ANNUAL REPORT - DEPARTMENT OF PHYSIOLOGY
UNIVERSITY OF KANSAS MEDICAL CENTER
July 1, 1964 - June 30, 1965

ACADEMIC STAFF
E. B. Brown, Jr., Ph. D., Professor and Chairman
Alan M. Thompson, Ph. D. Associate Professor
Norman Loofbourrow, Ph. D., Associate Professor
Lawrence Sullivan, Ph. D., Assistant Professor
Donald Johnson, Ph. D., Assistant Professor (Joint appointment in Obstetrics and Gynecology.)
Kenneth Goetz, Ph. D., Instructor
John Trank, Ph. D., Assistant Professor
A. Stark Wolkoff, M. D., Assistant Professor (Joint appointment in Obstetrics and Gynecology.)

POSTDOCTORAL FELLOWS
Virginia Tucker, M. D., Department of Pediatrics (returned to Department of Pediatrics September 1964.)
James Evans, M. D., Division of Anesthesiology (returned to Anesthesiology October 1964.)
Benjamin Razon, M. D., AID Fellow, Far Eastern University (returned to Philippines September 1964.)
Hiroshi Aoki, M. D., Surgical Fellow from Japan (returned to Japan August 1964.)
Joseph McMullen, M. D., Department of Surgery
Darren Nelson, Ph. D., Ob-Gyn Fellow with Dr. Johnson
Tomi-O Hishida, L. Sc., Nagoya University, Fellow with Dr. Johnson
Woo Gyeum Kim, M. D., (IAEA) International Atomic Energy Agency Fellowship, Seoul National University, Korea.

GRADUATE STUDENTS
Richard L. Clancy - 1965
Robert Thurber - 1965
Dale Mayhew -
Lilly Kung -
Gary Slick -
Franklin R. Darrow -
Ray Cook
Larry Welling
Paul Hensleigh
TEACHING

The medical school course for freshmen was changed so that Neuroanatomy was taught in the fall quarter. Physiology and Biochemistry were still taught during the winter and spring quarters, except for the last two weeks of the spring quarter, at which time the integrated course in Endocrinology was presented.

Current course offerings of the department are the same as for last year, except for the addition of graduate course #327, Physiological Instrumentation (3 credits) which will be taught by Dr. John W. Trank during the winter quarter of even numbered years.

Two graduate courses and two graduate seminars were presented. In the winter quarter 1964, Dr. Johnson presented his course #325 on Biology of Sex (3 credits); Dr. Brown's graduate course #320 on Acid-Base and Electrolyte Metabolism was taught in the spring quarter of 1965. A graduate seminar on Blood Brain Barrier was given by Dr. Thompson in the fall of 1964, and Dr. Sullivan presented his graduate seminar course #351 on the Role of the Kidney in Acid-Base Balance during the spring quarter of 1965.

In addition to the senior staff members, Mr. Richard Clancy (Instructor) and Dr. Virginia Tucker were responsible for a Conference Section of one group of students in the medical school Physiology course. Graduate students Clancy, Mayhew, Darrow, Slick, and Kung, and Dr. Kim also assisted with teaching the medical school Physiology laboratory course.

During the summer of 1964 the integrated course in Basic Human Biology for Nurses was again taught by the combined Departments of Biochemistry, Anatomy, and Physiology. Drs. Sullivan and Thompson were the senior staff members from this department participating in this course. Medical students Luther Frye, Wayne Figgs, and Jack Reida assisted in the course.

The Surgery-Physiology Conference was again held each Wednesday afternoon at 4 P.M. during the academic year.

Three graduate students completed work for the Ph.D. degree in this department during the past academic year. Robert W. Hamilton received the Ph.D. degree from the University of Minnesota Graduate School in December 1964. He is now employed as a Physiologist with The Union Carbide Corporation, Linde Division, Tonawanda, New York.
Richard L. Clancy and Robert Thurber both received Ph.D. degrees from the University of Kansas in the June commencement, 1965. Dr. Thurber has accepted a position as Instructor in the Department of Physiology in the Medical College of Virginia at Richmond, Virginia. Dr. Clancy will work with Dr. Stanley Sarnoff as a postdoctoral fellow for the next two years in the Cardiac Research Unit, National Institutes of Health, Bethesda, Maryland.

The department was strengthened by the addition of Drs. John Trank and Stark Wolkoff to our Senior Staff during the year. Dr. Trank, appointed as Assistant Professor, came to this department from Montreal, Canada, where he had been associated with both the Departments of Surgery and Physiology at McGill University Medical School. In addition to his doctorate degree in Physiology, Dr. Trank holds a Bachelors degree in Electrical Engineering and a Masters degree in Biophysics. He brings much needed strength in the area of Biophysics to this department and to the Medical Center. Dr. Trank transferred a research grant supported by the Life Insurance Medical Research Fund from McGill University to this institution.

Dr. Stark Wolkoff began an appointment as Associate Professor of Obstetrics and Gynecology and Assistant Professor of Physiology on January 1, 1965. Dr. Wolkoff also transferred a research grant supported by the USPHS from the University of North Carolina. Dr. Wolkoff's research deals with fetal physiology, which he studies in sheep.

July 1, 1964, was the activation date for a Training Grant in Physiology supported by the USPHS. This grant makes it possible for us to support an additional six graduate students in Physiology. The number of applications for admission to graduate work in this department has steadily increased over the past three years, and it appears likely that this increase will continue.

