals-III
CHE211 Inorganic Chemistry
CHE212 Inorganic Chemistry: Practicals
LIF215 Economic Botany
LIF216 Biofertilizers

SEMESTER 4

LIF201 Botany: Plant Physiology & Metabolism
LIF202 Botany: Practicals-IV
LIF203 Zoology: Genetics & Evolutionary Biology
LIF204 Zoology: Practicals-IV
CHE201 Organic Chemistry
CHE202 Organic Chemistry: Practicals
LIF205 Economic Zoology
LIF206 Medical Diagnostics

SEMESTER 5

LIF311 Bioinformatics
LIF312 Bioinformatics: Practicals
LIF313 Animal Biotechnology
LIF314 Animal Biotechnology: Practicals
LIF315 Drug Discovery & Design
LIF316 Drug Discovery & Design: Practicals
LIF317 Basic Biochemistry
LIF318 Basic Biochemistry: Practicals
LIF319 Medicinal Botany

SEMESTER 6

LIF301 Analytical Techniques in Plant Sciences
LIF302 Analytical Techniques in Plant Sciences: Practicals
LIF303 Reproductive Biology
LIF304 Reproductive Biology: Practicals
LIF305 Biochemistry – Intermediary Metabolism
LIF306 Biochemistry – Intermediary Metabolism: Practicals
LIF307 Basic Microbiology
LIF308 Basic Microbiology: Practicals
LIF309 Aquatic Biology

SEMESTER 7

LIF411 Cell Biology
LIF412 Immunobiology
LIF413 Immunobiology: Practicals
LIF414 Molecular Biology
LIF415 Molecular Biology: Practicals
LIF416 Endocrinology
LIFE Elective 1

SEMESTER 8

LIF401 Infectious Diseases
LIF402 Infectious Diseases: Practicals
LIF403 Neurobiology
LIF404 Plant Pathology & Crop Protection
LIF405 Plant Pathology & Crop Protection: Practicals
LIF406 Pharmacology
LIFE Elective 2
LIFE Elective 3

SEMESTER 9

LIF511 Theoretical Pathology
LIF512 Environmental Toxicology
LIF513 Behavioral Ecology
LIF514 Biosafety & Bioethics
LIF515 Biostatistics & Intellectual Property Rights
LIF516 Laboratory Animal Care & Maintenance & Research Methodology
LIFE Elective 4

SEMESTER 10

LIF501 Life Sciences Project Dissertation



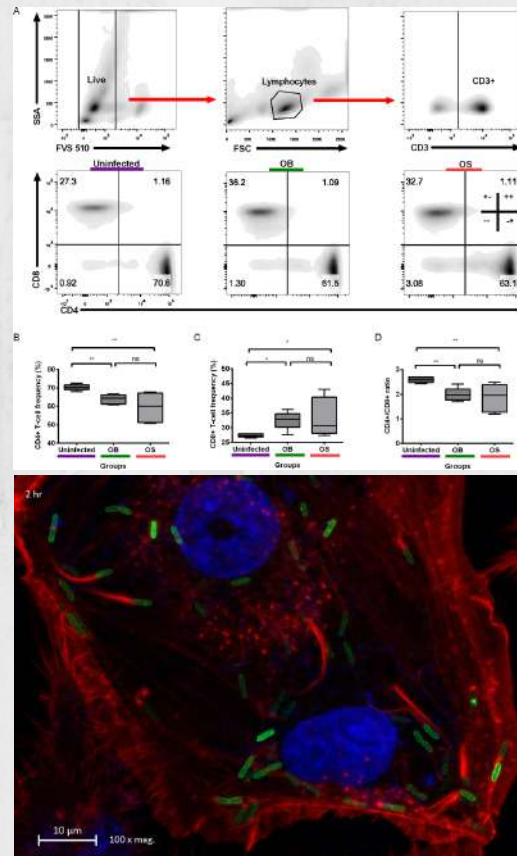
INFECTION BIOLOGY & MEDICAL MICROBIOLOGY

