

VISION RESEARCH FOUNDATION

New No.41 (Old No.18), COLLEGE ROAD, CHENNAI – 600 006



**ANNUAL REPORT & AUDITED ACCOUNTS
2018 – 19**



VISION RESEARCH FOUNDATION

August 22, 2019

The Members of the Vision Research Foundation

NOTICE

NOTICE IS HEREBY GIVEN TO THE MEMBERS OF VISION RESEARCH FOUNDATION THAT THE 35TH ANNUAL GENERAL MEETING OF VISION RESEARCH FOUNDATION WILL BE HELD ON SATURDAY, THE 14TH SEPTEMBER 2019 AT 4.30 P.M. AT THE VRF BOARD ROOM IN THE 2ND FLOOR OF KAMALNAYAN BAJAJ RESEARCH CENTRE, VISION RESEARCH FOUNDATION, NO.41/18, COLLEGE ROAD, CHENNAI – 600 006. THE AGENDA FOR THE MEETING IS GIVEN BELOW:

AGENDA

1. To consider and adopt the Annual Report of the Hon. Secretary for the year 2018-19.
2. To consider and adopt the Audited Income and Expenditure Account for the year ended March 31, 2019 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 2019–20 and to fix their remuneration.
4. To appoint the following Member to the Board of Management in the vacancy caused by his retirement, who is eligible for re-appointment:

Name	Category of Membership
Dr. T S Surendran	Honorary Member

Kindly make it convenient to attend the meeting.

**DR S BHASKARAN
HONY. SECRETARY**

Note:

Explanatory statement for Item 4 of the Agenda is attached.



VISION RESEARCH FOUNDATION

Explanatory Statement

Refer Item No 4 of the Agenda

The following member was appointed to the Board of Management for a period of three years at the 32nd Annual General Meeting held on 24th September 2016 :-

Name

Dr. T S Surendran

His term of appointment expires at the end of the Annual General Meeting on 14th September 2019. As per 16(xiv) of the Bye-laws of the Foundation read with Section 15 (5) of the Tamil Nadu Societies Registration Act 1975, he is eligible for reappointment to the Board of Management.



VISION RESEARCH FOUNDATION

BOARD OF MANAGEMENT

Dr Ronnie Jacob George	President
Dr S Bhaskaran	Honorary Secretary
Mr R S Falor	Honorary Treasurer

Members of the Board

Dr S S Badrinath	Member
Dr J Biswas	Member
Mr Homi C H Bhabha	Member
Dr H N Madhavan	Member
Dr Lingam Gopal	Member
Dr T S Surendran	Member
Dr M S Swaminathan	Member
Mr V Vaidyanathan	Member
Dr S B Vasanthi	Member
Dr L Vijaya	Member

Chief Operating Officer	Dr. K. S. Vasan
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
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Bankers	HDFC Bank, Chennai – 600 034 State Bank of India, Chennai –600 034 Indian Overseas Bank, Chennai – 600 006
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Registered Office	New No.41, Old No.18, College Road Chennai – 600 006
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VISION RESEARCH FOUNDATION

INSTITUTIONAL REVIEW BOARD (ETHICS COMMITTEE) MEMBERS

Justice Mohan S.
Dr. T Santha Devi
Dr. Bakulesh M. Khamar
Dr. Manjula Dutta
Dr. Ronnie Jacob George
Prof. H N Madhavan
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
Dr. T Santha Devi
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. Kalpathy R K Easwaran
Dr. Prema Padmanabhan
Dr. N Angayarkanni



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INSTITUTIONAL COMMITTEE FOR STEM CELL RESEARCH

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

INSTITUTIONAL BIOLOGICAL SAFETY COMMITTEE

Dr. H.N. Madhavan
Dr. Gunasekar
Dr. M Natarajan
Mr. S Narayan
Dr. S Krishnakumar



VISION RESEARCH FOUNDATION

ANNUAL REPORT FOR THE YEAR 2018-19

Report of the Honorary Secretary to the Members of the Foundation

It gives me great pleasure to welcome you all to this 35th Annual General Meeting of our Foundation. I am pleased to present the Thirty Fifth Annual Report of Vision Research Foundation. The thirty fourth Annual General Meeting of the Foundation was held on 22nd September 2018 in which the Annual Report and the Audited Accounts of the Foundation for the financial year ended 31st March 2018 were approved by the members and M/s. S Viswanathan LLP, Chartered Accountants, were re-appointed as Auditors for the financial year 2018-19.

The donations received during the year under report were Rs.164.81 lakhs as compared to Rs. 258.02 lakhs in the previous year. The gross total income for the year under review was Rs.746.16 lakhs including research grants and interest on deposits. The total expenditure before providing depreciation was Rs.859.55 lakhs resulting in a cash deficit of Rs.113.38 lakhs. After considering depreciation for the year and loss on condemned assets, there was a net deficit of Rs.244.04 lakhs, which was carried over to the capital fund account.

Summary of Source and applications are as follows:

Sources	Rs. in Lakhs
1. Decrease in Net Current Assets	174.70
2. Increase in Net Current Liabilities	5.60
	<hr/> 180.30 <hr/>
Applications of Funds	
1. Increase in Fixed Assets	66.92
2. Cash Deficit	113.38
	<hr/> 180.30 <hr/>



VISION RESEARCH FOUNDATION

The foundation has received a sum of Rs.471.28 lakhs as research grants during the year under review as per the details given below :

	Rs. in Lakhs	
Research Grants – Basic Science	2018-19	2017-18
1. Council of Science & Industrial Research	7.46	11.72
2. Indian Council of Medical Research	69.79	55.75
3. Department of Biotechnology	159.54	135.20
4. Department of Science & Technology	51.66	68.82
5. Bayer Pharmaceuticals Pvt Ltd	5.58	.00
6. NHS Foundational Trust	50.96	6.55
7. Indian Institute of Technology	6.07	2.74
8. Fellowship Programme	60.87	33.36
9. The Glaucoma Foundation	7.73	.00
10. Others	.00	2.60
Total	419.66	316.74
Clinical Science		
11. Excel Life Sciences Pvt. Ltd.	5.09	5.31
12. Heads AS	.00	28.25
13. Indiana University	17.01	.00
14. Manipal Academy of Higher Education	5.86	.00
15. Microsoft India (R & D) Pvt Ltd.	5.88	.00
16. Parexel Intl. Clinical Research Pvt Ltd	17.18	6.33
17. Others	0.60	0.10
Total	51.62	39.99
Grand Total	471.28	356.73

Research Activities:

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



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The projects which were under consideration by the Govt. agencies as on date are as under:

Title of the Project	Funding Agency	Grant Amount for 2019-20 (Value in Rs.)
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 V Umashankar]	Indian Council of Medical Research	17,89,110/-
RNA guided Nuclease based targeted genome editing for retinitis pigmentosa [Dr Sowmya Parameswaran]	Department of Biotechnology	26,61,000/-
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 Mohana Devi]	Science & Engineering Research Board	13,70,000/-
Screening of epigenetic markers in Leber hereditary optic neuropathy (LHON) cells for mitochondrial dysfunction [Dr Mohana Devi]	Indian Council of Medical Research	12,10,000/-
Analysis of protective effect of stem cells on mutant Leber's Hereditary Optic Neuropathy (LHON) in LCL cells [Dr Mohana Devi]	Council of Scientific & Industrial Research	9,90,000/-
Ocular Biological senescence evaluation and science study (OBSESS) [Dr. Nivedita Chatterjee]	Indian Council of Medical Research	50,00,000/-

During the year, five meetings of the Board of Management were held and Institutional Review Board (Ethics Committee)/Research Sub-Committee met four times.



