



# FUNDING REPORT

UC San Diego's  
Department of Neurosurgery

Fluorescence Imaging  
Microscope Equipment Purchase



We've got brain cancer surrounded.

## **FUNDING REPORT: UCSD'S DEPARTMENT OF NEUROSURGERY**



Glioblastoma is the most common form of brain cancer and remains a devastating human disease. Unfortunately, conventional chemotherapy and radiation therapy have not significantly improved patient survival. Novel therapeutic paradigms are desperately needed. One of the unique advantages neurosurgeons have in the treatment of brain cancer is that therapeutic agents can be delivered directly into the brain tumor at the time of surgery, thereby bypassing the blood brain barrier. Since surgical resection is an important part of the standard of care for the treatment of brain cancers, it presents a unique opportunity for the delivery of therapeutic agents as well as improving surgical outcomes through novel technology. It is Dr. Bob Carter's belief that fluorescence imaging could dramatically improve surgical outcomes in patients with malignant and intrinsic brain tumors.

### **FLUORESCENCE IMAGING LEADS TO IMPROVED SURGICAL OUTCOMES**

Over the next 12 months, Dr. Bob Carter will inject a fluorescent compound into every brain tumor patient three hours before surgery. By using a specially designed filter, the tumor will fluoresce under the microscope. Normal tumor resection will occur, then the surgical team will view the tumor through the microscope to determine if additional resection is needed. This process will streamline and accelerate surgery, improve patient outcomes and eliminate the need for future surgeries.

Without this technology, the surgeon must do his/her best to resect as much of the tumor as possible but without any way to distinguish between healthy brain matter and the tumor. The results of the surgery are unknown until six weeks later when a patient receives a brain scan to check how much of the tumor was removed. The fluorescence imaging would greatly impact the surgeon's ability to judge the results of the surgery in real time.

Based on early proof of concept research, Dr. Carter believes tumors will fluoresce more brightly in the most aggressive part(s) of the tumor. If this is proven true over the coming

year, then surgeons can assess the area of the tumor with the most activity and target that area in surgery with special care. This could potentially reduce, or even eliminate, the cancer spreading throughout the brain.

UC San Diego is collaborating with a number of other sites nationwide on this trial. The goals of the trial are to determine the efficacy of utilizing this technology in the operating room as well as to assess the fluorescent's effectiveness in determining the most aggressive cells within the tumor.

### **UNCLE KORY FOUNDATION GRANT**

In order to pursue this research project, Uncle Kory Foundation has partnered with the UCSD foundation to split the cost of the \$65,000 (\$32,500/each) in order to purchase a filter for an existing microscope that will visually show tumors glowing in a different color during surgery. Dr. Bob Carter's fluorescence imaging trial could lead to FDA approval in 12 - 18 months, which could catapult an entire field's surgical success.

### **THE UNCLE KORY MISSION**

The Uncle Kory Foundation looks forward to collaborating with like-minded individuals and organizations to inspire and bring hope to those who are facing such life-altering challenges. GBM accounts for approximately 17 percent of all brain tumors and increases in frequency with age, affecting more men than women. Unfortunately for all of them, the prognosis is grim, as few will live to see 3 years after diagnosis. Most patients will live only 6-18 months. The entire family is affected by the devastating news. The Uncle Kory Foundation's mission is to advance innovative and collaborative brain cancer research to specifically improve the survival rate and treatment of those diagnosed with Glioblastoma (GBM).

For more information or to make a donation, please visit [UNCLEKORY.ORG](https://unclekory.org)