Esaki M Shankar MSc PhD FRSB (UK) (Team Lead)
 Jaisheela Vimali I (PhD Graduate)
 Annai Meena (iMSc Graduate)
 Koneti I Swamy (MSc Graduate)
 Veena Krishnamurthy (MSc Graduate)
 Sakthi Narpavi (iMSc Graduate)



Dr. Shankar's lab aims to investigate into the basic mechanisms associated with host-pathogen interactions primarily to unveil the functional role of the host immune system. His team is basically interested to explore into the patho-signatures of immune exhaustion operational especially across T cells, dendritic cells, mucosal-associated invariant T cells and iNKT cell subsets in chronic infectious diseases viz., HIV, TB, hepatitis B, C and melioidosis where he has many overseas collaborations with leading researchers.

He has recently turned his attention to also work on the mechanisms of antimicrobial resistance mirrored by opportunistic bacterial pathogens and the pathogenicity islands featured by these agents where putative mechanisms of host-pathogen interactions are investigated such as biofilm production and quorum sensing in non-fermenting gram negative bacilli (NFGNB) such as *Chromobacterium violaceum*, *Acinetobacter baumannii* and MRSA.



PLoS Negl. Trop. Dis 2016;10(3): e0004503

Recent Publications

Cheong HC, Quin Lee CY, Cheek CY, Shankar EM, Sabet NS, Yi Tan GM, Movahed E, Yeow TC, Sulaiman S, Wong WF, Looi CY, Gupta R, Hassan J, Arulanandam B, AbuBakar S. CPAF, HSP60 and MOMP antigens elicit pro-inflammatory cytokines production in the peripheral blood mononuclear cells from genital *Chlamydia trachomatis*-infected patients. *Immunobiology* 2019, 224:34-41 (Impact Factor: 2.873)

Ellegård R, Khalid M, Svanberg C, Holgersson H, Thorén Y, Wittgren MK, Hinkula J, Nystrom S, Shankar EM, Larsson M. Complement-opsonized HIV-1 alters cross talk between dendritic cells and natural killer (NK) cells to inhibit NK killing and to upregulate PD-1, CXCR3, and CCR4 on T cells. *Frontiers in Immunology* 2018, 9:899. (Impact Factor: 5.511)

Yong YK, Saeidi A, Tan HY, Rosmawati M, Enstrom PF, Al Batran R, Vasuki V, Chattopadhyay I, Murugesan A, Vignesh R, Kamarulzaman A, Rajarajeswaran J, Ansari AW, Vadivelu J, Velu V, Ussher JE, Larsson M, Shankar EM. Hyper-expression of PD-1 is associated with the levels of exhausted and dysfunctional phenotypes of circulating CD161⁺TCR iVa7.2⁺ mucosal-associated invariant T (MAIT) cells in chronic hepatitis B virus infection. *Frontiers in Immunology* 2018, 9:472. (Impact Factor: 5.511)

Ahmad F, Shankar EM, Kong CY, Tan HY, Ahrenstorf G, Jacobs R, Larsson M, Schmidt RE, Kamarulzaman A, Ansari AW. Negative checkpoint regulatory molecule 2B4 (CD244) upregulation is associated with invariant natural killer T cell alterations and human immunodeficiency virus disease progression. *Frontiers in Immunology* 2017, 8: 338. (Impact Factor: 5.511)

VECTOR BIOLOGY & NEUROIMMUNOLOGY

Jayalakshmi Krishnan MSc MPhil PhD (Team Lead)

Rajalakshmi (PhD Graduate)

Arpita Shukla (PhD Graduate)

Susmita Halder (MSc EPH Graduate)

Tomcy Thomas (MSc EPH Graduate)

Subash Kannan (iMSc Graduate)

Harinisri (iMSc Graduate)



