DEPARTMENT OF PHYSIOLOGY
UNIVERSITY OF KANSAS MEDICAL CENTER
COLLEGE OF HEALTH SCIENCES AND HOSPITAL
ANNUAL REPORT
July 1, 1976 - June 30, 1977

Department Roster

a. Academic Staff

G. S. Greenwald, Ph.D., Distinguished Professor and Chairman
E. B. Brown, Jr., Ph.D., Professor (Acting Chairman 1/1/77 through 1/31/77 and
Vice-Chancellor for Faculties and Academic Affairs)
D. C. Johnson, Ph.D., Professor (Joint appt. Ob-Gyn)
F. E. Samson, Ph.D., Professor (and Director of Ralph Smith Center for
Mental Retardation Research)
L. P. Sullivan, Ph.D., Professor
A. M. Thompson, Ph.D., Professor (Acting Chairman through 12/31/76)
R. L. Clancy, Ph.D., Associate Professor
N. C. Gonzalez, M.D., Associate Professor
G. N. Loofbourrow, Ph.D., Associate Professor
J. B. Rhodes, M.D., Associate Professor (Joint appt. Medicine)
C. M. Tarr, Ph.D., Associate Professor
J. W. Trank, Ph.D., Associate Professor
J. D. Wood, Ph.D., Associate Professor
H. J. Cooke, Ph.D., Assistant Professor
P. A. Hensleigh, M.D., Ph.D., Assistant Professor (Joint appt. Ob-Gyn)
W. K. Legler, Ph.D., Assistant Professor
K. L. Goetz, M.D., Ph.D., Adjunct Associate Professor

b. Postdoctoral Fellows

Jack S. Connor, Ph.D.
D. N. Erwin, Ph.D., Instructor
Paul R. Leiffer, Ph.D.
Paul F. Terranova, Ph.D.
Srinivas K. Saidapur, Ph.D.
Bertalan Varga, M.D., Ph.D.
Archie Vomachka, Ph.D.
Harold L. Wilkinson, Ph.D., Instructor

Research Associate - H. C. Cheng, Ph.D.

Research Associate - H. C. Cheng, Ph.D.

Candidate For Degree Requirements Fulfilled

Lynn R. Brann Ph.D. 6/29/77
Dennis C. Fater (Entered 7/76) Ph.D.
Richard A. Fenton Ph.D.
Robert E. O'Neill (Entered 8/76) Ph.D.
David R. Strome Ph.D.
Chon-Hwa Tsai (Entered 7/76) Ph.D.
Dianne L. Vermillion Ph.D.
Mary S. Vomachka (Entered 4/77) Ph.D.
Dan F. Watson Ph.D. & M.D.
Byron H. Whitaker (Entered 7/76 & Dropped 6/77) Ph.D.
Notes concerning graduate students:

Lynn Brann was Vice-President of the Graduate Student Council, President of the Student Union Board of Directors, the Area III Graduate Student representative to the Lawrence campus, and Student Representative to the Kansas City Chapter of Neuroscience.

Richard Fenton successfully completed his dissertation defense on May 26. The title of his thesis: "Effects of dBcAMP, glucagon and ouabain on myocardial acid-base regulation". He is now doing his post-doctoral work in the Department of Physiology, University of Virginia School of Medicine, Charlottesville, Virginia.

David Strome followed on June 17. His thesis title was: "Myocardial transmembrane H⁺ or HCO₃⁻ flux during hypercapnia. He is now working on a post-doctoral fellowship with Dr. Robert Forster, Department of Physiology, University of Pennsylvania School of Medicine, Philadelphia.

Lynn Brann's thesis defense was June 29, her title: "Studies on the piebald-lethal mouse model for human Hirschsprung's disease". She is going to vacation this summer before making a final decision about where she will do her post-doctoral work.

COURSES TAUGHT

101 - Elementary Physiology (F), part of a 1,000 hour course for Emergency Care. Taught by Dr. Thompson, Ms. Linda Gericke and graduate students. Enrollment 21.

388 - (F and S) Human Physiology, undergraduate physiology course. Taught by Drs. Cooke, Erwin, Legler, Samson, Wilkinson and Graduate Students Brann and Watson. Coordinated in the fall by Dr. Erwin and in the spring by Dr. Loofbourrow. Enrollments 120 and 35.

Section I  Homeostasis, Cell Physiology and Muscle Physiology
Section II  Nervous System
Section III  Defense Mechanisms & Circulation
Section IV  Respiration
Section V  Kidney, Digestion and Regulation of Metabolism

705 - Advanced Human Physiology (F). Taught by Drs. Clancy, Cooke, Gonzalez, Johnson and Sullivan.

8 lecture hours  Introduction, General Physiology, Skeletal Muscle
10 lecture hours  Cardiovascular
8 lecture hours  Respiration
8 lecture hours  Renal
8 lecture hours  Gastrointestinal
2 lecture hours  Temperature Regulation
8 lecture hours  Endocrinology

786 - Reproductive Physiology (S). Two hours. Taught by Dr. Greenwald. Enrollment 2.
800 - (770 & 771) - Medical Physiology. Enrollment, all first year medical students plus 8 graduate students. Taught by staff.

