



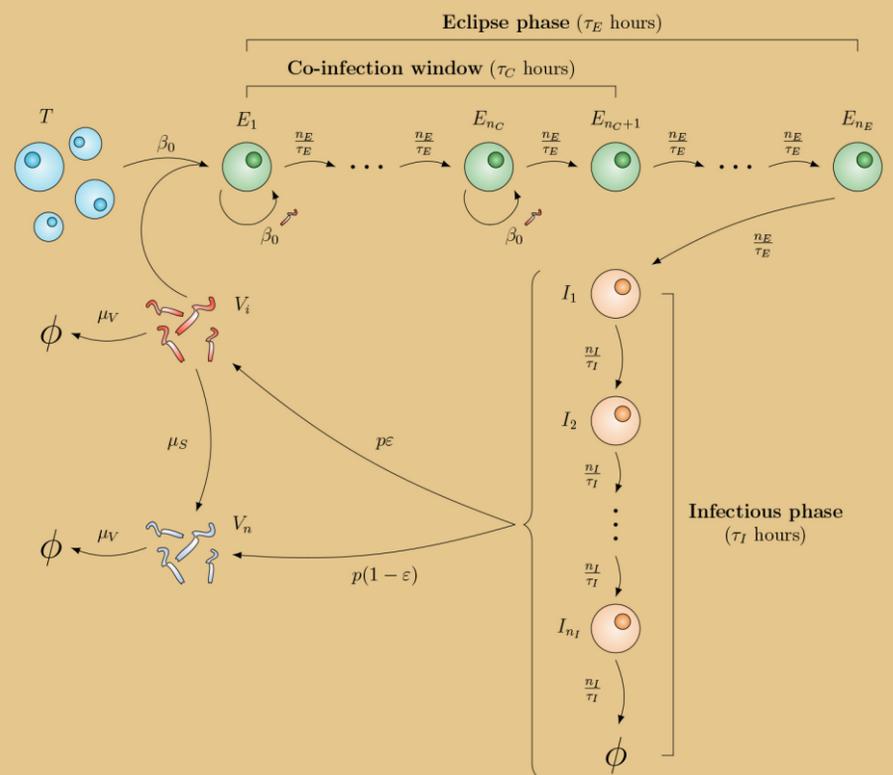
Carmen Molina-París

Carmen Molina-París is Professor of Applied Mathematics at the University of Leeds. She obtained a PhD in Theoretical Physics under the supervision of Professor Bryce DeWitt in the Centre for Relativity at the University of Texas in Austin. She was a Director's Funded post-doctoral Fellow at Los Alamos National Laboratory in the Theoretical Division (1996-1999). At the University of Leeds, she leads the Mathematical Immunology research group. She was BBSRC Research Development Fellow (2009 - 2012). She coordinated the FP7 ITN Network (Quantitative T cell Immunology) (2013 - 2017). She currently coordinates the H2020 ITN Network (Quantitative T cell Immunology and Immunotherapy) (2018 - 2022).



A Mathematical Adventure in Immunology

Our immune system is an extraordinary collection of molecules and cells, which together protect us from pathogens and infectious diseases, such as smallpox, dengue or Ebola viruses. An essential step to decipher the governing rules of our immune system is to understand how its molecules and cells interact and communicate in health and disease. Experimental techniques such as flow cytometry, single-cell genomics and novel imaging methods have greatly advanced our ability to explore the immune system. Together with the generation of new experimental and clinical data sets, there is a need to develop mathematical models that can describe immune dynamics at the molecular, cellular and population scales. In doing so, we can, for example, provide answers to the following questions: i) what are the events and their probabilities that lead to the generation of a naive T cell in the thymus, ii) what is the minimum number of dendritic cells that are required to generate an immune response and iii) how can we quantify the infectivity of a given pathogen (a virus or a bacterium).



4 pm, Sunday, 7th July 2019,
Jawaharlal Nehru Planetarium, Bengaluru

Register: bit.ly/kwk2019july



ictstifr



ictstifr



ICTStalks



INTERNATIONAL
 CENTRE for
 THEORETICAL
 SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH