ANNUAL REPORT
July 1, 1982 - June 30, 1983
DEPARTMENT OF PHYSIOLOGY
UNIVERSITY OF KANSAS MEDICAL CENTER
COLLEGE OF HEALTH SCIENCES AND HOSPITAL

Department Roster

a. Academic Staff
Gilbert S. Greenwald, Ph.D., Distinguished Professor and Chairman
Michael D. Ballie, M.D., Ph.D., Professor (Joint appt., Pediatrics)
Richard L. Clancy, Ph.D., Professor
Kenneth L. Goetz, M.D., Ph.D., Adjunct Professor (Director of Research and Head, Div. of Experimental Med., St. Luke's Hosp.)
Norberto C. Gonzalez, M.D., Professor
Donald C. Johnson, Ph.D., Professor (Joint appt., Ob-Gyn)
Theodore Lawwill, M.D., Adjunct Professor (Chairman, Department of Ophthalmology)
Werner K. Noell, M.D., Adjunct Professor (Joint appt., Ophthalmology)
Fred E. Samson, Ph.D., Professor (Director of Ralph Smith Ctr for Mental Retardation)
Lawrence P. Sullivan, Ph.D., Professor
Alan M. Thompson, Ph.D., Professor
Merrill Tarr, Ph.D., Professor
John W. Trank, Ph.D., Professor
James L. Voogt, Ph.D., Professor (Associate Dean of Research)
Sudhansu K. Dey, Ph.D., Associate Professor (Joint appt. Ob-Gyn)
Russell T. Dowell, Ph.D., Associate Professor
Hugo L. Fernandez, Ph.D., Associate Professor (Director, Neurosciences Research Laboratory, VA Hospital)
Paul F. Terranova, Ph.D., Associate Professor
Daniel J. Welling, Ph.D., Adjunct Associate Professor
Paul D. Cheney, Ph.D., Assistant Professor
Richard Edwards, Ph.D., Research Assistant Professor (Joint appt., Medicine)
Thomas J. Imig, Ph.D., Assistant Professor
Philip L. Smith, Ph.D., Assistant Professor
Dennis P. Valenzano, Ph.D., Assistant Professor

b. Postdoctoral Fellows
Inkyo Kim, M.D.
Anne Morel, Ph.D.
Katsuji Oguchi, M.D., Ph.D.
Pranab Pakrasi, Ph.D.
Shyamal K. Roy, Ph.D.
Masoomi Takayama, M.D.
Shiw-Ching Wang, Ph.D.

Postdoctoral Candidates

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<thead>
<tr>
<th>Candidate for</th>
<th>Degree Requirements Fulfilled</th>
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<td>Ph.D.</td>
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Ph.D.

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<th>Degree Requirements Fulfilled</th>
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<tr>
<td>April 29, 1983</td>
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<td>Withdraw, June, 83</td>
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<td>Withdraw, Feb., 83</td>
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G. Graduate Students

<table>
<thead>
<tr>
<th>Virginia Cassmeyer</th>
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<tr>
<td>Timothy Griswold</td>
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<tr>
<td>Curtis Kauer</td>
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<td>Richard D. McCabe</td>
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<td>Robert O'Neill</td>
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<td>Mohammad Shaban, M.D.</td>
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<td>Patricia A. Tonkowicz</td>
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<td>Dianne L. Vermillion</td>
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<td>Robert Whitman</td>
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<td>Tim Watt</td>
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<td>Lisa Wood</td>
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<td>Matthew Zupka</td>
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<td>Lorraine Rome</td>
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Notes concerning graduate students:

Virginia Cassmeyer attended the FASEB meetings in Chicago and presented a poster entitled "Acid-Base Regulation in Rat Diaphragms" and participated in Student Research Day with a slide presentation on the same topic.

Curtis Kauer represented the physiology department on the Graduate Student Council throughout the year and was elected Vice-President of the council in April, was elected Secretary-Treasurer of the Student Union Board in April and attended the FASEB meetings in Chicago in April.

Richard McCabe attended the fall APS meeting in San Diego and presented a poster; attended the spring FASEB meeting in Chicago, presented poster and co-authored second poster; submitted three papers (two to Am. J. Physiol. - G.I. section, one to gastroenterology), two as first author, one as third author; and was awarded a National Kidney Foundation Postdoctoral Fellowship for one year/$17,000.

Mohammad Shaban attended the Endocrine Society meeting in San Antonio in June and presented a poster entitled "Regulation of development of pre-ovulatory follicles by FSH & LH in hypophysectomized hamster".

Patricia Tonkowicz attended the Society for the Study of Reproduction meeting in Madison, Wisconsin in July and presented a poster entitled "Prolactin and placental lactogen during pregnancy", she also presented "Lactogen secretion in the pregnant rat" at the FASEB meeting in Chicago, Illinois in April and at the 1983 KUMC Student Research Forum which won Honorable Mention in the graduate division. In March she presented a seminar to the Physiology Department of K state, Manhattan and in June she attended the Endocrine Society Meeting in San Antonio, Texas and presented a poster entitled "Ovarian and fetal control of rat placental lactogen and prolactin secretion".

Matt Zupka attended FASEB meeting in Chicago in April and presented a Renal Journal Club seminar entitled "K+ transport in the Amphibian Kidney".

COURSES TAUGHT

101 - Elementary Physiology (F), part of a 1,000 hour course for Emergency Care. Taught by Dr. Cheney and graduate students. Enrollment 18. Dr. Cheney - coordinator.


808 - Reproductive Physiology. 2 credits. Fall, 1982. Taught by Dr. Greenwald. Enrollment 1 student.