Our lab research aims to provide complete sequence information of mosquitoes collected from Kumbakonam, Nagapattinam and Thiruvavur districts. Since these districts are highly susceptible to Vector Borne Diseases (VBDs) in Tamil Nadu, there is a necessity for mosquito surveillance and documentation. The faunistic studies of both vectors/non-vector mosquitoes from the chosen districts of Tamil Nadu remains a lacuna. As the chosen districts are highly proved to be endemic VBDs, it is very much essential for documentation of mosquitoes fauna with seasonal changes. The ecological succession of mosquitoes because of climate change has not been addressed in these districts as well. Further, the chosen districts are called as delta districts, as the impact usage of agriculture pesticides, in mosquito breeding has not been understood yet. With these lacuna, our lab focus to do a complete mosquito surveillance in the infected/ non-infected hamlets (both urban and rural) of chosen districts. We do bar-coding to identify genetic variations of collected mosquitoes from three districts. The collected mosquitoes are tested for insecticide resistance mechanisms as well. Also our lab has successfully completed ICMR project on vector surveillance at Lakshadweep islands. Extensive surveys were carried out in the ten inhabited islands of Lakshadweep for conducting faunistic studies on mosquitoes and to know the basic bionomics like breeding and resting preference of mosquitoes. The study islands included, Kavaratti, Agatti, Chetlat, Bitra, Amini, Kadmath, Andrott, Minicoy, Kalpeni and Kiltan.

Recent Publications

J Krishnan, L Mathiarasan. Prevalence of disease vectors in Lakshadweep Islands during post-monsoon season. *Journal of vector borne diseases* 55 (3), 189

J Krishnan. Human cerebral malaria and experimental cerebral malaria in mice: Relevance and applicability. *MOJ Biology & Medicine* 2 (1), 2

S Choi, J Krishnan, K Ruckmani. Cigarette smoke and related risk factors in neurological disorders: an update. *Biomedicine & Pharmacotherapy* 85, 79-86

CS Shah M, Anwar MA, Yesudhas D, Krishnan J. A structural insight into the negative effects of opioids in analgesia by modulating the TLR4 signaling: An in silico approach. *Scientific Reports* 6, 39271

RVR Sanyal J, Ahmed SS, Ng HK, Naiya T, Ghosh E, Banerjee TK, Lakshmi J, Guha G. Metallomic biomarkers in cerebrospinal fluid and serum in patients with Parkinson's disease in Indian population. *Scientific Reports* 18 (6), 35097

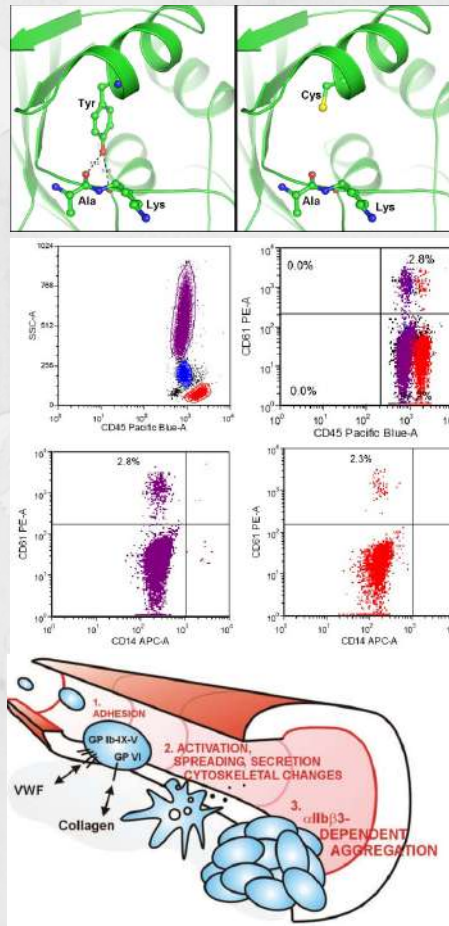
V Alexandar, PG Nayar, R Murugesan, S Shajahan, J Krishnan. A systems biology and proteomics-based approach identifies SRC and VEGFA as biomarkers in risk factor mediated coronary heart disease. *Molecular BioSystems* 12 (8), 2594-2604

BLOOD & VASCULAR BIOLOGY

Meganathan Kannan MSc PhD (Team Lead)
 Chandreswara Raju Kataru (PhD Graduate)
 Samarjit Maharana (PhD Graduate)
 S. Prabhakaran (MSc Graduate)
 Pragadheeswaran (iMSc Graduate)