1 lecture hour Introduction
6 lecture hours Body Fluids & Transport
6 lecture hours Electrophysiology
16 lecture hours Neurophysiology
23 lecture hours Cardiovascular
  8 lecture hours
  5 lecture hours
  6 lecture hours (Hemodynamics)
  2 lecture hours (Muscle)
  2 lecture hours (Blood)
9 lecture hours Renal
  8 lecture hours
  1 lecture hour
10 lecture hours Gastrointestinal Physiology
  7 lecture hours
  3 lecture hours
16 lecture hours Endocrinology
  5 lecture hours
  7 lecture hours
  3 lecture hours
  2 lecture hours
  1 lecture hour

Electrophysiology Problem Sessions 4 - 2 hours each
Hemodynamics Problem Session 4 - 2 hours each
Review Sessions, Renal 4 - 2 hours each
Kidney Problem Sessions (1, 2 & 3) 12 - 2 hrs each

16 conferences (2 hours each)
Peritoneal Dialysis Dr. Thompson
Hypokalemia and Hyperkalemia Dr. Tarr
Parkinson's Disease Dr. Loofbourrow
Autonomic Conditioning Dr. Wood
Stimulus - Secretion Coupling Dr. Johnson
Anti-arrhythmia Agents Dr. Tarr
Mitral Stenosis Dr. Clancy
Angina Pectoris Dr. Trank
Pheochromocytoma Dr. Trank
Obstructive Lung Disease Dr. Gonzalez
Shock Lung Dr. Gonzalez
Diabetes Insipidus Dr. Sullivan
Nephrotic Syndrome Dr. Sullivan
Hirschsprung's Disease Dr. Wood
Acid Peptic Disease Dr. Rhodes
Reproductive Physiology Dr. Johnson
Medical Physiology (continued)

Laboratories:
# 1 Osmotic and Permeability Phenomena in Erythrocytes
# 2 The Capillary Circulation
# 3 Optics
# 4 & 5 Properties of Skeletal Muscle and Excitability and Neural Control of the Turtle Heart
# 6 & 7 Blood Pressure in Man and Electrocardiography in Man
# 8-I Cardiovascular Regulation (Blood Pressure Studies in the Dog)
# 8-II Circulatory and Respiratory Interactions (Blood Pressure Studies in Dog)
# 9 & 10 Lung Volumes and Composition of Respiratory Gases
Demo #6 Pulmonary Function Tests
Demo #7 Acid Base Regulation & Respiratory Control

810 - Transport, Permeability and Membranes. 2 hours (FE) Drs. Thompson, Sullivan, Tarr, and Welling. No enrollment.

812 - Excitable Membranes. 2 hours (FE). Dr. Tarr. No enrollment.


827 - Physiological Instrumentation I. 2 credits (FE) Dr. Trank. No enrollment.

829 - Integrated Studies of Microtubular and Microfilamentous Proteins. Spring 1977. This course was given by microwave-TV with Biology 701 on the Lawrence campus. 7 students were enrolled at Lawrence, 2 at KUMC. 2 hours. Total Physiology 829 plus Biology 701 were 14 credit hours. Dr. Samson was professor in attendance at KUMC for all lectures. Others from KUMC were Drs. Bettinger, Poisner and Yarbrough.

For graduate students:
782 - Advanced Topics
Summer 1976 - Dr. Samson - 1 student
Fall 1976 - Dr. Gonzalez - 1 student
Dr. Johnson - 1 student
Dr. Samson - 1 student
Dr. Tarr - 1 student
Spring 1977 - Dr. Samson - 2 students
Dr. Sullivan - 1 student

860 - Thesis
Summer 1976 - Dr. Clancy - 1 student
Fall 1976 - Dr. Clancy - 1 student
Spring 1977 - Dr. Clancy - 1 student
Dr. Gonzalez - 1 student
Dr. Wood - 1 student
Department Seminars

9/20/76  Dr. D. W. Goodwin, Psychiatry
9/27/76  Dr. A. L. Chapman, Anatomy
10/ 4/76  Dr. William Dentler, KU Phys. & C. B.
10/11/76  Dr. John Clancy, Anatomy
10/18/76  Dr. Joseph D. Bast, Anatomy & Ob/Gyn
10/25/76  Dr. James Orr, KU Phys. & C. B.
11/ 1/76  Dr. David Quadagno, KU Phys. & C. B.
11/ 8/76  Dr. Paul A. Hensleigh
11/29/76  Dr. Harvey Lillywhite, KU Phys. & C. B.
12/ 6/76  Dr. L. P. Sullivan
12/13/76  Mary Lou Michaelis, KU Human Development
12/20/76  Dr. Merrill Tarr
1/17/77  Dr. Joe Kimmel, Biochemistry & Assoc.Dean
1/24/77  Dr. Allen Rawitch, Biochemistry
1/31/77  Dr. Donald Baer, KU H. Dev. & Psych.
2/ 7/77  Dr. David Cohn, VA Hospital
2/14/77  Dr. Wayne Osness, KU Phys. Ed. & Rec.
2/21/77  Dr. N. C. Gonzalez
2/28/77  Dr. Larry Welling, VA Hospital
3/ 7/77  Dr. Billy Hudson, Biochemistry
3/14/77  Dr. Paul Terranova, Ob-Gyn & Anat.
3/21/77  Dr. R. L. Clancy
3/28/77  Dr. Lyn Yarbrough, Biochemistry
4/11/77  Dr. Don Jin, Medicine
4/25/77  Dr. Donald C. Johnson
5/ 2/77  Dr. Warren Legler
5/ 9/77  Dr. Hampton Shirer, KU Phys. & C. B.