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Manpower Details :-

<u>Manpower</u>	<u>As on 31st Mar 2019</u>	<u>As on 31st Mar 2018</u>
President	01	01
Directors	03	05
Deputy Director / Head of the Dept / Chief Scientist / Professor	01	01
Head of the Department / Senior Chief Scientist / Senior Professor	01	00
Head of the Dept / Chief Scientist / Senior Professor	01	01
Head of the Department / Chief Scientist / Professor	02	02
Head of the Department /Principal Scientist / Associate Professor	01	01
Manager	01	01
Senior Principal Scientist / Associate Professor	02	02
Principal Scientist / Associate Professor	06	05
Senior Scientist II / Assistant Professor	03	04
Senior Associate Professor	01	00
Senior Scientist / Sr Research Scientist	02	00
Post Doc. Fellow / Research Associate	03	02
Project Manager / Project Coordinator	05	00
Senior Research Fellows	16	17
Junior Research Fellows	12	11
Social Workers / Field Workers	05	00
Research /Project / Technical Asst	05	05
Junior Scientist	07	05
Optometrist	03	01
Executives / Staff / Technicians	19	17
Bio-statistician	01	01
Part Time Scientists	61	77
Total	162	159



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Conclusion:

I would like to take this opportunity to place on record my gratitude for all the guidance extended to me by Dr. Ronnie Jacob George, President & Director – Research; Mr. R S Falor, Hon. Treasurer; Emeritus Dr S S Badrinath, President & Chairman, Medical Research Foundation; Dr. Kris S. Vasan, Chief Operating Officer and Dr. S Krishnakumar, Deputy Director - Research.

I am pleased to inform you that at the request of Dr. G N Rao from Indian Eye Research Group (IERG), "**Dr. S S Badrinath Oration for Research in Ophthalmic & Visual Science**" was instituted at the 25th Meeting of the Indian Eye Research Group held during July 2018 and the 26th Annual Meeting of the Indian Eye Research Group for the year 2019 will be hosted by Vision Research Foundation in July 2019.

The sixth 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 "Amino Acid Compositions for the Treatment of Diabetic Retinopathy" on 27th October 2018. The Inventor is Dr.N.Angayarkanni, Department of Biochemistry & Cell Biology.

The income tax demand of Rs.233.99 lakhs for the AY 2016-17 and Rs.196 lakhs for the AY 2015-16 received from the Income Tax Department are pending with the Hon'ble High Court, Chennai.

I would like to mention that the achievements and awards received by the scientists, details of completed projects and ongoing projects, conferences attended and the articles published in the national and international journals are given separately.

My thanks are also due to the Auditors, M/s. S Viswanathan LLP particularly to their partner, Mr. Chella K Srinivasan for their active and invaluable support and our Bankers, HDFC 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. I also wish to thank Mr. N Sivakumar for his support in relation to the income tax assessment of the foundation.



VISION RESEARCH FOUNDATION

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



VISION RESEARCH FOUNDATION

HONOURS & AWARDS

- ❖ 'The Times of India' honoured Dr. S S Badrinath and conferred with the 'Lifetime Achievement Award' for his exemplary commitment and impactful contribution to the healthcare, at a function held at Chennai on 5th May 2018.
- ❖ Dr. S. Srilekha was awarded the Developing Country Eye Research Fellowship (DCERF) Award from The Association for Research in Vision and Ophthalmology (ARVO) for attending the annual meeting of ARVO 2018 at Honolulu, Hawaii, USA from 29th April to 3rd May 2018. She made a poster presentation on "Genetic survey of the primary mitochondrial mutations along with clinical correlation in suspected Leber Hereditary Optic Neuropathy (LHON) patients from an Indian Cohort".
- ❖ Dr. Sangeetha Srinivasan, Research Fellow received Travel Grant from Department of Biotechnology for attending the Annual Meeting of The Association for Research in Vision and Ophthalmology (ARVO) at Honolulu, Hawaii, USA from 29th Apr to 3rd May 2018 and made a poster presentation on "Changes in Corneal Endothelial Morphology Over Four Years In Subjects With Type 2 Diabetes: A population based study"
- ❖ Mr. N. Murugan, received the Ph.D degree at Sastra University, Thanjavur, for his thesis entitled "NGS based Study on Genome, Drug resistance, Virulence Mechanism of Multi Drug Resistant Pseudomonas aeruginosa & its molecular diagnosis to in silico drug discovery", under the guide-ship of Dr. J Malathi, Department of Microbiology, on 20th April 2018.
- ❖ Mr. Sivashankar was awarded the Ph.D Degree at at Sastra University, Thanjavur, for his thesis entitled "Anti-EMT activity of the extracts of Triphala and its active constituents, Chebulagic acid, Chebulinic acid, Gallic acid in the Retinal Pigment Epithelium and their Anti-angiogenic activity in Retinal Capillary Endothelium: An *in vitro* study" under the guide-ship of Dr. N. Angayarkanni, Biochemistry Department, on on 25th June 2018.
- ❖ Vision Research Foundation instituted the "**Dr. S S Badrinath Oration for Research in Ophthalmic & Visual Science**" at the 25th Annual Meeting of the Indian Eye Research Group held from 27th to 29th July 2018. **Dr. Vengu Lakshminarayanan**, Prof. of Vision Science, Physics, ECE and System Design Engineering University of Waterloo, Ontario, Canada, delivered the **First Dr. S S Badrinath Oration for Research in Ophthalmic & Visual Science** on "Back to the future"- *History of evolution of optics till the modern era and the future*, on 28th July 2018.
- ❖ Dr.S.S.Badrinath received the Certificate of Appreciation Award at the IERG - ARVO Conference 2018 as a Founding Member and for ongoing service to the Indian Eye Research Group.
- ❖ Mr. Samdani A, Bioinformatics Department, cleared the highly competitive DBT-BINC-2018 (Bioinformatics National Certification) and also secured All India Rank 8th position.



