

**New Jersey State Commission on Cancer Research
LAY ABSTRACT OF RESEARCH PROJECT**

NAME OF PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR: **John Glod**

Project Title: **Endothelial-like Monocytic Cells in Tumor Vessel Growth**

Description: **This project investigates the role of a type of blood cell in the formation of brain tumor blood vessels in an effort to develop treatment strategies for brain tumors that involve disrupting the tumor blood supply.**

Brain tumors are a significant problem in both adult and pediatric patients. Despite advances in neurosurgical techniques and radiation oncology, brain tumors remain a leading cause of cancer death and suffering. Traditional chemotherapy has proven largely ineffective; hence, novel treatment strategies are needed for these diseases.

Tumors require oxygen and nutrients to grow. They derive these substances from the blood supply. Therefore, treatments that disrupt the tumor blood vessels can stop the growth of a tumor. Recent studies have shown that certain cells found in the blood are essential for the formation and growth of tumor blood vessels. Our laboratory studies one type of cell found in the blood that may be important in tumor blood vessel growth (Endothelial-like monocytic cells or ELMCs). If we can better understand the biology of this cell type it may be possible to use ELMCs to deliver drugs to the brain tumor blood vessels and to disrupt the blood supply of the tumor in this way.

This study addresses two key questions about the role of ELMCs in brain tumor growth: 1) How do ELMCs interact with blood vessel cells that are already present in the tumor? 2) If ELMCs are injected intravenously how fast do they arrive at the tumor, how many arrive at the tumor blood vessels, and what other sites do they go to? This information will help us to design subsequent experiments using ELMCs to deliver substances to the tumor blood vessels which may be able to disrupt the tumor blood supply.