Genetics of Alcoholism
The new scanning electron microscropy facility at KUHC
In vitro assembly of brain and flagella microtubules
Graft vs host disease in the rat
Negative and positive feedback regulatory mechanisms in reproduction
Control of respiration during acute hypercapnia in the awake pony
Hormone and behavior
Intra-partum fetal monitoring
Blood pressure regulation in snakes
Osmotic regulation in primates
Chemical studies on a Lesch-Nyhan animal model
Contractile activity of isolated cardiac cells
Hemodynamic changes during salicylate intoxication in conscious dogs
New pancreatic polypeptide hormone
Thyroglobulin and thyroxin synthesis
Operant principle applied to learning problems
Biochemical characterization of bone cells
Effect of exercise on the cardiovascular system
Acid-base regulation of the myocardial cell
Fluid transport in thick ascending limb of Henle
Chemistry of basement membrane
Effects of anti-LH sera on interruption of pregnancy
Regulation of myocardial cell pH
RNA synthesis inhibitors
Bovine TSH binding to cultured human physiology
Biorhythms in reproductive hormones
The PDP 11/34 minicomputer facility
Biological oscillators
Outside Speakers

11/15/76 - Dr. Peter F. Davison
Chief, Division of Fine Structure
Boston Biomedical Research Institute
"Neurofilaments and Similar Structures: Chemistry and Structure in Neuronal Cells"

12/2/76 - Dr. Steven Cohen
National Institutes of Health
Bethesda, Maryland
"Transmitter Release at the Neuromuscular Junction of Developing Tissue in Culture"

3/24/77 - Dr. Horacio B. Croxatto
Chief, Laboratory of Endocrinology
Professor of Physiology and Embryology
Institute of Biological Sciences
Catholic University of Chile, Santiago
"Ovum Transport and Preimplantation Stages of Pregnancy in the Human"
Sponsored jointly with the Department of Gynecology and Obstetrics

5/13/77 - Professor David Matthews
Department of Experimental Chemical Pathology
Westminster Hospital, London
"Peptide Transport and Its Role in Intestinal Absorption"

Special Seminars

5/11/77 - Dr. Richard Schimmel
University of Pittsburgh
Pittsburgh, Pennsylvania
"Multiple actions of calcium ions on adipose tissue lipolysis"

6/14/77 - Dr. James L. Voogt
University of Louisville School of Medicine
Louisville, Kentucky
"Catecholamine control of prolactin section"

5/22/77 - Dr. Hugo L. Fernandez
VA Hospital, Kansas City, Missouri
"Axonal transport and trophic function of vertebrate neurons"
Publications:

a. Published during year


b. In press.


c. Abstracts


Research Support

R. L. Clancy: Kansas Heart Association - Effect of cAMP on mitochondrial acid-base state, 7/1/76 - 6/30/77. Direct Costs $7,993; Indirect Costs $480.

H. J. Cooke: KU Research Committee - Transport of amino acids and electrolytes by isolated newborn rabbit ileum, 11/76 - 10/77. $4,000.


N. C. Gonzalez: Kansas Heart Association - Myocardial bicarbonate transport in acidosis, 7/1/76 - 6/30/77. Direct Costs $8,000, Indirect $480.

KUMC Research Committee - Contribution of NH3 to cell pH regulation during hypercapnia, $1,450.

G. S. Greenwald: NIH - Follicular and luteal regulation in the mammalian ovary, 1/1/77 - 12/31/77, $210,134. 1/1/77 - 12/31/77 - Direct Costs $66,730; Indirect $18,616.


HEW Child Health and Human Development - Research Fellowship support - Institution Allowance, 6/10/76 - 6/9/79, $9,000. 6/10/77 - 6/9/78, Direct Costs $3,000.

D. C. Johnson: NIH-NCI - Endocrinology of experimental ovarian tumors, 7/1/74 - 5/31/77, $97,936. 7/1/76-5/31/77, Direct Costs $38,000.

NSF - Biorhythm induced gradients in reproductive functions, 10/1/74-9/30/77, $49,000. 10/1/76-9/30/77, Direct Costs, $17,000.

F. E. Samson: Smith Foundation - Mini-computer development, 1975 & 1976, $20,000. 1976, Direct Costs $10,000; no indirect costs.

Eli Lilly Co. - Microtubule involvement in neuropathies, 1976-1977, $10,000, Indirect costs waived.

KU Research Committee - Neuroanatomical regional functional mapping, 10/76-5/77, $2,000 Direct Costs.

Mid-America Cancer Center - Vincristine induced neuropathy, 11/75 - 10/76, $1,300, Direct Costs; no indirect costs.

NICHHD - Mental Retardation Center Core Grant, 1976-1980, $1,252,715.

Kansas Heart Association - Relationship between renal cellular Na and K transport, 7/1/76 - 6/30/77, Direct Costs $7,946; Indirect Costs $397.


Kansas Heart Association - Electrophysiology of isolated cardiac cells, 7/1/75-6/30,77, Direct Costs $8,000; Indirect $480.

