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MINUTES

ADVISORY COMMITTEE FOR BIOLOGY AND MEDICINE

TWENTY THIRD MEETING

Held at

ATOMIC ENERGY COMMISSION

Washington, D. C.

September 8-9, 1950

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
SINGLE REVIEW AUTHORIZED BY: <i>A.A. SINISGALLI</i>	DETERMINATION [CIRCLE NUMBER(S)]
REVIEWER (ADD): <i>5-23-94</i>	1. CLASSIFICATION RETAINED
NAME: <i>ACK</i>	2. CLASSIFICATION CHANGED TO: _____
DATE: <i>5-23-94</i>	3. CONTAINS NO DOE CLASSIFIED INFO
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	5. CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED

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MINUTES

Advisory Committee for Biology and Medicine

September 8-9, 1950

The twenty third meeting of the Advisory Committee for Biology and Medicine was held on Friday and Saturday, September 8 and 9 at the Atomic Energy Commission building in Washington, D. C.

Attendance

ATTENDANCE

Members of Committee Dr. E. W. Goodpasture, Vice-Chr.  
Dr. D. W. Bronk  
Dr. E. A. Doisy  
Dr. E. C. Stakman  
Dr. Curt Stern  
Dr. J. T. Wearn

Dr. Alan Gregg was unable to be present.

Staff of AEC and  
Division of Biology  
and Medicine Mr. Gordon Dean  
Dr. Shields Warren  
Mr. John A. Derry  
Dr. Walter D. Claus  
Dr. Charles L. Dunham  
Dr. Paul B. Pearson  
Dr. George A. Hardie  
Dr. L. W. Tuttle  
Dr. Max R. Zelle  
Dr. Wm. F. Bale  
Dr. N. E. Tolbert  
Mr. Harry L. Bowman  
Mr. Joe Deal  
Mr. John V. Lannon  
Mr. W. E. McGuirk  
Mr. Beverly Thompson  
Mr. R. A. Tumbleson  
Mrs. F. R. Montgomery

Visitors

Dr. N. Woodruff, Oak Ridge O. O.  
Dr. P. Owen, N.R.C.

FRIDAY, SEPTEMBER 8, 1950

The Vice-Chairman convened the meeting at 9:40 a.m.

Minutes of  
Meeting of  
May 12-13,  
1950

The first order of business presented to the Committee by the Chairman was a discussion of the minutes of the meeting held at the AEC on May 12-13, 1950. Upon a motion by Dr. Bronk and seconded by Dr. Wearn, the minutes were approved unanimously.

Report on Support of Research Projects

Report on  
Support of  
Research  
Projects

The following projects in biology, medicine, and health physics, that had been selected since the previous meeting by the Division of Biology and Medicine to receive support by the Atomic Energy Commission were studied by the Committee. Dr. Warren commented that the number of 83 approved contracts may seem to be high, however, it did not represent undue acquiescence in requests, but rather it is a reflection of the fact that there were certain specific holes in the biological, medical and health physics programs that needed to be filled and the Division had been working hard to interest various investigators.

Biology Division

- (1) Yale University (Contract No. AT(30-1)-568- Dr. E. C. Pollard - "Irradiation of Viruses and Large Molecules" \$19,440.

Personnel	\$16,500
Equipment & Supplies	1,000
Overhead	1,440
Other	500
Total	<u>\$19,440</u>

(Approval of renewal of contract for period Jun 1, 1950 to May 31, 1951. Previous contract June 1, 1949 to May 31, 1950 - \$12,400.

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- (2) Oregon State College - Drs. V. H. Cheldelin and A. E. Christensen - "Vitamin-Amino Acid and Carbohydrate Amino Acid Interrelationships, Using Isotopic Tracers" - \$9499.

Personnel	\$6,796
Equipment & Supplies	1,600
Overhead	703
Other	400
Total	<u>\$9,499</u>

(Approval of transfer to AEC and renewal of ONR contract NR-125-830 for period July 1, 1950 to June 30, 1951. Previous contract July 1, 1949 to June 30, 1950 - \$14,000).

- (3) University of Texas - Dr. Jack Meyers - "Biological Accumulation of Inorganic Materials by Algae" - \$14,202.

Personnel	\$11,400
Equipment & Supplies	1,500
Overhead	1,052
Other	250
Total	<u>\$14,202</u>

(Approval of transfer to AEC and renewal of ONR contract NR-130-742 for period July 1, 1950 to June 30, 1951. Under ONR contract FY 1948 - \$6600; FY 1949 - \$14,300).

- (4) Texas A & M College (Contract No. AT(40-1)-291) - Dr. R. Reiser - "Metabolism of Glycerides" - \$10,800.

Personnel	\$8,000
Equipment & Supplies	2,500
Overhead	0
Other	300
Total	<u>\$10,800</u>

(Approval of renewal of contract for period July 1, 1950 to June 30, 1951. Previous contract July 1, 1949 to June 30, 1950 - \$12,800).

- (5) U. S. Department of Agriculture "Soil Management and Crop Production" - \$185,000.

Personnel	\$135,832
Utilities & Services	36,650
Equipment & Supplies	24,218
Travel	2,000
Other	1,300
	<u>\$200,000</u>
Less unexpended funds	15,000
	<u>\$185,000</u>

(Previous contract FY 1949 - \$348,998; FY 1950 - \$200,000).

- (6) Southern Research Institute, Birmingham, Alabama -  
Dr. Howard E. Skipper - "Body Retention of Carbon 14"  
\$17,979.

Personnel	\$13,039
Equipment & Supplies	3,358
Overhead	1,332
Other	250
Total	<u>\$17,979</u>

(Approval of transfer to AEC and renewal of ONR contract NR-171-642 for period July 1, 1950 to June 30, 1951. Previous contract under ONR FY 1948 - \$14,749; FY 1949 - \$18,060).

