Attention of Dr. Warren

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A PROPOSED DEFINITION OF AEC FELLOWSHIP FIELDS OF INTEREST

The availability of atomic energy for research in the basic sciences and for use in medicine, agriculture, and industry has increased the demand for investigators, physicians, and engineers who have atomic energy know-how as well as the specialized training peculiar to their professions.

The Atomic Energy Commission has been trying to meet this demand by providing fellowships for training in atomic energy know-how, and in research in the basic sciences.

In the fields of biology and medicine, the kinds of training which, in my opinion, are properly the responsibility of the Atomic Energy Commission are the following:

I. FOR FELLOWS HAVING THE M.D. OR PH.D. DEGREE:

1. Depending upon the previous training of the fellow - STUDY in physics, chemistry, biophysics, biochemistry, genetics, radiochemistry, and INSTRUMENTATION.

2. STUDY OF THE EFFECTS OF RADIATION (BENEFICIAL AND HARMFUL) ON CELLS, TISSUES, WHOLE ORGANISMS.
(TECHNIQUES TO BE USED: THOSE OF BIOLOGY, BIOPHYSICS, BIOCHEMISTRY, PHYSIOLOGY, PATHOLOGY, CLINICAL INVESTIGATION.)

3. THE USE OF RADIOISOTOPES TO DETERMINE (FOR EXAMPLE)

   a. The over-all reactions of drugs, foodstuffs, and other organic substances taken into the body.

   b. The detailed nature of organic reactions in specialized cells.

   c. The particular way in which the enzymes (biological catalysts) work.

   d. The nature of the exchange of inorganic materials in the bones and body fluids.

   e. Pathological states, and as aids to DIAGNOSIS.

4. THE EXPLOITATION OF KNOWLEDGE LEARNED
from (1) and (2) above in the search for therapeutic measures to combat

   a. Radiation damage in particular, and

   b. Disease and injury in general.

II. FOR FELLOWS IN TRAINING FOR THE PH.D. DEGREE:

1. Courses of study selected from such subjects as the following: biology, physics, chemistry, radiochemistry, biophysics, biochemistry, physiology, microbiology, pathology, instrumentation.

2. Research, leading to a Ph.D. thesis, on some agriculture important problem in the field of biology, biophysics, biochemistry, or one of the medical sciences, in the course of which the fellow will employ radioisotopes or engage in the study of the effects of radiation.

A. David Lothrop

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