J. D. Wood: NIH - Study of congenital megacolon in mice. Direct Costs $16,166, Indirect $3,836.

NIH - Function of the enteric nervous system, 5/1/77-4/30/83, $136,542. 5/1/77-4/30/78, Direct Costs $40,538, Indirect $5,231.

NIH - Research Career Development Award (two years of support remaining). 6/1/77-5/31/78.

Total of Grants*: Direct support $383,808; Indirect support $56,230.

* excluding core grant of F. E. Samson.

ACTIVITIES OF STAFF

E. B. Brown, Jr., Ph.D., Professor

In addition to his duties as Vice-Chancellor of Faculties and Academic Affairs, assisted with the teaching of the Respiration section of the Medical Physiology course, and also served as Acting Chairman of the Department during the month of January.

Serves on the Council of the American Physiological Society and continues as Chairman of the Finance Committee of that Society.

Dr. Brown retired from the University effective June 1, and as of that date he became Professor and Chairman of the Department of Physiology, School of Medicine and Dentistry, at Oral Roberts University, Tulsa, Oklahoma.

Richard L. Clancy, Ph.D., Associate Professor

August 15-20, 1976 - Attended the Fall meeting of the American Physiological Society in Philadelphia, Pennsylvania, and presented a paper "A comparison of cardiac muscle pH values obtained with DMO and nicotine".

September 10-11 - Attended the 27th Annual Meeting and Delegate Assembly of the Kansas Heart Association at Glenwood Manor in Overland Park.

April 1-7, 1977 - Attended meetings of the American Societies for Experimental Biology in Chicago and presented a paper with Richard Fenton entitled "Dibutyryl cyclic AMP and cardiac muscle pH after Na⁺-K⁺ ATPase inhibition".
R. L. Clancy (continued)

August, 1976 - Lectured on "Regulation Myocardial Cell pH" to the Department of Physiology, at the Medical College of Georgia, Augusta.

Lectured on "Effects of acid-base disturbances on the cardiovascular system" at St. Luke's Hospital, Kansas City, Missouri.

Member of the Kansas Heart Association Research Committee.

Member of the Kaw Valley Tri County Heart Association Coordinating Committee.

Member of the Human Investigation Committee of St. Luke's Hospital of Kansas City.

Member of the Faculty Steering Committee.

Member of the Pathology Chairperson Search Committee.

Member of the Departmental Graduate Student Admission Committee.

Oversees operation of the student laboratory and storeroom.

Assembles Medical Physiology Laboratory Manual.

Is an ad hoc referee for Proceedings of the Society for Experimental Biology and Medicine, American Journal of Physiology, and Science.


Reviewed grant applications to the Kansas Heart Association.

Directed the research and was Dissertation Chairman for Richard A. Fenton, graduate student who completed the requirements for his Ph.D. in May.

Teaching activities:

- Physiology 705 - 20 hours - General, neuror, and cardiovascular physiology
- Medical Physiology - 8 lectures, 5 cardiovascular laboratories, 2 demonstrations

Helen J. Cooke, Ph.D., Assistant Professor

Joined this department September 1, 1976, following five years with the Department of Physiology and Biophysics at the University of Iowa.

May 22-26, 1977 - Attended the meeting of the American Gastroenterology Association in Toronto, Canada.

Member of Review Committee to review CV's of prospective candidates for position of cellular physiologist position in department.

Teaching activities:

- Physiology 388
  - GI 6 lectures (1 hour each)
  - Renal 6 lectures (1 hour each)

- Physiology 705 - GI 8 lectures (1 hour each)

- Medical Physiology 16 conferences (2 hours each) and 10 labs (2-6 hours each)
Kenneth L. Goetz, M.D., Ph.D., Adjunct Associate Professor

September 13-17, 1976 - Attended International Symposium on Cardiac Receptors in Leeds, England, and gave lecture on "A search for evidence linking atrial receptors to renal regulatory mechanisms".

September 21, 1976 - Gave lecture on "Factors regulating ADH secretion" at the University of Kuopio, Finland.

September 28, 1976 - Gave lecture on "Critical evaluation of the role of thoracic volume receptors in the control of ADH secretion" at the Physiological Institute of the University of Munich.

November 14-17, 1976 - Attended meetings of the American Heart Association in Miami, Florida.

November 18, 1976 - Gave lecture on "Atrial receptors and renal function" at the University of South Carolina, Columbia, South Carolina.


Chairman of the Human Investigation Committee, St. Luke's Hospital.

Chairman of the Animal Care Committee, St. Luke's Hospital.

Serves on ad hoc basis to edit articles for the American Journal of Physiology.

Member of Special Study Session of NIH for program project grant, 1976.

Post-Doctoral Fellow: Bin C. Wang, Ph.D.

Directing research of Dennis C. Fater, graduate student beginning his second year of study in the department.

Teaching activities:

Medical Physiology - 5 lectures in cardiovascular section.

Promoted to Adjunct Professor by Board of Regents to become effective July 1, 1977.

Norberto C. Gonzalez, M.D., Associate Professor

September 10-11, 1976 - Attended annual meeting of the Kansas Heart Association in Overland Park.

April 1-7, 1977 - Attended meetings of the Federation of American Societies for Experimental Biology and with David Strome presented a paper on "Effects of HCO₃ concentration on extra- to intracellular HCO₃ flux during hypercapnia".