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- ❖ Ms Rizza A N received the Travel Grant Award for attending the 25th Annual Meeting of the Indian Eye Research Group held from 27th to 29th July 2018 and she made a poster presentation on "Replication study of SNPs identified by GWAS for diabetic retinopathy in south Indian population with type 2 diabetes".
- ❖ Ms Srikrupa NN was awarded the Travel Grant for attending the 25th Annual Meeting of the Indian Eye Research Group held from 27th to 29th July 2018. She made a poster presentation on "Next Generation Sequencing in Predictive diagnosis of Syndromic LCA/EORP".
- ❖ Mr. Gokulraj Pandiyan received the Travel Grant Award for attending the 25th Annual Meeting of the Indian Eye Research Group held from 27th to 29th July 2018 and he made a poster presentation on "The effect of matrix on PCL melphalan nanoparticles for RB tumor cells".
- ❖ Ms Lakshmi Priyanka received the Travel Grant Award for attending the 25th Annual Meeting of the Indian Eye Research Group held from 27th to 29th July 2018 and made a poster presentation on "MicroRNA in Ocular Vasculopathies".
- ❖ The sixth 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 "Amino Acid Compositions for the Treatment of Diabetic Retinopathy" on 27th October 2018. The Inventor is Dr. N. Angayarkanni, Department of Biochemistry & Cell Biology.
- ❖ Dr K. Lily Therese was conferred "*Life Time Achievement Award*" at the 16th Indian Association of Applied Microbiologist (IAAM) National Conference at the Department of Water & Health - Faculty of Life Sciences, JSS Academy of Higher Education and Research, Mysuru on 27th September 2018.
- ❖ Dr S Krishnakumar became the Expert Committee Member in Genomics and Genetics Biomedical under the Chairman of Prof. Partha Majumdar.
- ❖ Dr N N Srikrupa was the recipient of 2018 SGRF Genomics Project Grant Award and Gyan Scholarship Award (Travel Grant) to attend NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference 2018 at Jaipur from 30th September to 2nd October 2018.
- ❖ Dr. Srilekha was awarded the NGBT GYAN scholarship to attend the NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) conference held in Jaipur from 30th Sep to 2nd October 2018.
- ❖ Ms. Lakshmi Priyanka was awarded NGBT GYAN Scholarship award to participate in the NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) conference held in Jaipur from 30th Sep to 2nd Oct 2018.
- ❖ Ms. K Suganya was awarded NGBT YUVA Scholarship award to participate at the NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) conference held in Jaipur from 30th Sep to 2nd October 2018.



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- ❖ Ms. Rizza was awarded NGBT GYAN Scholarship award to participate at the NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) conference held in Jaipur from 30th Sep to 2nd October 2018.
- ❖ Mr S Muthukumaran received the Next Gen Genomics, Biology, Bioinformatics and Technologies (NGBT) GYAN scholarship to attend the 2018 NGBT conference from Sep30 - Oct 2, 2018 held at Jaipur.
- ❖ Dr A Prasannakumar received the Prof. S Krishnamoorthy Endowment Award for the year 2017 for the Best Outgoing Ph.D Student in the Graduation Ceremony held at Sri. V D Swami Auditorium on 3rd November 2018.
- ❖ Ms.P.Karthikka, received Swarna Latha Punshi Award for the Best Research Worker 2018 in the Graduation Ceremony held at Sri. V D Swami Auditorium on 3rd November 2018.
- ❖ Dr N Murugan received the Best Research Scientist Award in memory of Smt. Radhamani N. Anantha Endowment for the year 2018 in the Graduation Ceremony held at Sri. V D Swami Auditorium on 3rd November 2018.
- ❖ Dr P Durgadevi received the Best Research Scientist Award in memory of Smt. Sreerangamma N. Narayana Endowment for the year 2018 in the Graduation Ceremony held at Sri. V D Swami Auditorium on 3rd November 2018.
- ❖ Ms Jayashree received Ph.D. degree for her thesis entitled "EpCAM Aptamer siRNA Chimeras for Targeted Anti-Cancer Therapy: An In Vitro and In Vivo Investigation" at Anna University on 22nd Dec 2018 under the guide-ship of Dr. Sailaja Elchuri.
- ❖ Ms S Suganya received the Ph.D. degree for her thesis entitled "A study on functional implications of PIWI-like proteins and PIWI-interacting RNAs in human somatic and cancer cells" at SASTRA University, Thanjavur on 25th January 2019. Dr. C. Subbulakshmi was her Supervisor.
- ❖ Mr. S Muthukumaran was awarded first prize for Best Oral Presentation entitled "Dissecting the intermolecular interactions of Antizyme-Antizyme inhibitor complex reveals potential inhibitory peptides targeting synthesis in retinoblastoma cells" at International Conference on Emerging perspectives on Bioengineering and Biomedical Informatics with Special relevance to Ethnomedicine in Human Health" (ICBBI 2019) on March 25-27, 2019, conducted by Sathyabama University.

Individual Fellowship Awards

- ❖ Mr.S.Muthukumaran was awarded SRF research fellowship for the project entitled "*In silico* Design and *invitro* validation of naturally occurring compounds as anticancer moieties for targeting Ornithine decarboxylase paralog (ODCp) protein" by Indian Council of Medical Research.
- ❖ Mr.Arun John was awarded SRF research fellowship for the project entitled "Virtual screening of natural compounds targeting human carbonic



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anhydrase ix validation of efficacy as anticancer agents through biochemical and in vitro assays" by Indian Council of Medical Research.

- ❖ Dr. Srilekha was awarded Research Associate fellowship for the project titled "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" by Indian Council of Medical Research.



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RESEARCH PUBLICATIONS

International Journals :

- ❖ Vidhya S, Ramya R, Coral K, Sulochana KN, Bharathidevi SR. "Effect of free amino acids on bovine retinal pericytes". Exp Eye Res. 2018 May 9.
- ❖ Dutta Majumder P, Therese KL, Mukherjee M, Gopal L, Biswas J. "Diagnostic Challenge with Nocardia Subretinal Abscess: A Case Report from Tuberculosis-Endemic Region". Ocular immunology and inflammation. 2018 May 10:1-4.
- ❖ Kalpana Babu, Bhagya Sudheer and S.Krishna Kumar. "Bilateral Conjunctival Granulomas in a Young lady with Hypereosinophilic Syndrome – A case report". Ocular Immunology and Inflammation. 17 May 2018:1-3.
- ❖ BaoJian Fan, Xueli Chen, Nisha Sondhi, P. Ferdinamarie Sharmila, Nagasamy Soumitra, Sarangapani Sripriya, Srinivasan Sacikala, Rashima Asokan, David S. Friedman, Louis R. Pasquale, X. Raymond Gao, Lingam Vijaya, Jessica Cooke Bailey, Veronique Vitart, Stuart MacGregor, Christopher J. Hammond, ChieaChuenKhor, Jonathan L. Haines, Ronnie George, and Janey L. Wiggs for the Mexican American Glaucoma Genetic Study; International Glaucoma Genetics Consortium; and NEIGHBORHOOD Consortium. "Family-Based Genome-Wide Association Study of South Indian Pedigrees Supports WNT7B as a Central Corneal Thickness Locus". Invest Ophthalmol Vis Sci. 2018 May 1;59(6):2495-2502.
- ❖ Sudha D, Neriyannuri S, Sachidanandam R, Natarajan SN, Gandra M, TharigopalaA, Sivashanmugam M, Alameen M, Vetrivel U, Gopal L, Khetan V, Raman R, SenP, Chidambaram S, Arunachalam JP. "Understanding variable disease severity in X-linked retinoschisis: Does RS1 secretory mechanism determine disease severity?" PLoS One. 2018 May 31;13(5):e0198086.
- ❖ Elchuri SV, Rajasekaran S, Miles WO. RNA-Sequencing of Primary Retinoblastoma Tumors Provides New Insights and Challenges Into Tumor Development. Front Genet. 2018 May 17;9:170.
- ❖ Aditya Bansal, Veena Noronha, Subramanian Krishnakumar, Vikas Khetan. "A Tale of Absent Crystalline Lens in an Eye with Retinoblastoma". Ocular Oncology and Pathology (Karger) June 2018; 4(4):250-253.
- ❖ Selvan LDN, Danda R, Madugundu AK, PuttamalleshVN, Sathe GJ, Krishnan UM, Khetan V, Rishi P, Prasad TSK, Pandey A, Krishnakumar S, Gowda H, Elchuri SV "Phosphoproteomics of Retinoblastoma: A Pilot Study Identifies Aberrant Kinases" Molecules. 2018 Jun 15;23(6).
- ❖ Aditya Sethi, Shikha Talwar Bassi, Veena Noronha, Lily K Therese "Diagnosis in a case total ophthalmoplegia - where time is life". Neuro-Ophthalmology. 2018 Jun 26;43(2):120-122.



