NOTICE

NOTICE IS HEREBY GIVEN TO THE MEMBERS OF VISION RESEARCH FOUNDATION THAT THE 37TH ANNUAL GENERAL MEETING OF VISION RESEARCH FOUNDATION WILL BE HELD ON SATURDAY, THE 25TH SEPTEMBER 2021 AT 12.00 NOON. THE AGENDA FOR THE MEETING IS GIVEN BELOW. THE MEETING WILL BE HELD ONLINE DUE TO THE PREVAILING COVID PANDEMIC.

AGENDA

1. To consider and adopt the Annual Report of the Hon. Secretary for the year 2020-21.

2. To consider and adopt the Audited Income and Expenditure Account for the year ended March 31, 2021 and the Balance Sheet as at that date together with the Report of the Auditors thereon.

3. To appoint statutory auditors for the financial year 2021-22 and to fix their remuneration.

4. To appoint the following Members to the Board of Management in the vacancies caused by their retirement, who are eligible for re-appointment:

<table>
<thead>
<tr>
<th>Name</th>
<th>Category of Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Ronnie Jacob George</td>
<td>Honorary Member</td>
</tr>
<tr>
<td>Shri. Homi C H Bhabha</td>
<td>Donor Member</td>
</tr>
</tbody>
</table>

Kindly make it convenient to attend the meeting.

DR S BHASKARAN
HON. SECRETARY

Note:

Explanatory statement for Item 4 of the Agenda is attached.
Explanatory Statement

Refer Item No 4 of the Agenda

Dr. Ronnie Jacob George was appointed to the Board of Management for a period of three years at the Extra-ordinary General Meeting held on 24th August 2018 and Shri. Homi C H Bhabha at the 34th Annual General Meeting held on 24th September 2018.

Their term of appointment expires at the end of the Annual General Meeting on 25th September 2021. As per 16(xiv) of the Bye-laws of the Foundation read with Section 15 (5) of the Tamil Nadu Societies Registration Act 1975, they are eligible for reappointment to the Board of Management.
VISION RESEARCH FOUNDATION

BOARD OF MANAGEMENT

Dr Ronnie Jacob George  President
Dr S Bhaskaran  Honorary Secretary

Members of the Board

Dr J Biswas  Member
Mr Homi C H Bhabha  Member
Dr H N Madhavan  Member
Mr R Rajagopal  Member
Dr T S Surendran  Member
Dr S Suresh  Member
Mr V Vaidyanathan  Member
Dr L Vijaya  Member

Director – Research  Dr. Ronnie Jacob George
Deputy Director – Research  Dr. S Krishnakumar
Manager  Mr. S Narayan

Auditors  M/s S Viswanathan LLP
Chartered Accountants, Chennai

Bankers  HDFC Bank, Chennai – 600 034
Indian Overseas Bank, Chennai – 600 006
State Bank of India, Chennai – 600 034
State Bank of India, New Delhi.

Registered Office  New No.41, Old No.18, College Road
Chennai – 600 006
INSTITUTIONAL REVIEW BOARD (ETHICS COMMITTEE) MEMBERS

Prof. H N Madhavan  
Dr. Bakulesh M. Khamar  
Dr. Manjula Dutta  
Dr. Ronnie Jacob George  
Dr. S Krishnakumar  
Dr. T S Surendran  
Prof. N Vizheenathan  
Mrs. Radhika Krishnan  
Lion G V Raman  
Dr. Rama Shankar Verma  
Mrs. Sujatha Viswanath  
Mrs. Nalini Ravindran

RESEARCH SUB-COMMITTEE MEMBERS

Dr. Ronnie Jacob George  
Dr. J. Biswas  
Dr. S Krishnakumar  
Prof. H N Madhavan  
Dr. Rama Shankar Verma

RESEARCH CELL COMMITTEE MEMBERS

Dr. Ronnie Jacob George  
Dr. H N Madhavan  
Dr. L Vijaya  
Dr. S Krishnakumar  
Dr. Sumita Agarkar  
Dr. J Biswas  
Dr. R R Sudhir  
Dr. Vikas Khetan  
Dr. Prema Padmanabhan  
Dr. N Angayarkanni
VISION RESEARCH FOUNDATION

