



JOHN C. MARTIN CENTER FOR LIVER RESEARCH AND INNOVATIONS

(A Unit of Liver Foundation, West Bengal) Registration No : S/IL/31676 of 2005-06

27 August 2024

Justification of Nomination for Sunpharma Science Foundation Research Fellowship for Dr. Anil K Mandal

Dr. Anil Kumar Mandal combines in him the experience and ability of an ophthalmologist and the curiosity and characteristics of a basic science researcher. In research, he works effectively and intimately with basic scientists, including geneticists, low vision specialists and qualitative health researchers.

Dr. Mandal has devised a new surgical technique – Illuminated Microcatheter Passage Assisted Circumferential Trabeculotomy-Trabeculectomy (IMPACTT) for advanced neo-natal onset congenital glaucoma (Sem Ophthalmol 2022). Earlier he had popularized and perfected the surgical technique of Combined Trabeculotomy-Trabeculectomy that gives the best hope of success in congenital glaucoma in Indian patient population. He has published the outcomes of the largest series of congenital glaucoma patients treated using this technique with longest follow-up of over 20 years (Acta Ophthalmologica, 2021; Ophthalmology 2023). Over last 34 years, he has the experience of successfully managing over 4000 children with various forms of developmental glaucoma, which is a global record. He has published over 150 papers in peer-reviewed journals.

Dr. Mandal has been instrumental in spearheading and facilitating genetics research in primary congenital glaucoma (PCG) over last 25 years with an overarching goal of translation. The large clinical and genetic data in PCG have helped identify novel genes, assess mutation spectrum, and have provided evolutionary insights for migrations of mutations across populations. This also led to the international collaborations with Brazil, Tunisia, Portugal, Australia and USA to understand the nature-nurture dialectics in PCG (PLoS One 2015). The dissections of the genetic and physical interactions of genes along with comprehensive genotype-phenotype correlations have helped identify novel functional targets in PCG through various *in vitro* (Hum Genet 2017) and *in vivo* (Dis Model Mech 2020) approaches with an outcome aimed at devising novel molecular diagnostics for predictive testing and guiding therapeutics.

He received several awards such ICMR prize for Biomedical Research for Scientists in 2000, Shanti Swarup Bhatnagar award for Medical Sciences (first ophthalmologist) in 2003, and senior achievement award from American Academy of Ophthalmology in 2008. He was awarded Fellowship of National Academy of Medical Sciences in 2009. He delivered the prestigious 'Noel Rice Lecture' in the Annual meeting of UK Pediatric Glaucoma Society (UKPGS), London in January 2019. He is the first Asian Ophthalmologist to deliver this lecture. He was awarded the highest award of the All India Ophthalmological Society – Adenwalla award for 2022. Most recently, he has been awarded the 'Life achievement honor award' by the American Academy of Ophthalmology, 2024.

Partha P. Majumder
National Science Chair & Distinguished Professor