

YITIAN YAO, CHRISTIAN BURNS, ZHIJUN WANG, QING WANG. Department of Computer Sciences, Mathematics, and Engineering, Shepherd University, Shepherdstown, WV, 25443, and DAVID J. KLINKE, Department of Chemical Engineering, and Dept. of Microbiology, Immunology & Cell Biology, West Virginia University, Morgantown, WV, 26506. Automating parameter change and data virtualization for simulations of a combinational cancer therapy

The excel importer software is a tool used in the simulations of investigation of sensitivity analysis and treatment strategies for a tumor growth model in response to an immune-chemotherapy. Prior to this software, manual entry of data was required to generate results from each experimental simulation. A prevalent issue that was found while analyzing experimental results is that human error is capable of misconstruing trends represented by the model. This software seeks to increase the speed and accuracy of recordings, furthermore improving the efficiency and throughput of the experimental simulator. The excel importer is largely responsible for organizing input data to be fed into a template that compares solutions of the impulsive ordinary differential equations (IODE) model to published experimental data. The output of each experiment is then automatically formatted for to display results graphically. The project was supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence and the Research Challenge Fund through a Summer Undergraduate Research Experience Grant from the West Virginia Higher Education Policy Commission Division of Science and Research.