INSTITUTIONAL COMMITTEE FOR STEM CELL RESEARCH

Prof. Dr. Rama Shankar Verma
Dr. H.N. Madhavan
Mrs. Radhika Krishnan
Dr. S Arumugam
Prof. N. Veezhinathan
Dr. Ronnie Jacob George
Dr. Rama Rajaram
Dr. Rosy Vennila
Dr. Bakulesh M Khamar

INSTITUTIONAL BIOLOGICAL SAFETY COMMITTEE

Dr. H.N. Madhavan
Dr. M Natarajan
Mr. S Narayan
Dr. S Krishnakumar
Report of the Honorary Secretary to the Members of the Foundation

It gives me great pleasure to welcome you all to this 37th Annual General Meeting of our Foundation. I am pleased to present the Thirty Seventh Annual Report of Vision Research Foundation. The thirty sixth Annual General Meeting of the Foundation was held on 30th December 2020 in which the Annual Report and the Audited Accounts of the Foundation for the financial year ended 31st March 2020 were approved by the members and M/s. S Viswanathan LLP, Chartered Accountants, were re-appointed as Auditors for the financial year 2020-21.

The donations received during the year under report were Rs.147.07 lakhs as compared to Rs. 184.37 lakhs in the previous year. The gross total income for the year under review was Rs.570.00 lakhs including research grants and interest on deposits. The total expenditure before providing depreciation was Rs.743.30 lakhs resulting in a cash deficit of Rs.173.30 lakhs. After considering depreciation for the year and loss on discarded assets, there was a net deficit of Rs.291.26 lakhs, which was carried over to the capital fund account. The non-recurring grant of Rs.12.40 lakhs received from Government Funding Agencies was accounted under capital fund account.

Summary of Source and applications are as follows:

<table>
<thead>
<tr>
<th>Sources</th>
<th>Rs. in Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Grant for Equipment</td>
<td>11.87</td>
</tr>
<tr>
<td>2. Decrease in Net Current Assets</td>
<td>222.53</td>
</tr>
<tr>
<td>3. Increase in Non-current Liabilities</td>
<td>9.31</td>
</tr>
<tr>
<td></td>
<td><strong>243.71</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applications of Funds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increase in Fixed Assets</td>
<td>7.72</td>
</tr>
<tr>
<td>2. Decrease in Net Current Liabilities</td>
<td>62.69</td>
</tr>
<tr>
<td>3. Cash Deficit</td>
<td>173.30</td>
</tr>
<tr>
<td></td>
<td><strong>243.71</strong></td>
</tr>
</tbody>
</table>
The foundation has received a sum of Rs.358.21 lakhs as research grants, during the year under review as per the details given below:

**Rs. in Lakhs**

<table>
<thead>
<tr>
<th>Research Grants – Basic Science</th>
<th>2020-21</th>
<th>2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Council of Science &amp; Industrial Research</td>
<td>4.86</td>
<td>12.42</td>
</tr>
<tr>
<td>2. Indian Council of Medical Research</td>
<td>86.48</td>
<td>103.58</td>
</tr>
<tr>
<td>3. Department of Biotechnology</td>
<td>67.02</td>
<td>247.10</td>
</tr>
<tr>
<td>4. Department of Science &amp; Technology</td>
<td>14.89</td>
<td>38.76</td>
</tr>
<tr>
<td>5. Fellowship Programme</td>
<td>106.31</td>
<td>98.02</td>
</tr>
<tr>
<td>6. NHS Foundational Trust</td>
<td>48.28</td>
<td>58.67</td>
</tr>
<tr>
<td>7. Indian Institute of Technology</td>
<td>0.71</td>
<td>3.07</td>
</tr>
<tr>
<td>8. Medgenome Labs Ltd</td>
<td>3.49</td>
<td>.00</td>
</tr>
<tr>
<td>9. The Glaucoma Foundation</td>
<td>6.51</td>
<td>22.42</td>
</tr>
<tr>
<td>10. Others [incl. Conference Receipts]</td>
<td>7.26</td>
<td>34.77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>345.81</strong></td>
<td><strong>618.81</strong></td>
</tr>
</tbody>
</table>