810 - Transport & Membranes, 2 credits, Fall, 1982. Graduate course taught by Dr. Smith, Thompson, Valenzeno and Welling. Enrollment: 5 students.


940 - Pulmonary Gas Exchange, Blood Gas Transport and Acid-Base Balance. 3 credits, Fall 1982. Taught by Dr. Gonzalez. Enrollment 5 students.
**Department Seminars**

9/13/82  Mr. Richard McCabe  
Department of Physiology, KUMC

9/20/82  Dr. Jerry Yochim  
Dept. of Physiology & Cell Biology  
KU, Lawrence

9/27/82  Dr. Kurt Ebner  
Department of Biochemistry, KUMC

10/11/82  Ms. Patricia Tonkowicz  
Department of Physiology, KUMC

10/18/82  Mr. Joel Stiles  
Department of Physiology, KUMC

10/25/82  Dr. Russell T. Dowell  
Department of Physiology, KUMC

11/1/82  Dr. Bin Ching Wang  
Division of Experimental Medicine  
St. Luke's Hospital

11/8/82  Dr. Curt Klaassen  
Department of Pharmacology, KUMC

11/15/82  Dr. Ted Lawwill  
Department of Ophthalmology, KUMC

11/22/82  Dr. Richard Edwards  
Department of Medicine, KUMC

11/29/82  Dr. Larry Sullivan  
Department of Physiology, KUMC

12/6/82  Dr. Dennis Valenzeno  
Department of Physiology, KUMC

12/13/82  Dr. Kaleem Quadri  
Dept. of Physiology & Anatomy  
Kansas State Univ., Manhattan, KS

1/3/83  Mr. Curtis Kauer  
Department of Physiology, KUMC

1/10/83  Dr. Floyd Atkins  
Department of Medicine, KUMC

1/17/83  Dr. Clarke Anderson, Chairman  
Department of Pathology, KUMC

- Secretary Stimuli of Potassium Transport in Rabbit Colon
- Metabolism of the Uterus During Early Progestation
- Prolactin
- From Pituitary to Placenta During Pregnancy
- Intracellular 16S Acetylcholinesterase in the Adult Mammalian Neuromuscular System
- Alternative Mechanisms Regulating Cardiac Muscle Contractile Proteins
- Factors that Regulate Vasopressin Release
- Glucuronidation and Biliary Excretion of Xenobiotics
- Ambyopia
- Reactivity of Isolated Renal Micro Vessels
- Potassium Transport Mechanisms in the Amphibian Kidney
- The Stoichiometry of Membrane Photomodification
- Serum Prolactin Levels During the Menstrual Cycle in the Rhesus Monkey
- Blood Flow Distribution in the Reproductive Tract of the Pregnant Rat
- Adrenergic Mechanisms in Cardiac Hypertrophy
- Calcifying Membranes
Phenytoin Teratogenicity in a Mouse Animal Model

Factors Regulating Follicular Development in the Cyclic Hamster

Kindling

Neural Regulation of Cerebral Microcirculation

Centrally-Acting Humoral Agents in the Control of Vasopressin Release

Ovarian Communication and Control

Studies on the Mechanisms Underlying Synaptic Efficacy

Morphological and Physiological Basis for Divergence in Pituitary Gland FSH and LH Secretion in the Rat

Control of Nociceptive Transmission in the Spinal Cord

Function and Cellular Localization of COMT

Exercise Stress and Disease

Factors Affecting K^+ Channels in Epithelia

Immuno Regulation in Normal Physiology and Human Disease

Comparative Mammalian Sound Localization

A Tale of Two Species: Hamster and Rat
5/3/83 Robert O'Neill
Doctoral Dissertation Defense
Department of Physiology, KUMC
Fast Axonal Transport & Morphometry in Vagal Unmyelinated Axons

5/2/83 Dr. Mrinalini C. Rao
Department of Physiology
University of Chicago
Role of Cyclic Nucleotides and Calcium in Regulation of Intestinal Ion Transport

5/9/83 Dr. Duane Davis
Department of Animal Science
Kansas State University
Pig Embryos during the First Two Weeks of Pregnancy

5/16/83 Dr. Dexter Irvine
Department of Psychology
Monash University
Organization of Neurons Sensitive to Sound Direction in the Cat Superior Colliculus

5/23/83 Dr. Mohammad Shaban
Department of Physiology, KUMC
Hormonal Changes before Puberty

6/6/83 Dr. Walter C. Randall
Department of Physiology
Stritch School of Medicine
Loyola University, and President,
American Physiological Society
The Physiology of Subsidiary Atrial Pacemakers

6/13/83 Mr. Tim Griswold
Department of Physiology, KUMC
Enzymes of the Granulosa Cell

PUBLICATIONS

Published during year - July 1, 1982 - June 30, 1983


b. In press


Fernandez, H.L. Regulation of nerve-target cell interactions. KUMC-Research Week Proc.

Gonzalez, N.C., V. Donoso and M. Bailie. The renin angiotensin system in pressure-induced myocardial hypertrophy. Hypertension.


Terranova, P.F. and Garza, F. Relationship between the preovulatory luteinizing hormone (LH) surge and androstenedione synthesis of preantral follicles in the cyclic hamster; detection by in vitro responses to LH. Biol. of Reprod.


Shaha, C. and Greenwald, G.S. Development of Steroidogenic Activity in the Ovary of the Prepubertal Hamster: II Production of Steroids from Steroidal Precursors and Response In Vitro to Cyclic AMP and LH. Biol. Reprod.