Dr. Kannan's research lab focuses primarily on molecular genetics of hematological disorders. The current on-going work is on the understanding of platelet signalling mechanisms at various conditions and diseased states. The existence of alternative cell death pathway in conditions like Sickle cell anaemia and ITP is being explored currently. The other on-going research is on the molecular aspects of hematological malignancies in children with Down syndrome. Down syndrome is the most common chromosomal abnormality in children and carries a marked increased incidence of leukemia. Our aim is to achieve the early identification of occurrence of leukemia in Down syndrome, by both proteomic and genomic approach which could potentially benefit children of Down syndrome. Apart from this, the lab is intensely focusing on other relevant research areas including Hemophilia, Thrombophilia, Heparin Induced Thrombocytopenia and other hematological defects. The lab is collaborated with prestigious national institutes such as AIIMS-New Delhi, PGIMER-Chandigarh and IIT-Madras and internationally with Loyola University Medical Center, Chicago, USA and University Medical Center Hamburg, Germany and supported by various national funding agencies such as UGC, DST and DBT, Govt. of India.



Recent Publications

Kannan M, Ahmad F, Saxena R. (2019) Platelet activation markers in evaluation of thrombotic risk factors in various clinical settings. *Blood Reviews* (In process) [Impact Factor: 6.60]

Ahmad F*, Kannan M*, Obser T, Budde U, Schneppenheim S, Saxena R, Schneppenheim R. (2019) Characterization of VWF gene conversions causing von Willebrand disease. *Br J Haematol.* 184(5):817-825. [*Equal first author] [Impact Factor: 5.128]

Barathan M, Mohamed R, Yong YK, Kannan M, Vadivelu J, Saeidi A, Larsson M, Shankar EM. (2018) Viral persistence and chronicity in hepatitis C virus infection: Role of T-cell apoptosis, senescence and exhaustion. *Cells* 7(10):165. [Impact Factor: 4.829]

Kannan M, Saxena R (2017). No genetic abnormalities identified in $\alpha 211b$ and $\beta 3$: Phenotype overcomes genotype in Glanzmann thrombasthenia. *International Journal of Laboratory Hematology* 39(2):41-44. [Impact Factor: 1919]

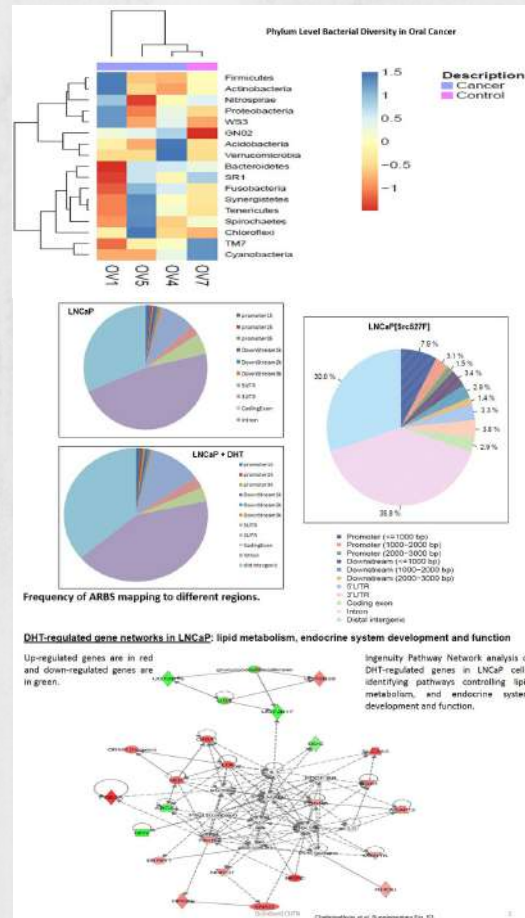
Ahmad F, Jan R, Kannan M, Obser T, Hassan MI, Oyen F, Budde U, Saxena R, Schneppenheim R. (2013) Characterisation of mutations and molecular studies of type 2 von Willebrand disease. *Thromb Haemost.* 109(1):39-46. [Impact Factor: 4.952]

MOLECULAR CANCER BIOLOGY

Indranil Chattopadhyay, MSc, PhD (Team Lead)
Madhusmita Panda (PhD Graduate)