- (7) University of California (Contract AT(11-1)-34-I)  
Dr. Max Kleiber - "Metabolism Studies and Biological Syntheses with Large Animals" - \$30,240.

Personnel	\$13,000
Equipment & Supplies	15,000
Overhead	2,240
Total	<u>\$30,240</u>

(Approval of renewal of contract for period July 1, 1950 to June 30, 1951. Previous contract for period July 1, 1949 to June 30, 1950 - \$16,000).

- (8) Amherst College - Dr. Harold H. Plough - "Research in Radiobiology & Biochemical Genetics" - \$16,265.

Personnel	\$11,880
Equipment & Supplies	2,630
Overhead	1,205
Other	550
Total	<u>\$16,265</u>

(Transfer to AEC and renewal of ONR Contract NR 164-879 for period July 1, 1950 to September 14, 1951. Previous contract under ONR \$12,315).

- (9) University of Chicago (Contract AT(11-1)-45) Dr. E.M.K. Geiling - "Biosynthesis of Radioactive Drug Compounds"  
\$50,000.

Personnel	\$32,400
Equipment & Supplies	16,600
Overhead	0
Other	1,000
Total	<u>\$50,000</u>

(Approval of renewal of contract for period July 1, 1950 to June 30, 1951. Previous contract for period July 1, 1949 to June 30, 1950 - \$50,000).

- (10) University of Missouri - Dr. J. Levitt - "Translocation of Mineral Substances in Plants" - \$2,530.

Personnel	\$1,650
Equipment & Supplies	400
Overhead	180
Other	300
Total	\$2,530

(Approval of transfer to AEC and renewal of ONR contract NR-122-725 for period July 1, 1950 to June 30, 1951. Previous contract under ONR - \$1753).

- (11) Oregon State College - Dr. Joseph S. Butts - "The Mode of Action of 2,4-Dichlorophenoxyacetic Acid (2,4-D) and Isopropyl-N-Phenyl Carbamate (IPC)" - \$8,290.

Personnel	\$6,136
Equipment & Supplies	1,275
Overhead	614
Other	265
Total	\$8,290

(Approval of transfer to AEC and renewal of ONR contract NR-171-786 for period July 1, 1950 to June 30, 1951. Previous contract under ONR - \$11,500).

- (12) Purdue University - Drs. Henry Koffler and P. A. Tetrault "The Use of Radioactive Isotopes in Studying Mold Metabolism with Emphasis on the Assimilatory Mechanisms of Penicillium Chrysogenum" - \$4,250.

Personnel	\$3,100
Equipment & supplies	750
Other	400
Total	\$4,250

(Approval of transfer to AEC and renewal of ONR contract NR-130-812 for period of June 15, 1950 to June 14, 1951. Previous contract under ONR - \$4,558).

- (13) Oklahoma A & M College (Contract AT(11-1)-28) - Dr. A. Eisenstark - "Cystogenic Effects of Irradiation" - \$3,327.

Personnel	\$2,580
Equipment & Supplies	300
Overhead	247
Other	200
Total	\$3,327

(Approval of renewal of contract for period June 1, 1950 to May 31, 1951. Previous contract June 1, 1949 to May 31, 1950 - \$5,740.)

- (14) University of North Carolina (Contract AT(40-1)-265)  
Dr. W. C. Gregory - "Peanut Seed Irradiation Project" \$17,085

Personnel	\$10,800
Equipment & Supplies	4,500
Overhead	0
Other	1,785
Total	<u>\$17,085</u>

(Renewal of contract for period July 1, 1950 to June 30, 1951. Previous contract for period July 1, 1949 to June 30, 1950 - \$16,950.)

- (15) U. S. Department of Interior, Fish & Wildlife Service  
Dr. W. A. Chipman - "The Accumulation of "radioactivity  
in Marine Invertebrate Animals" - \$19,500.

Personnel	\$18,850
Equipment & Supplies	4,950
Other	1,200
Total	<u>\$25,000</u>
Less unexpended funds	5,500
	<u>\$19,500</u>

(Renewal of contract for FY 1951. Previous contract for FY 1950 - \$24,500).

- (16) University of Illinois (Contract No. AT(11-1)-67-II)  
Drs. B. C. Johnson & H. C. Carter - "Metabolism of  
Vitamins" - \$5,400.

Personnel	\$2,640
Equipment and Supplies	1,465
Overhead	1,095
Other	200
Total	<u>\$5,400</u>

(Renewal of contract for period October 1, 1950 to September 30, 1951. Previous contract for period October 1, 1949 to September 30, 1950 - \$4,800).

- (17) State College of Washington (AT(45-1)-213-I) Dr. O.  
Biddulph - "The Absorption, translocation and  
disposition of various elements in Plants" - \$2,520.

Personnel	\$2,520
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(Approval of additional funds to amount previously approved; Contract April 1, 1949 to March 31, 1951, \$13,600).

- (18) Johns Hopkins University - Drs. Robert Ballentine & Wm. L. McElroy - "The Metabolism and Functional Significance of Cobalto-Protein" - \$6,507.

Personnel	\$4,000
Equipment & Supplies	2,025
Overhead	482
Total	<u>\$6,507</u>

- (19) University of Texas - Dr. J. W. Foster - "Mold Metabolism" - \$4,968.

Personnel	\$3,600
Equipment & Supplies	1,000
Overhead	368
Other	0
Total	<u>\$4,968</u>

- (20) University of Southern California - Dr. H. J. Deuel, jr. "The Effect of Radiation on Intestinal Absorption and Metabolism of Fats and Carbohydrates" - \$7,181. (Approval of additional \$7,181 to sum of \$23,382 Previously approved).

Equipment & Supplies	\$7,181
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- (21) Polytechnic Institute of Brooklyn - Dr. A. D. McLaren - "The Effect of Ultraviolet Radiation on Enzymes and Viruses" - \$15,120.