Tonkowicz, P. and J.L. Voogt. Examination of rat placental lactogen and prolactin at 6 hour intervals during mid-pregnancy. PSEBM.


c. Abstracts


Shaban, M.A. and Terranova, P.F. Regulation of development of preovulatory follicles by FSH and LH in hypophysectomized hamsters. 65th Ann. Meeting of the Endocrine Society; San Antonio, TX, Abst. No. 879.


RESEARCH SUPPORT


KUMC Visiting Scientist Program for Neuroscience. $2,100.


NIH - Steroid hormones and embryo development. 07/01/80-12/30/83. Direct costs $77,947/3-1/2 years (7/1/80 - 12/30/83).

NIH-HD16247 - Development of heart metabolism and contractile function. 9/1/81-8/31/83* (*12 month extension of time - No additional funds). Direct costs $23,534. Indirect costs 0.

H. L. Fernandez: VA Merit Review Program - Muscle Degeneration - Regeneration. 04/01/83 - 03/31/86. First year direct costs $73,660.

VA Innovative Aging Research Program - Acetylcholinesterase Molecular Forms in Aging Mammalian Skeletal Muscle. 06/30/83-07/01/85. First year direct costs $42,000.

Muscular Dystrophy Association - Regulation of acetylcholinesterase at the neuromuscular junction. 01/01/82-01/01/85. Second year direct costs $18,519; indirect costs $1,481.

ALS-KUMC-Research Center - Studies on acetylcholinesterase molecular forms in amyotrophic lateral sclerosis. 07/01/82-06/30/85. First year direct costs $18,700.

K. L. Goetz: NIH (National Heart, Lung and Blood Institute). Cardiovascular Reflexes, 7/1/82-6/30/85. Direct costs $56,891 for period 7/1/82-6/30/83.


D. C. Johnson: NIH (NICHD) - Reproductive Hormone interactions in the ovary. March 1, 1982 - February 28, 1985. $37,656 direct costs; $9,201 indirect costs.


U.S. Army Medical Research Command "Safety/Surety Facility - September 1981-Completion Date; Direct costs $73,000, Indirect - None.


C. M. Tarr: N.I.H. National Heart and Lung Institute - Contractile Activity of Single Cardiac Cells, April 1, 1982 - March 31, 1983. Unexpended funds from terminal year of grant carried forward for a one year extension (approx. $12,000). Total period of support April 1, 1979 through March 31, 1983.


P. F. Terranova: NICHD - Aged Antral Follicles and Atresia. 09/1/82 - 03/31/83. Direct costs $28,286; Indirect costs $7,081.


NICHD - Superovulation and Cystic Follicles: role of LH. 04/01/82 - 03/31/83. Direct costs $25,174; Indirect costs $6,293.

National Foundation, March of Dimes. Summer, 1983. $1,000

A. M. Thompson: American Heart Association, Kansas Affiliate - Cerebral Autoregulation and Cerebrovascular Permeability. Extension of 1981/82 award 07/01/81-06/30/82. Direct costs $12,000; Indirect costs $1200.


ACTIVITIES OF STAFF

Paul D. Cheney, Ph.D., Assistant Professor

Meetings Attended:
October 31-November 5, 1982. Presented a paper at the Society for Neuroscience meeting, Minneapolis, Minnesota.

Committees:
Chairman, KUMC Animal Care Committee
Member, Student Promotions Subcommittee of the Academic Committee
Member, Physiology Department Committee to review Medical Physiology
KUMC Minority Recruitment Coordination representative
President, Kansas City Chapter, Society for Neuroscience.
Coordinator, KUMC Neuroscience Selectives program.
Organizer, Neurobiology Session, KUMC Research Week, 1982.

Editorial and Grant Reviews:
ad hoc reviewer - Neuroscience Letters
ad hoc reviewer - Pflugers Archiv.
ad hoc reviewer - J. Neurophysiology

Academic Honors
June 14-18, 1983. Invited speaker for a teaching day on motor control held in conjunction with the American Physical Therapy Association meeting, Kansas City, Missouri.

Seminars presented:
March 21, 1982 - Physiology Dept., Univ. of Western Ontario, London, Ontario.

Teaching activities:
Medical Physiology
10 hours lecture, Neurophysiology
12 conferences (prepared one)
5 laboratories
1 demonstration
Physiology 388
8 hours lecture
Physiology 101
Faculty Coordinator
Physical Therapy - advanced topics
4 hours lecture

Trainees:
James Applebaum - Medical student on summer research fellowship.

Richard L. Clancy, Ph.D., Professor

Meetings attended:
Committees:
Departmental:
Chairman, Physiology Department Graduate Student Committee
Local:
KUMC Academic Committee (Student Admissions Subcommittee)
KUMC Graduate School Council
Univ. Kansas Graduate School Periodic Program Reviews Committee
KUMC Medical Alumni Scholarship Committee
KUMC Long Range Planning and Resources Committee

Teaching Activities:
Medical Physiology 770-771
7 hours lecture - Cardiovascular
30 hours laboratory (Responsible for Student Labs in Med Physiology Course)
National Board Review (1 hour lecture)
Physiology 705, Advanced Human Physiology
10 hours lecture - Cardiovascular

Trainees:
Virginia Cassmeyer - Graduate Student
Dwight St. Clair - Graduate Student

Sudhansu K. Dey, Ph.D., Associate Professor

Meetings attended:

Committees:
Member, KUMC Research Committee
Member, KUMC Animal Care Committee
Member, Research Space Subcommittee
Secretary, Sigma Xi, KUMC
Member, Promotion and Publicity Committee, Research Week, 1982 & 1983
Member, Selection Committee for Associate Dean of Research
Member, Selection Committee for Summer Student Research Program, 1983.

