Parameters that influence variation in EBV-infected B cells

Epstein-Barr virus (EBV) infection of B cells is associated with 90% of malignant post-transplant lymphoproliferative disorder (PTLD) cases. We observed a high variation in EBV-infected B cells in the University of Alberta transplant data of chronic viral load patients (CVLP) from our collaborators. As a consequence, we developed a mathematical model that is based on EBV biology to investigate the cause of variation in EBV-infected B cells. Our application of Sobol\' variance decomposition technique to the mathematical model revealed parameters that are likely essential for the variation we observed. I will discuss implications and limitations of our results in understanding EBV-associated cancers.