Personnel	\$10,800
Equipment & Supplies	2,250
Overhead	1,120
Other	950
Total	<u>\$15,120</u>

- (22) Howard University - Dr. Louis A. Hansborough - "The Effect of Labelling the Germ Cells on Fertilization and Development" - \$4,076.

Personnel	\$2,500
Equipment & Supplies	1,426
Overhead	0
Other	150
Total	<u>\$4,076</u>

- (23) Yale University - Dr. Norman H. Giles - "Investigations of the Mechanism of Radiation-Induced Chromosomal Rearrangement in Tradescantia and Gene Mutations in Neurospora" \$39,906.

Personnel \$11,100; Equipment & Supplies \$25,850; Overhead \$2,956, Total \$39,906.

- (24) U. S. Department of Agriculture - Drs. H. R. Bird, P. B. Pearson (Collaborator), L.W. Tuttle(Collaborator) "Metabolism of the Embryo and the Effect of Internal Radiations" - \$30,680.

Personnel	\$21,780
Equipment & Supplies	8,500
Other	400
Total	<u>\$30,680</u>

- (25) University of Wisconsin - Dr. Paul H. Phillips - "The Long Time Effects of Intermittent Radiations on Dogs" - \$28,200.

Personnel	\$16,400
Equipment & Supplies	7,100
Overhead	0
Other	4,700
Total	<u>\$28,200</u>

- (26) University of Arizona - Drs. Wallace Fuller & W. T. McGeorge - "Utilization of Phosphorus from Biological Material" - \$2,460.

Personnel	\$1,800
Equipment & Supplies	510
Other	150
Total	<u>\$2,460</u>

- (27) Stanford Research Institute - Drs. R. Pencharz and D. Singman - "An Experimental Study of the Direct and Indirect Effects Produced by X-Irradiation of the Spleen" - \$13,500.

Personnel	\$8,800
Equipment & Supplies	4,700
Total	<u>\$13,500</u>

- (28) South Dakota State College - Drs. Alvin L. Moxon & E.I. Whitehead - "Metabolism of Selenium and Sulfur in Plants" - \$7,050.

Personnel	\$3,400
Equipment & Supplies	3,465
Other	185
Total	<u>\$7,050</u>

- (29) Oklahoma A & M College - Dr. R. M. Chatters - "Effect of Radiation on Plant Growth" - \$4,752.

Personnel	\$2,898
Equipment & Supplies	1,000
Overhead	404
Other	450
Total	<u>\$4,752</u>

- (30) University of Utah - Drs. L. P. Gebhardt & Dr. L. T. Samuels - "The Use of Labelled Phosphorous in the Study of Nerve Tissue Metabolism During Invasion of Neurotropic Viruses" - \$8,543.

Personnel	\$4,250
Equipment & Supplies	3,660
Overhead	633
Total	<u>\$8,543</u>

- (31) University of Michigan - Dr. Clement L. Markert - "Mutagenic Effects of Different Types of Radiation" - \$3,240.

Personnel	\$2,500
Equipment & Supplies	500
Overhead	240
Total	<u>\$3,240</u>

- (32) University of Missouri - Drs. Donald W. Barton and L. J. Stadler (Advisor) - "Cytogenic Study of the Effects of Radiation on the Differentiated Chromosomes of the Tomato" - \$4,830.

Personnel	\$4,300
Equipment & Supplies	100
Overhead	355
Other	75
Total	<u>\$4,830</u>

- (33) University of Oklahoma Research Institute - Drs. L. M. Rohrbaugh & L. Rice - "The Translocation of Tagged 2, 4-D and Other Growth Regulators in Plants in Light and in Darkness" - \$5,789.

Personnel	\$3,360
Equipment & Supplies	1,800
Overhead	429
Other	200
Total	<u>\$5,789</u>

(34) University of Oklahoma - Dr. R. A. Goff - "The Effects of Isotopic Irradiation of Embryonic Capillaries" \$1,923

Personnel	\$1,080
Equipment & Supplies	500
Overhead	143
Other	200
Total	<u>\$1,923</u>

(35) University of California, Citrus Experiment Station - Drs. F. M. Turrell, F. A. Gunther, R. L. Metcalf and R. B. March - "Use of Radioactive Tracers in Studies of the Mode of Action of Organic Insecticides" - \$2,740.

Equipment & Supplies	\$2,740
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(36) University of Utah - Drs. John D. Spikes & R. W. Lumry "Studies of Photosynthetic Processes in Cell-Free Preparations" - \$23,832.

Personnel	\$17,900
Equipment & Supplies	3,900
Overhead	1,432
Other	600
Total	<u>\$23,832</u>

(37) University of Minnesota - Drs. W. R. Petersen, Allan Hemingway and Lew Mix - "A Study of Milk Formation by the Use of Radioactive Carbon Compounds" - \$8,640.

Personnel	\$2,688
Equipment & Supplies	5,312
Overhead	640
Total	<u>\$8,640</u>

(38) University of Delaware - Dr. Arnold M. Clark - "Radiation Effects Upon Haploids and Diploids of Habrobracon" - \$4,521.

Personnel	\$3,536
Equipment & Supplies	550
Overhead	335
Other	100
Total	<u>\$4,521</u>

(39) Yale University - Dr. David Bonner - "The Relationship of Genes to Biochemical Reactions in Neurospora" - \$6,415.

Personnel	\$3,940
Equipment & Supplies	2,000
Overhead	475
Total	<u>\$6,415</u>

Medicine

- (1) University of California (Contract No. AT(11-1)-34-II)  
Dr. Herman Becks - "Metabolism of Radioactive Fluorine  
(Dental)" - \$5,700.

Personnel	\$4,200
Equipment & Supplies	800
Overhead	300
Other	400
Total	<u>\$5,700</u>

(Renewal of contract for period July 1, 1950 to  
June 30, 1951. Previous contract July 1, 1949 to  
June 30, 1950 - \$5,000).

