## Using Radio Waves to cure Cancer Sean Aguiar Department of Electrical and Computer Engineering

There have been many breakthroughs in the name of cancer removal in the past couple decades, but none as promising and efficient as Radiotherapy. Radiotherapy uses radio waves to initiate cancer cell destruction in various procedures.

Cancer cells become created in a person's life when DNA inside the cells are damaged. This damage can be caused by viruses, chemicals, tobacco or sunlight. These damaged cells don't abide by the normal protocol of a cell.3 The cancerous cells divide abnormally and travel through the blood stream effecting tissue and other cells throughout the body. This process is called metastasis. 2

Dr. Holt is a brilliant scientist in the field of medicine who concluded that by using radio waves to stimulate cells, he could "starve" the cancer cells then force them to divide, thus killing them. He would inject the infected patient with a glucose blocking agent which would attach itself to the cancer cells. Then he bombards the body with high frequency radio waves that would stimulate cell division within the body. The cancerous cells would then be starved and destroyed.

John Kanzius invents a machine that bombards cancer tumors injected with metal nanoparticles with high frequency radio waves. The chemical properties of the metal nanoparticles cause a diffusion of heat when excited with electromagnetic radiation. The resulting heat will reach high enough temperatures to kill the cancerous cells or tumors.1



Nanoparticles are tiny particles that measure in size below 100nanometers. When effected by electromagnetic radiation, the carries inside the nanoparticles are driven which creates energy. This energy is then converted into heat then diffused throughout the surrounding material or organism.



Holt and Kanzius both have provided very promising techniques and theories to develop cures for most cancers. And although the Kanzius Machine is still not completely operational, it could be an inexpensive and efficient way of targeting cancer cells to destroy them.

## **References:**

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