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- ❖ Janani MK, Durgadevi P, Padmapriya J, Malathi J, Kulandai LT, Rao Madhavan HN. "First Report on Detection of Dengue Virus in the Donor cornea". *Cornea* Dec 2018; 37(12):1586-9.
- ❖ Parthasarathy D, Madhuravasal JK, Jayavel P, Kulandai LT, Rao MH, Jambulingam M. "Expression analysis of toll-like receptors of Dengue-infected cornea by real-time polymerase chain reaction". *Inflammation Research*. 2018 Jul;67(7):555-558.
- ❖ Nareshkumar RN, Sulochana KN, Coral K "Inhibition of angiogenesis in endothelial cells by human lysyl oxidase propeptide" *Scientific Report* 2018, Jul 11;8(1):10426.
- ❖ Anil Chekuri, Aditya A. Guru, Pooja Biswas, Kari Branham, Shyamanga Boroah, Angel Soto-Hermida, Michael Hicks, Naheed W. Khan, Hiroko Matsui, Akhila Alapati, Sripriya Sarangapani, Sinnakaruppan Mathavan, Amalio Telenti, John R. Heckenlively, S. Amer Riazuddin, Kelly A. Frazer, Paul A. Sieving and Radha Ayyagari. "IFT88 mutations identified in individuals with non-syndromic recessive retinal degeneration result in abnormal ciliogenesis". (2018): *Human Genetics* 2018 Jul;137(6-7): 447-458.
- ❖ Hemavathy Nagarajan, Umashankar Vetrivel "Demystifying the pH dependent conformational changes of human heparanase pertaining to structure-function relationships: an in silico approach" *Journal of Computer-Aided Molecular Design (Springer Nature)*, 2018 Aug;32(8):821-840.
- ❖ Bhavna S. Rao, Samdani Ansar, Tharigopala Arokiaswamy, Rachapalli R. Sudhir, Umashankar Vetrivel, Rama Rajagopal, Nagasamy soumittra. "Analysis of candidate genes ZEB1 and LOXHD1 in late-onset Fuchs' endothelial corneal dystrophy in an Indian cohort". *Ophthalmic Genet*. 2018 Aug;39(4):443-449.
- ❖ Bhende M, Raman R, Singh N, Jain M, Sharma T, Gopal L, Bhende PS, Srinivasan S, Jambulingam M; Sankara Nethralaya Vitreoretinal Study Group. "Risk Factors for Endophthalmitis after Pars Plana Vitrectomies in a Tertiary Eye Institute in India". *Ophthalmol Retina*. 2018 Aug;2(8):779-784.
- ❖ S Vidya, R Ramya, K Coral, K N Sulochana, S R Bharathi Devi. "Free amino acids hydroxyproline, lysine, and glycine promote differentiation of retinal pericytes to adipocytes: A protective role against proliferative diabetic retinopathy". *Exp Eye Res* 2018 Aug;173:179-187.
- ❖ Murugan Nandagopal, Durgadevi Parthasarathy, Rajeswari Mahadevan, Padmapriya Jayavel, Hajib N Madhavan, Malathi Jambulingam "Meta-genomics study among four contact lens wearers from India" *Gene Reports*. Sep 1;12:208-17.
- ❖ Shanmuganathan S, Angayarkanni N. "Chebulagic acid Chebulinic acid and Gallic acid, the active principles of Triphala, inhibit TNF α induced pro-angiogenic and pro-inflammatory activities in retinal capillary endothelial cells by inhibiting p38, ERK and NF κ B phosphorylation". *Vascul Pharmacol*. 2018 Sep;108:23-35.
- ❖ Danda R, Ganapathy K, Sathe G, Madugundu AK, Krishnan UM, Khetan V, Rishi P, Gowda H, Pandey A, Subramanian K, Prasad TK, Elchuri SV.



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"*Membrane Proteome of Invasive Retinoblastoma: Differential Proteins and Biomarkers*". Proteomics Clinical Applications 2018 Sep;12(5):e1700101.

- ❖ Akilandeswari Balachandran, Ajit Zambre, Jagjot Singh Kainth, Lakshmi Dhevi Nagarajha Selvan, Sowmya Parameswaran, Zahra Afrasiabi, Subramanian Krishnakumar, Raghuraman Kannan, Anandhi Upendran. "*Targeting HMGA protein inhibits retinoblastoma cell proliferation*". RSC Advances 09/2018; 8(55):31510-31514.
- ❖ Rebecca M, Gayathri R, Bhuvanansundar R, Sripriya K, Shantha B, Angayarkanni N. "*Elastin modulation and modification by homocysteine: a key factor in the pathogenesis of Pseudoexfoliation syndrome?*" Br J Ophthalmol. 2019 Jul; 103(7): 985-992. Epub 2018 Sep 24.
- ❖ Janani MK, Jaichandran V, Madhavan HN, Vijaya L, George RJ, Ambastha PS, Manu A, Malathi J. "*Effect of Lignocaine Concentration on Human Fibroblasts Growth in Eyes Undergoing Trabeculectomy: An in vitro Study*". Biomedicine Hub. Oct 2018;3(3):1-0.
- ❖ Anupriya sadasivam, Umashankar Vetrivel "*Identification of potential drugs targeting L, L-diaminopimelate aminotransferase of Chlamydia trachomatis: An integrative pharmacoinformatics approach*". Journal of Cellular Biochemistry, 2018 Oct 10.
- ❖ Umashankar Vetrivel, Hemavathy Nagarajan "*Deciphering ophthalmic adaptive inhibitors targeting RON4 of Toxoplasma gondii: An integrative in silico approach*". Life Sciences, Elsevier 2018 Nov 15;213:82-93.
- ❖ Sivagurunathan Suganya, Raman R, Chidambaram Subbulakshmi. "*PIWI-like protein, HIWI2: A novel player in proliferative diabetic retinopathy*". Experimental Eye Research. 2018 Dec;177:191-196.
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VISION RESEARCH FOUNDATION

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- ❖ Geetha Iyer, Shweta Agarwal, Bhaskar Srinivasan, Angayarkanni Narayanasamy "Isolation of acid from eye drop bottles being used by patients presenting with presumed scleritis" Indian J Ophthalmol 2018 Aug;66(8):1084-7.



