

MODELING TUMOR GROWTH IN PRESENCE OF TREATMENT AND IMMUNOLOGICAL RESPONSE

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ABSTRACT. Place abstract here. The abstract summarizes in one paragraph the main question and conclusions drawn from your investigation.

1. BACKGROUND/MOTIVATION

Mathematical modeling in biological processes is used to help researchers and doctors understand biological phenomena. Specifically, it enables researchers to understand the complex biological systems and how these respond to signals or perturbations and how the systems evolve with time [?]

Mathematical oncology is a field of oncology, the study of cancer, that employs math to study cancer and its behavior. In the words of Dr. Rockne and MD Scott, “it [serves] as a bridge between...the biologist, and the practicing clinician (2019).” Some of the most recent and important reasons for math modeling in oncology is to understand and model the characteristics and growth of cancer. Moreover, it seeks also to understand and model the relationship between cancer and the immune system and/or its response to treatment or resistance to it. Lastly, one of the biggest goals is to use this modeling to then develop more personable treatment to individuals facing the plight of cancer.

Also reference articles and sources [?] that are relevant or that you used when learning and/or thinking about your project.

2. MODELING

The primary aspect of the project is the modeling of the chosen phenomenon. If your group’s repeated attempts resulted in abject failure, or your group succeeded, detail them in this section. Be sure to account for the various attempted models and why they were not appropriate. Include numerical simulations for each attempted model. Reference figures and plots, like Figure ??.

3. RESULTS

Clearly and succinctly state and describe the conclusions that you can draw from the model you have achieved (or the many failed attempts). Does your model(s) perform well quantitatively or qualitatively?

4. ANALYSIS/CONCLUSIONS

Discuss the appropriateness of the techniques/methods you employed in modeling. Did your group appropriately model the chosen phenomenon? If not, what different steps could you have taken if you had more time? What did you learn about the techniques/method that were used in the group project? If your model was successful, what additional insight/conclusions could you obtain from it? For instance, if you had a successfully modified SIR model, how might it affect different government policy? If you had a successful model for the spread of inaccurate information on social media, how might it be implemented to help reduce the spread of inaccurate information?

This part should all be done before you get to *page 11*. The bibliography can spill on to page 11, but we won't read text that goes past page 10.