**Clinical Science**

<table>
<thead>
<tr>
<th></th>
<th>2020-21</th>
<th>2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Excel Life Sciences Pvt. Ltd.</td>
<td>1.26</td>
<td>3.15</td>
</tr>
<tr>
<td>12. Microsoft India (R &amp; D) Pvt Ltd.</td>
<td>4.47</td>
<td>7.16</td>
</tr>
<tr>
<td>13. Parexel Intl. Clinical Research Pvt Ltd</td>
<td>0.04</td>
<td>12.30</td>
</tr>
<tr>
<td>14. Others</td>
<td>6.63</td>
<td>7.25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12.40</strong></td>
<td><strong>29.86</strong></td>
</tr>
</tbody>
</table>

**Grand Total**

<table>
<thead>
<tr>
<th></th>
<th>2020-21</th>
<th>2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>358.21</strong></td>
<td><strong>648.67</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Research Activities:**

Research activities during the financial year were satisfying. A number of projects were submitted to the Indian Council of Medical Research, Department of Science and Technology and Department of Biotechnology.

The projects which were under consideration by the Govt. agencies as on date are as under:
<table>
<thead>
<tr>
<th>Title of the Project</th>
<th>Funding Agency</th>
<th>Grant Amount for 2021-22 (Value in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A study on the DNA methylation pattern of the ocular quantitative trait loci genes</td>
<td>Indian Council of Medical Research</td>
<td>20,20,118/-</td>
</tr>
<tr>
<td>in primary open angle glaucoma. [Dr. S Sripriya]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does Hyperglycemia Alter Copper Homeostasis in Diabetic Retinopathy [Dr. S R Bharathi</td>
<td>Department of Biotechnology</td>
<td>11,46,000/-</td>
</tr>
<tr>
<td>Devi]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To delineate the role of Zinc alpha 2 glycoprotein as a novel target in diabetic</td>
<td>Indian Council of Medical Research</td>
<td>11,60,800/-</td>
</tr>
<tr>
<td>retinopathy [Dr. S R Bharathi Devi]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artificial Intelligence for Affordable Screening and Prediction of Diabetic</td>
<td>Department of Biotechnology</td>
<td>71,37,420/-</td>
</tr>
<tr>
<td>Retinopathy in the Framework of Big Data [Dr. Rajiv Raman]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Due to the Covid 19 pandemic situation from end March 2020 to mid-September 2020, meetings of the Board of Management and Institutional Review Board (Ethics Committee)/Research Sub-Committee were conducted virtually/through circulation.

**Manpower Details:-**

<table>
<thead>
<tr>
<th>Manpower</th>
<th>As on 31st Mar 2021</th>
<th>As on 31st Mar 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deputy Director / Head of the Dept /</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chief Scientist / Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head of the Dept / Chief Scientist /</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Senior Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head of the Department / Chief Scientist</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Senior Principal Scientist / Associate</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principal Scientist / Associate Professor</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Principal Scientist / Assistant Professor</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Senior Scientist II / Assistant Professor</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Senior Research Scientist</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Post Doc. Fellow / Research Associate 5 7
Project Manager / Project Coordinator 1 2
Research Fellows 2 3
Senior Research Fellows 11 16
Junior Research Fellows 10 12
Social Workers / Field Workers 3 4
Research / Project / Technical Asst 6 5
Junior Scientist 2 2
Research Optometrist 4 4
Executives / Staff / Technicians 17 19
Bio-statistician 1 1
Part Time Scientists 49 53
Total 127 150

**Conclusion:**

I would like to take this opportunity to place on record my gratitude for all the guidance extended to me by Dr. S S Badrinath, Founder Member; Dr. Ronnie Jacob George, President & Director – Research; and Dr. S Krishnakumar, Deputy Director – Research; and all the members of the Board of Management, and members of the sub-committees of Vision Research Foundation.

I would like to mention that the achievements and awards received by the scientists, details of completed projects and ongoing projects, and the articles published in the national and international journals are given separately. Due to the Covid 19, many international/national conferences were held virtually and our scientists participated in the virtual meetings and the details are also given separately.

The eighth Patent Certificate for Vision Research Foundation has been granted to the patentee, Vision Research Foundation by the Patent office Chennai, Government of India for an invention entitled “Inhibition of Angiogenesis” on 13th November 2020. The Inventors are Dr. K. N. Sulochana, Dr. S. R. Barathi Devi & Ms. Iyer Gomathy Narayanan, Department of Biochemistry & Cell Biology.