VISION RESEARCH FOUNDATION

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- ❖ Selvaraj JR, Sudharshan S, Therese LK, Janani MK, Selvamuthu P et al. Real-time polymerase chain reaction for diagnosis and management of HIV-induced uveitis. *Indian J Ophthalmol*. 2018 Nov;66(11):1634-1636
- ❖ Rama Rajagopal, pratik V. Kataria, Sudharshan Sridharan, S Krishnakumar, Lily Therese K, Poongulali Selvamithu "Simultaneous presentation of ocular surface squamous neoplasia with viral retinitis in HIV-positive patients with low CD4 counts" *Indian J Ophthalmol* 2019 Jan;67(1):116-117.
- ❖ Srinivasan V, Radhakrishnan S, Angayarkanni N, Sulochana KN. Inhibitory effect of free amino acids supplementation in human visceral adipocytes through adiponectin-dependent mechanism. *Indian J Med Res*. 2019 Jan;149(1):41-46.



VISION RESEARCH FOUNDATION

COMPLETED PROJECTS

- ❖ Development of Low Cost Sweep VEP System [Dr Ronnie George]
- ❖ Changes in corneal epithelial permeability upon chronic use of anti-glaucoma medications [Dr Prema Padmanabhan]
- ❖ Regulation of LOX expression in Lens epithelial cells and trabecular endothelium [Dr N Angayarkanni]
- ❖ Identification of ocular inflammatory Mediators in Steven johnsons syndrome [Dr G Srividya Mentor: Dr N Angayarkanni]
- ❖ CTR1 as a therapeutic target for angiogenesis; its understanding its cellular and molecular signaling in retinal angiogenesis [Dr S R Bharathi Devi]
- ❖ Insilco drug target identification in Chlamydia species through systems biology and molecular modelling approaches pertaining to the development of potential drug molecules [Dr V Umashankar]
- ❖ Exosomal microRNA as biomarkers of early and late stage Retinoblastoma. [Dr S Krishnakumar]
- ❖ Investigating the effects of HIV-1 proteins in blood brain barrier degeneration. [Dr Nivedita Chatterjee]
- ❖ Identifying miRNA clusters in retinal cytokine producing glia which control inflammation during HIV1 Tat exposure: implications for immune recovery uveitis [D. Nivedita Chatterjee]
- ❖ Whole exome sequencing in Leber congenital amaurosis (LCA) to identify novel gene(s) [Dr Parveen Sen]
- ❖ Macular diseases: microRNA signature discovery as potential biomarkers in patients with macular disease and genotype phenotype correlation [Dr S Mathavan]
- ❖ Intervention of ciliopathy genes in the molecular pathology of BBS in Indian population [Dr S Sripriya]

SRF FELLOWSHIP

- ❖ Monocyte to macrophage differentiation induced alterations in oxLDL uptake and Paraoxonase expression in Retinal Pigment Epithelium-Monocyte co-culture system [Mr Anand Babu; Guide: Dr N Angayarkanni]
- ❖ Effect of PIWI proteins on tight junctions in retinal pigment epithelial cells and its effect on diabetic retinopathy Date of initiation of fellowship [Ms Suganya; Guide: Dr C Subbulakshmi]



VISION RESEARCH FOUNDATION

ONGOING PROJECTS

- ❖ Corneal endothelial function in health and disease [Dr Prema Padmanabhan]
- ❖ Measurements of aqueous flare objectively using an ocular fluorometer [Dr Prema Padmanabhan]
- ❖ Protocol No:PSV-FAI-005 : A Multi-center, Controlled, Safety and Efficacy Study of a Fluocinolone Acetonide Intravitreal (FAI) Insert in Subjects with Chronic Non-Infectious Uveitis Affecting the Posterior Segment of the Eye [Dr J Biswas]
- ❖ A Phase 2/3, Randomized, Double-Masked, Sham controlled Trial of QPI-1007 Delivered by Single or Multi-Dose intra vitreal injection(s) to subjects with Acute No-Arteric Anterior Ischemic Optic Neuropathy (NAION) [Dr S Ambika]
- ❖ 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. Angayarkanni N]
- ❖ Functional Characterization of Lacrimal Proline rich 4protein (LPRR4). [Dr. Angayarkanni N]
- ❖ Clinical Correlation of the Tear Chemokines and the sphingolipids in children with vernal keratoconjunctivitis [Dr. Angayarkanni N]
- ❖ Cracking the code of NEDD8 conjugation pathway via Human Antigen R (HuR) signaling in ocular angiogenesis [Dr Sharada R]
- ❖ Indo US Genetic Study of ocular quantitative traits predisposing to glaucoma [Dr Ronnie George]
- ❖ Unraveling the genetic architecture of diabetic retinopathy in south India [Dr. Mathavan S]
- ❖ To identify circulating biomarkers for responders and non-responders to anti-VEGF therapy in proliferative diabetic retinopathy (PDR) [Dr. Mathavan S]
- ❖ A Novel Molecular Screening approach for clinical and molecular characterization of Usher Syndrome patients from India [Dr Sripriya S]
- ❖ Molecular pathogenesis of HIV in T cells and endothelial cells [Dr. Anand A R]
- ❖ Role of microenvironment in the pathogenesis of HCV and HCV/HIV-associated hepatocellular carcinoma [Dr. Anand A R]
- ❖ 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]



VISION RESEARCH FOUNDATION

- 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]
- ❖ 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. S. Krishnakumar]
- ❖ Fluorescent Nanoprobes for Squamous cell carcinoma: A step towards developing a rapid tool for margin clearance [Dr. S. Krishnakumar]
- ❖ Self-assembling peptide nanofiber matrix for drug delivery to fungal keratitis [Dr Narayanan J]
- ❖ Mechanobiological effect of chemotherapeutic drugs on retinoblastoma cells [Dr Narayanan J]
- ❖ Smart Polycaprolactone (PCL) Peptide Composite nanofiber for sustained release of 5 Fluoro uracil to modulate wound healing in glaucoma surgery [Dr Narayanan J]
- ❖ 3D cancer tissue growth on graphene sponges for cancer drug therapy [Dr Sailaja Elchuri]
- ❖ Generation of hypo-immunogenic retinal pigment epithelial cells for age related macular degeneration by targeted genome engineering approach [Dr Sowmya P]
- ❖ Patient derived induced pluripotent stem cells (iPSCs) for modeling retinoblastoma tumorigenesis [Dr Sowmya P]
- ❖ Generation of corneal endothelial cells from induced pluripotent stem cells [Dr Sowmya P]
- ❖ Injectable self-assembled Bruch's membrane mimetic nanofibers for Retinal pigment epithelial cells [Dr Sowmya P]
- ❖ Development of a highly efficient and immunologically inert adeno-associated virus based vector system for retinal gene therapy [Dr Sowmya P]
- ❖ Genome wide association studies for pharmacogenomics of steroid response in eye [Dr Srujana Chitipothu]