- (2) University of Chicago - Dr. H. S. Anker - "Investiga-  
tions of the Mechanisms of Antibody Synthesis by the  
Tracer Technique" - \$345.

Overhead	\$345
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(Approval of additional funds to \$4300 previously approved)

- (3) University of Michigan (Contract AT(11-1)-33) - Dr.  
Reuben Kahn - "Universal Serological Reaction following  
Irradiation" - \$23,000.

Personnel	\$20,000
Equipment & Supplies	2,700
Overhead	0
Other	300
Total	<u>\$23,000</u>

(Renewal of contract for period July 1, 1950 to  
June 30, 1951. Previous contract July 1, 1949 to  
June 30, 1950 - \$23,750).

- (4) Henry Ford Hospital (Contract No. AT(11-1)-40 -  
Dr. F. W. Hartman - "Chemical Sterilization of Blood  
and Plasma with Nitrogen Mustard" - \$12,900.

Personnel	\$9,900
Equipment & Supplies	3,000
Total	<u>\$12,900</u>

(Renewal of contract for period July 1, 1950 to June 30,  
1951. Previous contract July 1, 1949 to June 30, 1950  
\$12,900).

- (5) University of Colorado (Contract Lt(29-1)-787)  
Dr. Theodore Puck - "Study of Normal and Radiation-Induced Mechanisms in Biological Systems which Permit Molecular Analysis" - \$36,400.

Personnel	\$25,100
Equipment & Supplies	9,300
Other	2,000
Total	<u>\$36,400</u>

(Renewal of contract for period July 1, 1950 to June 30, 1951. Previous contract for July 1, 1949 to June 30, 1950 - \$39,000).

- (6) Boston University - Dr. B. R. Lutz - "Effect of Radiation on the Functions of Small Blood Vessels of the Hamster and the Frog" - \$5,000.

Personnel	\$15,750
Equipment & Supplies	12,548
Construction	6,158
Overhead	0
Other	500
Total	<u>\$34,956</u>

(Approval of additional \$5,000 to \$30,000 previously approved).

- (7) University of Georgia (Contract AT(40-1)-232) Dr. S. A. Singal - "The Effects of Nutritional Deficiencies on the Synthesis of Phospholipids and Nucleoproteins in the Rat" - \$2,600.

Equipment & Supplies	\$2,600
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(Approval of additional \$2,600 to \$5,600 previously approved).

- (8) University of Oregon (Contract AT-45-1-226) Dr. P.L. Risley - "Localization of Radioactive Isotopes in Germ Cells and Reproductive Tissues during Quiescence and Activation" - \$14,082.

Personnel	\$10,039
Equipment & Supplies	2,350
Overhead	1,043
Other	650
Total	<u>\$14,082</u>

(Renewal of contract for period July 1, 1950 to June 30, 1951. Previous contract for period July 1, 1949 to June 30, 1950 - \$14,000).

- (9) Ohio State University - Dr. J. L. Merton - "Investigations of the Therapeutic Use of Cobalt-60" - \$25,000.

Personnel	\$6,350
Equipment & Supplies	3,300
Hospital costs	11,000
Overhead	4,000
Other	350
Total	<u>\$25,000</u>

(Transfer to AEC and renewal of ONR contract NR-171-851 for period July 1, 1950 to June 30, 1951. Previous contract under ONR \$25,331).

- (10) Washington University (Contract AT(11-1)-55) Dr. Frank J. Dixon - "Investigations of the Effects of Agents Used in the Treatment of Cancer, X-ray and Nitrogen Mustards on Immunologic Response to Experimental Animals" - \$18,200.

Personnel	\$11,450
Equipment & Supplies	6,000
Other	750
Total	<u>\$18,200</u>

(Renewal of contract for period Sept. 1, 1950 to Aug. 31, 1951. Previous contract for Sept. 1, 1949 to Aug. 31, 1950 - \$10,500.)

- (11) Reed College (Contract AT(45-1)-227 - Dr. F. P. Hungate - "Application of Radioactive Tracers in Field of Cellular Metabolism" - \$7,500.

Personnel	\$5,000
Equipment & Supplies	1,550
Overhead	550
Other	400
Total	<u>\$7,500</u>

(Renewal of contract for July 1, 1950 - June 30, 1951. Previous contract for July 1, 1949 - June 30, 1950 \$7,500.)

- (12) Reed College (Contract AT(45-1)-229) - Dr. A. H. Livermore "Biological Synthesis of the Peptide Bond" - \$9,400.

Personnel	\$5,750
Equipment & Supplies	2,500
Overhead	695
Other	455
Total	<u>\$9,400</u>

(Previous contract for July 1, 1949 to June 30, 1950 - \$9,400. Renewal for period July 1, 1950 to June 30, 1951)

- (13) Reed College (Contract AT(45-1)-230) - Dr. Arthur F. Scott - "Radiation Monitoring Training Course" - \$4,650.

Personnel	\$2,400
Equipment & Supplies	800
Overhead	300
Other	1,150
Total	\$4,650

(Previous contract for July 1, 1949 to June 30, 1950 \$11,716).

- (14) Western Reserve University (Contract W-31-109-ENG-78) Dr. Hymer I. Friedell - "Study of Biologically Toxic Agents with Radioisotopes Criteria for Dosage Toxicity; and Studies in Radiation Physics" - \$185,091. (Final breakdown on budget not available) Renewal of contract for period July 1, 1950 - June 30, 1951.

- (15) University of Virginia (Contract AT(40-1)-263) Dr. Chalmers L. Gemmill - "Study of the Effect of Beta Radiation on the Distribution of Phosphate in Red Blood Cells, and in Cardiac Muscle" - \$10,000.

Personnel	\$8,300
Equipment & Supplies	1,550
Overhead	0
Other	150
Total	\$10,000

(Renewal of contract for July 1, 1950 - June 30, 1951. Previous contract for July 1, 1949 - June 30, 1950 - \$11,514.)

