A YEAR OF TRANSITION
2001-2002

In September of 2001, Dr. Paul Cheney, department member since 1978, took over as Interim Chair to lead the department during a period of transition. While we were all disappointed to see Dr.
Voogt’s tenure as Chair of the department come to an end, we could fully understand his reasons for stepping down. As much as we all enjoy science and education, life does have other rewards. We are pleased that Jim will remain as a faculty member in the department. The department thrived during Jim’s eight years as Chair. He left the department strong and vibrant which has certainly made this year of transition much simpler. Running the department during this period was also facilitated by the cooperative spirit and supportive attitude of the physiology faculty and staff.

It seems important to remember that the beginning of this transition year was marked by the tragedies of September 11, 2001. The events of that day remain indelibly etched in our minds.

There were many noteworthy highlights during the year. Dr. John Wood received the Outstanding Educator Award from the first year medical students and the Medical Physiology Course, led by Dr. Dennis Valenzeno, won the outstanding first year course from the medical students. Both of these accomplishments were celebrated at "The Grande Affair". Dr. Norberto Gonzalez received the 2002 Chancellors Distinguished teaching award. Dr. Mike Soares was named the 2001 Chancellor's Club Research Awardee and Dr. Wood received a Research Investigator Award. Special congratulations to these members of our department for this highly deserved recognition.

We were very pleased that Dr. Leslie Heckert was promoted to associate professor with tenure this year and Dr. Dennis Valenzeno was promoted to full professor. These recommendations came from the Departmental Promotion and Tenure committee, chaired by Dr. Tom Imig, and were approved by Executive Dean Deborah Powell. Congratulations to both of them on this significant achievement.

This year was also marked by the departure of one of our senior and most distinguished faculty members – Dr. S.K. Dey. After many years of trying to recruit him, Vanderbilt University was finally successful. S.K. left in June of 2002 to take an endowed chair position in the Department of Pediatrics at Vanderbilt. He came to KUMC as a postdoctoral fellow on a cold day in January of 1973. Despite a somewhat inauspicious beginning, S.K. became a star in the field of reproductive biology and we are fortunate that for most of these years he was a member of our department. We wish him all the best in his new position at Vanderbilt.

We were saddened by the death of one of the department’s long-standing members – Dr. John Trank. John died February 10th, 2002 after a brief illness. He joined the department in 1964 (one of five faculty members at the time) and rose to full professor before retiring in June of 1997. Throughout his career, he taught cardiovascular physiology to medical students and provided instruction to graduate students in electronic instrumentation and measurement. He supervised the department’s electronics shop and was a collaborator on several instrumentation intense research projects.

The graduate students in the department had a very active year. Joe McDonald and Ryan Thummel led an effort to create a formal organization for our students called “The Physiology Society”. The Society has become a focal point for the students and has provided a structure for a number of new activities including a journal club that meets regularly. A number of students completed their Ph.D. degrees during the year and have moved on to the next step in their training. Gerald Call (Dr. Wolfe, mentor) is now a postdoctoral fellow at the Stowers Institute for Medical Research in Kansas City, Kathleen Friel (Dr. Nudo, mentor) is now a postdoctoral fellow at Columbia University in New York City, Theingi Thway (Dr. Wolfe, mentor) is a postdoctoral fellow at the University of Texas Health Sciences Center at Houston, Haengseok Song (Dr. Dey, mentor) is a postdoctoral fellow at Washington University in St. Louis and Michael Park (M.D., Ph.D. student, Dr. Cheney, mentor) is a resident in neurosurgery at Brown University/Rhode Island Hospital. Three new students entered our program this year: Marie-Helene Boudrias, Joe McDonald (M.D., Ph.D. student) and Al Casillan (M.D., Ph.D. student).

Congratulations to the graduate students and postdoctoral fellows in the department who received awards from the KUMC Biomedical Research Training Program. The graduate students receiving awards and their mentors were Ryan Thummel (Dr. Godwin), Haengseok Song (Dr. Dey)
and Theingi Thway (Dr. Wolfe); the postdoctoral fellows and their mentors were Dr. Wohaiib Hasan (Dr. Smith) and Dr. Hongzheng Zhang (Drs. Imagawa and Soares).

During the course of the year, the faculty initiated a "grass roots" effort in support of Dr. Cheney taking over as permanent chair of the department. Dr. Deborah Powell, Executive Dean of the School of Medicine supported this possibility and asked that Dr. Cheney develop a plan for the department’s future including new faculty recruitments. Over a period of months, a plan was developed that emphasized recruitments in areas that would not only strengthen the department but would also contribute to building strength in areas of research at KUMC that would enhance the institution’s competitiveness for larger, programmatic type grants. The plan was presented to the department, accepted and forwarded to Dean Powell. The Dean was very supportive of the goals and rationale of the plan, but before making a final decision, Dr. Powell accepted a position as Dean of the School of Medicine at the University of Minnesota. We were fortunate that the transition in the Dean’s office was relatively quick and Dr. Barbara Atkinson, previously Chair of Pathology and former Dean at MCP Hahnemann School of Medicine, was named Executive Dean. Shortly thereafter, Dr. Atkinson accepted the proposal for Physiology and Dr. Cheney was appointed as permanent Chair of the department.

Overall, 2001-2002 was an outstanding year in which the department continued to excel in education, research and service. In addition to all the important individual successes within the department in obtaining NIH RO1 grants, special acknowledgement goes to Dr. Soares’ in recognition of funding of his NIH Program Project grant entitled "Biology at the Maternal-Fetal Interface". This project includes Dr. Joan Hunt and Dr. Ken Audus (Lawrence campus) as collaborators and is scheduled to begin May 1st. It is particularly pleasing that research funding in the department continued to grow reaching a new record for the department of 5.23 million in NIH funds (source: NIH Website). This places the department ranking at 31st among 99 medical schools receiving NIH funding, up from 34th last year. Given the fact that there are actually about 128 medical schools, this funding level would place the us in the top 25% of all Physiology Departments in the country. The KUMC Research Institute 2001-2002 Annual Report lists the total research funding for Physiology at $8,164,257, first among all departments at KUMC! We can all be very proud of this accomplishment. At the same time, Dr. Voogt was correct in pointing out in the 2000-2001 annual report that the challenge for all of us and for the next chair will be maintaining this lofty position. Maintaining this performance and even growing is certainly not impossible but it will take an all out effort on everyone’s part. A commitment from the School of Medicine for new positions should also substantially boost our position. While this is a challenging time with cuts in funding from the state, there is also reason to be highly optimistic about the future and our ability to grow and thrive as a department.
DEPARTMENT ROSTER
July 1, 2001 – June 30, 2002

a. Faculty

**Primary Appointment in Physiology**
Paul D. Cheney, Ph.D., *Professor and Interim Chair*
   *Director, Ralph L. Smith Center for Mental Retardation*
V. Gustavo Blanco, M.D., Ph.D., *Assistant Professor*
Sudhansu K. Dey, Ph.D., *University Distinguished Professor*
Alan R. Godwin, Ph.D., *Assistant Professor*
Norberto C. Gonzalez, M.D., *Professor*
Leslie L. Heckert, Ph.D., *Assistant Professor*
Jennifer Hill Karrer, Ph.D., *Assistant Professor*
Walter T. Imagawa, Ph.D., *Assistant Professor*
Thomas J. Imig, Ph.D., *Professor*
Steven M. LeVine, Ph.D., *Associate Professor*
Randolph J. Nudo, Ph.D., *Professor and Interim Director, Center on Aging*
Peter G. Smith, Ph.D., *Professor*
Michael J. Soares, Ph.D., *Professor*
Merrill Tarr, Ph.D., *Professor*
Joseph S. Tash, Ph.D., *Associate Professor*
Paul F. Terranova, Ph.D., *Professor and Director, Center for Reproductive Sciences*
Dennis P. Valenzeno, Ph.D., *Associate Professor*
James L. Voogt, Ph.D., *Professor and Chair until September, 2001*
Michael W. Wolfe, Ph.D., *Associate Professor*
John G. Wood, Ph.D., *Associate Professor*

**Emeritus**
Lawrence P. Sullivan, Ph.D., *Professor*
Gilbert S. Greenwald, Ph.D., *Distinguished Professor*
Frederick E. Samson, Ph.D., *Professor*

**Modified Title Research Track Faculty**
Guoli Dai, Ph.D., *Research Assistant Professor*
Brian Petroff, Ph.D., *Research Assistant Professor*
Joanne Marcario, Ph.D., *Research Assistant Professor*
Hongyu Zhang, Ph.D., *Research Assistant Professor*

