

## **NUCLEAR-PIONEER**

### **LECTURER:**

## **GORDON LEE BROWNELL**



Gordon Lee Brownell, Head of the Physics Research Laboratory at the Massachusetts General Hospital, was born in Duncan, Oklahoma, in 1922. He received his Ph.D. in physics at the Massachusetts Institute of Technology in 1950 and almost immediately thereafter embarked on a career in medical physics that has been characterized by a series of outstanding contributions to our field.

In 1951 Dr. Brownell joined a group of investigators from the Massachusetts General Hospital in a study of  $^{131}\text{I}$  kinetics in patients with endemic goiter in South America. This study is the archetype of the application of mathematics to kinetic tracer studies. Dr. Brownell has continued to contribute in this area and was the first to apply transform methods to the analysis of tracer kinetics. He is currently chairman of the ICRU task group on tracer kinetics.

In the early 1950's Dr. Brownell also developed the positron scanning system that was the first scanning device successfully used for the routine detection of brain tumors. He has continued to work on the development of positron imaging devices, and his group

has recently developed the hybrid positron scanner. He is currently working on sophisticated positron imaging devices which locate the source of activity by time-of-flight measurements. When perfected, a time-of-flight device will permit true isotope tomography.

Dr. Brownell's contributions to the field of dosimetry are well known through his classic book written in collaboration with Gerald Hine. More recently he developed the concept of the absorbed fraction for gamma-ray dosimetry and pioneered the use of Monte Carlo techniques for these calculations. As Associate Professor of Nuclear Engineering at MIT, Dr. Brownell has done basic work in the physics of neutron therapy. His teaching program in medical physics at MGH draws biophysics graduate students from MIT and is one of the largest and most comprehensive programs of its kind.

For many years Dr. Brownell has had an interest in the history of medical physics. Through his many contacts at MIT and other centers throughout the world, he is in a unique position to present this year's pioneer lecture on the early history of nuclear medicine.