Editorial and Grant Reviews:
ad hoc reviewer - NIH (HED Study Section)
ad hoc reviewer - NSF (Regulatory Biology)
ad hoc reviewer - Biology of Reproduction
ad hoc reviewer - J. Reprod. Fertility

Seminars presented:
November 10, 1982 - Implantation in the mammals, KUMC.
November 20, 1982 - Embryonic Signals in Implantation, Invited Speaker, University of Wisconsin at Madison.
June 20, 1983 - Embryo-uterine Interaction, KUMC.

Teaching Activities:
Medical Physiology
30 hours laboratory
24 hours conference

Trainees:
Dr. P.L. Pakrasi, Rockefeller Foundation Post-Doctoral fellow.
Betsy Kantor, Medical Student
Mike Kirk, Premedical Student
Russell T. Dowell, Ph.D., Associate Professor

Meetings Attended:
- October 8-20, 1982 - Attended the Fall Meeting of the American Physiological Society in San Diego, California and presented a paper.
- April 10-17, 1983 - Attended FASEB annual meeting in Chicago, Illinois and presented a paper.
- May 17-22, 1983 - Attended the American College of Sports Medicine annual meeting in Montreal, Quebec, Canada and presented a paper.

Committees:
- Member, Planning Committee, Interdepartmental Selections, KUMC
- Member, Search Committee for Chairman of Department of Cardio-Thoracic Surgery, KUMC

Editorial Reviews
- ad hoc reviewer - American Journal of Physiology
- ad hoc reviewer - Journal of Applied Physiology
- ad hoc reviewer - Proceedings of the Society for Experimental Biology and Medicine

Seminars presented:
- October 25, 1982 - Presented departmental seminar entitled "Alternative Mechanisms Regulating Cardiac Muscle Contractile Proteins.

Teaching activities:
- Medical Physiology
  - 7 hours lecture
  - 12 conferences
  - 7 student laboratories
- Physiology 705
  - 8 lectures, Respiratory Physiology
- National Board of Medical Examiners - review sessions

Trainees:
- Curtis Kauer, Graduate Student

Hugo L. Fernandez, Ph.D., Associate Professor

Meetings Attended:
- September 6-11, 1982 - Attended 6th European Neuroscience Congress, Torremolinos, Spain.
- September 12-18, 1982 - Attended 5th International Congress on Neuromuscular Diseases, Marseilles, France.

Committees:
- Chairman, Research and Development Committee, VA Medical Center.
- Member, Search Committee for Associate Chief of Staff for Research, VA Medical Center
- Member, Research Space Subcommittee, VA Medical Center
- Member, Research Promotions Committee, VA Medical Center
- Member, Research and Development Budget Subcommittee, VA Medical Center
- Member, Research Computer Committee, VA Medical Center
- Member, KUMC-ALS Regional Research Center Peer Review Committee
- Member, Student's Award Committee, KUMC
- Served as Acting Associate Chief of Staff for Research on a few occasions, VA Medical Center.
Editorial and Grant Reviews:

ad hoc reviewer - Experimental Neurology
ad hoc reviewer - J. Neurobiology
ad hoc reviewer - J. Neuroscience
ad hoc reviewer - Neuroscience Letters
National Institutes of Health
National Science Foundation
Summarized 10 VA Merit Review Submissions and 9 Progress Reports for VA Research and Development Committee

Academic Honors:

Appointed as Associate Research Career Scientist by the VA Medical Research Service Central Office, Washington.
Invited speaker at Symposium on Nerve-Muscle Trophic Interactions, 6th European Neuroscience Congress, Malaga-Torremolinos, Spain, 9/8/82.
Invited speaker, Workshop on "Acetylcholinesterases", 5th International Congress on Neuromuscular Diseases, Marseilles, France, 9/14/82.
Invited by Dr. J. Massoulie to spend 1 week (Sept. 19-26, 1982) at the Department of Neurobiology, Ecole Normale Superieur, Paris, France, to give a lecture and exchange research information on Acetylcholinesterase Molecular Forms.

Seminars presented:

September 3, 1982 - "Role of Axonal Transport in Regenerative Changes in Motor Nuclei", Department of Morphology, Autonoma University of Madrid, Spain/
September 20, 1982 - "Molecular Forms of Acetylcholinesterase", Department of Neurobiology, Ecole Normale Superieur, Paris, France.
September 22, 1982 - "Neurotrophic Control of 16S Acetylcholinesterase", Department Cellular Biology, University of Paris, Paris, France.
September 24, 1982 - "Long-lasting Synaptic Modifications in a Simple Nervous System Preparation", Department of Physiology, University of Paris, Paris, France.
January 28, 1983 - "Studies on the Mechanisms Underlying Synaptic Efficiency", Department of Physiology, University of Kansas Medical Center.
April 27, 1983 - "Origin and Regulation of Acetylcholinesterase in Adult Mammalian Skeletal Muscle", Resarch Service, VA Medical Center.

Teaching Activities:

Medical Physiology
  7 hours lecture, Neurophysiology
  10 conferences
  7 laboratory sessions
  Responsible for Myasthenia Gravis Conference

Trainees:

Joel Stiles, M.D.-Ph.D. program
Thomas Seiter, Pre-Medical Summer Student
Peter Brady, Medical Student
Meetings Attended:


October, 1982 - American Physiological Society, San Diego. Slide presentation, "Plasma vasopressin response to continuous hemorrhage in conscious, cardiac-denervated dogs".