- (16) The Trudeau Foundation, Drs. Arthur J. Vorwald & F. N. Klemperer - "Biochemical and Clinical Investigations of the Toxicity of Beryllium" - \$50,386.

Personnel	\$30,800
Equipment & Supplies	14,254
Overhead	3,732
Other	1,600
Total	\$50,386

(Previous contract under ONR - \$48,247)

- (17) Baylor University (Contract AT(40-1)-285) - Dr. Joseph Gast - "Chemistry and Metabolism of some Sulfur Oxides" \$5,000.

Personnel	\$3,000
Equipment & Supplies	1,750
Other	250
Total	\$5,000

(Renewal for period of July 1, 1950 - June 30, 1951. Previous contract July 1, 1949 - June 30, 1950 - \$11,753).

- (18) American National Red Cross Contract AT(49-1)-448  
"Research and Development in the Field of Blood  
Fractionation" - \$99,200.

Personnel	\$90,300
Equipment & Supplies	8,900
Total	<u>\$99,200</u>

(Approval of additional funds of \$49,200 to \$50,000  
previously approved).

- (19) Cedars of Lebanon Hospital (Contract AT(04-1)-290  
Dr. Paul W. Reckers - "Relation of Flavanoid  
Structures to Radiation Protection" - \$2,500.

Personnel	\$2,500
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(Approval of extension of contract for 2 months  
July 1, 1950 to Aug. 31, 1950. Previous contract  
for July 1, 1949 to June 30, 1950 - \$17,500)

- (20) University of Illinois (Contract No. AT(11-1)-67)-I  
Dr. Andrew C. Ivy - "Effects of Radiation on Gastric  
Mucosa" - \$5,940.

Personnel	\$2,000
Equipment & Supplies	3,500
Overhead	440
Total	<u>\$5,940</u>

(Renewal of contract for period Oct. 1, 1950 to  
Sept. 30, 1951. Previous contract for period  
October 1, 1949 to September 30, 1950 - \$4,400).

- (21) Presbyterian Hospital (Contract No. AT(11-1)-56)  
Dr. R. Gordon Gould - "The Mechanism of CO<sub>2</sub>  
Fixation" - \$7,000.

Personnel	\$4,500
Equipment & Supplies	2,500
Total	<u>\$7,000</u>

(Previous contract for September 1, 1949 to Aug. 31,  
1950 - \$6,000. Renewal for period Sept. 1, 1950 to  
Aug. 31, 1951.)

- (22) New York Medical College (Contract AT(30-1)-780  
Dr. Alfred Copley - "Study of Vascular Factors in  
Radiation Hemorrhage and Other Hemorrhagic Diatheses  
in Patients and Experimental Animals" - \$1,050.

Equipment & Supplies	\$1,050
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(Approval of additional funds to previously approved  
amount of \$13,528).

- (23) Massachusetts General Hospital (Contract AT(30-1)-730)  
Drs. Wm. H. Sweet & Bertram Selverstone - "Use of  
Phosphorus 32 for the Precise Localization of Brain  
Tumors" - \$11,850.

Personnel	\$7,723
Equipment & Supplies	2,857
Overhead	945
Other	325
Total	<u>\$11,850</u>

(Renewal of contract for period Aug 1, 1950 to  
July 31, 1951; Previous contract for period Aug. 1,  
1949 to July 31, 1950.- \$11,850).

- (24) University of Utah - Dr. John Z. Bowers - "Plutonium  
Toxicity Project" - \$200,000.

Construction	\$110,000
Equipment & Supplies	40,000
Operations	50,000
Total	<u>\$200,000</u>

(Dr. Shields Warren discussed the initiation of this  
project by telephone with members of the Committee  
and he received their unanimous recommendations that  
this project should be approved.)

- (25) University of Washington - Dr. Robert H. Williams -  
"The Biological Effects of Radioactive Sulfur"

- (27) Johns Hopkins University Hospital - Dr. John E. Howard - "Investigations of the Mechanism of Bone Deposition and Related Physiological Studies" - \$26,106.

Personnel	\$22,152
Equipment & Supplies	1,020
Overhead	1,934
Other	1,000
Total	<u>\$26,106</u>

- (28) Vanderbilt University - Dr. W. J. Darby - "A Study of the Absorption and Metabolism of Lipids and Alterations which Occur in Acute Radiation Injury" \$25,000.

Personnel	\$18,800
Equipment & Supplies	4,200
Overhead	1,500
Other	500
Total	<u>\$25,000</u>

- (29) New York University - Dr. Norton Nelson - "Study of the Particle Size Dependence of Aerosol Retention in the Human Respiratory System" - \$20,736.

Personnel	\$9,700
Equipment & Supplies	9,100
Overhead	400
Other	1,536
Total	<u>\$20,736</u>

- (30) SACHEM LABORATORIES, INC., New Haven, Conn. - Dr. Marvin Botwick - "Research and Development on a Civil Defense Type Blood Typing Kit and Research on a Simplified Cross-matching System" - \$12,324.

Personnel	\$9,600
Equipment & Supplies	1,400
Overhead	824
Other	500
Total	<u>\$12,324</u>

- (31) North Carolina State College - Dr. Donald B. Anderson "Rate of Movement of Organic and Inorganic Compounds in the Tissues of Intact Tree Species" - \$2,335.

Personnel	\$300
Equipment & Supplies	1,835
Other	200
Total	<u>\$2,335</u>

4

This document consists of 31 pages  
No. 3 of 40 Copies, Series A

MINUTES

ADVISORY COMMITTEE FOR BIOLOGY AND MEDICINE

TWENTY THIRD MEETING

Held at

ATOMIC ENERGY COMMISSION

Washington, D. C.