As per the new provisions in the Foreign Contribution (Regulation) Act, 2010 (Amended), a designated FCRA Savings Account in State Bank of India, New Delhi Main Branch, New Delhi, has been opened on 25th March 2021.
My thanks are also due to the Auditors, M/s. S Viswanathan LLP particularly to their partners, Mr. Chella K Srinivasan and Mr. R M Narayanan for their active and invaluable support and our Bankers, HDFC Bank Ltd, Indian Overseas Bank and State Bank of India for their support and co-operation.

I also thank the Internal Auditors, M/s. Sundar, Ranganath & Srinivasan, Chartered Accountants, for their active support in conducting internal audit of the Foundation.

Mr. S Narayan, Manager, played an active role in managing the finance and administrative activities of the Foundation. I thank him for his help and assistance.

The Board of Management place on record their appreciation of the invaluable contribution made by the Research Scientists, Consultants, para-medics and other employees to the continued success of the institution.

Dr S Bhaskaran  
Hony. Secretary  
Vision Research Foundation
Mr. S. Muthukumaran received the PhD degree for his thesis entitled “Computational design, synthesis and validation of potential inhibitors targeting human Ornithine decarboxylase (ODC) to modulate polyamines in retinoblastoma cells” at SASTRA deemed to be university, Thanjavur on 20th July 2020 under the supervision of Dr. V. Umashankar.

Ms. Bhavna S Rao received the Ph.D. Degree for her thesis entitled “Fuchs’ endothelial corneal dystrophy – genetic analysis using whole genome sequencing, association study and candidate gene screening” at SASTRA deemed to be university, Thanjavur, on 3rd August 2020 under the supervision of Dr. N. Soumittra.

Ms. Karthikka P received the Ph.D. Degree for her thesis entitled “Functional Characterization of Adiponectin in the Molecular events preceding the onset of Diabetic Retinopathy” at SASTRA deemed to be University, Thanjavur, on 5th August 2020 under the supervision of Dr. J. Subbulakshmi.

Dr. Amit Chatterjee received the PhD for his thesis entitled “Designing and understanding of cell penetrating peptides uptake using keratoconus epithelium as a clinical model” on 28th September 2020 under the supervision of Dr. J. Narayanan.

The eighth Patent Certificate for Vision Research Foundation has been granted to the patentee, Vision Research Foundation by the Patent office Chennai, Government of India for an invention entitled “Inhibition of Angiogenesis” on 13th November 2020. The Inventors are Dr. K. N. Sulchona, Dr. S. R. Barathi Devi & Ms. Iyer Gomathy Narayanan, Department of Biochemistry & Cell Biology.

Mr. Arun John received the PhD for his thesis entitled “In silico design of peptide and chemical inhibitors targeting carbonic anhydrase IX mediated pH homeostasis in cancer cell and in vitro validation of inhibitory efficacies” at SASTRA deemed to be University, Thanjavur on 21st December 2020 under the supervision of Dr. V. Umashankar.

Dr. Ravikanth Danda, received the “Prof. S. Krishnamoorthy Endowment Award for the year 2020” for the best outgoing Ph.D. student in the 32nd Graduation Ceremony of Sankara Nethralaya held at Sri V.D.Swami Auditorium on 12th January 2021.

Ms. Ramya received Swarnalatha Punshi Best Researcher Award in Basic science for the year 2020 for her research paper entitled “RAGE silencing deters CML-AGE induced inflammation and TLR4 expression in endothelial cells” at the 32nd Graduation Ceremony of Sankara Nethralaya held at Sri V.D.Swami Auditorium on 12th January 2021.

Mr. R. N. Naresh Kumar received the Ph.D. for his thesis entitled “Molecular Mechanism of the anti-angiogenic and anti-tumorigenic potential of Lysyl oxidase propeptide” at SASTRA deemed to be University, Thanjavur on 24th March 2021 under the supervision of Dr. K. Coral Miriam.
Individual Fellowship Awards

- Dr. M.Vimalin Jeyalatha was awarded Research Associate fellowship for the project entitled, “Development of a novel serological ‘point-of-care device’ to detect AQP-4 antibodies for the differential laboratory diagnosis of neuromyelitis optica (NMO)” by Indian Council of Medical Research.