Committees:

Chairman, Animal Care Committee, St. Luke's Hospital
Member, Institutional Review Board, St. Luke's Hospital
Member, Continuing Medical Education Committee, St. Luke's Hospital
Member, Research Committee, Kansas Affiliate of American Heart Association

Editorial and Grant Reviews:

ad hoc reviewer for American Journal of Physiology
ad hoc reviewer for Circulation Research
Reviewed grants for the British Medical Research Council
Reviewed grants for the Medical Research Council of Canada

Academic Honors:

December, 1982 - Invited to participate in symposium, "Sodium Metabolism, Blood Pressure and Nutrition", Vienna, Austria, sponsored by the Austrian Biophysical Society. Presentation entitled "How much do cardiac receptors influence sodium and water homeostasis?"

April, 1983 - Invited to co-chair session, Hypertension: Neurohumoral, at 1983 FASEB, Chicago.

May, 1983 - Invited to participate in symposium, "Body Fluid Homeostasis", Evian, France, sponsored by the International Union of Physiological Science: Commission of Physiology of Food and Fluid Intake and the Evian Society. Chaired session and presented paper entitled "Plasma vasopressin and renin during progressive hemorrhage in conscious dogs with sinoaortic denervation, or cardiac denervation, or combined sinoaortic and cardiac denervation".

Teaching Activities:

Taught five sessions (10 hours each) of cardiovascular physiology for the Critical Care Nursing Program sponsored by Research and Bethany Medical Centers and St. Luke's Hospital.

Norberto C. Gonzalez, M.D., Professor

Meetings Attended:

October 10-15, 1982 - Attended the meeting of the American Physiological Society, San Diego, California.

Committees:

In charge of grading system for the Medical Physiology Course.
Member of the Scheduling Committee for the Medical Physiology course.
Member, Cardiovascular Research Committee, American Heart Association, Kansas Affiliate.
Member, Board of Directors, American Heart Association, Kansas Affiliate.
Vice President, American Heart Association, Kansas City Division.
Editorial and Grant Reviews:
  ad hoc reviewer - Journal of Pharmacol. & Experimental Therapy
  ad hoc reviewer - Pflugers Archiv.
  ad hoc reviewer - Respiration Physiology
  ad hoc reviewer - Journal of Applied Physiology
  Reviewed grants for the National Science Foundation

Seminars presented:
  October 18, 1982 - Modulation of myocardial hypertrophy. Institute for Medical Research, University of Buenos Aires, Argentina.
  Role of mechanical and humoral factors in myocardial hypertrophy development. Institute of Cardiovascular Physiology, Medical School of LaPlata, Argentina, October 20, 1982.

Teaching activities:
Medical Physiology
  13 hours lecture - Respiration Physiology
  two 3-hour demonstrations
  two 3-hour study sessions.
  12 conferences
  5 laboratories

National Board Review
  3 hours lecture

Physiology 388
  6 hours lecture - Physiology of Respiration

Physiology 940 - Graduate course, Fall 1982

Trainees:
Virginia Cassmeyer, Graduate Student
Robert Henry, Medical Student

Gilbert S. Greenwald, Ph.D., Distinguished Professor and Chairman

Meetings Attended:
  July, 1982 - Attended 4th Ovarian Workshop, Madison, Wisconsin (Chaired a session)

Committees:
  KUMC:
    Member, Academic Track Committee, 1982-83
    Chairman, Advisory Committee for the Vice-Chancellor for Academic Affairs for Academic Excellence, 1982-1983.
    Chairman, Guidelines for Appointments to Research Ranks, 1982.
    Chairman, Awards Committee, 2nd Annual Research Week, 1982.
    Member, Program Development Committee, 2nd Annual Research Week, 1982.

  External:
    Member, Development and Research Committee, Kansas City V.A. Hospital.
    Chairman, 4th Ovarian Workshop, July, 1982, University of Wisconsin.

Editorial and Grant Reviews:
  ad hoc reviewer - American Journal of Physiology
  ad hoc reviewer - Biology of Reproduction
  ad hoc reviewer - Endocrinology
  ad hoc reviewer - Fertility and Sterility
  ad hoc reviewer - J. Reproduction and Fertility
Academic Honors:
University of Kansas College of Health Sciences Research Award, 1982.

Seminars presented:
April 25, 1983 - Departmental seminar entitled "A tale of two species: hamster and rat".

Teaching activities:
Medical Physiology (Class coordinator)
  8 hours lectures - G.I. Physiology
Physiology 388
  4 hours lecture - G.I. Physiology
Physiology 808 - Reproductive Physiology (Graduate Course)

Trainees:
Shiow-Ching Wang, Ph.D. - Postdoctoral Fellow
Inkyo Kim, M.D., Ph.D. - Postdoctoral Fellow
Shyamal Roy, Ph.D. - Postdoctoral Fellow
Stuart Krigel - Summer Student

Thomas J. Imig, Ph.D., Assistant Professor

Meetings Attended:
November 1-5, 1982 - Attended annual meeting of the Society for Neuroscience, Minneapolis, MN.

Committees:
Departmental liaison with Clendening Library
Departmental librarian

Editorial and Grant Reviews:
ad hoc reviewer - NSF
ad hoc reviewer - Journal of Neurophysiology
ad hoc reviewer - Proceedings of the National Academy of Science
ad hoc reviewer - Science
ad hoc reviewer - Experimental Neurology
ad hoc reviewer - Journal of Neuroscience

Teaching Activities:
Medical Physiology
  8 hours lecture
  12 conferences
  7 laboratories
National Board Review Session
Lecture to otolaryngology residents on sound localization.
Lecture to Speech and Hearing students and faculty in the origin of the auditory evoked response.