September 8-9, 1950

CLASSIFICATION CANCELLED  
AUTHORITY: DOE-DPC  
BY R. HAMBURGER, DATE: 1/21/82  
CR

1058814

DOE ARCHIVES

C-3871

Biophysics

- (1) University of Chicago - Dr. Raymond . Zirkle  
"Use of a Microbeam of Light Atomic Nuclei for  
Radiological Investigations" - \$56,646.

Personnel	\$45,450
Equipment & Supplies	6,000
Overhead	4,196
Other	1,000
Total	<u>\$56,646</u>

(Transfer to AEC and renewal of ONR Contract NR-171-256 for period July 1, 1950 to June 30, 1951. Previous contract FY 1948 - \$18,086; FY 1949 - \$65,662).

- (2) University of Washington (Contract AT(45-1)-237)  
Dr. P. C. Church - "Meteorological Studies" - \$7,960.

Personnel	\$7,595
Equipment & Supplies	1,525
Other	1,350
Total	<u>\$10,470</u>
Less unexpended funds	2,100
	<u>7,370</u>
Overhead	590
Total	<u>7,960</u>

(Renewal for period Aug. 1, 1950 to July 31, 1951. Previous contract for Aug. 1, 1949 to July 31, 1950 \$16,100.)

- (3) University of Washington (Contract AT(45-1)-236)  
Dr. Robert G. Fleagle - "Meteorological Studies"

(Approval of extension of contract from Aug. 1, 1950 to July 31, 1951 without additional funds. Previous contract for period Aug. 1, 1949 to July 31, 1950 \$14,768).

- (4) Massachusetts Institute of Technology - Dr. John G. Trump - "Biological Effects of High-Energy X-rays and Cathode Rays" - \$15,000.

Personnel	\$8,800
Equipment & Supplies	2,000
Overhead	3,700
Other	500
Total	<u>\$15,000</u>

(Transfer to AEC and renewal of ONR contract NR-171-888 for July 1, 1950 to June 30, 1951. Previous contract under ONR - \$14,440).

US ATOMIC ENERGY COMMISSION  
326 US ATOMIC ENERGY COMMISSION  
SECRETARIAT  
127  
ACBM

- (5) University of Kansas - Dr. Frank H. Hoecker -  
 "Biological effect of Ionizing Radiation" - \$31,000  
 (2 years).

Personnel	\$21,500
Equipment & Supplies	6,200
Overhead	2,300
Other	1,000
Total	<u>\$31,000</u>

(Transfer to AEC and renewal of ONR contract NR-171-184 for July 15, 1950 to July 14, 1952. Previous contract under ONR \$30,860).

- (6) Columbia University (Contract AT(30-1-GEN-70)  
 Dr. G. Failla - "Dose Determination; Biological Action of Ionizing Radiation; Training Program" \$184,000.

Personnel	\$127,400
Equipment & Supplies	23,300
Overhead	63,700
Other	13,800
Total	<u>\$228,200</u>

Less unexpended funds	44,000
Total	<u>\$184,000</u>

(Contract renewal for July 1, 1950 to June 30, 1951. Previous contract FY 1949 - \$277,633; FY 1950 - \$144,000)

- (7) Massachusetts Institute of Technology - Dr. Noble D. Evans - "research in Applied Radioactivity" - \$128,950.

Personnel	\$72,500
Equipment & Supplies	23,500
Overhead	30,450
Other	2,500
Total	<u>\$128,950</u>

DOE ARCHIVE

(Transfer to AEC and renewal of ONR Contracts NR-171-645 and NR 171-643 for July 1, 1950 to June 30, 1951. Previous contracts under ONR FY 1948 - \$81,999, FY 1949 - \$226,025).

- (8) University of Florida (Contract AT(40-1)-267  
 Dr. A. A. Bless - "Radiation Injury" - \$14,375.

Personnel	\$9,100
Equipment & Supplies	3,775
Other	1,500
Total	<u>\$14,375</u>

(Renewal for July 1, 1950 to June 30, 1951. Previous contract for July 1, 1949 to June 30, 1950 - \$13,390).

- (9) New York University - Bellevue Medical Center  
 Drs. Victor W. Whitten & Marion B. Sulzberger  
 \$19,440. Title I: "Study of Thorium X in Selected  
 Vehicles Applied to the Skin of Man" and "Study of  
 the Effects of Selected Pure Beta Emitters on the  
 Skin of Man."

Personnel	\$15,000
Equipment & Supplies	2,200
Overhead	1,440
Other	800
Total	\$19,440

- (10) Marquette University - Dr. W. A. Anderson - "The  
 Pathologic Effects of Radioactive Isotopes of  
 Calcium and Strontium on Bone and Soft Tissue" \$13,200.

Personnel	\$8,000
Equipment & Supplies	5,000
Other	200
Total	\$13,200

- (11) Idaho State College - Dr. Ray J. Davis et al -  
 "Ecological and Radiation Background Survey in  
 Reactor Testing Area" - \$10,000 (No budget breakdown  
 available).

- (12) Southern Research Institute - Dr. Locke White -  
 "Improvement in Photoelectric Smoke Penetrometers  
 or Filter Testers" - \$14,700.

Personnel	\$5,000
Equipment & Supplies	4,000
Overhead	4,700
Other	1,000
Total	\$14,700

DOE ARCHIVES

- (13) University of Wisconsin - Drs. D. Murray Angevine  
 and Jos. L. Lalich - "Development and Application of  
 Historadiography in Relation to the Distribution of  
 Mass and Localization of Elements in Normal and  
 Pathologic Tissues." - \$8,000.

