

2. The non-technical abstract.

The goal of this study will be to test a new type of vaccine designed to boost the immune system of cancer patients so that they can attack cancer cells growing in their own body. The main goal of the study is to test the safety of the vaccine, but we will also check how the immune system reacts after giving the vaccine to cancer patients. Ultimately, we will check to see if the cancer stops growing or goes away after vaccination.

The vaccine will be made by mixing two kinds of cells: 1) some of the patients' own cancer cells, which their surgeon will give us at the time of their surgery, and 2) experimental "bystander" cells. All the cells in the vaccine will be treated with high-dose X-rays to make sure that none of them grow and cause more cancer. The bystander cells, called "GM.CD40L", are human cells that have been genetically engineered to express GM-CSF and CD40L. These changes are designed to help recruit and activate dendritic cells (special immune cells). The dendritic cells will take up antigen (small bits of the irradiated tumor cells) and present it to T cells (other immune cells), which can then circulate throughout the body and kill living tumor cells.