Trainees:
Anne Morel, Ph.D. - Postdoctoral Fellow

Donald C. Johnson, Ph.D., Professor

Meetings Attended:
July, 1982 - Attended 4th Ovarian Workshop, Madison, Wisconsin
September 5-10, 1982 - Attended 6th International Congress on Hormonal Steroids, Jerusalem, Israel.
Committees:
Member, Medical Faculty Steering Committee
Chairman, Radiation Safety Committee

Editorial and Grant Reviews:
ad hoc reviewer - Biology Reproduction
ad hoc reviewer - Journal of Reproduction and Fertility

Seminars presented:
March 10, 1983 - "Source of Ovarian Steroids", Kansas State Univ., Manhattan, KS.

Teaching Activities:
Medical Physiology
5 hours lecture - Endocrinology
1 conference
1 laboratory
Physiology 705 - Advanced Human Physiology
8 hours lecture - Endocrinology

Trainees:
Tim Griswold - Graduate Student
Virginia Cassmeyer - Graduate Student
John Dedon - Medical Student
Hugh Martin - Medical Student

Fred E. Samson, Ph.D., Professor

Meetings Attended:
November 1-4, 1982 - Attended meeting of the Society for Neuroscience in Minneapolis, Minn. Poster presentation on cholinergic receptors.
November 19-23, 1982 - Attended meeting of directors of Mental Retardation Research Centers, U.C.L.A., California.
March 21-25, 1983 - Attended American Society Neurochemistry annual meeting in Honolulu. Poster presentation on cholinergic receptor down-regulation. Also, committee meetings on "By-Laws".
May 28-30, 1983 - Attended meeting of Directors of Mental Retardation Research Centers in Dallas, Texas.

Committees:
KUMC:
Director, Ralph L. Smith Research Center
Chairman, Graduate Student Travel Scholarship Committee
Member, Promotions and Tenure Committee, School of Medicine
Chairman, KUMC-KU Liaison committee
Member, International Cajal Conference Committee
Member, KUMC Review Committee for ALS Research Applications
Scrivener-Scribe, Department of Physiology

Local:
The University of Chicago Alumni Fund, Greater Kansas City Area
Member, The University of Chicago Club of Kansas City
National:
American Society for Neurochemistry (Public Policy Committee, 1980-82; Standing Rules Committee, 1982-84)
Member, National Alumni Fund Board, The University of Chicago

Editorial and Grant Reviews:
Occasionally of articles submitted to journals in Neurobiology
member, Scientific Advisory Board of the Encyclopedia of Neuroscience now in preparation to be published by Birkhauser Verlag.

Seminars presented:
August 12, 1982 - "Microtubules", Medical Students Summer Research Group
October 7, 1982 - "Brain Regional Functional Mapping: A New Window to the Brain", Research Week Lecture.
October 20, 1983 - Adult Life Cycle Program, Lawrence Campus, panel participant.
December 7, 1982 - "Beyond Circuitry: The Brain Extracellular Domain", Department of Pharmacology, KUMC
May 25, 1983 - "Brain Regional Functional Mapping: A New Window to the Brain", V.A. Hospital Lecture, KCMO

Teaching activities:
Medical Physiology
12 conferences
Physiology 388
4 hours lecture
Physiology 782 - Advanced Topics
4 hours lecture
Physiology 999 (Doctoral Dissertation)
4 hours
Physiology 850 (Research)
9 hours
Ph.D. Thesis Committees
Robert O'Neill, Department of Physiology
Larry Sheets, Department of Pharmacology
James Chastain, Department of Pharmacology
Darryl Stone, Department of Pathology

Trainees:
Robert O'Neill - Graduate Student
Darryl Stone - Graduate Student
Tim Watt - M.D./Ph.D. program
Masaomi Takayama, M.D. - Postdoctoral training, Brain regional glucose use in fetal brain development, January 8-March 16, 1983.
Larry Dobbs - Medical Student
J. Hernandez, Ph.D. - Visiting Scientist
Milagros Ribelles, Ph.D. - Visiting Scientist

Philip L. Smith, Ph.D., Assistant Professor
Meetings Attended:
October, 1982 - Attended the American Physiological Society meetings in San Diego and presented a paper entitled "Cellular Mechanisms of Potassium Transport by Rabbit Descending Colon".
April, 1983 - Attended FASEB meetings in Chicago and presented a paper entitled "Cellular Mechanisms of Chloride Transport by Rabbit Descending Colon".
May, 1983 - Attended American Gastroenterology Association meetings in Washington, D.C.
Committees:
Graduate Student Committee, Physiology Department

Editorial and Grant Reviews:
ad hoc reviewer - Science
ad hoc reviewer - American Journal of Physiology
ad hoc reviewer - J. of Applied Physiology - Respiratory & Environmental Physiology
ad hoc reviewer - Veterans Administration Merit Review

Seminars presented:
December 8, 1982 - "The Conquest of Cholera" at Drury College, Springfield, MO.
December 9, 1982 - "Mechanisms of Ion Transport by Canine Tracheal Epithelium" at Drury College, Springfield, MO.
May 22, 1983 - "In Vitro Antisecretory Effects of Antihistamines in Rabbit Intestine", George Washington University, Washington, D.C.
May 25, 1983 - Seminar at the Center for Nutrition and Aging in Boston entitled "Mechanisms of Ion Transport by Rabbit Intestine".
June 2, 1983 - Potassium Transport by Rabbit Descending Colon, Northeastern University, Boston, Mass.