Served as liaison member in the Physiology Chairman Search Committee.


Directed the research and served as Dissertation Chairman for David R. Strome, graduate student who completed the requirements for the Ph.D. degree in June.

Teaching activities:

Physiology 705 - 8 hours lecture on Physiology of Respiration.

Medical Physiology - 12 lectures of Respiration plus 4 demonstrations and two study session on Respiration; in charge of one conference and laboratory group.

Was awarded a fellowship for the Alexander von Humboldt Foundation of Bonn, West Germany, to spend a year's sabbatical leave in the Max Planck Institute for Experimental Medicine in Göttingen, West German.
Gilbert S. Greenwald, Ph.D., Distinguished Professor


November, 1977 - Attended the NIH Conference on Neuroendocrinology in Washington, D. C.

April 1-7, 1977 - Attended the meetings of the Federation of American Societies for Experimental Biology in Chicago.

June 7 - 10, 1977 - Attended the meeting of the Endocrine Society.


Chairman, Special Study Section, Reproductive Biology and Endocrinology, NIH - November, 1976.

Member of Committee on Animal Models of Fertility and Contraception, National Research Council.

Member of Organizing Committee for Workshop on Ovarian Function, NIH, to be held in Miami in June 1978.

KUMC Committees;
- Faculty Library Committee
- Pathology Chairman Search Committee
- Library Learning Resources Center Planning Committee
- Ad Hoc Committee on Faculty Tenure
- Committee for Distinguished Professors

Editor of Biology of Reproduction.

Member of Editorial Boards for Endocrinology and Proceedings of the Societies of Experimental Biology and Medicine.

Reviewed grant applications for National Science Foundation and National Institutes of Health contract programs.

Post-doctoral Fellows:
- Bertalan Varga, M.D., Ph.D.
- Paul F. Terranova, Ph.D.
- Srinivas K. Saidapur, Ph.D.
- Archie Vomachka, Ph.D.
- Jack S. Connor, Ph.D.

Graduate Trainee: Charles H. Bill, Department of Anatomy

Teaching activities:
- Gross Anatomy laboratories - 80 hours
- 4 lectures in Medical Histology
- 2 lectures in Medical Embryology
- 7 lectures in Endocrinology section of Medical Physiology
- 5 hours Endocrinology teaching to Emergency technicians
Paul A. Hensleigh, M.D., Ph.D., Assistant Professor

Was promoted to Associate Professor of Obstetrics and Gynecology Department effective July 1, 1976.

July 13, 1976 - Was consultant for NICHD site visit at the Midwest Research Institute.

September 18-12, 1976 - Attended the Johnson & Johnson meeting in Intrauterine Asphyxia and the Developing Fetal Brain in San Diego, California.

September 14, 1976 - was a visiting lecturer at the Stanford University Medical School.

Member of Advisory Committee for Regionalization of Perinatal Care in Kansas.

Member of Committee to establish the Mid-America Perinatal Association.

Member of National Perinatal Association Advisory and Communications Committee.

Member of FDA Radioactive Drug Research Committee.

Member of the following KUMC committees:

- Human Ethics Committee
- Radiation Safety Committee
- Pediatrics Departmental Review Committee
- Perinatal Obstetrics Advisory Board
- Animal Care Committee
- Medical Records Committee
- Faculty promotions Appeal Committee
- Ralph Smith Mental Retardation Research Committee
- Steering Committee
- Clinical Research Center Advisory Committee

Served as consulting editor for the National Perinatal Association Newsletter.

Was advisor for Graduate Student Linda Scott from the KU Department of Physiology and Cell Biology.

Teaching activities:

Medical Physiology - scheduled as back up staff and conference leader
gave lectures in endocrinology section.

Dr. Hensleigh resigned from his position at KUMC to join the staff of Stanford University School of Medicine.

Donald C. Johnson, Ph.D., Professor of Gynecology & Obstetrics and Physiology

July 18-24, 1976 - Attended V International Congress of Endocrinology in Hamburg, Germany, and presented a paper on "Induction of the estrogen synthesizing system of the immature rat ovary by exogenous and endogenous gonadotropins".


April 1-5, 1977 - Attended the meetings of the American Physiological Society and the Federation of American Societies for Experimental Biology in Chicago, Illinois, and presented a paper "Rhythms in reproductive hormones in male rats given estrogen".

Was assistant editor of Biology of Reproduction.

Teaching activities:

Medical Physiology - in charge of Endocrinology session, and in charge of a conference and laboratory group.
Warren K. Legler, Ph.D., Assistant Professor

November 29, 1976 - Lectured to Dr. H. W. Shirer's class, Electrical Engineering 680, on the Lawrence campus on "Could machines become intelligent?"

April 22, 1977 - Gave presentation at meeting of Conference on Higher Education Computing in Kansas (CHECK) on "Video interfacing to a digital computer for pattern recognition".

April 27, 1977 - Lectured to KU student chapter of Institute of Electrical and Electronic Engineers on "Could machines become intelligent?"

Member, Ralph L. Smith Mental Retardation Research Center Computer Committee and Director, HRRC Computing Laboratory.

Teaching activities:

PHSL 388
- Fall 1976 - 7 hours lecture on cardiovascular physiology
- Spring 1977 - 6 hours lecture on respiration physiology

Medical Physiology
- Had a conference and laboratory section.
- Handled scheduling and coordination for the course.

