

### 3. THE NON-TECHNICAL ABSTRACT

Patients that relapse with acute lymphoblastic leukemia (ALL) after an autologous hematopoietic stem cell transplant have a poor chance of survival. One way to improve the rates of relapse is to enhance the recipient's immune response against their leukemia. To accomplish this we have developed a strategy to augment an immune response by infusing large numbers of tumor-specific T cells. This is accomplished using genetic techniques to modify T cells to be specific for ALL of B cell origin. In this Phase I protocol the ALL-specific T cells are expanded in the laboratory using meticulous growth conditions and given to selected recipients as an infusion after recovery from their autologous hematopoietic stem cell transplant. Patients are eligible for this trial if they are identified at high risk for relapse after their hematopoietic stem cell transplant. Subcutaneous injections of IL-2 will be given to help support the survival of the infused T cells. The recipients of these infusions will be closely monitored for signs of toxicity from these infusions. In addition, data will be collected on how well the ALL-specific T cells function in the body. However, additional studies will probably be necessary to determine the ability of the genetically modified T cells to alter patient survival.