VISION RESEARCH FOUNDATION

- ❖ In silico Design and Development of novel peptide inhibitors targeting CD147 through virtual screening and biopanning of peptide libraries and in vitro validation of anticancer efficacies [Dr Umashankar V]
- ❖ Genome wide transcriptome profiling of human retinal cells under diabetic milieu in the context of Egr-1 expression towards deciphering alternative pathways mediating diabetic complications of retina [Dr Umashankar V]
- ❖ Increasing eye research capacity and capabilities to tackle the burden of blindness in India: a research-based UK-India Collaboration [Dr. Rajiv Raman]

INDIVIDUAL FELLOWSHIP:

- ❖ A pilot study to evaluate the expression of tropoelastin intracellularly and its aggregation extracellularly to probe the disease mechanism of PXF [Ms Rebacca Manohar; Guide: Dr N Angayarkanni]
- ❖ 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; Guide: Dr Rajiv Raman]
- ❖ 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 Umashankar V]
- ❖ 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 Umashankar V]
- ❖ In silico design and in vitro validation of naturally occurring compounds as anticancer moieties for targeting Ornithine Decarboxylase paralog (ODCp) protein. [Mr. S Muthukumar; Mentor: Dr Umashankar V]
- ❖ 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 Srilekha S; Mentor: Dr. S Sripriya]
- ❖ To delineate the functional role of Paraoxonase 2 in regulating angiogenesis [Ms. Ramya; Mentor: Dr. Bharathi Devi SR]



VISION RESEARCH FOUNDATION

PARTICIPATION IN CONFERENCES

- ❖ Dr. V Uma shankar gave an invited talk on "Computational drug target mining in Ocular infective Chlamydia serovars through integrative multiomics approach" at the International Conference on Genome Biology & Informatics in Health Sciences" at SASTRA University, Thanjavur on 7th April, 2018.
- ❖ Dr. N Angayarkanni gave an invited talk on "American Diabetes Association Guidelines for Diabetes care: Role of Laboratory" at the International Lab Professional Week conducted by the Clinical Biochemistry Dept & the Clinical Biochemists Association at the Cancer Institute on Total Quality Management in Clinical Lab Practices on 21st April 2018.
- ❖ Dr Nivedita Chatterjee participated in the CART, International AIDS Society Meeting, Chennai 28th and 29th April, 2018.
- ❖ Dr. V Umashankar, Dr. S. R Bharathi Devi, Dr. S Srilekha and Dr. Sangeetha Srinivasan attended the ARVO (The Association for Research in Vision and Ophthalmology) meeting held at Honolulu, Hawaii, USA from 28th April to 3rd May 2018. Dr. Umashankar presented a poster titled "In silico comparison of Chlamydia trachomatis drug binding pocketome vs. Human and prioritization of potential drug targets"; Dr. Bharathi Devi on "Copper triggers mitochondrial biogenesis and helps in survival of RPE"; Dr. S. Srilekha on "Genetic survey of the Primary Mitochondrial Mutations along with Clinical Correlation in Suspected Leber Hereditary Optic Neuropathy (LHON) patients from an Indian Cohort" and Dr. Sangeetha on "Changes in Corneal Endothelial Morphology over four years in subjects with Type 2 Diabetes: A population based study".
- ❖ Dr S Krishnakumar attended the CME programme on "Lysosomal Storage Disorder" organized by Fetal Care Research Foundation in Sanjeevi Auditorium, Voluntary Health Services (VHS), Taramani on 18th and 19th May, 2018.
- ❖ Dr. Mohana Devi delivered lectures and provided Hands-on Training on Epigenetic Techniques to the participants of the workshop on "Cytogenetic and Molecular Biology Techniques" in the Department of Human Genetics and Molecular Biology and Department of Zoology, Bharathiar University, Coimbatore from 28th May 2018 to 1st June 2018.
- ❖ Mrs. Ambily Vincent and Mrs. Suganya Annadurai attended the scientific writing workshop at Elite school of Optometry, Chennai from 7th to 9th June 2018.
- ❖ Dr. Mohana Devi participated in the "Ocular TraumaCON 2018" International Conference at Chennai from 13th to 15th July 2018.
- ❖ Dr. P. Durgadevi attended the CME & State level Workshop on "Indirect Immunofluorescence in Hep2 cells" on 26th July 2018 at Madras Medical College, Chennai.



VISION RESEARCH FOUNDATION

- ❖ Dr. S Mathavan, Dr. N Angayarkanni, Dr. J. Narayanan, Dr. Nivedita Chatterjee, Dr. N N Srikrupa, Ms. Suganya, Ms. Lakshmi Priyanka, Mr. Gokulraj Pandiyan and Ms. Rizza, attended the 25th Indian Eye Research Group (IERG-ARVO 2018) Annual Meeting at L V Prasad Eye Institute, Hyderabad from 27th to 29th July 2018.

Dr. Mathavan presented a poster entitled "RNA biomarker discovery in Polypoidal Choroidal Vasculopathy: Pharmacogenomic approach". Dr Angayarkanni gave an oral presentation on "Delineating the pathophysiology of Elastosis Pseudoexfoliation Syndrome: *ex vivo* and *in vitro* studies in Lens Epithelium". Dr. Narayanan made an oral presentation on "Corneal epithelial cell penetrating peptide with antifungal activity using hydrogel" and a talk on "Recent advances in mechanobiology: Regenerative medicine approach" at the pre-conference Workshop. Dr. Nivedita Chatterjee made a free paper presentation on "Differential expression of miRNA in HIV positive patients with ocular manifestation of IRIS". Dr. Srikrupa made a poster presentation "Next generation sequencing in predictive diagnosis of syndromic LCA/EORP"; Ms. Suganya on "Promoter Methylation Status of cis eQTL genes in Primary Glaucomas", Ms. Lakshmi Priyanka on "MicroRNA in ocular vasculopathy: review"; Mr. Gokulraj Pandiyan on "Effect of matrix on chemotherapeutic sensitivity of PCL melphalan nanoparticles on retinoblastoma tumor cells" and Ms.Rizza on "Replication study of SNPs identified by GWAS for diabetic retinopathy in south Indian population with type 2 diabetes".

- ❖ Dr. S Krishnakumar participated in the CME on Pathology at Sri Ramachandra Medical College and Research Institute, Chennai on 2nd August 2018
- ❖ Dr N Angayarkanni delivered an invited talk on "The Biochemistry of Diabetic Retinopathy" at Biochemistry Association (Bio Quest), Karpagam Academy of Higher Education, (Deemed University) Coimbatore on 3rd August 2018.
- ❖ Dr. A. R. Anand attended "Quality Management System and NABL Internal Auditor's Training Program" at Neuberg Ehrlich Laboratory, Chennai from 23rd to 26th August 2018.
- ❖ Dr S Krishnakumar participated in the "Eye Cancer" meeting at LV Prasad Eye Institute, Hyderabad on 2nd September 2018.
- ❖ Dr S Mathavan and Ms Lakshmi Priyanka, attended the Biotechnology & Bio Pharma Skill Enhancement Program (B2SEP) at SCL Genome Research Foundation, Chennai, on 3rd September, 2018.
- ❖ Dr. K. Lily Therese delivered lecture during the contact class 'HIC Certificate Programme' entitled "Control of Ophthalmic Infection" conducted at V D Swamy Auditorium on 21st September, 2018.
- ❖ Dr. K. Lily Therese presented an invited lecture at the 16th National Conference of Indian Association of Applied Microbiology (IAMM) conducted at JSS Academy of Higher Education and Research, Sri Shivarathreshwara Nagara, Mysuru on 27th September 2018.