**Joint Appointment in Physiology**
Ken Audus, Ph.D., *Professor & Chair (Pharmaceutical Chemistry)*
Sanjoy Das, Ph.D., *Assistant Professor (Ob-Gyn)*
Thomas DuBose, M.D., *Professor & Chair (Internal Medicine)*
Timothy Hall, Ph.D., *Professor (Diagnostic Radiology)*
Donald C. Johnson, Ph.D., *Professor Emeritus (Ob-Gyn)*
Warren Nothnick, Ph.D., *Assistant Professor (Ob-Gyn)*
B.C. Paria, Ph.D., *Assistant Professor (Pediatrics)*
Janet Pierce, D.S.N., *Associate Professor (School of Nursing)*
Jeffrey Radel, Ph.D., *Associate Professor (Occupational Therapy Ed.)*
Jeffrey Reese, M.D., *Assistant Professor (Pediatrics)*
Namita Sahgal, M.D., Assistant Professor (Pediatrics)
### b. Graduate Students

<table>
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<tr>
<th>Name</th>
<th>Prelims</th>
<th>Candidate</th>
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<tbody>
<tr>
<td>Audrey Blacklock</td>
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<td>M.D./Ph.D.</td>
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<td>Marie-Helene Boudrias</td>
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<td>Gerald Call</td>
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<td>M.D./Ph.D.</td>
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<td>Al Casillan</td>
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<td>Numa Dancause</td>
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<td>Kathleen Friel</td>
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<td>6/26/02</td>
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<td>Brian Hermann</td>
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<td>Joe McDonald</td>
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<td>Erin Moss</td>
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<td>Michael Park</td>
<td>7/97</td>
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<td>Haengseok Song</td>
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<td>Amy Spears</td>
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<td>Ann Stowe</td>
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<td>Ryan Thummel</td>
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<td>Theingi Thway</td>
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<td>J. Don Warn, Jr.</td>
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<td>Ph.D.</td>
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<tr>
<td>Shalmica Williams</td>
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<td>Ph.D.</td>
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### c. Postdoctoral Fellows

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<td>Hongzheng Zhang</td>
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<td>Elena Zoubina</td>
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### d. Temporary Students

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<tr>
<td>Steffan Anderson</td>
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<td>Dominik Choromanski</td>
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<td>Claire Crouutch</td>
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<td>Jared Finney</td>
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<td>Matt George</td>
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<td>Rohan Ghandi</td>
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<td>Elizabeth Haddock</td>
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<td>Anju Idiculla</td>
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<td>Abdi Jamal</td>
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<td>Jeremy Kirchoff</td>
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<td>Jennifer Ly</td>
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<td>Kerry McGonigle</td>
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<td>David Rafinsky</td>
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<td>Whitney Smalley</td>
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<td>My-Linh Trinh</td>
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<td>Brice Zogleman</td>
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e. Research Staff
Sara Achleitner – Research Assistant
Carrie Adams – Research Assistant
Dora Agbas – Research Associate
Julie Allen – Research Associate
Adam Alt – Research Assistant
Scott Barbay – Research Associate
Meaghan Beever – Research Assistant
Abderraouf Belhaj-Saif – Research Associate
Amber Botros – Research Assistant
Sarah Bradshaw – Research Associate
Illya Bronshteyn – Research Assistant
Lindsey Canham – Research Assistant
Glaukia Cavalcanti – Research Assistant
Robert Cross – Research Associate
Judy Dunmore – Senior Research Associate
Noriko Esterly – Research Assistant
Fabrice Favret – Research Assistant
Xin Gao – Research Assistant
Yue-ping Hou – Research Associate
Kaori Iha-Hornbaker – Research Assistant
Diane Larson – Research Assistant
Chunbin Li – Research Associate
Jun Li – Research Assistant
Darlene Limback – Research Associate
Lu Lu – Research Assistant
Wen-ge Ma – Research Associate
Sotirios Macheras – Research Assistant
Sherri McDonald – Research Assistant
Tracy Newman – Research Assistant
Judith Pace – Senior Research Associate
Melanie Parks – Research Assistant
Martin Perry – Research Assistant
Erik Plautz – Research Associate
Jeremy Presley – Research Assistant
Daren Rice – Research Assistant
Gladis Sanchez de Blanco – Research Associate
Kevin Shields – Student Assistant
Dawn Steiner – Research Assistant
Jeffrey Sweetwood – Research Assistant
Siqing Tang – Research Assistant
Lovella Tejada – Research Assistant
Jennifer Vavold – Research Assistant
Matt Webb – Research Assistant
Dustin Wiemers – Research Assistant
Phil Wilhauk – Support Technologist
Michael Wulser – Research Associate
Lixing Yuan – Research Assistant
Xuemei Zhao – Research Associate
Ying Zhu – Research Assistant

f. Support Staff
Linda Carr - Administrative Officer
Ethel Doetzl - Accounting Specialist
Ted Gleason - Electronics Technician II
Robin Marks - Administrative Assistant
(Reproductive Sciences Center)
Gail Wells - Administrative Specialist
Audrey Blacklock received a travel scholarship from the School of Medicine to attend the 31st Annual Meeting for the Society for Neuroscience in San Diego, California in November. In April, she gave a presentation entitled "Estrogen increases calcitonin gene-related peptide (CGRP)-immunoreactive nerve fibers in the ovariectomized rat mammary gland" at the KUMC Student Research Forum, for which she was awarded the "Best of Room" in the Neuroscience I category. Audrey has also served as a teaching assistant for the Medical Physiology course and as a tutor for the nurse anesthetist physiology course. She successfully passed her oral comprehensive examination in June, and she is first author on a paper with Peter Smith that is currently under revision for the Journal of Comparative Neurology. It is entitled "Estrogen increases sensory nociceptor innervation of rat mammary gland." Audrey currently serves as treasurer in the newly formed graduate student group, Physiology Society.

Marie-Helene Boudrias received a scholarship from "Le Fond de la Recherche en Santé du Québec" for 2001-2003. She was co-author of an abstract “Functional tuning of corticomotoneuronal (CM) cell activity for tasks involving coordination of proximal (P) and distal (D) joints” presented at the Society for Neuroscience in November 2001.

Alfred Casillan, an M.D./Ph.D. student in Dr. John Wood’s laboratory, has completed his first year of the Ph.D. component of his training. Al has submitted a paper, entitled “Mesenteric Microvascular Inflammatory Responses to Systemic Hypoxia are Mediated by PAF and LTB4,” to the Journal of Applied Physiology. In addition, he has given a presentation, entitled “Inducible Nitric Oxide Synthase Attenuates Hypoxia-Induced Reactive Oxidant Levels, Leukocyte Emigration, and Vascular Permeability in Acclimatized Rats,” at Experimental Biology 2002 in New Orleans, LA, as well as another presentation, entitled “Inducible Nitric Oxide Synthase Attenuates Hypoxia-Induced Increases in Reactive Oxidant Levels, Leukocyte Emigration, and Vascular Permeability in Acclimatized Rats,” at the 2002 KUMC Student Research Forum.

Numa Dancause presented a poster entitled, “Redistribution of Premotor Cortical Connections after an Ischemic Lesion in Primary Motor Cortex” at the Neuroscience conference in Orlando, Florida the first week in November.

Brian Hermann spent the past year working hard on his research in the laboratory of Dr. Leslie Heckert. During that time, he successfully defended and passed his Qualifying Exam and became a candidate in the graduate program. Brian presented his research utilizing Yeast artificial chromosomes containing the Follicle-stimulating hormone receptor (Fshr) at the 2002 Student Research Forum, for which he earned first place in the Genetics I session. Outside of the lab, Brian served as president of the Graduate Student Council and was elected to serve as Co-president of the Student Governing Council in April 2002.
Ning Lei received a travel scholarship from the School of Medicine to attend the 35th Annual Meeting of Society for the Study of Reproduction at Baltimore, MD, in July, 2002. She had a poster presentation entitled “The role of upstream regulatory region of rat Dmrtl promoter in Dmrtl testis-specific expression”. In April, she gave a presentation of the same title at the KUMC Student Research Forum. Also, she is first author on a paper with Dr. Leslie L. Heckert that is currently under revision for the Molecular and Cellular Biology. It is entitled “Gata4 regulates the testis-specific expression of Dmrtl”.