G. N. Loofbourrow, Ph.D., Associate Professor

Departmental duties:

Librarian. Handled book and subscription orders. Prepared the journals for bindery. Handled the correspondence and follow-up on orders to the State Printer for binding. Handled the arrangement of books, etc.

Teaching aids. Arranged for previews of films, slides, tapes; coordinated department efforts for machine teaching; programmed teaching; selected and ordered visual aid hardware and software.

Graduate Admissions Committee Chairman. Handled the correspondence and interviews with students inquiring about graduate school work and those applying for admission to the Physiology section of the Graduate School.

Graduate Course Announcements. Supervised the preparation and distribution of announcements of graduate courses offered each semester.

Conference Folders. Supervised the preparation of these.

Office Details. Signed time sheets, change-of-status personnel forms, purchase orders, routine work orders, pharmacy requisitions, etc.

Peterson's Guides. Handled the revisions of material and the correspondence with the publisher.

Served as Departmental Representative on the Graduate Committee.

Fulfilled duties of Department Chairman when the Acting Chairman was unavailable.

Teaching activities:

- Coordinated the teaching of PHSL 388 in Spring 1977.

Dr. Loofbourrow retired as of July 1, 1977 after almost 29 years of service to the University of Kansas, both at Lawrence and the Medical Center.
James B. Rhodes, M.D., Associate Professor

October 25-28, 1976 - Attended meeting of the American College of Gastroenterology in Montreal, Canada.


February 17-18, 1977 - Attended the regional meeting of the American College of Physicians in Kansas City.

March 4, 1977 - Attended meeting of the Midwest Gut Club in Lexington, Kentucky.

May 23-26, 1977 - Attended the meeting of the American Gastroenterology Association and the American Society GI Endoscopy in Toronto, Canada.

June 8-10, 1977 - Attended Third Symposium on H2 Receptor Inhibitors in Los Angeles, California.

Outside lectures given:

8/27/76 - Fiber and the irritable bowel syndrome. Millers and Oreal Chemists, Kansas City, Mo.

9/27/76 - Colon cancer and colonoscopy. Surgical Post Graduate Course.

10/11/76- Alcoholic hepatitis. Medical Post Graduate Course.


10/20/76- Peptide digestion and transport. Dept. of Medicine Research Conference.

2/16/77 - Oral electrolyte overload for cleansing the colon. Grand Rounds, St. Luke's Hospital, Kansas City, Mo.

4/16/77 - Inflammatory bowel disease. Grand Rounds, Stormont-Vail Hospital, Topeka, Kansas.

4/20/77 - Lactulose in liver failure. Post Graduate Course, Family Physicians.

4/20/77 - H2 blockers for peptic ulcer disease. Post Graduate Course, Family Physicians.

5/10/77 - Dietary fiber and the irritable bowel syndrome. Kansas Medical Society, Wichita, Kansas.

Committee service

Outside KUMC

H2 blockers - Smith, Kline and French, Philadelphia, 2 visits during year.

Anticholinergics in irritable bowel - Merrill Labs, Chicago.

Local

Animal Care committee, Faculty Assembly
Curriculum - Department of Medicine
Promotions - Department of Medicine
Review Faculty Bylaws - KUMC

Editorial service - Ad hoc basis

Book review - Peptide Transport and Digestion
Book consultant on GI Physiology - Mosby Co.

American Journal of Physiology - reviewed two papers.

Reviewed 2 ad hoc grant reviews.

Teaching activities:

Medical Physiology - 7 lectures on GI Physiology
in charge of conference group for half the sessions during course
Frederick E. Samson, Ph.D., Professor

Meetings attended:

7/2-16/76 - Emerging Concepts in the Neurosciences, M.I.T., Boston
10/6-7/76 - International Workshop on Neurobiologic Mechanisms in Manipulative Therapy; planning session at Michigan State University, School of Osteopathic Medicine, East Lansing.
10/24-27/76 - Mental Retardation Research Centers Directors Meeting, University of Wisconsin, Madison.
11/7-11/76 - Society for Neuroscience Annual Meeting, Toronto, Canada.
4/3-7/77 - Federation of American Societies for Experimental Biology, Chicago.
5/30 - 6/1/77 - American Association for Mental Deficiency Annual Meeting, New Orleans.

Lectures outside Dept. of Physiology:

8/17/76 & 4/19/77 - Neurosciences course, Neurology Department.
10/13/76 - "Brain Research", Bioengineering course, University of Kansas, Lawrence
7/16/76 - "Neurosciences Research Program - What's It All About?", Kansas City Chapter of Society for Neuroscience.
4/5/77 - "Effect of Maytansine on Fast Axonal Transport" (poster session) with J. Donoso, D. Watson and I. Bettinger at Federation Meetings in Chicago.