VISION RESEARCH FOUNDATION

- ❖ Dr N Angayarkanni gave an invited talk on “Valorisation of Bio-active components from plants” at Academy –Industry Partnership, French Institute in India, French Embassy in India at Taj Lands, Mumbai, from 29th September to 3rd October 2018.
- ❖ Dr. S Mathavan, Dr.V.Umashankar, Mr. S. Muthukumaran, Dr. S. Srilekha, Dr.Srikrupa, Ms. Suganya, Ms. Rizza, Ms. Lakshmi Priyankka attended the 7th Nextgen Genomics, Biology, Bioinformatics And Technologies Conference (NGBT-India) 2018 held from 30th September to 2nd October 2018, at Farmont, Jaipur. Dr Mathavan delivered an invited talk on “Developmental Genomics” and chaired a session on “Genomics” in the conference. Dr Umashankar and Mr Muthukumaran presented poster titled “Design and Development of inhibitory peptides targeting Ornithine Decarboxylase and in vitro validation in Human Retinoblastoma Y79 cells”; Dr. S. Srilekha on “Molecular profiling of patients with Stargardts disease by Next Generation Sequencing Technology”; Dr.Srikrupa on “Whole exome sequencing of patients with Leber Congenital Amaurosis in an Indian Cohort”; Ms. Suganya on “Mutational Screening of Bardet Biedl Syndrome patients from india by targeted re-sequencing method”; Ms. Lakshmi Priyankka “MicroRNA profiling in Polypoidal Choroidal Vasculopathy (PCV) patients: Pharmacogenomics approach” and Ms. Rizza on “Validation of GWAS signals identified in Finnish and south Indian population with implication in diabetic retinopathy”.
- ❖ Dr N Angayarkanni delivered an invited talk on “Chebulagic acid Chebulinic acid and Gallic acid, the active principles of Triphala, inhibit TNF α induced pro-angiogenic & TGF- β 1 induced fibrotic changes in the retinal barrier in vitro” at Dept. of Biochemistry and Indian Women Scientists Association and MS University, Baroda, on 1st October, 2018.
- ❖ Dr. S Mathavan delivered an invited talk on “NGS and it application in Biology” at the Central University of Rajasthan, Jaipur on 4th October, 2018.
- ❖ Dr. S Mathavan gave an invited talk on “Explorative Genomics” in Institute of Bioinformatics and Applied Biotechnology (IBAB) on 15th October, 2018 at Bangalore.
- ❖ Dr. S Krishanakumar participated in the 3rd Annual Conference of Indian Society of Nanomedicine (NanoBioteck-2018) at All India Institute of Medical Science, New Delhi, from 24th to 27th October 2018. He has been invited as part of Nanomedicine Task Force.
- ❖ Dr. Nivedita Chatterjee attended the XXXVI Annual Conference of Indian Academy of Neurosciences at Varanasi from 29th to 31st October 2018 and presented a poster on “Comparing Immuno-miRs in glial cells and HIV positive patients with ocular manifestation of Immune Reconstitution Inflammatory Syndrome”.
- ❖ Dr. A. V. Kavitha attended training programme Laboratory Quality System & Internal Audit as per IS/ISO: 15189-2012 from 15th to 18th November, 2018 at Neuberg Ehrlich Laboratory, Royapettah, and Chennai.
- ❖ Dr. J Narayanan and Dr. Sailaja Elchuri attended a one day workshop on “Recent Advance in Nanoscience and Technology” at Anna University on 7th December 2018. Dr. Narayanan gave a talk on “Nano materials for energy applications”.



VISION RESEARCH FOUNDATION

- ❖ Dr. V. Umashankar delivered an invited talk at the National Workshop on Cheminformatics in Modern Drug Discovery conducted by DBT BIF Center on 13th & 14th December 2018.
- ❖ Dr. N Angayarkanni made a presentation on "2D based experiments using Mass spectroscopy for clinical applications" at the "3rd National Hands-on-Workshop" on "Advanced Bio-Analytical Techniques from Method Development to Data Interpretation" with a special reference to Metabolomics, Lipidomics and Proteomics at AIIMS, New Delhi from 17th to 19th December, 2018.
- ❖ Dr. J. Narayanan participated in the 6th World Congress on Nano Medical Sciences at Vigyan Bhawan, New Delhi from 7th to 10th January, 2019 and delivered an invited talk on "Toxin Conjugates for epithelial tumors".
- ❖ Dr. S Krishnakumar and Dr. Sowmya P participated in the AICTE approved QIP Workshop on "Recent trends in Biotechnology related to Tissue Engineering" on 9th January 2019 in IIT, Madras. Dr. Krishnakumar presented a talk on "Where are we in corneal tissue engineering?" and Dr. Sowmya on "Induced Pluripotent Stem cells for therapy and disease modeling".
- ❖ Dr. S Krishnakumar delivered an invited talk on "Aptamer and cancer" at the Dr M. Malathy Madhavan Endowment Lecture at University of Madras, Taramani Campus on 24th January, 2019.
- ❖ Dr S Krishnakumar attended International Conference on "Nanotechnology and its application to ocular drug delivery system" at Maliba Pharmacy College, Surat from 27th to 29th January 2019.
- ❖ Mr. Ranjith Kumar and Mr. Hemanth attended the 4th International Conference on Bioenergy Environment and Sustainable Technologies (BEST 2019) at Arunai Engineering College, Thiruvannamalai on 30th January, 2019. Mr. Ranjith Kumar made a poster presentation on "Graphene Foam-A 3D scaffold for cancer cell growth" and Mr. Hemanth on "Small RNA Sequencing by NEs - A Tool to compare MicroRNA Expression Pattern in Biological Samples".
- ❖ Ms. B Lakshmi made a poster presentation on "Single Nucleotide Polymorphisms associated with steroid induced ocular hypertension in Indian population: A pilot study" at the "Indian Society of Human Genetics (ISHG-2019)" from 30th January to 1st February 2019 held at National Institute of Biomedical Genomics and University of Kalyani, West Bengal.
- ❖ Dr. S. Mathavan, Ms. K Suganya, Ms. A N Rizza, Ms. Lakshmi Priyanka & Ms. Harshavardhini attended the National Seminar cum Workshop on Genomics and Proteomics-2019 at Alagappa University, Karaikudi, from 6th to 8th February 2019. Dr. Mathavan gave an invited lecture on "NGS and its application on biomarker discovery".
- ❖ Ms. Suganya and Ms. Harshavardhini participated in the Conference on Advances in Clinical Genomics at Aravind Medical Research Foundation 9th February 2019.