Joe McDonald completed his first year in the Ph.D. portion of his training following his first two years of medical school. His project is to investigate the cerebral microvascular inflammatory responses to systemic hypoxia. Joe attended the Experimental Biology 2002 conference, and he was the first author of an abstract entitled “Systemic Hypoxia Induces Oxidatively Driven Ischemia/Reperfusion.” He also presented this work at the Annual M.D./Ph.D. meeting in Aspen, Colorado. He was the co-author of a paper: Wright, D.E., William, J.M., McDonald, J.T., Carlsten, J.A., Taylor, M.D. “Muscle-Derived Neurotrophin-3 Reduces Injury-Induced Proprioceptive Degeneration in Neonatal Mice.” *Journal of Neurobiology*, 50, 198-208 (2002). Joe also was active in other areas during this past year. He founded and served as vice-president of the Physiology Society and was also President of the KUMC Ambassadors. In the AMA, Joe served as Regional Delegate to the AMA-HOD and was awarded the AMA Foundation National Leadership Award.

Ann Stowe attended the "International Stroke symposium: Translating Principles of Brain Plasticity into Clinical Interventions" in Kansas City in April. Ann was also co-author on three Society for Neuroscience abstracts, "Redistribution of Premotor Cortical Connections After An Ischemic Lesion in Primary Motor Cortex", "Consequences of a Rostral Motor Cortex Lesion and Rehabilitative Training on Primary Motor Cortex Hand Representation Topography", and "Induction of Novel Forelimb Representations in Peri-infarct Motor Cortex and Motor Performance Produced by Concurrent electrical and Behavioral Therapy.

Ryan Thummel received a $500 Graduate Student Travel Scholarship to present a poster at the 60th Annual Meeting of The Society for Developmental Biology in July in Seattle, WA. He is first author on a published abstract from this meeting. In October, Ryan presented his work at The Stowers Institute Symposium – From Genes and Genetics to Molecular Medicine – in Kansas City, MO. In November, Ryan completed his Qualifying Exam with Honors. In the spring, Ryan was honored with a Biomedical Training Grant. After receiving a $500 Graduate Student Travel Scholarship, Ryan was able to present his work in April of 2002, this time at the Evolution of Developmental Diversity meeting in Cold Spring Harbor Laboratory, NY. That summer, along with Joe McDonald, Ryan founded the Physiology Society, an organization of Graduate Students in the Department. He is currently president of this Society. Finally, Ryan received the award for the Most Outstanding Poster Presentation for the presentation of his work at the 42nd Annual Midwest Developmental Biology Meeting and the Singer Symposium, University of Missouri, Columbia, MO, June, 2002.

Shalmica Williams passed her comprehensive exam in October 2001. She gave an oral presentation entitled "Protein kinase C delta is redistributed to the nucleus in ovarian cancer cells by TCDD" at the 2002 Student Research Forum; for this presentation she won first place in the Developmental and Reproductive Biology Session. Shalmica also helped to develop a novel plan to acquire funding to support the Student Research Forum by serving as the co-chairman of the Fundraising Committee.
COURSES TAUGHT

Major Service Courses


Departmental Graduate Courses


PTHT 842 - *Physical Therapy Education Neuroscience.* Spring 2002. This course includes Medical Neuroscience 840 in addition to some lectures presented by PT instructors. Enrollment 44.


DEPARTMENT SEMINARS

The Departmental Seminar program was directed by Dr. Michael Wolfe. Forty-two speakers made presentations, eleven of which were from outside the university. In addition to support from the department, the Office of the Dean of the School of Medicine and the MRRC made important financial contributions to our program. The Kathleen M. Osborn Lecture Series sponsored Dr. Marc Freeman from Florida State University.

9/17/01 Michael Wolfe, Ph.D. Department of Molecular and Integrative Physiology, KUMC Neuroendocrine Regulation of Egr1 in Gonadotropes

9/24/01 Paul Terranova, Ph.D. Department of Molecular and Integrative Physiology, KUMC Endocrine Disruption of the Reproductive System: Dioxin Models

10/8/01 Richard Behringer, Ph.D. Molecular Genetics, The University of Texas/M.D. Anderson Cancer Center Molecular Genetic Studies of Mammalian Reproductive Biology

10/11/01 Mary Neville, Ph.D. Biomira USA, Inc. Cranbury, NJ The Use of Liposomal IL-2 in Tumor Vaccines: Applications to in Situ and Autologuous Vaccines

10/15/01 Marc Freeman, Ph.D. Biological Science Florida State University Regulation of Neuroendocrine Dopaminergic Neurons

10/19/01 Dr. Mwenda Kenya Medical Research University of Nairobi Medical School & Reproductive Biology Unit Opportunities for Reproductive Health Research using Baboons Maintained in a Primate Colony in Kenya

10/22/01 Michael Sarras, Ph.D. Department of Anatomy and Cell Biology, KUMC Early Divergence of Matrix Metalloproteinases During Metazoan Evolution and Their Role in Development

10/25/01 Carlos Simon, M.D. Instituto Valenciano de Infertilidad Valencia, Spain Microarray Analysis of Human Endometrium during the Receptive State Regulation of Embryonic Endometrial Molecules

10/29/01 George Gittes, M.D. Pediatric Surgical Research Children’s Mercy Hospital Extracellular Control of Pancreatic Development and Lineage Selection
11/5/01  Mark Fisher, Ph.D.  
Department of Biochemistry and Molecular Biology, KUMC  
Chaperonin-Protein Substrate Interactions and Folding: From Structure to Application

11/19/01  Randolph Nudo, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  

11/26/01  Patrice Delafontaine, M.D.  
Division of Cardiovascular Diseases  
Department of Internal Medicine, KUMC  
Aspects of IGF-1 Regulation in Cardiovascular Disease

11/27/01  Theingi Thway  
Department of Molecular and Integrative Physiology, KUMC  
Regulation of Glycoprotein Hormone α-Subunit Expression in Trophoblasts

12/3/01  Karl Rozman, Ph.D.  
Department of Pharmacology and Toxicology  
KUMC  
Time as a Quantitative and Quantifiable Variable of Toxicity

12/4/01  Gerald Call  
Department of Molecular and Integrative Physiology, KUMC  
Gonadotropin-Releasing Hormone Regulation of the Luteinizing Beta Subunit Promoter

12/5/01  Warren Nothnick, Ph.D.  
Obstetrics & Gynecology, KUMC  
New Insights into the Pathophysiology and Treatment of Endometriosis

12/10/01  Edward Stephens, Ph.D.  
Department of Anatomy and Cell Biology  
KUMC  
The Role of the Vpu Protein in HIV-1 Pathogenesis

12/19/01  Leslie Heckert, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Transcriptional Regulation of Doublesex -and Mab-3-Related Transcription Factor (Dmrt1) in Postnatal Testes and Sertoli Cells

1/28/02  William Kinsey, Ph.D.  
Department of Anatomy and Cell Biology  
KUMC  
Tyrosine Phosphatase/Kinase Interactions at Fertilization

2/11/02  Ben Cowley, M.D.  
Department of Internal Medicine, Division of Nephrology, KUMC  
Polycystic Kidney Disease: from Start to (Renal) Failure

2/18/02  Joanne Marcario, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Neuron Loss and Neuropathology in a Model of HIV-1 Infection
2/20/02 Katherine Roby, Ph.D.  
Department of Anatomy and Cell Biology, KUMC  
Characterization of a mouse model for ovarian cancer

2/22/02 Phyllis Wise, Ph.D., Dean  
Division of Biological Sciences  
University of California - Davis  
Neuroprotective Actions of Estrogen Against Brain Injury

2/28/02 Cheryl Sisk, Ph.D., Director  
Neuroscience Program, Department of Psychology, Michigan State University  
Pubertal Maturation of the Male Brain and Reproductive Behavior: Recasting a Behavioral Potential

3/4/02 Peter Smith, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Paracrine and Autocrine Roles for Nerve Growth Factor in Autonomic Neurons

3/6/02 Wen Bin Tsai  
Department of Anatomy and Cell Biology, KUMC  
Regulation of Yes Tyrosine Kinase Activity from Fertilization to Gastrulation of the Zebrafish Egg

3/11/02 Diane Persons, M.D.  
Department of Pathology and Laboratory Medicine, KUMC  
Regulation of p53 by Cisplatin-induced ERK

3/18/02 Darren Wallace, Ph.D.  
Department of Biochemistry and Molecular Biology, KUMC  
Electrolyte and Fluid Secretion by Renal Collecting Ducts

4/1/02 Patrice Delafontaine, M.D., Director  
Division of Cardiovascular Diseases  
Internal Medicine, KUMC  
Aspects of IGF-1 Regulation in Cardiovascular Disease

4/2/02 Asgi Fazleabas, Ph.D.  
Department of Physiology  
University of Illinois, Chicago  
Embryonic Signals and Modulation of the Primate Endometrium

4/4/02 Haengseok Song  
Department of Molecular and Integrative Physiology, KUMC  
Molecular Signaling in Uterine Receptivity for Blastocyst Implantation

4/8/02 Joe Tash, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
New Approaches to Contraception: How About the Male for a Change?

