



# Budget

707345

Salaries appear reasonable  
Instruments, equip. med. supplies  
Little noted in income?

Machine tools: —  
does Univ. already have a  
shop?

Travel appears high.

Contingencies.  
Will this not include  
overhead?

Will Col. Petersen care to  
check this whole affair with  
me.

1020982

REPOSITORY Oak Ridge Operations Office

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Records Holding Area - Bldg 2714-H Vault,

BOX No. Box RHA - H248-8 3 of 3

FOLDER None



WESTERN RESERVE UNIVERSITY

THE SCHOOL OF MEDICINE

Department of Medicine  
Lakeside Hospital  
Cleveland, 6, Ohio.

May 24, 1946.

The District Engineer  
Manhattan District,  
U.S. Engineers Office  
Oak Ridge, Tennessee.

~~CONFIDENTIAL~~

Dear Sir:

The School of Medicine of Western Reserve University is prepared, in accordance with previous communications and discussions between Dr. Hymer L. Friedell and Colonel Stafford L. Warren, to conduct biological research on special problems associated with the operations of the Manhattan Engineer District. This program will be pursued in the main by the Department of Radiology under Dr. Friedell, but will involve other departments of the Medical School, (Department of Pharmacology and Department of Biochemistry). The work can be integrated with the over-all medical research program since it is the intent of the University to continue a strong interest in the field of biophysics and to promote research in radiation and radio isotopes in biological and biochemical research.

Dr. Friedell has indicated that the broad objectives to be pursued under the research program which is dictated primarily by the needs of the Manhattan Project, may be outlined as follows:

1. An investigation of the toxic effects of thorium and its isotopes. Prospective uses of this element make it necessary to understand the possible medical hazards involved in exposure to this element. The study of thorium and its isotopes includes the following: a) Establishment of the toxicity levels by ingestion and parenteral injection; b) Establishment of the mechanism of damage by determining the site and character of injury in the organism; c) The study of the distribution and excretion which would probably best be accomplished by use of one of the radioactive isotopes of thorium.
2. An investigation of radiation tissue dosages by comparing radiation from internally distributed radioactive materials with radiation from external source. The basis for comparison would be energy absorption of tissue; alpha emitters such as thorium, polonium, and radium, and beta emitters such as radiophosphorus and radio-strontium would be particularly useful for studying the effects of internally distributed radioactive elements.

The studies will require accurate localization in tissue of the specific elements and careful assay of the deposited radioactivity.

3. A small portion of the total activity (not to exceed 20%) could be utilized for the application of radioactive isotopes to fundamental biological research. This would include the application of radioactive elements for functional studies (circulation rates and peripheral blood flow); for therapeutic purposes (treatment of Cancer with radiophosphorus, radio-iodine and radio-strontium); and for investigation of fundamental metabolic problems (use of C<sup>14</sup>.)

Classification Changed to UNCLASSIFIED  
By Authority of DAR-C  
Classification Authority

BY M. R. THEISEN, ANALYSIS CORP. 1-13-94  
JAN 24 1984 Date

Section 3 concerns itself with more distantly related problems than those indicated in Section 1 and 2. They are nevertheless of great fundamental interest. It is considered necessary in any well-organized research program to permit the pursuit of academic problems in order to provide investigative stimulus and to broaden the concepts of those working with the more practical problems outlined in Section 1 and 2.

It is not necessary to point out to you the difficulty of securing satisfactory personnel today. There is a dearth of chemists and physicists and the competition among medical schools and industrial concerns is very intense. Another factor that will make the securing of desirable personnel difficult is the lack of security and permanence to the positions. I realize full well that the Government can make grants for one year only, but I am sure you will appreciate that this adds to the difficulty of attracting the best young chemists and physicists. I do not know whether it is possible for the Government to intimate that if the work is satisfactory that it would be their intent to go along with it over several years time.

It should also be pointed out that it may take some time to get the work going at full speed. In addition to the difficulty of getting men, there is also difficulty in getting materials and to get the whole problem organized. In view of this, I think it would be fortunate if Dr. Friedell could get under way by September or October 1.

For your information, also, I may say that Dr. Harland G. Wood, Professor of Biochemistry in Western Reserve University School of Medicine, has done outstanding work in isotope chemistry and that Dr. Arnold D. Welch, Professor of Pharmacology, is also a well trained biochemist. These men are ideally equipped to take a hand in the problem as outlined above.

Ample space will be set aside in the School of Medicine for housing the projects and the School will, of course, furnish, in addition to space, access to all of its apparatus and equipment. Should the problem call for co-operation from other Departments than those mentioned above, their services would also be available.

An estimate of the cost of the work for the year 1946-1947 is appended.

Please note that no item for overhead is included. In contracts with the Office of Scientific Research and Development, the Surgeon General's office of the Army, the Navy and the U. S. Public Health Service, items for overhead are included. I would suggest consideration be given to this item when discussion of the contract is taken up.

After review of the above by your office, Western Reserve University School of Medicine is ready to negotiate a suitable contract for the conduct of these studies.

Yours sincerely,

/s/ Joseph T. Wearn

Joseph T. Wearn, Dean  
The School of Medicine.

JTW/F

1020985

TENTATIVE PERSONNEL AND BUDGET REQUIREMENTS  
For the Year 1946-1947

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Head, Biochemistry Subsection	6,000
Head, Pharmacology Subsection	6,000
Head, Radiology Subsection	6,000
Assistant Head, Radiology Subsection (Pathology.?)	5,000
Head, Physics Subsection	6,000
Assistant Head, Physics Subsection (instrument)	5,000
Executive Administrator	5,000
Research Associates (4) (\$4000 per annum)	16,000
Technicians (10) (\$2500 per annum)	25,000
Instrument workers, Animal men, Secretaries	10,000
Instruments, equipment, material, supplies	75,000
Travel and Telephone Services	10,000
Contingencies	25,000
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	200,000

## EQUIPMENT

A. X-ray equipment and x-ray measuring devices	15,000
Radioactivity assay equipment (counters, scales, etc.)	10,000
Accessory electronic equipment	5,000
B. Animal Cages (Metabolism and others)	2,000
C. Machine Tools (for electronic equipment and others)	10,000
D. Accessory Equipment	
Ashing and drying ovens	
Microscopes- Counting chambers	
Plating equipment (four counting discs)	
Balances	15,000
E. Materials	
Glassware	
Chemicals	
X-ray film	8,000
F. Animals	
Rats	
Mice	
Dogs	10,000
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	75,000