Dr. Indranil's Laboratory is presently involved in the investigation of microbiome profiling in the saliva of control, premalignant (leukoplakia, erythroplakia, erythro-leukoplakia) and oral squamous cell carcinoma (OSCC) patients to identify the signatures of microbiomes in the progression of tobacco and betel quid-associated OSCC by sequencing 16s rDNA hypervariable region amplicons by Next Generation Sequencing platform and validate bacterial species in large cohort by Real-Time PCR. He is also involved in interrogating over 850,000 methylation sites quantitatively across the genome at a single-nucleotide resolution to identify potentially methylated CpG sites. His team aims at Genome-wide methylation studies to identify CpG markers conferring the risk for oral cancer. His laboratory is mainly involved in the identification of non-invasive biomarkers that drive metastatic progression of solid tumors by using next-generation sequencing technologies. His other area of research aims to focus on the efficacy of natural epigenetic modulators in the treatment of solid tumors.



Recent Publications

Chattopadhyay I, Wang J, Qin M, Gao L, Holtz R, Vessella RL, Leach RW, Gelman IH. Src promotes castration-recurrent prostate cancer through androgen receptor-dependent canonical and non-canonical transcriptional signatures. *Oncotarget*. 2017; 8(6):10324-47.

Baba AB, Nivetha R, Chattopadhyay I, Nagini S. Blueberry and malvidin inhibit cell cycle progression and induce mitochondrial-mediated apoptosis by abrogating the JAK/STAT-3 signalling pathway. *Food Chem Toxicol*. 2017;109(Pt. 1):534-43.

Siddavaram Nagini, Kranthi K, Kishore T, Indranil Chattopadhyay. NF-κB Inhibitors in Head and Neck Cancer. *Letters in Drug Design & Discovery*, 2017, 14(5): 619-33.

Chattopadhyay I. Application of radiogenomics in radiation oncology. *J Radiat Cancer Res* 2017; 8:74-6.

Singh V, Singh LC, Vasudevan M, Chattopadhyay I, Borthakar BB, Rai AK, Phukan RK, Sharma J, Mahanta J, Katakki AC, Kapur S, Saxena S. Esophageal Cancer Epigenomics and Integrome Analysis of Genome-Wide Methylation and Expression in High Risk Northeast Indian Population. *OMICS*; 2015: 19(11):688-99.

Sharma A, Pandey A, Sharma S, Chatterjee I, Mehrotra R, Sehgal A, Sharma JK. Genetic polymorphism of glutathione S-transferase P1 (GSTP1) in Delhi population and comparison with other global populations. *Meta Gene*; 2014: 20: 2:134-42.

PLANT MOLECULAR STRESS PHYSIOLOGY

Dinakar Challabathula MSc PhD (Team Lead)

Akhil M (PhD Graduate)

Benedict Analin A (PhD Graduate)

Zarin Taj Z (PhD Graduate)



The research group is interested in understanding the molecular basis of stress tolerance in higher plants. Our studies are focused on deciphering the role of mitochondrial oxidative electron transport in maintaining the redox homeostasis during abiotic stress conditions, understanding the molecular mechanisms of desiccation tolerance in resurrection plants and assessing plant-microbe interactions during abiotic stress conditions.

Ongoing Research

1. Understanding the role of trehalose in desiccation tolerance of resurrection plants.
2. Importance of mitochondrial oxidative electron transport in maintenance of cellular homeostasis during drought and salinity stress in plants.
3. Assessment on the role of plant-microbe interaction in salt affected soils.

Research Collaborations:

International

Prof. Dorothea Bartels, Institute of Molecular Physiology & Biotechnology of Plants (IMBIO), University of Bonn, Germany.
Dr. Charles Melnyk, Swedish University of Agricultural Sciences, Uppsala, Sweden.

National

Prof. A. S. Raghavendra, Department of Plant Sciences, University of Hyderabad.
Prof. K.P.M.S.V. Padmasree, Department of Biotechnology, University of Hyderabad.
Prof. M. Rajkumar, Department of Environmental Science, Bharathiar University, Coimbatore.
Dr. Jos Puthur, Department of Botany, Plant Physiology & Biochemistry Division, University of Calicut, Kerala.

