Cancer is a complex disease with many unknown features. The evolution of tumors greatly depends on the interaction network among different cell types, including immune cells and cancer cells in the tumor. To overcome some of the outstanding challenges of mathematical modeling of cancer, we have utilized and integrated several computational techniques. Importantly, in collaboration with scientists with diverse backgrounds, we have used patients’ data and rich spatio-temporal mouse data to develop data-driven mathematical models for tumors’ progression. We believe a collaborative model for conducting research and sharing resources, including codes, data, and results would improve our chances to arrive at more effective treatments and ultimately eliminate cancer as a major health problem for this and future generations. In this talk, I will provide an overview of some of our recent collaborative works and outline several outstanding challenges and possible next steps to address them.