

CONTACT: Peggy Simcic Brønn/Ray Moore
(404) 894-3405

Fills Research Gap

30 January 1980

NEW GEORGIA TECH CENTER APPLIES
ENGINEERING SKILLS TO CANCER RESEARCH

For Immediate Release

ATLANTA, GA.....Filling a gap in modern cancer research is the object of the new Georgia Tech Center for Engineering in Cancer Therapy.

"Traditionally," says Center Director Dr. John L. Russell, Jr., "there has been a gap between research and the actual treatment of patients. The main problem has been in developing the technology for getting the research out of the labs and to the patients."

The Georgia Tech Center will help fill this gap by applying engineering skills to cancer research. This includes developing machines, instruments and chemicals for therapeutic use on patients with cancer.

To Russell's knowledge, no other such broadly-based, interdisciplinary facility in the U.S. is concentrating on the engineering problems of cancer therapy.

The Center at Tech is particularly interested in applying its skills to the types of cancer that cannot be cured with surgery or radiation. Two-thirds of the known types of cancer fall into this category, including inoperable cancer of the liver and many types of brain and lung cancer.

The research at the Center will concentrate on developing clinical equipment and procedures for treating cancerous tumors with non-surgical methods that get rid of the tumor but don't harm the surrounding tissue. Some of this work has already been pioneered by Tech researchers.

-more-

One such example is the preparation at the Tech Nuclear Research Center of a radiopharmaceutical called radioactive yttrium microspheres which is used experimentally in the treatment of inoperable liver tumors. The substance is now being used in nationwide clinical trials for treating metastatic cancer of the liver. Metastatic cancer is a secondary cancer that has spread from a primary tumor.

Another promising area of nuclear medicine is the use of boron-neutron-capture therapy. This approach is based on first loading tumors with boron, a common chemical element. The tumor is then irradiated with a neutron beam from the Georgia Tech research reactor. The neutrons from the beam are captured by the boron which then becomes violently radioactive and kills the tumor without harming the surrounding tissue.

Although much of the work at the Center will deal with nuclear medicine, other areas of cancer research expertise within Tech will be employed in the "war on cancer." For instance, the School of Chemical Engineering has a facility for growing mammalian cells in an artificial environment which is an important tool in therapy involving a body's natural protection against foreign tissue.

The Engineering Experiment Station has expertise in the design and construction of radio frequency equipment. It has been demonstrated that temperatures above normal body temperature, but not so high as to damage normal tissue, will produce significant tumor damage. Radio frequency heating can be used for heating selected organs to treat them for cancer.

The Biology Department will also play a role in the Center's research on cancer immunology and tumor specific antibodies. These are antibodies that, when injected into the blood stream, are able to localize in cancer lesions. They are used first to diagnose malignant tumors and then to help destroy them.

The radio frequency studies and the cancer immunology studies are both partially supported by the National Cancer Institute.

Along with the expertise at Georgia Tech, the Center will utilize the work at the Medical Research Foundation in Atlanta, a private non-profit research group; the assistance of the local community; and the cooperation of state organizations.

#