

**Professor D Balasubramanian**  
Distinguished Scientist

Date : 29/09/2021

**Justification by Nominator (400 words)**

Dr Sayan Basu, MBBS, MS is the Director, Prof. Brien Holden Center for Eye Research, and Center for Ocular Regeneration (CORE) at the L. V. Prasad Eye Institute, Hyderabad, India. He is also an Adjunct Associate Professor of Ophthalmology, School of Medicine and Dentistry, University of Rochester, New York, USA. He is an excellent clinician and is internationally recognized for his breakthroughs in stem cell(SC) therapy and artificial corneal transplantation. He has a cumulative impact factor of 356.7, H-index of 29 and i-10 index of 59 ([https://scholar.google.com/citations?user=Y3hO\\_C0AAAAAJ&hl=en](https://scholar.google.com/citations?user=Y3hO_C0AAAAAJ&hl=en)).

Cultivated limbal epithelial transplantation(CLET) for ocular burns induced corneal damage involves isolating and culturing limbal Stem Cell in a laboratory, and grafting them onto the patient's cornea. (Sangwan VS, Basu S, et al. *Clinical outcomes of xeno-free autologous CLET: a 10-year study. Br J Ophthalmol.* 2011 Nov;95(11):1525-9; IF 3.8). However, Dr Basu, an expert in the surgical technique, argued: "why not let the 'culturing' happen in situ, rather than in a cell-culture lab?". This led to the development of an innovative procedure, called Simple Limbal Epithelial Transplantation which has similar efficacy as CLET (Basu S, et al. *SLET: Long-Term Clinical Outcomes in 125 Cases of Unilateral Chronic Ocular Surface Burns. Ophthalmology.* 2016 May;123(5):1000-10,IF 12).

He has developed a mesenchymal SC therapy with a simple delivery system, for corneal scarring (Basu S, et al. *Human limbal biopsy-derived stromal stem cells prevent corneal scarring. Sci Transl Med.* 2014 Dec 10;6(266):266ra172,IF 16.79). For those with advanced corneal diseases, not amenable to transplantation, he has devised a visually rehabilitating prosthesis (Basu S, Nagpal R, et al. *LVP Keratoprosthesis: Long-term anatomical and functional outcomes in bilateral end-stage corneal blindness. Br J Ophthalmol* 2018, IF 3.8). Additionally, Dr Basu has been involved in analysing the incidence and risk factors behind "Dry Eye" disease with Big Data Analytics (Rao Donthineni P, Basu S. *Incidence, demographics, types and risk factors of dry eye disease in India: Electronic medical records driven big data analytics report I. Ocul Surf* 2019. IF 5.53).

Dr Basu has received numerous research grants and serves on the editorial boards of several national and international journals. He has 137 highly cited papers and is held in high regard as a researcher by the ophthalmology and visual sciences community. As the director of Centre for Ocular Regeneration (CORE) he leads a team of scientists who develop cell based therapies for blinding diseases. They work on 3-D printed corneas, cornea-mimetic hydrogels and stem cell transplantation immunology.

Yours Sincerely



D. BALASUBRAMANIAN,

Distinguished Scientist & Director-Research Emeritus  
L V Prasad Eye Institute, Hyderabad, India

Prof D. Balasubramanian  
Distinguished Scientist  
L.V. Prasad Eye Institute  
Banjara Hills, Hyderabad - 500 034