What about Acute Myeloid Leukemia?

**Leukemia is the cancer of white blood cells.**

White blood cells are needed to fight infections. Patients with leukemia have very little functional white blood cells and a massive number of immature, non-functional white blood cells (blast cells); therefore, the patients will succumb to infections caused by common microbes we encounter every day.

One of the most common causes of Acute Leukemia is a defect of FLT3 (fms-like tyrosine kinase 3). FLT3 is a surface receptor on blood stem cells. When activated by regular outside influences, FLT3 encourages stem cells in the bone marrow to differentiate into blast cells at a steady rate. The blast cells then eventually differentiate into functional white blood cells. However, a defect in FLT3 causes it to be in the "on" state constantly, causing the overwhelming proliferation of blast cells from stem cells, with little time for them to mature into functional white blood cells. This event can result in Acute Leukemia

-Willard Cheng

A BCC CIRM intern who worked under the mentorship of Dr. Neil Shah in a Hematology/Oncology lab at UCSF. Willard validated and applied two clinical tests for FLT3 defects using serum samples from patients.

**Brandts, C. H..** "SOCS1 cooperates with FLT3-ITD in the development of myeloproliferative disease by promoting the escape from external cytokine control." Blood: 1691-1702. Print.