- Ms. Lakshmi B was awarded Senior Research fellowship for the project entitled, “Downstream functional analysis and validation of single nucleotide polymorphism associated with Triamcinolone-acetonide and Dexamethasone-induced ocular hypertension among Indian subjects” by Indian Council of Medical Research.

- Ms. Sruthi Priya was awarded Senior Research fellowship for the project entitled, “Delineating the importance of Neddylation, an ubiquitin-like molecule in maintenance of blood retinal barrier integrity and its function” by Indian Council of Medical Research.
International Journals:


VISION RESEARCH FOUNDATION


National Journals:


ACCEPTED FOR THE PUBLICATION:

- M Aloysius Dhivya, K N Sulochana, S R Bharathi Devi. “Copper modulates long pentraxin 3 expression in retinal pigment epithelial cells” Cellular Signalling.


VISION RESEARCH FOUNDATION

COMPLETED PROJECTS

- Validation of Diabetic retinopathy deep learning algorithm (Microsoft) by using Sankara Nethralaya Diabetic Retinopathy image data set from SNDREAMS [Dr. Rajiv Raman]

- Effect of the Metabolites Relevant to Pathogenesis of Age Related Macular Degeneration on the Phagocytic Machinery of the Retinal Pigment Epithelial cells and Screening of Therapeutic Molecules: An in vitro study. [Dr. N. Angayarkanni]

- Cracking the code of NEDD8 conjugation pathway via human antigen R (HuR) in ocular angiogenesis. [Dr. R. Sharada]

- Evaluating the effect of ocular UV exposure as a major causative factor in a risk model for pseudo-exfoliation syndrome in Indian population. [Dr. A Rashima]

- Molecular pathogenesis of HIV in T cells and endothelial cells. [Dr. A.R. Anand]

- Generation of corneal endothelial cells from induced pluripotent stem cells.[Dr. Sowmya Parameswaran]

- In silico Design and Development of novel peptide inhibitors targeting CD147 through virtual screening and bio-panning of peptide libraries and in vitro validation of anticancer efficacies. [Dr.Krishnakumar]

INDIVIDUAL FELLOWSHIP:

- A pilot study to evaluate the expression of tropoelastin intracellularly and its aggregation extracellularly to probe the disease mechanism of PXF. [Ms. Rebecca; Mentor: Dr.N.Angayarkanni]

- Virtual Screening of Natural compounds targeting Human Carbonic anhydrase IX and validation of efficacy as anti-cancer agents through biochemical and in vitro assays. [Mr. Arun John; Mentor: Dr Srujana Chitipothu]

- Design and Development of automated computational pipelines for intermolecular recognition of kinases pertaining to structure-based drug design and validation [Mr. A.Samdani; Mentor: Dr. Srujana Chitipothu]

- To delineate the functional role of paraoxonase 2 in regulating angiogenesis. [Ms.Ramya Ravi; Mentor: Dr.S.R.Bharathi Devi]
ONGOING PROJECTS

- Protocol No. ILJ466-P005, Study Title: Post-Market Clinical Study of the Clareon® AutonoMe™ with Indian Population [Dr Prema Padmanabhan]
- Development of Cell based systematic evolution of ligands by exponential enrichment (cell-SELEX) for Retinoblastoma. [Dr. S. Krishnakumar]
- Nuclease resistant aptamer-nanoparticle conjugate against B7-H3 as targeted therapy and imaging in retinoblastoma. [Dr. S. Krishnakumar]
- Biological Investigation and Degradation Behaviour of Bioglass based artificial cornea material. [Dr. Krishnakumar S]
- Fluorescent Nanoprobes for Squamous cell carcinoma. A step towards developing a rapid tool for Margin clearance. [Dr. Krishnakumar S]
- RCUK SIVS1033: Increasing eye research capacity and capabilities to tackle the burden of blindness in India: a research-based UK-India Collaboration [Dr Rajiv Raman]
  - WP1: SMART INDIA (Statistical Modelling and Risk Assessment of Type 2 diabetes complications in India) study. [Principal Investigator: Dr. Rajiv Raman]
  - WP3: Prospective multicentre discovery and validation of diagnostic circulating biomarkers to detect sight threatening diabetic retinopathy [Principal Investigator: Dr. S. Krishnakumar]
- Ocular Biological Senescence evaluation and science study (OBSESS) [Dr. Nivedita Chattarjee]
- Controlling immunosuppressive properties of T regulatory cells with retinal glia: implications for tubercular uveitis [Dr. Nivedita Chattarjee]
- Genome wide Transcriptome profiling of Human Retinal Cells under diabetic milieu under the context of Egr-1 expression towards deciphering alternative pathways mediating Retinal Angiogenesis. [Dr. R. Sharada]
- Impact of Ultra-Violet Radiation and Air Pollution on Ocular Health with Emphasis on Cataract and Pterygium among outdoor workers. [Dr. R. Sharada]
- Evaluation of novel cell penetrating peptide inhibitors targeting Neuronal Protein 3.1 (P311) in ocular fibrosis using 3D model of Tenon’ capsule fibroblasts. [Dr. R.Sharada]
- Epitranscriptomics of N6-methyl adenosine (m6A) occupied mRNAs in hypoxia-induced retinal endothelial cells: Implications in intraocular vascular diseases [Dr. R.Sharada]
VISION RESEARCH FOUNDATION