Recent Publications

Liu X, Challabathula D, Quan W, Bartels D (2018) Transcriptional and metabolic changes in the desiccation tolerant plant *Craterostigma plantagineum* during recurrent exposures to dehydration. *Planta* doi: 10.1007/s00425-018-3058-8. [Epub ahead of print]. [Impact factor: 3.249].

Challabathula D, Jos T. Puthur, Bartels D (2016) Surviving metabolic arrest: Photosynthesis during desiccation and rehydration in resurrection plants. *Annals of the New York Academy of Sciences*, 1365: 89-99. [Impact factor: 4.277].

Dinakar C, Abhaypratap Vishwakarma, Agepati Raghavendra, Kollipara Padmasree (2016) Alternative oxidase pathway optimize photosynthesis during osmotic and temperature stress by regulating cellular ROS through redox couples of malate valve and antioxidative system. *Frontiers in Plant Science*, 7: 1-17. [Impact factor: 3.677]

VanBuren R, Bryant D, Edger P P, Tang H, Burgess D, Challabathula D, Spittle K, Hall R, Gu J, Lyons E, Freeling M, Bartels D, Hallers BT, Hastie A, Michael TP, Mockler TC (2015) Single molecule sequencing of the desiccation tolerant grass *Oropetium thomaeum*. *Nature*, 527: 508-511. [Impact factor: 41.577]

Giarola V, Challabathula D, Bartels D (2015) Quantification of expression of dehydrin isoforms in the desiccation tolerant plant *Craterostigma plantagineum* using specifically designed reference genes. *Plant Science* 236: 103-115. Equal first authors. [Impact factor: 3.712]

MOLECULAR NEUROSCIENCES

Latchoumycandane Calivarathan MSc PhD (Team Lead)



Dr. Latchoumycandane's Laboratory currently focuses on the mechanism of neuroinflammation and neurodegeneration in Parkinson's disease using in vitro and in vivo models. His lab is trying to identify the source of free radicals that causes truncation of membrane phospholipids and the formation of Platelet-activating Factor, both are considered to be crucial for inflammation and apoptotic cell death.

Ongoing Research

1. Elucidating the molecular mechanism of neuroinflammation and neurodegeneration in Parkinson's disease.
2. Identifying the early biomarkers for acute kidney injury and renal fibrosis in collaboration with Dr. Thomas M. McIntyre, Lerner Research Institute, Cleveland Clinic, USA.
3. Endocrine Disruptors and Male Reproductive health in collaboration with Prof. P.P. Mathur, Department of Biochemistry & Molecular Biology, Pondicherry University.

Recent Publications

Latchoumycandane C, Nagy LE., McIntyre TM. Myeloperoxidase formation of PAF Receptor ligands induces PAF receptor-dependent kidney injury during ethanol consumption. *Free Radic Biol Med* (2015) 86: 179-190. (Impact Factor 5.73).

Latchoumycandane C, Nagy LE., McIntyre TM. Chronic ethanol ingestion induces oxidative kidney injury through taurine-inhibitable inflammation. *Free Radic Biol Med* (2014) 69: 403-416. (Impact Factor 5.73).

Latchoumycandane C, Marathe GK, Zhang R, McIntyre TM. Oxidatively-truncated phospholipids are required agents of tumor necrosis factor α (TNF α)-induced apoptosis. *J Biol Chem* (2012) 287 (21): 17693-705. (Impact Factor 4.01).

Latchoumycandane C, Anantharam V, Jin H., Kanthasamy A, Kanthasamy AG. Dopaminergic neurotoxicant 6-OHDA induces oxidative damage through proteolytic activation of PKC δ in cell culture and animal models of Parkinson's disease. *Toxicol Appl Pharmacol* (2011) 256 (3): 314-323. (Impact Factor 3.70).

Latchoumycandane C, Goh CW., Ong MMK, Boelsterli UA. Mitochondrial protection by the JNK inhibitor leflunomide rescues mice from acetaminophen-induced liver injury. *Hepatology* (2007) 45 (2): 412-421. (Impact Factor 14.07).