Teaching Activities:
Medical Physiology
2 hours lecture - Gastrointestinal
12 conferences
7 laboratories
Responsible for Intestinal Secretion Conference
Physiology 705 - Advanced Human Physiology
10 hours lecture - Gastrointestinal
Physiology 810 - Graduate Course
14 hours lecture
Physiology 818 - Graduate Course
42 hours lecture, Course Coordinator

Trainees:
Richard McCabe - Graduate Student
Steven Sullivan - Premedical Student
Gary Johnson - Medical Student
Michael Kirk - Premedical Student
Clint Brown - Summer Student

Lawrence P. Sullivan, Ph.D., Professor

Meetings Attended:

Committees:
Internal
Member, Renal Dialysis and Transplantation Committee
Member, School of Medicine Research Committee
Chairman, Exec. Committee, KUMC Division of Univ. of Kansas AAUP Chapter
Member, School of Medicine Selective Committee
Member, Departmental Graduate Committee
Member, Kidney Urology Research Center
Scheduler, Renal Journal Club
Chairman, Departmental Committee on Medical Physiology Course
External:
  Member, Special Study Sections, NIH, July 27, 1982 and January 11, 1983
  Member, Professional Education Committee, Kansas Affiliate, American Heart
  Assoc.

Editorial and Grant Reviews:
  ad hoc reviewer - American Journal of Physiology
  ad hoc reviewer - Journal Lab. and Clin. Medicine

Seminars presented:
  October, 1982 - "Basic Research at the University of Kansas Kidney and Urology
  Research Center", KUMC Research Week presentation.
  November 29, 1982 - Departmental seminar entitled "Potassium Transport Mechanisms
  in the Amphibian Kidney".
  February 4, 1983 - Lecture on renal mechanisms of salt and water transport
  presented in graduate course, Department of Physiology, University of
  Nebraska Medical Center, Omaha, Nebraska.
  Department of Physiology, University of Nebraska Medical Center, Omaha,
  Nebraska.

Teaching Activities:
  Medical Physiology
    9 hours lecture - Renal Physiology
    8 problem sessions
    12 conferences
    7 laboratory sessions
  Physiology 705
    8 hours lecture
  Physiology 820 - Graduate course
    Organized and presented course with assistance from Drs. Welling and Edwards.
  National Board Review
    2 hours lecture

Trainees:
  Matthew Zupka - Graduate Student
  Lorraine Rome - Graduate Student
  Holly Behrens - Summer Student

Merrill Tarr, Ph.D., Professor

Meetings Attended:
  February, 1983 - Attended Biophysical Society Meeting at San Diego, California and
  presented a paper entitled "Response of the single frog cardiac cell to
  stretches and releases".

Editorial Reviews:
  Refereed papers for Circulation Research (Member of Editorial Board thru December
  31, 82).

Teaching Activities:
  Medical Physiology
    12 hours lecture
    3 hours review sessions
    12 conference sessions
    5 laboratories
Meetings Attended:
July 17-19, 1982 - Attended IV Ovarian Workshop, Madison, Wisconsin.
September 5-10, 1982 - Attended VI International Congress on Hormonal Steroids in Jerusalem, Israel.

Committees:
Departmental:
Member, Graduate Committee
Member, Awards Committee

Local:
Member, Steering Committee (Medical School)
Member, Intercampus Liaison (College of Health Sciences)
Member, Patent Committee (College of Health Sciences)
Member, Research Space Utilization Subcommittee (College of Health Sciences)
Coordinator, Summer Medical Student Research Traineeship program

National:
Member, Editorial Board, Biology of Reproduction
Chairman, Nominating Committee for Society for the Study of Reproduction
Advisory Council for Endocrine Society 65th Annual Meeting
Organizing Committee for IV Ovarian Workshop, Madison, WI, July, 1982

Editorial and Grant Reviews:
Biology of Reproduction (Editorial Board)
Endocrinology
Journal of Reproduction and Fertility
Science
NSF (Regulatory Biology)

Seminars presented:
January 31, 1982 - Departmental seminar entitled "Factors Regulating Follicular Development in the Cyclic Hamster"
March, 1983 - "The role of LH in follicular development and atresia", Department of Ob/Gyn, The University of Texas Medical School at Houston.

Teaching Activities:
Medical Physiology
6 hours lecture - Endocrinology
12 conferences
7 laboratories

Physiology 388
5 hours lecture - Endocrinology
Physiology 807 - Graduate Course (Neuroendocrinology)
2 hours lecture
Physiology 850 - Research for Grad Students
3 hours Fall 1982
3 hours Spring 1983
Responsible for student evaluation for Medical Physiology course.

Trainees:
Mohammad Shaban, M.D. - Graduate Student
John Goodwin - Summer Medical Student

Alan M. Thompson, Ph.D., Professor

Committees:
Medical Faculty Education and Curriculum Committee

Teaching Activities:
Medical Physiology
conferences
laboratories
Physiology 388
6 hours lecture
Physiology 810 - Transport & Membranes (Graduate Course)
3 hours lecture - Permeability

Trainees:
Janet Pachta - Medical Student

John W. Trank, Ph.D., Professor

Meetings Attended:
February, 1983 - Attended the Biophysical Society Meeting in San Diego, CA.

