

Fulbright-Nehru Academic and Professional Excellence Fellowships

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Fulbright-Nehru Project Title:	“Molecular determinants of Chikungunya virus neurovirulence”
Field of Study:	Neuroscience (Neurovirology)
Home Institution in India:	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala
Host Institution in the U.S. (if confirmed):	Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
Grant dates (from – to)	September 2015 to May 2016
Duration of Grant:	9 months

Dr. Sreekumar is a scientist in the Viral Disease Biology program of Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram, Kerala, India. After completing his Masters degree in Veterinary Immunology and doctoral degree in Biotechnology, Dr. Sreekumar joined RGCB and focused his research on studying emerging viral diseases in the region. His major thrust areas are molecular epidemiology and virus-host interactions of chikungunya and dengue virus. Dr. Sreekumar has published more than 35 original research papers in national and international journals of repute as primary or corresponding author, and co-authored research publications in prestigious journals such as *Nature communications* and *Oncogene*. He is also a regular reviewer for journals such as *Virus Genes*, *Virology Journal*, *Archives of Virology*, *PLoS One* and *Molecular Immunology*.

Chikungunya virus is a mosquito-borne virus that has been originally implicated in a benign, febrile disease with polyarthralgia. However, the strains recently emerged show aberrant behaviour with a rapid spread and cause a more severe disease and neurological complications with central nervous system involvement. Dr. Sreekumar’s proposed project explores the molecular basis of this altered behaviour of the newer strains. A preliminary analysis of the complete viral genome nucleotide sequences has identified novel genetic changes that result in amino acid changes in major viral proteins. His goal is to identify the role of these mutations in the observed phenotypic changes in these new virus strains. He would be resorting to reverse genetics approaches and animal experimentation to understand the determinants of Chikungunya virus neurovirulence.