- Biomechanical effect of Chemotherapeutic drugs on retinoblastoma tumor cells [Dr. J. Narayanan]
- Smart Polycaprolactone (PCL) Peptide Composite nanofibres for sustained release of 5 Fluoro uracil to modulate wound healing in glaucoma surgery. [Dr. J. Narayanan]
- Proteomics and Phosphoproteomics of FUCHS Endothelial Cells. [Dr. Sailaja Elchuri]
- Unravelling the genetic architecture of diabetic retinopathy in the South Indian population. [Dr. S. Mathavan]
- Discovery of Potential microRNA biomarkers for Macular disease. [Dr. S. Mathavan]
- Identify of miRNA biomarkers between anti-VEGF responders and non-responders of PDR and diabetes without DR (no DR). [Dr. S. Mathavan]
- In search of the causative genetic/molecular events in Bardet Biedl syndrome patients excluded for mutations in candidate genes. [Dr. S. Sripriya]
- A novel molecular screening approach for clinical and molecular characterisation of Usher syndrome patients in India [Dr. S. Sripriya]
- Mitochondrial genome landscape analysis in an Indian cohort of Lebers Hereditary Optic Neuropathy (LHON) patients negative to primary mutation (G3460A, G11778A, T14484C). [Dr. S. Srilekha]
- Mesenchymal Stem cell mitochondrial transfer effectively protects mutant Leber’s Hereditary Optic Neuropathy (LHON) cells from mitochondrial damage: Molecular and epigenetic screening of LHON patients [Dr. Mohanadevi Subramaniam]
- Analysis of protective effect of Mesenchymal Stem Cell mitochondrial transfer on mutant Leber’s Hereditary Optic Neuropathy (LHON) cells from mitochondrial damage [Dr. Mohanadevi Subramaniam]
- Screening of mitochondrial transfer and epigenetic markers in Leber hereditary optic neuropathy (LHON) cells for its protective effect from mitochondrial dysfunction. [Dr. Mohanadevi Subramaniam]
- RNA guided Nucleases targeted genome editing for retinitis Pigmentosa. [Dr. Sowmya Parameswaran]
- Generation of corneal endothelial cells from induced pluripotent stem cells. [Dr. Sowmya Parameswaran]
- Injectable self-assembled bruch’s membrane mimetic nanofibers for retinal pigment epithelium. [Dr. Sowmya Parameswaran]
- Generation of oligodendrocytes from induced pluripotent stem cells: A step towards cell-based therapy for demyelinating diseases. [Dr. Sowmya Parameswaran]

- Rational Design of novel peptide inhibitors targeting DNA-Topoisomerase-II-Beta through virtual screening of combinatorial peptide libraries and in vitro validation of anticancer efficacies. [Dr. Srujana Chitipothu]

**Individual Fellowship:**

- Clinical phenotype guided selection and screening of candidate genes in Leber Congenital Amaurosis patients and Genetic Analysis of X-Linked Recessive Retinitis Pigmentosa families from India. [Dr. S Srilekha; Mentor: Dr. S. Sripriya]