4/15/02 Curt Klaassen, Ph.D.  
Department of Pharmacology and Toxicology, KUMC  
Regulation of the Biliary Excretion of Xenobiotics
4/17/02  Hongzheng Zhang, Ph.D.
Department of Molecular and
Integrative Physiology, KUMC

Interaction of Progesterone and Prolactin
in Mammary Gland Development and
Tumorigenesis

4/19/02  Michael Park
Department of Molecular and
Integrative Physiology, KUMC

Representation of Forelimb Muscles in
the Primary Motor Cortex of Rhesus
Macaques

4/22/02  Derrick Rancourt, Ph.D.
Department of Biochemistry and Molecular
Biology, University of Calgary

Novel Tryptases Associated with the
Initiation of Implantation

4/23/02  Debra J. Wolgemuth, Ph.D.
Genetics and Development
Columbia University College of Physicians
and Surgeons, New York, New York

From Meiosis Arrest to Myeloid Leukemia:
New Insight into the Function of the
Mammalian A-Type Cyclins

4/29/02  Gilbert Greenwald, Ph.D.
Department of Molecular and
Integrative Physiology, KUMC

Evolution of a Science: 19th Century
Physiology Texts

5/6/02   Jeff Radel, Ph.D.
Department of Occupational Therapy
KUMC

Dietary Deficiency of Essential Fatty
Acids During Development in Rats
Influences Brain Function at Maturity

5/13/02  Glen Andrews, Ph.D.
Department of Biochemistry and Molecular
Biology, KUMC

Mechanisms of Mental-Regulation of
Gene Expression

5/15/02  S.K. Dey, Ph.D.
Department of Molecular and
Integrative Physiology, KUMC

Molecular Basis of Implantation

5/29/02  Joseph Tash, Ph.D.
Department of Molecular and
Integrative Physiology, KUMC

Male Infertility: A Consequence of
Long-Term Exposure to Microgravity
An Update on New Studies

6/26/02  Kathleen Friel
Department of Molecular and
Integrative Physiology, KUMC

Cortical Plasticity and Behavioral
Recovery Following Focal Lesions to
Primary Motor Cortex in Adult Squirrel
Monkeys
PUBLICATIONS

a. Manuscripts published


Heckert, L.L. and Griswold, M.D. “The expression of the FSH receptor in Spermatogenesis”

Hicks, A., Potula, R., Sui, Y.J., Villinger, F., Pinson, D., Adany, I., Li, Z., Long, C., Cheney, P.,
Marcario, J., Novembre, F., Mueller, N., Kumar, A., Major, E., Narayan, O. and Buch, S.
“Neuropathogenesis of lentiviral infection in macaques.” American J. Pathology 161: 813-
822, 2002.

Imagawa, W. and Pedchenko, V.K. “In vivo inhibition of KGF receptor (FGFR-IIIb) expression
by estrogen and antagonism by progesterone in the mouse mammary gland.” J.

Imagawa, W., Pedchenko, V.K., Helber, J., Zhang, H. “Hormone/growth factor interactions
mediating epithelial/stromal communication in mammary gland development and

and involvement of the phosphatidylinositol 3-kinase/akt-signaling pathway in the endocrine

Kleim, J.A., Barbay, S., Cooper, N., Hogg, T., Reidel, C.N., Remple, M.S. and Nudo, R.J.
“Motor learning dependent synaptogenesis is localized to functionally reorganized motor

Lei, N. and Heckert, L.L. “Splt and Egrl regulate transcription of the Dmrtl gene in Sertoli
cells” Biology or Reproduction 66: 675-684.

Mizuyachi, K., Son, D.S., Rozman, K.K. and Terranova, P.F. “Alteration in ovarian gene
expression in response to 2,3,7,8-tetrachlorodibenzo-p-dioxin: reduction of cyclooxygenase-

Nudo, R.J., Kleim, J.A. and Friel, K.M. “Functional remodeling of motor cortex after stroke.”
Chapter 27, In: Cerebrovascular Disease: Momentum at the End of the Second Millennium,

K., Uehara K., Groome, N.P. and Taya, K. “Potential role of activin A in follicular
development during the second half of pregnancy in the golden hamster: utero-placental

and Taya, K. “Roles of basal levels of circulating luteinizing hormone on follicular
maturatuation in the golden hamster (Mesocricetus auratus).” J. Reprod Devel 48: 363-369,
2002.

Petroff, B.K., Gao, X., Rozman, K.K., Terranova, P.F. “The effects of 2,3,7,8-
tetrachlorodibenzo-p-dioxin (TCDD) on weight gain and hepatic ethoxyresorufin-o-
deethylase (EROD) induction vary with ovarian hormonal status in an immature
gonadotropin-primed rat model.” Reproductive Toxicology 2001; 15:269-274.

Petroff, B.K., Gao, X., Ohshima, K., Shi, F., Son, D.-S., Roby, K.F., Rozman, K.K., Taya, K.,
Terranova, P.F. “Effects of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) on serum inhibit
concentrations and inhibit immunostaining during follicular development in female

Pi, X., Voogt, J.L. and Grattan, D.R. “Detection of prolactin receptor mRNA in the corpus
striatum and substantia nigra of the rat.” Journal of Neuroscience Research 67:551-558,
2002.

Rupasri, A., Tash, J.S. and Soares, M. J. “A simple method for the in situ detection of

Shi, F., Petroff, B.K., Herath, C.B., Ozawa, M., Watanabe, G., Taya, K. “Serous cysts are a
benign component of the cyclic ovary in the guinea pig with an incidence dependent upon


B. Manuscripts in press

Barbay, S., Peden, E.K., Falchook, G. and Nudo, R.J. “Sensitivity of cutaneous hindlimb responses in somatosensory cortex (S1) of the rat two and four months after a sciatic nerve crush.” Journal of Neurophysiology.


Scherrer, S.P., Rice, D.A. and Heckert, L.L. “Expression of steroidogenic factor 1 in the testis requires an interactive array of elements within its proximal promoter” Biology or Reproduction.


Steinle, J.J., Pierce, J.D., Clancy, R.L. and Smith, P.G. “Increased ocular blood vessel frequencies and sizes following chronic sympathectomy in rat.” Experimental Eye Research.


c. Abstracts


Marcario, J.K., Manaye, K., Mouton, P.R., SantaCruz, K., Berman, N.E.J. and Cheney, P.D. “Neuron loss and neuropathology in the basal ganglia and hippocampus of SIV-infected rhesus macaques.” J Neurovirol, 8(Supp. 1): 71, 2002.


McDonald, J.T., Gonzalez, N.C. and Wood, J.G. “Systemic hypoxia induces oxidatively-driven responses in the cerebral microcirculation distinct from those induced by ischemia/reperfusion.” FASEB, New Orleans, LA.


Park, M.C., Belhaj-Saif, A. and Cheney, P.D. “Properties of poststimulus facilitation (PStF) and suppression (PStS) of proximal and distal forelimb muscles from primary motor cortex (M1) in rhesus macaques.” Neuroscience Abstracts 27, program # 289.9, 2001.


Steiner, D.R.S., Wood, J.G. and Gonzalez, N.C. “Leukocyte adherence/emigration contributes to increased vascular permeability during systemic hypoxia.” FASEB, New Orleans, LA.

Steiner, D.R.S., Gonzalez, N.C. and Wood, J.G. “Systemic hypoxia reduces NO levels in the mesenteric microcirculation of non-acclimatized but not of acclimatized rats.” FASEB, New Orleans, LA.

Steinle, J.J. and Smith, P.G. “Sensory but not parasympathetic nerves are required for ocular vascular neogenesis after sympathetic denervation.” Soc. Neurosci. Abs. 27.


RESEARCH SUPPORT

Grant awards, direct and indirect, that were received during FY '02 for principal investigators in the department totaled $12,365,963.


Center of Excellence Award - Role of the testes-specific alpha isoform of the Na,K-ATPase in germ cell function”. September 1, 2001 to August 31, 2003. Total costs: $50,000/year.


Center for Reproductive Sciences, Project III – Uterine Angiogenesis and Implantation. April 1, 2001 – March 31, 2006. Total costs $1,193,625; Direct costs $798,403; Indirect costs $395,222.