Committees

Outside KUHC
Planning Committee of International Conference on Neurobiologic Mechanisms in Manipulative Therapy for session to be held 10/24-26/77 at Michigan State University
Chairman, Greater Kansas City University of Chicago Alumni Fund
Chairman of Inter Campus Cooperation Committee, K.U.
Ph.D. Thesis Committees at K.U., Lawrence, for Joe Fix, Dept. of Physiology and Cell Biology, Daniel Cawley and Mary Hedbloom, Department of Biochemistry, and Mary Lou Michaelis, Department of Human Development

Local
Inter-campus liaison
President-elect, Sigmi Xi, Kansas City, Club
Kansas City Chapter, Society for Neurosciences - Secretary-Treasurer 1977-78, President-elect 1978-79
Chairman, Research Committee of Ralph L. Smith Research Center
Ph.D. Thesis Committees for George Kemper and Robert Stephens, Department of Anatomy, and Bernard Schneider and J. Alejandro Donoso, Department of Pharmacology
Dr. F. E. Samson (continued)

Minicomputer Committee, Ralph L. Smith Research Center
Chairman, Visiting Lecturers Committee, Department of Physiology
Seminar Series, Department of Physiology

Editorial service
Neurosciences Research Program Bulletin (ad hoc)
Journal of Biology (ad hoc)
Proceedings of the National Academy of Sciences (approximately 1 ms/year)

Grant Reviews
National Science Foundation - Neurobiology Division (approximately six applications/year)

Post-doctoral Fellows and Graduate Students
Louis Green, M.D. (Sept. 1975 - Sept. 1976) Currently in Neuropathology, Department of Pathology, Case Western Reserve University, Cleveland
J. Alejandro Donoso, M.S., Graduate Student in Pharmacology
Danny Watson, M.D. and Ph.D. candidate, Department of Physiology
Joseph Fix, Ph.D. - Thesis adviser (with Dr. Borchardt, K.U., Lawrence)
Currently post-doctoral fellow with Professor Charles Rutledge, Department of Pharmacology, K.U., Lawrence.

Teaching Activities:
Medical Physiology - 16 conferences.
Physiology 388, Spring 1977 - 13 lecture hours in Cell Physiology, Muscle Physiology, and homeostasis.
Physiology 782, Advanced Topics, Summer 1976, 1 student, 3 credit hours
Fall 1976, 1 student, 4 credit hours
Spring 1977, 2 students
Physiology 829, 2 hours of lectures
Physiology 850, Research, Fall 1976, 1 student 4 credit hours
Spring 1977, 1 student, 6 credit hours
Biology 902 (KU, Lawrence) Thesis, Summer 1976, 1 student, 1 credit hour
Fall 1976, 1 student, 1 credit hour

Lawrence P. Sullivan, Ph.D., Professor

November 21-23, 1976 - Attended meetings of the American Society of Nephrology in Washington, D.C.


April 1-7, 1977 - Attended the meetings of the Federation of American Societies for Experimental Biology in Chicago and with Dr. Harold Wilkinson presented a paper on "Effect of ouabain on K transport in the bullfrog kidney".

April 22, 1977 - Gave two lectures to students and house staff at St. Francis and Wesley Hospitals in Wichita.

Representative of Renal Section to the Program Committee, American Physiological Society.
Dr. L. P. Sullivan (continued)

Chairman of the Academic Committee.
Member of Interinstitutional Executive Committee.
President, KUMC Sigma Xi Club.
Ad hoc referee for the American Journal of Physiology and Biology of Reproduction.
Post-doctoral Fellow: Dr. Harold Wilkinson

Teaching Activities:
- Medical Physiology - in charge of Renal Physiology section
  8 hours lecture
  24 hours problem sessions
  in charge of laboratory and conference section
- Physiology 388 - 1 hour lecture
- Physiology 705 - 8 hours lecture
- Physiology 820 - 15 hours lecture

C. Merrill Tarr, Ph.D., Associate Professor

- August 15-20, 1976 - Attended the Fall meeting of the American Physiological Society in Philadelphia, Pennsylvania, and presented paper on "Contractile activating substance released from isolated single frog atrial cardiac cells".

Outside lectures given:
- 10/27/76 - Calcium current and the heart. St. Luke's Hospital, Kansas City, Mo.

Referee for Circulation Research (ad hoc prior to January 1, 1977; member of editorial board since).

Departmental representative to Education Committee.
Member of Departmental Fletcher Fund Committee.

Post-doctoral Fellows:
- Paul Leiffer, Ph.D. (10/1/76 to present)
- Byron Whitaker, Graduate Student, 3 month lab rotation during summer and fall of 1976.

Teaching Activities:
- Medical Physiology - in charge of Electrophysiology portion (6 hours of lecture, 8 hours of problem sessions and reviews, 1 hour Advanced Topics lecture).
- Cardiac Electrophysiology - 1 hour of lecture
- Muscle Physiology (2 hours of lecture, 2 hours of problem sessions)
  In charge of a lab and conference group
Alan M. Thompson, Ph.D., Professor


December 8-10, 1976 - Attended meeting of task force on biomedical graduate education at Council of Graduate Schools meeting in Denver.

February 1-3, 1977 - Attended meeting of Executive Committee of Task Force of Council of Graduate Schools in Washington, D.C.

February 22-24, 1977 - Served as member of panel for selection of research associates for federal laboratories.

March 2-3, 1977 - Talked to students from six colleges about graduate programs at McPherson College, McPherson, Kansas.

Associate Dean for Graduate Studies.

Acting Chairman of Department through December 31, 1976.