VISION RESEARCH FOUNDATION

- ❖ Dr. S. Mathavan gave an invited lecture on "Bio-Bank and experience of operating Indo-US project" at the International Eye Genetic Consortium Meeting held at Bombay on 18th & 19th February 2019.
- ❖ Dr. S. Mathavan and Dr. Umashankar attended the AQUATER Golden Jubilee International Conference on Genome Biology at Madurai Kamarajar University, Madurai on 27th February, 2019. Dr. Mathavan delivered "Prof. S. Krishnaswamy Endowment Lecture" entitled, "Transcriptome dynamics in ocular vasculopathy".
- ❖ Mr. Ranjith presented a student's Seminar on 20th March 2019 at Anna University, Tharamani campus prior for MS by Research Synopsis submission.
- ❖ Dr. S. Mathavan delivered an invited talk on "Unexpected results are more interesting than expected results-Why?" at the School of Biosciences and Technology, Vellore Institute of Technology, at the invitation of Dr. Radha Saraswathi on 20th March, 2019.
- ❖ Dr. N. Angayarkanni participated in the ICAMIB - 2019 International Conference on Advances in Medical and Industrial Biotechnology, Sathyabama Institute of Science & Technology, Chennai on 20th March 2019. She gave a presentation on "Molecular targets and therapeutic intervention for angio-fibrotic switching in Diabetic retinopathy : An in vitro study in microvascular endothelial cells".
- ❖ Dr. V. Umashankar and Mr. S. Muthukumaran attended the International Conference on "Emerging perspectives on Bioengineering and Biomedical Informatics with Special relevance to Ethnomedicine in Human Health" (ICBBI 2019) from 25th to 27th March 2019, Conducted by Sathyabama University. Dr. Umashankar chaired a session on "Drug Discovery" and Mr. Muthukumaran made an oral presentation entitled "Dissecting the intermolecular interactions of Antizyme-Antizyme inhibitor complex reveals potential inhibitory peptides targeting synthesis in retinoblastoma cells".
- ❖ Dr. K. Lily Therese and Dr. P. Durgadevi attended WHO-IAMM Network for Surveillance of Antimicrobial Resistance (WINSAR) AMR on 28th & 29th March 2019 at New Delhi.



VISION RESEARCH FOUNDATION

DISTINGUISHED VISITORS

- ❖ Mr. Jonathan Scollard, Mr. Rahul Kumar from Orbis, New York, visited our foundation and research laboratories on 12th April, 2018 and gave a guest lecture on "Orbis is an international NGO that transforms Lives through the prevention and treatment of blindness".
- ❖ Mr. Sunny Virmani and Mr. Dushyant of Google team visited our biochemistry department on 4th May 2018.
- ❖ Dr K Balamurugan, Dr Sanjeev Kumar Singh & Dr A Arun from Alagappa University, Karaikudi visited our research laboratories on 14th May, 2018.
- ❖ Mr. Rama Krishnan from OM Trust USA visited L & T Microbiology Research Centre on 21st May 2018.
- ❖ Mr. Moe Kyau Aung and Mr Ranganathan Jayaraman, Union Minister of Myanmar, visited our foundation and microbiology laboratory on 28th May, 2018.
- ❖ Dr. Ranjana Mathur, Singapore National Eye Center, Singapore, visited our biochemistry and genetics laboratories on 11th July 2018.
- ❖ Dr. D. Aravind Prasanth, Dr. Meenu Chaudhary from Institute of Medicine in Kathmandu, Dr. Paisan Ruamviboonsuk & his team, Department of Ophthalmology, Rajavithi Hospital, Bangkok, Thailand, Prof. Graham E. Holder from National University of Singapore, Dr. Maris Colyer, Dr. Hunny Hamza & Team, Thailand and other participants of the Ocular Trauma Conference 2018 visited our foundation & research laboratories from 12th to 14th July 2018.
- ❖ Prof. James Wolffsohn, Aston University, Birmingham, UK visited our foundation and research laboratories on 25th July 2018.
- ❖ Dr. Leonardi Andrea, from Italy visited our foundation and research laboratories on 28th July 2018.
- ❖ Dr. Mano Shanmugam and Dr. Uea Feng (Retina) from Malaysia visited our biochemistry laboratory on 17th August 2018.
- ❖ Post Graduate Students of Microbiology along with faculty from Periyar University, Salem visited our L & T Microbiology Research laboratory on 7th September 2018.
- ❖ Mr. Ram Babu from IIF visited our microbiology lab on 9th September 2018.
- ❖ Dr. Suba Rajinikanth, Pediatrician visited our genetics laboratory lab on 11th October 2018.
- ❖ Dr. Vasanth, Senior Scientist, SASTRA University visited our Ocular Pathology and Biochemistry research laboratories on 13th October, 2018.



VISION RESEARCH FOUNDATION

- ❖ Mr. Imran Virani, Carl Zeiss S.E. Asia, Medical Business Group, Regional Director, visited our Microbiology & Genetics research laboratories on 19th October, 2018
- ❖ Ms. Georgina Kemlgisa, Dr. Kahnala Abubakar & Dr.Ssali Grace, Ophthalmologists from Mulago Hospital, Uganda visited our microbiology lab on 30th October, 2018.
- ❖ Dr. Anmol Kumar, Scientist, Helsinki University Central Hospital, Finland, visited our foundation and research laboratories on 30th October and 1st November 2018 and gave a guest lecture on "Diabetic Retinopathy: A novel pathway to target?"
- ❖ Prof Carlos Pavesio, Director of Uveitis, Moorfields Eye Hospital, UK and Dr Andre Curi, Oswaldo Cruz Foundation, Brazil, visited our foundation and research laboratories on 14th November 2018 and Prof Carlos gave a guest lecture on "Local therapies - how good are they? And Cat Scratch".
- ❖ Dr. Yang Niao, Capital Medical University & Dr. Xu Wu, Wenzhon Medical University, China visited the research laboratories on 18th December 2018.
- ❖ Dr Sudha Iyengar , Dept of Genetics & Genome Sciences and Dept of Ophthalmology & Visual sciences from Case Western University, USA visited our foundation and research laboratories on 20th December 2018 and gave a guest lecture on "Multi-ethnic susceptibility to AMD: Lessons from the Million Veteran Program"
- ❖ Lt. Col. Marian Mathew, Military Hospital, Chennai visited our biochemistry and genetics laboratories on 29th December 2018.
- ❖ Prof. Joseph Irudayaraj, Founder Professor in Bioengineering, Associate Head of Graduate Programs, and University of Illinois at Urbana-Champaign, USA visited our foundation and research laboratories on 03rd January 2019.
- ❖ Dr Merlyn Mathew and Ms. Christina Bence from Deakin University, Australia visited our research laboratories on 09th January 2019.
- ❖ Dr. Narsing A Rao, Professor of Ophthalmology and Pathology at the Keck School of Medicine & Director of Uveitis Service, Los Angeles visited the Histopathology Laboratory on 11th January 2019. He delivered a guest lecture on "Approach to diagnosis and management of posterior and panuveitis".
- ❖ Ms. Soniz Phene and Mr. Dushyant of Google team visited our foundation and research facility on 29th January 2019
- ❖ Dr. Yasuo Yoshimi, Professor of Chemical Engineering from Shibaura Institute of Technology, Tokyo visited Microbiology laboratory on 26th March 2019 through Nichi-In Centre for Regenerative Medicine (NCRM) Chennai.