Personnel	\$4,000
Equipment & Supplies	4,000
Total	\$8,000

Proposal  
Declined

Proposals Declined

- (1) University of Oklahoma Research Institute - Dr. V. H. Schnee - "Absorption and Assimilation of Radioactive Wastes by Water and Sewage Slimes."
- (2) Oklahoma A & M College - Dr. C. K. Whitehair - "The Metabolism of Phosphorus in Beef Cattle Using Radioactive Phosphorus-32 as a Tracer - \$6,699."
- (3) Oklahoma A & M College - Dr. Wendell R. Krull - "Metabolism of Phosphorus by Larval Nematodes \$4,886."
- (4) Baird Associates, Inc. Cambridge, Massachusetts - Dr. Bruce H. Billings - "Scintillation Counter Development" - \$12,000."
- (5) University of Oregon Medical School - Dr. Edward S. West - "Investigations on Glycine Metabolism in Relation to Glycogenesis" - \$6,500."
- (6) New York University - Dr. Robert Chambers - "The Investigations on the Localized Effects of Radiation on Living Cells."
- (7) University of Washington - Dr. Verne F. Ray - "Age Determination Utilizing Carbon-14 Technique" \$32,184."

Dissemination  
of Information

Dissemination of Information

Dr. Bronk raised the question of the dissemination of information gleaned from the research projects, and laboratories and as well as how the pamphlet "Nuclear Science Abstracts" could be more widely circulated and be made more useful to investigators.

DOE ARCHIVES

Dr. Bronk suggested that it might be well to initiate an operational research program through the NRC as to the various types of publications and their relative effectiveness in order to see just what is being accomplished with the dissemination and utilization of scientific information.

The Committee approved of this proposal and of this type of investigation and they will look forward to definite suggestions from Dr. Bronk on how the Committee and the Division of Biology and Medicine may cooperate in this undertaking.

Radioisotope  
Training  
Courses

Radioisotope Training Courses

Dr. Nathan Woodruff of the Oak Ridge Operations Office sought the view of the Committee as to expanding the basic radioisotope training courses to universities and colleges in the larger metropolitan areas by assisting them financially in creating facilities whereby they could train persons in the handling of radioactive materials. It was the sense of the Committee that even though the objectives as set forth by Dr. Woodruff seemed to be desirable it was their belief that the present training course programs as now established are adequate.

Free  
Isotopes

Free Isotopes

The question of broadening the scope of research with free radioactive isotopes, rather than restricting them for use in cancer research was fully discussed. The Committee wished to be placed on record as being in favor of using free radioactive isotopes for all types of research which may be described as fundamental research including chemistry, biology and physics.

Idaho Reactor  
Test

Idaho Reactor Test

Dr. William F. Bale summarized the preliminary study

that has been made to determine the levels of radioactivity due to fission products which might be tolerated for emergency periods in food and drinking water. Dr. Bale stated that for periods not exceeding a few weeks, water contaminated within certain reasonable limits can be used with very little real hazard, and these levels of contamination are such that they can be measured by monitors using ordinarily available field monitoring instruments. It is expected that these permissible limits of contamination will be made public shortly, following concurrence by experts to whom the study has been submitted.

Idaho Reactor  
Test Site

Idaho Reactor Test Site

Dr. Walter D. Claus and Mr. L. Joe Deal brought the Committee up to date on the status of the Idaho Reactor Test Site. They gave an interesting review and stated that the radiation background survey is essentially complete.

Effects of  
Atomic Weapons

Effects of Atomic Weapons

The Committee was informed by Dr. Max R. Zelle that the two sections in the Effects of Atomic Weapons concerned with genetic effects were completely revised by him and Dr. W. L. Russell of the Oak Ridge National Laboratory, and approved by the Director of the Division of Biology and Medicine. Dr. Zelle stated that the sections as printed were scientifically incorrect and the revised sections express views compatible with the opinion of a committee

of geneticists convened by the Director of the Division of Biology and Medicine last March. The revision was approved by the Commission before it was printed. (An erratum sheet containing the revised sections was included with the pre-publication and first printed copies.)

FRIDAY AFTERNOON- September 8, 1950

AEC Project  
Beltsville

AEC Project at Beltsville

A stimulating and instructive program on the project concerning "Soil Management and Crop Production" under the guidance of Dr. F. W. Parker, at the Bureau of Plant Industry, the U. S. Department of Agriculture in Beltsville, Maryland was presented to the Committee on Friday afternoon.

The Committee was interested in the statement that advances made in the knowledge of phosphate fertilizers during the three years through the use of radioisotopes exceeds the information obtained during the preceding fifty years.

The program covered a tour of the new AEC laboratories and greenhouse.

SATURDAY - September 9, 1950

ABCC

Atomic Bomb Casualty Commission

Dr. George Hardie summarized his report on his trip to Japan to survey the activities of the ABCC. Mr. John V. Lannon who visited Japan with Dr. Hardie reported on the administrative controls that are in effect in the operation

of the program in protecting properties and supplies. The committee studied the problems emanating from the report and the discussions and they recommended unanimously that the following statement regarding the program be forwarded to the General Manager for his consideration and transmittal to the President of the National Academy of Science for his guidance in recommending the research program to be followed by the ABCC in Japan.

"The Committee on Biology and Medicine of the Atomic Energy Commission, having heard the reports of the Atomic Bomb Casualty Commission, notes with satisfaction, the progress made in the various aspects of the study, including the work in genetics, medicine and in the organization of the staff.

"The Committee on Biology and Medicine notes, however, that little progress has been made in screening larger groups of the population. While recognizing the importance of complete physical examinations and the various laboratory studies, the Committee feels that it should re-emphasize its desire for the screening of larger numbers of the population with a view to discovering early any acute changes in the hemotopoietic and other systems.

"At a joint meeting of Committees from the Division of Biology and Medicine of the AEC, and the National Research Council on February 4, 1950, it was agreed that more

emphasis should be placed upon the screening process and that more careful studies be carried out upon these groups, discovered by the screening operation, to have abnormalities."

Mr. Gordon Dean,  
Chairman, AEC

Mr. Gordon Dean, Chairman, AEC

Mr. Gordon Dean, Chairman of the AEC, greeted the Committee and extended his appreciation and the appreciation of the Commission to the Committee for their continued interest and assistance to the Director of the Division of Biology and Medicine as well as to the AEC. Mr. Dean informed the Committee that even with the emphasis to be placed on the military program he was hopeful that the Commission would not have to curtail either the biological and medical research work or the physical research work and that he would like to see the programs move forward as proposed.