RESEARCH INFRASTRUCTURE

Under the umbrella of the School of Life Sciences, the department owns several high-end equipment housed within a Central Instrumentation Facility established in 2019 onwards for use to churn-out outputs by all the research teams of DLS. The department currently owns the following equipment:

Autoclaves (Vertical)
 Bacteriological Incubators
 Bacteriology Culture
 BD BACTEC Blood Culture System
 BD FACScanto II Immunocytometry System
 Bioinformatics & Computational Biology Facility
 Biopac Physiological Measurement System
 Bioplex-Luminex Multiplex Array (BioRad)
 Biosafety Cabinets
 Binocular Microscope
 Cell Culture Facility

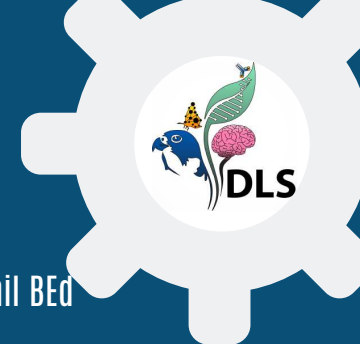
Centrifuge (REMI)
 Centrifuge (MICRO)
 Clean Rooms (MarkAir)
 Cold Room (MarkAir)
 Cooling Centrifuge (REMI)
 CO2 Incubators (Eppendorf)
 Deep Freezer (-20oC)
 Dissection Microscopes
 Droplet Digital PCR System (BioRad)
 Flame Photometer
 Fluorescence Microscope (Nikon)
 Fumehoods
 Gel Documentation with Chemi-Doc Imaging System
 Glucometers
 BioRad Electrophoresis Systems
 Icematic Ice Flaker
 INCUBATOR Galaxy model
 Laminar flow (Horizontal)
 Master Cycler Nexus Gradient PCR
 Micropipettes & Multichannel Pipettes (Eppendorf)
 Microplate Reader (Bio-Rad)
 Mosquito Larvae Culture Facility
 Phase Contrast Microscope (Nikon)
 PH Meters
 Photosynthesis Unit with Fluorescence & Oxygen System
 Plant Growth Chamber
 Platelet Aggregometer UV-VIS Spectrophotometer
 Refrigerated Centrifuges
 Sphygmomanometers
 Stethoscopes
 Transilluminators
 Trinocular Inverted Microscope
 Trinocular Stereo Zoom (Parallel Optics Zoom) System with Epifluorescence
 Vaccum Pump
 Ultra Deep (-80oC) Freezers (Upright Model)
 Ultrapurification System

STAFF

Mr. Nehru Raja MSc MPhil BEd
 Laboratory Attendant

Ms. Latha
 Laboratory Attendant

Mr. T Muruganantham
 Office Assistant





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Research Infrastructure

STATE-OF-THE ART

*The Department of Life Sciences provides
an ambience for her scholars to conduct
high quality research*

The world has become highly competitive, and your ward will have to prepare very well to soar up in the sky with confidence! DLS offers to provide your ward with the latest technology for her/his research & training..