SELF Faculty Scholar Award, University of Kansas - July 1, 2000 – June 30, 2003. $50,000/yr. Total award $150,000.


French Government – Faculty of Sciences University of Nancy I – Peroxisome Proliferator-Activated Receptors in EAE and MS. Sabbatical Fellowship. (PI: Pascaline Bouillaud; Mentor: Steven LeVine).


NIH/NICHD International Conference Grant – “Chronic recovery from stroke” translating basic science knowledge into enhanced clinical interventions.” January 28, 2002 through December 31, 2002. $41,724 direct costs, no indirect costs.

American Heart Association Bugher Award – “Neural bases for effects of amphetamine on motor recovery after stroke.” Randolph J. Nudo, PI, $90,909 yearly direct costs, $9,091 indirect costs.


B. K. Petroff: Mellon Foundation CONRAD grant – “Testing novel compounds that block follicular rupture.” $117,000 direct costs, $13,000 indirect costs.


NIH – Kansas Biomedical Research Infrastructure Network. April 1, 2002 – August 31, 2004. P.G. Smith, Core Director KUMC Site, J. Hunt, PI. $86,187 annual direct costs; $39,313 annual indirect costs (KUMC core only).


NIH – “Trophoblast Differentiation-Supplement for Dr. Juan Jose Bustamante.” May 1, 2002 through April 30, 2007. $46,000 direct costs/year.


Research Institute – New Methods for Storage and Activation of Turkey Sperm. August 3, 1999 – present. Direct costs $1,000.


**J. L. Voogt:** NIH – “Hypothalamic Control of Prolactin Secretion.” Principal Investigator. Total project period December 1, 2000 - November 30, 2001. Annual direct costs $151,658; Indirect costs $75,829.


**M. W. Wolfe:** NIH/NICHD – “Cytokine regulation of trophoblast function.” June 1, 2001 through May 30, 2003. Annual direct costs $50,000; Indirect costs $25,000.

NIH/NICHD – “Trophoblast differentiation.” Michael J. Soares, Principal Investigator. December 1, 2001 through November 30, 2006. Total direct costs $1,125,000; indirect costs $559,500.


V. Gustavo Blanco, M.D., Ph.D., Assistant Professor

Summary of Research: My laboratory studies the role of ion-transport proteins of the plasma membrane in cell function. Research is focused on the Na,K-ATPase, a plasma membrane enzyme system that uses the energy from ATP to establish and maintain the high internal K$^+$ and low internal Na$^+$ concentrations characteristic of most animal cells. The transporter comprises a group of isozymes, each characterized by unique enzymatic properties and a cell-dependent and developmentally regulated pattern of expression. Experiments are designed to understand the function and regulation of the different molecular forms of the transporter. A variety of molecular and cellular biology methods are used to study these important enzymes, both in their native environment and after expression in cells in culture. These studies are important to understand how cells are able to control water and ion balance in physiological and pathological conditions, such as polycystic kidney disease.

Committees:
Departmental Member, Departmental. Website committee.

Editorial and Grant Reviews:
Ad hoc reviewer for life Sciences and Cell Biochemistry and Biophysics.
Ad hoc reviewer for National Science Foundation.

Seminars Presented:
September, 2001 - Presented a seminar entitled “The Na,K-ATPase multiple isozymes with different function” for the Larry Sullivan Journal Club at University of Kansas Medical Center Kidney Center.
November 8, 2001 – Presented a seminar entitled “The testes specific alpha isoform of the Na,K-ATPase. Localization and function”, at Faculty Research Day, University of Kansas Medical Center.

Teaching Activities:
PHSL 802 - Medical Physiology
18 hours lecture - Renal Physiology
IGPBS Module 4
6 lectures
Paul D. Cheney, Ph.D., Professor and Chairman

Summary of Research: Modern neurophysiological techniques are used to investigate the functional contribution of neurons in the cerebral cortex and brainstem to the control of voluntary movement. The spike discharge activity of single neurons is recorded in awake monkeys trained to perform various movement tasks. Computerized analysis techniques are used to reveal the functional contribution of a neuron to movement. In another project, SIV infection in monkeys is used as model of neuro-AIDS. The mechanisms by which SIV/HIV enters the brain and injures neurons is investigated using neurobehavioral, neurophysiological, and neuroanatomical methods.

Meetings Attended:

November 9-10, 2001 - Attended NIH Study Section, IFCN #5, Washington, D.C.
January 14-17, 2002 - Attended NIH – NCRR Primate Center Site Visit - University of Washington Regional Primate Research Center, Seattle, Washington.
February 15-16, 2002 - Attended NIH Study Section, IFCN #5, Washington, D.C.
June 16-18, 2002 - Attended the MRDDRC Directors Meeting in Madison, Wisconsin.
June 20-21, 2002 - Attended NIH Study Section, IFCN #5, Washington, D.C.

Committees:

Departmental
Chair, Planning Committee, Jim Voogt recognition event
Member, Numa Dancause Comprehensive Exam Committee
Member, Ann Stowe Comprehensive Exam Committee
Member, Don Warn Dissertation Committee
Member, Kathleen Friel Dissertation Committee
Member, Michael Park Dissertation Committee

University
Chair, Committee on Federal Grants and Indirect Costs
Chair, ad hoc committee to evaluate use of space in the MRRC animal facility
Member, Program of Requirements Planning Committee for new Research Building
Member, Research Building Planning Committee
Member, Search Committee for Hogland Brain Imaging Center Director & Associate Director positions
Member, Search Committee, Research Director, Center on Aging
Member, KUMC Research Compliance Committee
Member, MEG System Advisory Committee
Organizer, Brain Awareness Week Program
Organizer, Grass Traveling Neuroscientist Lectureship
Judge, Student Research Forum
Co-Director, Neuroscience Ph.D. Program
Member, Neuroscience Ph.D. Program Executive Committee
Member, Kansas MRRC Internal Scientific Advisory Committee
Member Kansas MRRC Statistics Advisory Board
Member, Kansas MRDDRC Colloquium series
Member KU/KUMC Graduate School Task Force on state of the graduate school
Theme Leader, Neurobiology of Mental Retardation and Developmental Disabilities Theme within the Kansas MRDDRC
Regional
President, Kansas City Chapter, Society for Neuroscience

National
Member, NIH Neuroscience Study Section meetings (IFCN #5)
Member, NIH Primate Center Site Visit Team for five year review of the
University of Washington Primate Center, Seattle, Washington

Editorial and Grant Reviews:
Associate Editor Neuroscience Letters
Ad hoc reviewer Nature
Ad hoc reviewer PNAS
Ad hoc reviewer Journal of Neurophysiology
Ad hoc reviewer Journal of Neuroscience
Ad hoc reviewer Trends in Neuroscience
Member NIH – Integrative, Cognitive and Functional Neuroscience Study Section #5
Member NIH – NCRR Primate Center Review University of Washington Regional Primate
Research Center Site Visit Team
Ad hoc reviewer – NIH AIDS and Related Research Study Section #2 (AARR#5)
Ad hoc reviewer – The Wellcome Trust, London, UK

Seminars Presented:
Motor Pathways and the Control of Whole-Limb Movements” at the 31st Annual
Meeting of the Society for Neuroscience in San Diego, California.
January 18, 2002 – Presented a seminar entitled “Muscle Synergies Underlying Reaching
Movements in Primary Motor Cortex of Macaque Monkeys” for the Physiology
and Biophysics Department at the University of Washington, Seattle, Washington.

Academic Honors:
KUMC Research Investigator Award

Teaching Activities:
Advanced Neuroscience (Course Director)
9 hours lecture
Medical Neuroscience
1 conference
IGPBS Module 5
6 lectures
Research presentation for new IGPBS students

Trainees:
Marie-Helene Boudrias - Ph.D. student
Alan R. Godwin, Ph.D., Assistant Professor

Summary of Research: Hox genes are evolutionarily conserved transcription factors that are important in determining changes along the major anterior-posterior axis in animals as diverse as nematodes, fruit flies, and man. Little is understood about how these genes carry out this process, especially which genes are regulated by these transcription factors. We are carrying out a detailed examination of two of these genes to determine the genes they regulate, the amino acid residues important for cofactor interaction, and changes of the use of these genes in different organisms.

Meetings Attended:
- October 30-31, 2001 – attended the Stowers Institute Symposium: From Genes and Genetics to Molecular Medicine at the Stowers Institute for Medical Research, Kansas City, Missouri.
- June 1-4, 2002 – attended the 42nd Annual Midwest Developmental Biology Meeting and The Singer Symposium at the University of Missouri-Columbia, Columbia, Missouri (platform talk and served as session chair).

