## **Cyberknife**

**Team name:** Robokids123 (JMS59)

## **Team Members:** Calvin Whittington [calwhitt01@gmail.com](mailto:calwhitt01@gmail.com) Israel L. Chirino [sirut99@gmail.com](mailto:sirut99@gmail.com) Laisbiel Garcia [garcialaisbie@gmail.com](mailto:garcialaisbie@gmail.com) Santiago Herrera [sanjo06546@gmail.com](mailto:sanjo06546@gmail.com) Ms. Lunsford, Ms. Glennon

**Definition:** How would the statistics of cancer/tumor recurrences change if we introduce robotic treatment like the Cyberknife to the medical field of New Mexico?

**Purpose:** The purpose of our project is to explore the implementation of the Cyberknife in the cancer treatment centers of New Mexico. The average cost for a single Cyberknife is about three million to five million dollars. This machine is well worth the cost because the success rates of the Cyberknife compared to handwork is much more accurate without reassurances.

**Research:** The Cyberknife treatment is currently used to decrease tumors that are cancerous with radiation. Cyberknife treatment is typically five days a week, over a period of four to six weeks, the frequency may vary. Some of our research has been acquired from the following websites:

<https://www.youtube.com/watch?v=ikHqxQGRdfc> <http://www.cancercenter.com/> <http://www.cyberknife.com/>

**Coding:** The program that we will use to create the model is NetLogo. The way that it will be shown is by creating a model that measures the recurrences of the Cyberknife treatment vs handwork.We are going to do this model with the glioma tumor, which is one of the most deadly tumors in the world. There are fewer than 200,000 US cases of Glioma per year.

**Results:** The result we expect to receive is at least 51% approval of the New Mexican public for the Cyberknife, which will improve the success rate of cancer/tumorous substances.