DROPLET DIGITAL PCR



FLORESCENCE MICROSCOPY



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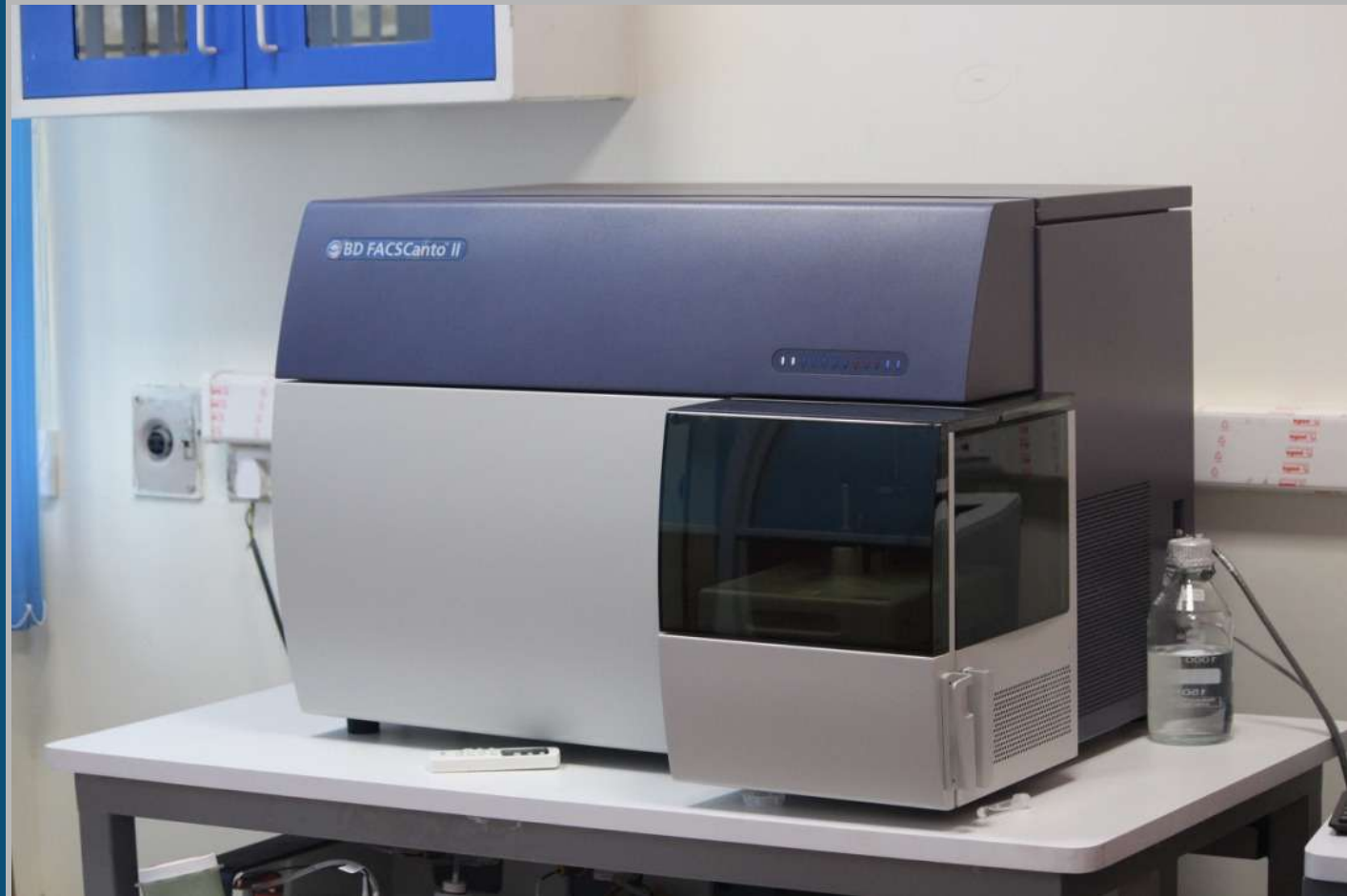


BIOPLEX LUMINEX

Cytokine Assay System



The Benchmark of
Knowledge & Excellence
in Life Sciences



BD FACS CANTO II

Immunocytometry System



The Benchmark of
Knowledge & Excellence
in Life Sciences



DEEP FREEZERS

Cryopreservation Facility



The Benchmark of
Knowledge & Excellence
in Life Sciences



MILLIPORE WATER

Millipore Water for Reagent Preparations



The Benchmark of
Knowledge & Excellence
in Life Sciences



BLOOD CULTURE SYSTEM



Blood Microbial Rapid Identification System



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RECENT TRENDS IN BIOLOGI
07-03-2018 - 08-03-2018
Wednesday & Thursday
Guest House Conference
Central University of Tamil Nadu

WE CARE LIKE YOU DO!

Department of Life Sciences conducts parent-teachers meeting every semester

Our thoughts are always on your ward's upliftment. We conduct PTM every semester and discuss with you on her/his progress. We instill confidence and swear to confer career guidance throughout..



EXPOSURE TO EXPERTS!

Department of Life Sciences conducts periodic Science Cafe Lectures by experts in the field

Experts from both the international and national scenario are invited regularly and lectures, and career guidance opportunities are provided to ensure that your ward is on the right track to success..



Contact

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