- Longitudinal assessment of retinal structural and functional changes in individuals with diabetes, with and without diabetic retinopathy. Wellcome Trust/DBT Early Career Fellowship [Dr Sangeetha Srinivasan; Supervisor: Dr Muna Bhende]

- Development of Myelin oligodendrocyte glycoprotein (MOG) cell-based assay for the detection of antibodies against MOG for differential laboratory diagnosis of optic neuritis. [Dr. P. Durgadevi; Mentor: Dr. K. Lily Therese]

- A study on genetic regulatory region in DIO3 gene for possible correlation with varying clinical severity in LCA patients. [Dr. N N Srikrupa; Mentor: Dr. S. Sripriya]

- Development of a novel serological "point-of-care device" to detect AQP-4 antibodies for the differential laboratory diagnosis of neuromyelitis optica (NMO). [Dr. M. Vimalin Jeyalatha; Mentor: Dr. K. Lily Therese]

- Investigator inflammatory machinery in glia and the role of miRNA on exposure to HIV Tat protein. [Mr. D Durairaj; Mentor: Dr. Nivedita Chattarjee]

- To delineate the role of copper in mediating inflammation in diabetic retinopathy. [Ms. Aloysius Dhivya M; Mentor: Dr. S. R. Bharathi Devi]

- Deciphering if impaired autophagy and mitochondrial dysfunction contribute to ECM modifications in primary glaucoma. [Ms. Nikhala Shree S; Mentor: Dr. S. R. Bharathi Devi]

- Delineating the importance of Neddylation, an ubiquitin-like molecule in maintenance of blood retinal barrier integrity and its function. [Ms. Sruthi Priya Mentor: Dr. R. Sharada]

- Profiling the promoter methylation status of the candidate genes for ocular quantitative traits in primary glaucoma patients. [Ms. Sukanya K; Mentor: Dr. S. Sripriya]

- Downstream functional analysis and validation of single nucleotide polymorphism associated with Triamcinolone-acetonide and Dexamethasone-induced ocular hypertension among Indian subjects. [Ms. Lakshmi B; Mentor: Dr. Srujana Chitipothu]
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- Modeling cancers associated with RB1 mutation using human induced pluripotent stem cells [Ms. Ambily Vincent; Mentor: Dr. Sowmya Parameswaran]

- Molecular and epigenetic screening of Leber's Hereditary Optic Neuropathy (LHON) [Ms. Aswathy P Nair; Mentor: Dr. S Mohana Devi]

- Studying HIV Mediated Changes at Blood Retinal Barrier on an in vitro Model [Ms. Kamini Khatak; Mentor: Dr. Nivedita Chattarjee]

- In silico conformational analysis and design of inhibitors targeting LIM kinases in cancer” [Ms. Hemavathy N; Mentor – Dr. Srujana Chitipothu & Dr. J. Jeyakanthan Alagappa University]
PARTICIPATION IN CONFERENCES

- Dr. J. Narayanan attended the International Webinar on Advances in Physics, Chemistry, Mathematics, Computer Sciences & Biological Sciences (CONIAPS XXVI) organized by Mahatma Gandhi University, Kottayam, Kerala on 20th December 2020. He delivered an invited talk on “Targeted therapy for retinoblastoma tumor cells”, and he chaired a session, “Recent advances in materials and its application”.

- Dr. S. Srilekha participated in the ARVO 2021 Annual Meeting (Virtual) from May 1st to 7th 2021. She made a poster presentation entitled “Complete mitochondrial genome sequencing in individuals with Leber hereditary optic neuropathy negative for the common pathogenic mitochondrial DNA mutations”.

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DISTINGUISHED VISITORS

- Dr. B.Aarthy and Dr. Raju Sivasamy from SIMS Hospital visited our Molecular Biology lab facility on 21st July 2020.
- Dr. S Prabakaran and Dr. Robert Sam from CSIR-CSIO, CSIR Madras complex, Chennai, visited our Microbiology lab on 9th October 2020 for potential collaboration.
- Dr. K. Ramadevi, Professor of Biochemistry, Director, Institute of Biochemistry, Madras Medical College & Dr. Pramila, Biochemistry Dept, Institute of Child Health and Hospital for Children, Chennai, visited the Biochemistry department on 6th January 2021.
- Dr. Purohit Abhishek from Indore visited our Biochemistry laboratory on 17th March 2021.