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News Release

NOTE: BICKNELL EUBANKS FOLLOWING WILMA WILLIAMS AS NEWS DIRECTOR IN EUROPE

GRADUATE RESEARCH CENTER OF THE SOUTHWEST

SOUTHWEST CENTER FOR ADVANCED STUDIES

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RELEASE ON RECEIPT

DALLAS RESEARCH CENTER STUDIES USE OF NEGATIVE PION BEAM FOR CANCER THERAPY

Dallas, Texas

The Graduate Research Center of the Southwest has received a $20,000 grant from the American Cancer Society, Inc., for research into the use of a negative pion beam for cancer therapy. The funds will further the project of Professor Chaim Richman of the Center's Pion Dosimetry Project.

With prior support from the American Cancer Society and with the cooperation of the Lawrence Radiation Laboratory at the University of California in Berkley, Professor Richman has demonstrated that negative pi mesons (among sub-atomic particles) deliver a large pulse of energy at the end of passage through tissue, while producing relatively little damage to cells along the beam path. This unique peaking feature appears to hold unusual promise for cancer radiation therapy.

Pion is a short name for pi meson. Mesons are particles that burst from the nuclei of atoms during atomic reactions. The particles may have plus or minus electric charges, or no charge at all. Their life is short; half their energy is expended in 1/100,000th of a second. The meson may be a major binding force of the nucleus of the atom.

Professor Richman and cooperating scientists at the Lawrence Radiation Laboratory have undertaken a series of investigations using plastic sandwich targets enclosing elements of low atomic number, tissue of the common broad-leaf bean plant, and living animal tissue, to obtain effect of varying dosages for pion beams of various powers.

Professor Richman also has shown that positive pi mesons, after stopping, produce positrons by which it may be possible to determine the density structure of the tissue along the beam path, thus effectively identifying

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the depth of a potentially cancerous tumor needing therapy. It appears this ranging technique may be used effectively to determine the tumor location before possible application of the negative pi meson for therapy.

The positron is another particle from the atom. It is the twin of an electron, but has a positive electric charge. When positrons and electrons interact, both disappear. Gamma radiation forms in their place; gamma rays are a form of energy that penetrate matter readily, traveling at the speed of light.

Professor Richman also is investigating the possibility of improved diagnosis and detection of breast cancer by nuclear emulsions, using soft X-rays. The purpose is to determine if cancerous symptoms can be detected better on the very sensitive emulsion than by the usual X-ray film. In this way, it is hoped improvements can be made in present diagnostic machines and techniques.

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Former Dallas correspondent for Christian Science Monitor - later, a C.S. practioner, (dec. c/ca 1971)