Committees:
Departmental:
Electronic shop supervisory committee
KUMC:
Computer Committee

Local:
Biomedical Engineering Technician Advisory Committee, Johnson County Community College
Member, Board of Directors Greater Kansas City Div., American Heart Assoc.
Member, Nutrition Task Force Greater Kansas City Div., American Heart Assoc.
Chairman, Community Program Committee Greater Kansas City Division

National:
Chairman, Committee on Awards and Honors, Biophysical Society

Teaching Activities:
Medical Physiology
12 hours lecture - Hemodynamics, Blood Pres. Reg., Electrocard., & Optics
24 contact hours - conference
60 contact hours - laboratory
National Board Review
1-1/2 hours lecture
Physiology 388
7 hours lecture - Cardiovascular Physiology

Trainees:
Brett Fremming - MS Bioengineering
John Burnett - ME Mechanical Engineering
Dennis P. Valenzeno, Ph.D., Assistant Professor

Meetings Attended:
June 26-30, 1983 - Attended American Society for Photobiology Meetings in Madison, Wisconsin

Editorial Reviews:
ad hoc reviewer - Photochemistry and Photobiology

Seminars presented:
December 6, 1982 - Department seminar entitled "The Stoichiometry of Membrane Photomodification"

Teaching Activities:
Medical Physiology
6 hours lecture
11 conferences
6 laboratories

Physiology 388
4 hours lecture
Course director

National Board Review
1-1/2 hours lecture

James L. Voogt, Ph.D., Professor (Associate Dean for Research)

Meetings Attended:
July, 1982 - Attended meeting of the Society for the Study of Reproduction in Madison, Wisconsin
April, 1983 - Poster presentation, FASEB meeting, Chicago, Illinois.
June, 1983 - Poster presentation, annual meeting of the Endocrine Society, San Antonio, Texas.

Committees:
Departmental:
Member, Graduate Committee

Local:
Member, Research Committee, Medical School
Member, Search Committee for Associate Chief of Staff for VA Hospital
Biological Sciences Lecture Series
Basic Science Review Committee
College Patent Committee

National:
Public Affairs Advisory Committee of the American Physiological Society

Editorial and Grant Reviews:
Editorial Board - American Journal of Physiology
ad hoc reviewer - Science
ad hoc reviewer - Endocrinology
ad hoc reviewer - Biology of Reproduction
ad hoc reviewer - Neuroendocrinology
NSF grant reviews

Teaching Activities:
Medical Physiology
6 hours lecture
12 conferences
5 laboratories
Physiology 807
24 hours lecture
10 hours lab
Physiology Seminars
weekly for 9 months

Trainees:
Patricia Tonkowicz - Graduate Student
Jeffrey Henke - Medical Student

Daniel J. Welling, Ph.D., Adjunct Associate Professor

Meetings Attended:
December, 1982 - Presentation of work to the American Society of Nephrology,
Chicago, Illinois.
April, 1983 - Presentation of work to the Federation of American Societies for
Experimental Biology in Chicago, Illinois.

Seminars presented:
January 14, 1983 - Renal Journal Club speaker
Pathology Journal Club speaker

Editorial and Grant Reviews:
Reviewed articles for American Journal of Physiology
Reviewed articles for Kidney International
National Science Foundation
National Institutes of Health.

Teaching Activities:
Physiology 820
6 hours lecture

Trainees:
James W. Holsapple - Medical Student
Chairman's Report

Activities of the past year attest to the continued growth and vitality of the Department. As of July 1, 1983 three faculty were promoted: Dr. Russell T. Dowell to full professor, Dr. Paul D. Cheney to associate professor (without tenure) and Dr. Daniel J. Welling to adjunct professor. In addition, three faculty members from other departments were granted joint appointments in physiology: Dr. Werner Noell was appointed adjunct professor of physiology; Dr. Richard Edwards to research assistant professor of physiology and Dr. Michael Baille to adjunct professor of physiology. Dr. Baille will unfortunately be leaving the medical school shortly and we will all miss him. Dr. Paul Terranova started a 5 year term as a Research Career Development Awardee from NIH. Dr. Hugo Fernandez was appointed an Associate Research Career Scientist of the Veteran's Administration.

The stature of the department continues to grow. For example, an independent survey covering 1975-1980, ranked the department 3rd in the Big 8 and second in the quality of education. More importantly, the rate of improvement of the department was evaluated as second best in the Big 8 and comparable to 4th in the Big 10. On the other hand, in a survey sponsored by the National Research Council, we did not fare that well. Continued and increased productivity on the part of every member of the department should lead to steady improvement in peer evaluation over the next 5 years.

The number of publications - published or in press - continues to grow at an impressive rate. Another encouraging sign is that grant support has not leveled off; persistence pays off with several members continuing to apply until their efforts are rewarded. Research support at the national level for every member of the department continues to be our major priority.

In perusing the annual report, there are several items worth stressing which have not been singled out in previous reports:

1. The department continues to attract large numbers of competent students working during the summer on research projects. For example, this summer there are 10 medical students, 1 osteopathic student and 7 college students involved in research.

2. A point of pride is the increasing participation of our faculty in every aspect of university governance. We are having a definite and positive impact on numerous local committees.

3. There is also an upswing in invitations at both the national and international level for our faculty. This will be reflected in next year's report. This is the ultimate payoff in evaluating progress.

4. I continue to be impressed by the calibre of our seminar program which has to be one of the best in the school.

What are the objectives for the coming academic year:

1. We are all concerned about the size of our graduate program. The decline is a nationwide phenomenon but what can we do to reverse the trend: more M.D.-Ph.D. students, greater emphasis on post-doctoral training, creating a better "sales" image of the department for prospective candidates?

2. Several alterations in the Medical Physiology class are being considered. It is worth keeping in mind that Anatomy and Biochemistry are contemplating drastic revisions in their curriculae. The rapport that we have built up with students over the years is a valuable asset and any changes that we make should be considered carefully and introduced over several years rather than drastically changing the structure of the course at one fell swoop.

3. Increased research productivity as evidenced by more publications and grant support is the goal for everyone and will be increasingly important in determining salary increases and promotions.