Mr. Dean expressed concern over the Civil Defense program and of the desire of the Commission to lend the NSRB every assistance even though the program is the responsibility of the NSRB.

Civil  
Defense

Civil Defense

Mr. Harry L. Bowman reviewed the status of the Civil Defense program including monitoring, training courses and the AEC building site survey. He stated that five courses have been completed in the training of monitors in radiation detection. Likewise, 18 emergency monitoring teams have been set up with AEC employees or contractor employees throughout the country who will be available in any sort of an incident.

Maps have been secured of the 197 cities in the country that have populations in excess of 50,000. These maps have been sent to the teams in their respective areas should occasion arise wherein the teams would have need for them in entering a strange locality if a catastrophe should occur.

Mr. John A. Merry discussed the radiation detection instruments and said that at the present time there was not a low-priced radiation detection instrument on the market. However, it is anticipated that by February 1951 several such instruments will be available and if proven satisfactory they will be ready for mass production.

The Committee was keenly interested in the interim defense plans for certain key areas and they will look forward to the report on the trial exercises to be held in Chicago on hypothetical problems. In connection with this discussion on civilian defense, Dr. Stakman remarked that he believed the ACEM should be commended because of the fact that they in several instances have placed themselves on record urging that preparations be made for civil defense planning.

Dr. Warren stated that the AMA had been very active in the planning program and they have organized groups for assistance down to each county medical society. The American Red Cross is also very active and is revising its first aid manual with a directive for first aid in a major type of disaster.

Recess

Recess

The Committee adjourned for lunch at 12:30 p.m. and reconvened in Executive Session at 1:30 p.m.

Human Experimentation

Human Experimentation

A full discussion was held once again on the problem of human experimentation. The Committee felt that human experimentation at the present time is not indicated, that it would have serious repercussions from a public relations standpoint if undertaken by an agency that has to do a portion of its work in secret; and that adequate data can be obtained from animal experimentation, from the Los Alamos accidents, from certain observations which have been made by clinical radiologists, and from the studies at Hiroshima and Nagasaki.

The Committee endorsed the action of the Director of Division of Biology and Medicine in not concurring in a program for human experimentation.

END OF EXECUTIVE SESSION 3:40 p.m.

Fifth International Cancer Congress, Paris France

Fifth International Cancer Congress and Sixth International Congress of Radiology

Dr. Warren reported on his trip to Europe to attend the Fifth International Cancer Congress in Paris and the Sixth International Congress of Radiology in London. He stated that from the standpoint of science the cancer congress was disappointing. Dr. Warren was of the opinion that feeble work in cancer research is being done on the Continent with

Sixth International Congress of Radiology

the exception of Scandanavia. The radiological Congress in London was well organized. The AEC representations made a creditable presentation of their papers in the radiobiology field.

Dr. Warren was impressed with the work being done at the British Atomic Energy project and he stated that their experience and opinion with relation to permissible dose levels are running closely parallel to those of the AEC.

Budget  
1951 & 1952

Budget - FY 1951 & FY 1952

Mr. Derry led a brief discussion on the budgets for FY 1951 and 1952 and provided the Committee with a current statement which summarized the program of the Division of Biology and Medicine. He further explained the overall defense that was made to the Bureau of Budget to justify the budget estimates and how the cutbacks, if any, will be applied.

Research  
Program

Research Program

A full discussion was held on the overall research program of the Division of Biology and Medicine as it relates to cutbacks in the budget estimates. It was the sense of the Committee that knowledge essential to the applied and developmental program be not curtailed and that our developmental program should be additive to the acquisition of fundamental knowledge rather than a substitute.

A formal statement drawn by Dr. Bronk and approved by the whole committee which will set forth reasons why the research programs of the Division of Biology and Medicine should be strengthened rather than curtailed during the international crises will be forwarded to the Commission for their consideration.

National  
Service Status  
of Scientific  
Personnel

National Service Status of Scientific Personnel

Dr. Tuttle explained to the Committee the proposed changes in the Selective Service Act and led a discussion on the proposed National Service Status for persons in critically needed skill categories. Deferment of essential scientific personnel was considered of primary importance. In connection with these discussions and upon a motion by Dr. Stakman and seconded by Dr. Bronk the Committee approved unanimously that scientific personnel who accept positions with the Division of Biology and Medicine be encouraged to continue their research activities within the laboratories or universities that are in close proximity to the AEC.

Fellowship  
Program

Fellowship Program

Dr. Bronk advised the Committee that at the instance of Dr. Pitzer the NRC was once again considering the question of resuming the responsibility for administering the fellowship program. The Committee was in full agreement and expressed themselves as being in favor of the NRC again assuming full responsibility for the program.

Public  
Education

Survey Paper re Psychological Project

Mr. Derry reported that the public education survey as sponsored by the AEC is now being made by the University of Michigan. It got underway about August 1, 1950 and interviews will be completed sometime in October and final results made by January 1, 1951.

Los Alamos  
Accidents

Los Alamos Accidents

Dr. Warren asked the views of the Committee as to whether the reports made on the accident cases at Los Alamos should be released for publication. The Committee discussed the worthiness of publishing these reports in the open scientific literature and they were unanimous in their opinions that these reports should be published.

Dr. N. Edward  
Tolbert

Dr. Warren introduced Dr. Tolbert as a new member of the staff of the Biology Branch of the Division of Biology and Medicine.

Dr. A. H.  
Holland, Jr.

Dr. Warren advised the Committee of the resignation of Dr. Albert H. Holland, Jr., as Medical Advisor of the OROO.

Next Meeting

Next Meeting

The next meeting of the ACBM will be held on Friday and Saturday, November 10 and 11, 1950 at the Atomic Energy Commission in Washington, D. C.