Committees:
- Departmental
  - Member, Graduate Student Advisory Committee
  - Member, Departmental Seminar Committee
  - Chair, Departmental Website Committee
  - Member, Graduate Committee, Ning Lei
  - Member, Graduate Committee, Brian Hermann
  - Member, Graduate Committee, Gerald Call
- KUMC
  - Member, Transgenic Facility Steering Committee
  - Member, Biotechnology Support Facility Steering Committee
  - Member, Microarray Facility Advisory Committee
  - Member, Graduate Committee for Susanna Harju, Biochemistry Ph.D. candidate

Editorial and Grant Reviews:
- Ad hoc reviewer, Developmental Biology
- Ad hoc reviewer, Developmental Dynamics
- Ad hoc reviewer, Genesis
- Ad hoc reviewer, Journal of Investigative Dermatology
- Ad hoc reviewer, Mechanisms of Development
Seminars Presented:

- September 19, 2001 — Presented a seminar entitled, “Hoxc13 and Epidermal Appendages” in the Department of Molecular and Medical Genetics at Oregon Health Sciences University, Portland, Oregon.
- April 8, 2002 — Presented a seminar entitled “Hoxc13 in Hair Follicle Morphogenesis” in the Department of Molecular Biosciences at the University of Kansas, Lawrence, Kansas.
- June 2, 2002 — Presented a platform talk entitled “Hoxc13 Expression and Function in Mice and Zebrafish” at the 42nd Annual Midwest Developmental Biology Meeting and the Singer Symposium, Columbia, Missouri.

Teaching Activities:

- Medical Physiology 802
  - 3 hours lecture
  - 8 hours conference
- Neuroscience 840
  - 1 hour lecture
- IGPBS Module 4:
  - 4 hours lecture
  - 2 hours paper discussion

Trainees:

- Ryan Thummel, Graduate Student
- Amy Spears, Graduate Student
- Dominik Choromanski, Medical Student (Poland), Summer Research
- Brian Chase, Summer Student (Undergraduate)
- Nelson Stauffer, Summer Student (High School)
Summary of Research: My research centers on the mechanisms of adaptation to acute and chronic hypoxia, as produced by a reduction in oxygen levels in the inspired air, in intact animals. A major research effort currently is the study of the underlying mechanisms and the physiological significance of the microvascular inflammatory response to systemic hypoxia. This is a novel phenomenon described in collaborative research with Dr. John G. Wood of our Department, and that may have relevance to acute altitude diseases such as acute mountain sickness, high altitude pulmonary edema and high altitude cerebral edema. In addition, a smaller proportion of my research effort is directed to continue with ongoing studies of the effects of acute and chronic hypoxia and of exercise training on systemic oxygen transport during exercise.

Meetings Attended:
April 18-22, 2002 - V International Meeting of Mountain Medicine and High Altitude Physiology, Barcelona, Spain. Panel member in “High Altitude Sickness Symposium”.

Committees:
Departmental
Promotions and Tenure Committee
KUMC
Promotions and Tenure Committee

Editorial and Grant Reviews:
Ad hoc reviewer, Journal of Applied Physiology
Ad hoc reviewer, Autonomic Neuroscience: Basic and Clinical
Member, NIH Study Section ZRG1 ALTX-1, Special Emphasis Panel, February 21, 2002
Ad hoc member, Respiratory Physiology Study Section, NIH, March 11-12, 2002

Seminars Presented:
August 20, 2001 – Presented a seminar entitled “Limitations to maximal O2 transport during exercise after acclimatization to hypoxia” Department of Physiology, School of Medicine, SUNY, Buffalo, New York.

Academic Honors:
Chancellor’s Distinguished Teaching Award, The University of Kansas, May 19, 2002

Teaching activities:
Medical Physiology
  11 Lectures – Respiratory Physiology
  1 Review Session – Respiratory Physiology
  10 Conference Sessions
  4 Student Laboratory Sessions

IGPBS
  4 lectures – Respiratory Physiology

Trainees:
Sidartah Shah, medical student, summer 2001
Summary of Research: Our research focuses on understanding the transcriptional and cell-signaling processes important for gonadal function and development. We are currently studying the genes that encode the FSH receptor (FSHR), a protein expressed only in somatic cells of the gonads, steroidogenic factor 1 (SF-1), an orphan nuclear receptor required for gonad and adrenal formation, and DMRT1, an evolutionarily conserved gene that regulates testis differentiation. Through the characterization of these genes, we hope to identify key regulatory proteins important for gonadal development and Sertoli cell-specification. We employ DNase I hypersensitivity mapping and transient transfection analysis to identify key regulatory regions and protein/DNA binding assays to characterize important transcriptional regulators. Transgenic mice are used to help confirm the regulatory regions in vivo and to generate mouse models for Sertoli cell function.

Meetings attended:

Committees:
Departmental
Member, Ph.D. Thesis Committee for Shalmica Williams
Member, Ph.D. Thesis Committee for Gerald Call
Member, Ph.D. Thesis Committee for Theingi Thway
Member, Ph.D. Thesis Committee for Ryan Thummel
Member, Ph.D. Thesis Committee for Amy Spears
Advisor, Ph.D. Thesis Committee for Ning Lei
Advisor, Ph.D. Thesis Committee for Brian Hermann
Member, Graduate Student Advisory Committee
Member, Web site construction Committee

KUMC
Member, Ph.D. Thesis Committee for Paul Freeburg, Anatomy and Cell Biology, Graduate Student
Member, Ph.D. Thesis Committee for Ramsey McIntire, Anatomy and Cell Biology, Graduate Student
Member, Ph.D. Thesis Committee for Suzanna Harju, Biochemistry, Graduate Student
Member, Ph.D. Thesis Committee for Huimin Jiang, Biochemistry, Graduate Student
Member, Transgenic Steering Committee
Chair, Graduate Student Travel Committee
Member, School of Medicine Research Committee
Member, Planning committee for Jim Voogt recognition
Dr. Heckert (continued)

Editorial and Grant Reviews:
ad hoc reviewer for Molecular Endocrinology
ad hoc reviewer for Biology of Reproduction
ad hoc reviewer for Endocrinology
ad hoc reviewer for Molecular and Cellular Endocrinology
ad hoc reviewer for Gene
ad hoc reviewer for Canadian Journal of Physiology and Pharmacology
ad hoc reviewer for Human Reproduction
ad hoc reviewer for Developmental Biology
ad hoc reviewer for Journal of Biological Chemistry
ad hoc reviewer for Molecular and Cellular Biology
ad hoc reviewer for Journal of Andrology
ad hoc reviewer for Proceedings of the National Academy of Sciences
member, NIH/NICHD U54 Review Committee, May 7, 2002

Seminars Presented:
November 15, 2001 - Presented a seminar entitled, “Transcriptional regulation of doublesex- and mab-3-related transcription factor (Dmrt1) in postnatal testes and Sertoli cells.” The Population Council, Rockefeller University, New York, New York.
December 3, 2001 - “Transcriptional regulation of doublesex-- and mab-3-related transcription factor (Dmrt1) in the testis.” Colorado State University, Fort Collins, Colorado.
December 19, 2001 - “Transcriptional regulation of doublesex- and mab-3-related transcription factor (Dmrt1) in postnatal testes and Sertoli cells.” Center for Reproductive Sciences, KUMC.

Academic Honors:
Asked to join Editorial Boards for Journal of Andrology and Molecular Endocrinology.

Teaching activities:
Module 3 of IGPBS, Fall 2001
2 lectures
1 paper discussion
PHYS 834 - Reproductive Physiology, Fall 2001
2 one hour lectures
1 paper discussion
PHYS 802 - Medical Physiology, Spring 2002
2 one hour lectures
2 two hour conferences

Trainees:
Serge Scherrer, Ph.D. – Post-doctoral Fellow
Ning Lei, Graduate Student
Brian Hermann, Graduate Student
Elizabeth Haddock, Undergraduate Summer Student
Walter T. Imagawa, Ph.D., Assistant Professor


Meetings Attended:
April 6-10, 2002 - American Association for Cancer Research, San Francisco, California.