Medical students who engaged in research projects in this department during the summer of 1964 were Terry Sutton, John Hunkeler, R. (Clio) Robertson, Tom Bauer, Dick Worley, Dave Reichert, Bill Hawley, Charles Hayes, Jerry Tulecke, Cleve Howard, Alan Moorhead, Ralph Kauffman, Rodney Thompson, and Barbara Cole.

The Kaw Valley Heart Association, through its Summer Search Talent program, sponsored Bruce Wolhuter and Roy Meals for research training in this department.
VISITORS AND OUTSIDE SPEAKERS:

The following visiting professors presented lectures during the year:

10/29/64 Dr. Min Haing Cho, Dept. of Pharmacology and Anesthesiology, State University of New York, Upstate Medical Center, Syracuse, New York, "Function of Histamine."

2/22/65 Dr. Charles L. Johnston, Jr., Assistant Professor of Physiology, University of North Carolina, Chapel Hill, spoke on "Some Studies of Villikinin."

3/29/65 Lerner B. Hinshaw, Ph. D., Physiologist, Civil Aeromedical Research Institute, Norman, Oklahoma, talked on "Endotoxin Shock: Mechanisms and Therapy."

3/30/65 Dr. James W. Bawdin, Assistant Dean for Research, Univ. of North Carolina School of Dentistry, talked with our group on "Calcium and fluoride exchange across the placenta."

4/19/65 Dr. Hebbel Hoff, M. D., Ph. D., Chairman, Dept. Physiology, Baylor University Medical School, lectured on "Claude Bernard and the Experimental Method!"


3/22/65 Dr. Paul Johnstone of UMKC spoke on "Studies on the Physiological anatomy of the embryonic heart: Observations on the development of the EKG in the embryonic chick heart."

4/26/65 Dr. James C. Elam, Professor and Chairman, Department of Anesthesiology, University of Missouri at Kansas City General Hospital, Kansas City, Missouri. "Regulation of respiration during halothane anesthesia in man."
5/10/65  Dr. Donald R. Boyer, Dept. of Biology, Washburn Univ. of Topeka, Topeka, Kansas. "Effects of hypoxia on respiratory and cardiac physiology in reptiles."

6/14/65  Dr. Floyd Rector, Dept. of Medicine, Southwestern University Medical School, Dallas, Texas, spoke on "Mechanism of Renal Bicarbonate Reabsorption."

ACTIVITIES OF STAFF:

Dr. Brown:

Editor:
Modern Medicine.

Member NIH Physiology Fellowship Panel.


Spoke at the KUMC Research Society Meeting in Wahl Hall East, February 5, 1965, on "Intracellular pH and Tissue Buffering."

Took part in the Postgraduate Department's program by lecturing on "Pathophysiology of Edema" at St. Joseph, Missouri, on November 17, 1964.

Spoke at Washburn University of Topeka, Topeka, Kansas, March 10, 1965, on "Intracellular pH and Potassium Metabolism."

Dr. Sullivan:

Seminar speaker at Baker University, Biology Department, Baldwin, Kansas, March 9, 1965.

Gave lecture at Medicine Grand Rounds in the fall of 1964.

Attended FASEB meetings in spring of 1965.

Attended Biophysical Society meetings in San Francisco in February 1965.

Member of KUMC Research Committee.
Dr. A. M. Thompson:
Review Editor for papers submitted to "Science."

Member of KUMC Admissions Committee.

Robert Thurber, graduate student, presented a paper at the spring meeting 1965 of the APS covering joint work done by Mr. Thurber and Dr. Thompson.

Addressed the Science Colloquium at Park College, Parkville, Missouri, in March 1965.

Gave lecture for Neurology Course on "Cerebral Blood Flow."

Dr. G. N. Loofbourrow:
The Neurology Section of the Department of Medicine, Division of Neurosurgery and the Basic Science Departments of the KUMC presented a series of lectures on basic topics in neurological sciences. Dr. Loofbourrow was responsible for the last third of this lecture program.

Dr. Kenneth Goetz:
Presented paper at American Heart Meetings, October 1964.

Attended spring meetings of FASEB

Lectured to Staff at Topeka State Hospital, May 11, 1965.

Dr. James A. Evans:

Dr. John W. Trank:
Dr. Trank is a new member of our staff since August 1, 1964. He has been busy setting up his laboratory and teaching.
Lectured to Science Classes at Broadmore Junior High School, Overland Park, Kansas.
Lectured at William Jewel College to the Beta Beta Beta Biology Society on April 27, 1965.
Lectured for Neurology Course on Biological Transducers.

Dr. Wolkoff:
From May 3 to 28, Dr. Wolkoff was at the Institute of Nuclear Studies in Oak Ridge, Tennessee, taking a course in Radioisotope Techniques.
RESEARCH

Research grants which were active during the year were the following:


Distribution of sucrose and plasma protein. American Medical Association. Med. Ctr. #115-E. Principal Investigator: Alan M. Thompson. $1,000. (can be used until money is all spent)


PUBLICATIONS


Goetz, Kenneth L. Effect of increased pressure within a right heart cul-de-sac upon heart rate in dogs. Am. J. Physiol. (In press)


Hamilton, R. W., Jr., Carbon dioxide, oxygen and acidity: The interaction and independent effects on respiration of these factors in the arterial blood. USAF School of Aerospace Med. Report 64-94, Brooks Air Force Base, Texas. (Dec. 1964)