Committees:
- Ad Hoc Committee to revise bylaws of Graduate School
- Executive Committee for Biomedical Task Force of Council of Graduate Schools, since January 1977
- NAS Panel
- Space and Remodeling Committee, KUMC
- Orr-Major Committee
- Ad Hoc Committee to revise bylaws of Faculty Assembly

Teaching Activities:
- Medical Physiology - in charge of Transport and Body Fluids section
  gave 8 lectures plus review sessions and special help to students
- Physiology 101 - in charge of course - gave 8 lectures

John W. Trank, Ph.D., Associate Professor

September 10-11, 1976 - Attended the annual meeting of the Kansas Heart Association held at Glenwood Manor in Overland Park.

October 4, 1976 - Gave seminar at Kansas State College of Emporia on Biomedical Engineering.


April 1-7, 1977 - Attended meetings of the Federation of American Societies for Experimental Biology in Chicago.

May 12-13, 1977 - Consultations concerning biomedical engineering at the Medical Branch of the University of Texas.

June 3-4, 1977 - Attended annual meeting of the Kansas Heart Association in Topeka.
Dr. J. W. Trank (continued)

Gave five two-hour lectures on Hospital Electrical Hazards to Critical Care Nursing Program at St. Luke's Hospital, Kansas City, Mo.

Gave four two-hour lectures to KU Critical Care Nursing Program during the academic year.

Member, Board of Directors, American Heart Association, Kansas affiliate.

Member, Regional Research Review Committee, American Heart Association Great Plains Region.

Member, Research Committee, Kansas Heart Association.

Chairman, KUMC Biomedical Engineering Study Committee, 1975-76.

Member, KUMC-KU Biomedical Engineering Education Study Committee.

Member, Intercampus Liaison Committee.

Member, Clinical Process Coordinating Committee.

Supervisor of Department of Physiology Electronics Shop facility.

Biomedical Electronics consultant to Burnett Industries, Lawrence.

Grant and post-doctoral reviews for American Heart Association, Great Plains Region.

Grant and post-doctoral reviews for Kansas Heart Association.

Ad Hoc reviewer for Biomedical Engineering Review for NIH.

Teaching activities:

Medical Physiology - 6 lectures on Hemodynamics
20 conferences
12 labs
1 Advanced Topics lecture
4 hours Hemodynamics problem sessions

Taught Hospital Electrical Hazards for Nursing to undergraduate nursing program.

2 lectures on Bioinstrumentation Electrical Engineering 260, Dept. of Electrical Engineering at KU in Lawrence (has appointment as lecturer in Electrical Engineering and is qualified on the graduate faculty at Lawrence)

Jack D. Wood, Ph.D., Associate Professor

June 30-July 3, 1976 - Attended annual convention of Alexander von Humboldt Foundation in Bonn, West Germany.

September 13-18, 1976 - Attended fall meetings of German Physiological Society in Regensburg, West Germany and presented paper on Prostaglandins and Intestinal Motility.


October 31, 1976 - Returned to KUMC from an 8-month stay in Munich, Germany where he was a Visiting Professor at the Physiological Institute at the University of Munich.
March 4-6, 1977 - Attended meeting of the Midwest Gut Club in Louisville, Kentucky.


April 14, 1977 - Gave talk on Auerbach's plexus to the Kansas Academy of Science in Hays, Kansas.

May 23-27, 1977 - Attended meetings of the Gastroenterology Association in Toronto, Canada, and also a Symposium on Gastrointestinal Transit in Hamilton where he gave invited lectures on "Neurophysiology of Auerbach's Plexus" and "Intrinsic Nerves and Intestinal Transit".

Serves on the Department Admissions Committee.


Directed research and was Dissertation Chairman for Lynn Brann, graduate student who completed the requirements for the Ph.D. degree in June 1977.

Postdoctoral Fellows:
- David N. Erwin, Ph.D.
- Toshi Ninchoji, M.D.

Teaching activities:
- Medical Physiology - Responsible for section on Neurophysiology - 16 lectures
  Shares responsibility for section on Gastrointestinal Physiology with Dr. Rhodes - 3 lectures
- Organization of 2 conference topics
- Responsible for Laboratory #12 on Physiology and Pharmacology of Smooth Muscle
- In charge of a conference and laboratory section
Chairman's Report

Dr. Gilbert S. Greenwald was appointed Distinguished Professor and Chairman of the Department of Physiology on February 1, 1977. This ends a 4 year search to find a successor to Dr. E. B. Brown. The morale of the department is surprisingly high after the 4 year hiatus and the yeoman service of Dr. Alan M. Thompson, who served as Acting Chairman during this period, is largely responsible for the stability of the department and its continued efforts to meet all of its commitments.

Dr. Greenwald was also named as a Distinguished Medical Alumni Teacher. The award is especially gratifying because it provides funds for strengthening the teaching and research functions of the department.

Efforts are underway to recruit new faculty members who will strengthen and complement the teaching and research roles of the department. It is confidently expected that at least three positions will be filled by the time of the next annual report.

During the past year, three members of the staff resigned to assume new careers:

Dr. E. B. Brown, Jr. left to become Chairman of the Department of Physiology at Oral Roberts University School of Medicine, Tulsa, Oklahoma.

Dr. Paul A. Hensleigh joined the Department of Obstetrics and Gynecology at Stanford University.

Dr. G. N. Loofbourrow retired after 29 years of service at both the Lawrence and Medical Center campuses.

The department will miss all three but hope that our paths will cross many times in the future.