Committees:
Graduate Student Advisory Committee

Editorial and grant reviews:
Editorial Board, Journal of Endocrinology
External Ph.D. thesis reviewer for Anna University, India

Teaching activities:
PHSL 834 - Reproductive Physiology
  3 hours lecture
PHSL 822 – Endocrine Physiology
  4 hours lecture
PHSL 802 – Medical Physiology
  2 hours conferences

Trainees:
Hongzheng Zhang - Post-doctoral Fellow
Summary of Research: Ototoxic drugs and acoustic trauma often cause tinnitus, the perception of phantom sound that in some cases can be debilitating. Cochlear insult results in a decrease in neural output from the cochlear and hyperactivity within the central auditory system, presumably due to a mechanism of disinhibition. We are seeking funding to determine the extent to which hyperactivity is transmitted from the dorsal cochlear nucleus, a low level auditory relay nucleus in which tinnitus related hyperactivity is known to occur, to higher levels in the auditory system.

Committees:
Departmental:
  Chair, Graduate Student Affairs Committee
  Chair, Promotion and Tenure Committee
KUMC:
  Member, IGPBS Advisory Committee
  Member, Academic Committee
  Member, Admissions Subcommittee

Editorial and Grant Reviews:
  Editorial Board, Journal of Neurophysiology
  ad hoc reviewer Cerebral Cortex
  ad hoc reviewer new edition of Haines Atlas for Lippincott Publishing
  ad hoc grant reviewer for State of Missouri University System

Teaching Activities:
  PHYS/ANAT 840 - Medical Neuroscience (Co-director)
    5 hours lecture
    20 hours lab instruction
  Advanced Neuroscience
    8 hours lecture
Donald C. Johnson, Ph.D., Professor Emeritus

Summary of Research: Research is focused upon collaborative studies with various faculty members.

Editorial and Grant Reviews:
- Biology of Reproduction
- Life Sciences
- Environmental Health Perspectives
- Environmental Protection Agency

Teaching Activities:
- Medical Physiology
  - 4 conference sessions
- Physiology of Reproduction
  - 3 hours lecture
Steven M. LeVine, Ph.D., Associate Professor

Summary of research: Multiple sclerosis and globoid cell leukodystrophy (Krabbe’s disease) are two demyelinating diseases of the central nervous system. We are investigating pathogenic mechanisms and therapeutic interventions for these disorders.

Meetings Attended:
July 7, 2001 – Invited presentation at the Hunter’s Hope 4th Annual Scientific and Medical Symposium for Krabbe’s Disease and Other Leukodystrophies, Buffalo, New York.

Committees:
Departmental:
Member, Graduate Student Advisory Committee

KUMC:
Member, Faculty Council
Member, IACUC

Editorial and Grant Reviews:
ad hoc Grant Reviewer, Neurological Foundation of New Zealand
ad hoc reviewer, Cellular and Molecular Biology
ad hoc reviewer, J. Neuroscience Research
ad hoc reviewer, Neuroscience Letters
ad hoc reviewer, Neurochemical Research

Teaching Activities:
PHSL 822 (Advanced Human Physiology) - Course Director
8 hours lecture
PHSL 800 (Medical Physiology)
3 hours lecture
14 hours of conference
PHSL 842 (Advanced Neuroscience)
4 hours lecture
PHSL 784 (Faculty Research Forum)
.5 hour lecture

Trainees:
Sangita Biswas - Postdoctoral Fellow
Mitchell Emerson - Postdoctoral Fellow
Smarajit Maiti – Postdoctoral Fellow
Anuradha Chakrabarty – Postdoctoral Fellow
Pascaline Bouillaud – Visiting Research Assistant Professor
Rohan Ghandi – Graduate Summer Student
Jared Finney – Undergraduate Summer Student
Joanne Marcario, Ph.D., Research Assistant Professor

Summary of Research: It is well known that human immunodeficiency virus (HIV) can infect the central nervous system (CNS) and lead to HIV-1-associated motor/cognitive disorder and AIDS dementia complex (ADC), but the causes of these deficits are poorly understood. The general objective of our work has been to characterize the functional consequences of HIV-1 infection of the CNS through the use of monkeys infected with neurovirulent SIVmac as model of neuro-AIDS. Our studies are multidisciplinary in nature, seeking to correlate a number of factors involved in SIV neuropathogenesis: 1) performance on cognitive and motor behavioral tasks; 2) physiologically measured variables such as sensory and motor evoked potentials; 3) virological and immunological parameters such as plasma virus load and CD4+ counts; and 4) neuroanatomical (stereological) analyses, to determine whether neuron loss in the CNS is a major factor in behavioral and physiological changes.

Meetings Attended:
June 19-22, 2002 – Attended the 4th International Symposium on NeuroVirology and the 10th Conference on Neuroscience of HIV Infection, Dusseldorf, Germany and presented a poster entitled, “Neuron loss and neuropathology in the basal ganglia and hippocampus of SIV-infected rhesus macaques”.

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**Randolph J. Nudo, Ph.D., Associate Professor (Assoc. Director of Research, Center on Aging)**

**Summary of Research:** The goal of this laboratory is to examine adaptive plasticity in primate motor cortex, including changes that occur during skill acquisition and changes that occur after stroke. To derive highly detailed functional motor "maps", we employ microelectrode mapping techniques and electromyographic recording. By tracking changes in motor cortex as a result of a focal vascular infarct, as might occur in stroke, and by examining the effects of both physiotherapy and pharmacotherapy on subsequent neuroplasticity, we are developing practical models of the neurophysiological processes operating during recovery of motor function. These studies will allow us to design more effective rehabilitation interventions for restoration of motor function after stroke.

**Meetings Attended:**


**Committee activities:**

**Departmental**

- Member, Dissertation Committee, Kathleen Friel
- Member, Dissertation Committee, Michael Park
- Member, Dissertation Committee, Numa Dancause
- Member, Dissertation Committee, Ann Stowe
- Member, Website Committee

**KUMC**

- Member, Neuroscience Program Steering Committee
- Member, School of Medicine Space Committee
- Member, LAR Policy and Advisory Subcommittee
- Member, Visualization and Modeling Steering Committee
- Member, Hogland Brain Imaging Center Search Committee
- Member, Center on Aging Director of Research Search Committee
- Member, Clinical Programs of the Landon Center Strategic Planning Committee
- Governing Board, Landon Center Clinical Programs

**National**

- Member, American Congress of Rehabilitation Medicine Research Advisory Council

**Editorial and Grant Reviews:**

- Member editorial board, Neuroscience and Behavioral Reviews
- Member editorial board, Neurorehabilitation and Neural Repair
- Ad hoc member, NIH-NINDS Special Emphasis Study Panel
- Advisory Board, Maryland Pepper Center for Independence in Older Americans
- Grant reviewer, Italian Ministry for Education, University and Research
- Ad hoc study section, NIH-NICHD, National Center for Medical Rehabilitation Research
- Chairman, Special emphasis study panel to review FRAs

**Seminars Presented:**

Dr. Nudo (continued)

Seminars Presented (continued):

August 16, 2001 – Presented a seminar entitled “Neural correlates of motor recovery after injury to motor cortex”, as an invited speaker, at the Progress in Motor Control Conference, Montreal, Canada.

October 4, 2001 – Presented a seminar entitled “Neuroplasticity as a basis for recovery after stroke”, as an invited speaker, at the Rehabilitation Institute of Chicago, Chicago, Illinois.

January 4, 2002 – Presented a seminar entitled “Adaptive plasticity in motor cortex: implications for rehabilitation after brain injury”. Invited speaker, Department of Neurology, UCLA School of Medicine, Los Angeles, California.

January 16, 2002 – Presented a seminar entitled “Neuroplasticity as a basis for recovery after stroke”, invited speaker, Life Sciences Seminar, Kansas City, Missouri.


March 28, 2002 – Presented a seminar entitled “Structural and functional plasticity after stroke”, as an invited speaker, Department of Anatomy and Cell Biology, KUMC.

May 9, 2002 – Presented a seminar entitled “Functional plasticity in motor cortex: implications for stroke rehabilitation”, as an invited speaker, Lillian Pollard Memorial Lectureship, Neuroscience Distinguished Seminar Series, Neuroscience Distinguished Seminar Series, Graduate Department of Rehabilitation Science, University of Toronto, Toronto, Canada.

Teaching Activities:
ANAT 880 - Faculty Research Series
1/2 hour lecture
NEUS 840 (Medical Neuroscience)
6 hours lecture
PHSL 846 (Advanced Neuroscience)
4 hours lecture
AMED 900 (Ambulatory Medicine)
8 hours lecture
NRSG 899 (Grant Writing)
3 hours lecture

Trainees:
Numa Dancause, graduate student
Shawn Frost, post-doctoral fellow
Elena Zoubina, post-doctoral fellow
Kathleen Friel, graduate student
Ann Stowe, graduate student
David Rafinsky, summer medical student (K. State)
Brian K. Petroff, D.V.M. Ph.D., Research Assistant Professor

Summary of Research: My research is focused upon the impact of dioxins on female fertility. In addition to preventing ovulation at quite low doses, dioxins exhibit chemoprotective properties for some hormone-dependent cancers. A long term goal of this research effort is to understand the mechanisms of dioxin action on the female reproductive system and develop novel compounds that retain the contraceptive and chemoprotective properties of dioxins while avoiding their toxicities. In addition to this reproductive toxicology and contraception research program, I collaborate with Dr. Paul Terranova to investigate the role of src tyrosine kinase in ovarian follicular development.

Meetings Attended:
- August 25-28, 2001 – Central Veterinary Conference, Kansas City, MO.
- March 17-21, 2002 – Society of Toxicology Annual Meeting, Nashville, TN.

Committees:
- KUMC:
  Judge, Student Research Forum

Seminars:
- June 10, 2002 – Presented a seminar entitled, “A young scientist’s perspective on biological training in the USA.” Graduate Student Society, University of Warmia and Mazury, Olsztyn, Poland.
- June 11, 2002 – Presented a seminar entitled, “Disruption of the female endocrine system by dioxins.” Polish Physiological Society, University of Warmia and Mazury, Olsztyn, Poland.
- June 13, 2002 – Presented a seminar entitled, “Disruption of the female endocrine system by dioxins.” Department of Zoology, Jagiellonian University, Krakow, Poland.

Academic Honors:
- Promoted to full membership in Society of Toxicology
- Promoted to full membership in Society for the Study of Reproduction
- Veterinary medical licensure successfully renewed for 2002-2005.

Teaching Activities:
- PHSL 834 – Reproductive Physiology
  2 hours lecture
- PHSL 802 – Medical Physiology Conference
  1 hour case study conference
Peter G. Smith, Ph.D., Professor (Director, MRRC)

Summary of Research: My research investigates interactions among populations of peripheral neurons and their target cells. We examine factors regulating target innervation and nerve growth, and assess how those nerves in turn regulate target cell function and growth. Our interests concern the relationships among sympathetic, parasympathetic and sensory nociceptor nerves in contexts of neurotrophic factor regulation, hormonal modulations, physiological and pathophysiological plasticity, wound healing and pelvic floor dysfunction.

Meetings Attended:
November 10-15, 2001 – Attended the Society for Neuroscience meeting in San Diego, California and presented 4 posters.
November 27, 2001 – Attended Kansas City Life Sciences Research Day, UMKC, and presented a poster and a keynote seminar.

Committees:
Departmental:
Chair, Student Advisory Committee for Audrey Blacklock
Chair, Student Advisory Committee for Don Warn
Member, Student Advisory Committee for Joe McDonald
Member, Student Advisory Committee for Ann Stowe
Member, Student Advisory Committee for Al Casillian
Member, Student Advisory Committee for Kyle Henderson
Member, Student Advisory Committee for Kathleen Friel
Member, Student Advisory Committee for Numa Dancause
Director, Molecular and Physiological Basis of Disease, Module 5 of the IGPBS
Member, Promotions and Tenure Committee
Member, Teaching Review Committee

KUMC:
Director, Bio-Imaging and Graphics Core of the Smith MRRC
Director, KUMC Bioinformatics Core, Kansas BRIN
Chair, Microarray Advisory Committee
Vice-Chair, Faculty Council
Member, MRRC Internal Scientific Advisory Committee
Coordinator, Neuroscience Seminar Committee
Member, Dean’s Advisory Group of Senior Scientists
Member, Confocal Microscopy Advisory Board
Member, Electron Microscopy Advisory Board
Member, KUMC Space Committee
Member, Kansas Biomedical Research Infrastructure Network Advisory Board
Member, Kansas City Life Sciences Research Day Program Committee
Dr. Smith (continued)

Editorial and Grant Reviews:
Reviewer, Anatomical Record
Reviewer, Brain Research
Reviewer, Journal of Comparative Neurology
Reviewer, Neuroscience
Reviewer, American Journal of Respiratory Cell and Molecular Biology
Fonds zur Forderung der wissenschaftlichen Forschung (Austria Science Fund) KUMC Research Institute

Seminars:
September 17, 2001 – Presented a seminar entitled, “BDNF as a mediator of estrogen-induced sympathetic nerve plasticity”, to the Department of Pharmacology, University of Missouri – Kansas City.
September 25, 2001 – Presented a seminar entitled, “Neural plasticity under physiological conditions: Lessons from a model system”, to the Institute for Child Development, University of Kansas Medical Center.
March 4, 2002 – Presented a seminar entitled, “Paracrine and autocrine roles of nerve growth factor on autonomic neurons”, to the Department of Molecular and Integrative Physiology, University of Kansas Medical Center.
March 11, 2002 – Presented a seminar entitled, “Paracrine and autocrine roles of nerve growth factor in the autonomic nervous system”, to the Department of Anatomy and Physiology at Kansas State University, Manhattan, Kansas.

Teaching activities:
PHSL 800 - Medical Physiology
6 hours lecture
8 hours laboratory
16 hours conferences
PHSL 822 - Advanced Human Physiology
8 hours lecture

Trainees:
Elena Zoubina, Post-doctoral Fellow
Don Warn, Graduate Student
Wohaib Hasan, Ph.D., Post-doctoral Fellow
Audrey Blacklock, M.D./Ph.D. Student
Tatyana Pedchenko, Ph.D., Post-doctoral Fellow
Matt George, Undergraduate Student
Abdi Jamal, Summer Medical Student
Michael J. Soares, Ph.D., Professor

Summary of Research: Our laboratory is interested in molecular mechanisms and signaling events involved in the establishment and maintenance of pregnancy; including investigations on the prolactin gene family, intrauterine inflammatory and immune cells, uterine vasculature, and signaling pathways controlling the growth and differentiation of decidual and trophoblast cells.

Meetings Attended:
- August 2001 – Attended the Annual Meeting of the Society for the Study of Reproduction, Ottawa, Canada.
- September 2001 – Attended the European Placental Group Meeting, Sorrento, Italy.
- October 2001 – Attended the 4th Symposium for Regeneration and Tissue Engineering Technology in Placenta, Tsukuba, Japan.
- June 2002 – Attended the Annual Meeting of the Endocrine Society, San Francisco, California.

Committees:
- Departmental:
  - Member, Dissertation Committee for Theingi Thway
  - Promotion and Tenure Committee
- KUMC:
  - Member, Dissertation Committee for Tim Burnett (Anatomy)
  - Member, Dissertation Committee for Ryan Gill (Pathology)
  - Associate Director, KUMC Training Program in Biomedical Research
  - Kansas Cancer Institute Leadership Council
  - Search committee for research faculty position in Urology
- National:
  - Member, Program Committee for the Annual Meeting of the Society for the Study of Reproduction, Baltimore, Maryland
  - Publications Committee for the Society for the Study of Reproduction

Editorial and Grant Reviews:
- ad hoc reviewer, Biology of Reproduction
- ad hoc reviewer, Endocrinology
- ad hoc reviewer, Pediatric Research
- ad hoc reviewer, Journal of Clinical Endocrinology and Metabolism
- ad hoc reviewer, Physiological Genomics
- ad hoc reviewer, Molecular Endocrinology
- ad hoc reviewer, Molecular Genetics Metabolism
- ad hoc reviewer, Proceedings for the National Academy of Sciences
- Senior Editor, Journal of Endocrinology
- Consultant, Americas Fellowship Program
Seminars Presented:
September 2001 – Presented a seminar entitled “Placental hormones and targeting of natural killer cells”, European Placental Group, Sorrento, Italy.

Academic Honors:
University of Kansas Chancellor’s Research Award

Teaching activities:
PHSL 800 - Medical Physiology
6 two hour conferences
3 hours lecture
Reproductive Physiology
3 hours lecture
1 hour discussion
Allied Health Grant Writing Course
3 hours discussion

Trainees:
Rupasri Ain - Postdoctoral Fellow
Long-jiang Shao - Postdoctoral Fellow
Toru Takahashi - Postdoctoral Fellow
Shigeki Oboshi - Postdoctoral Fellow
Kerry McGonigle - Summer Student
My-Linh Trinh - Summer Student
Merrill Tarr, Ph.D., Professor

Summary of Research: My research investigates the electrophysiological properties of heart tissue. Isolated, single cardiac cells are used for this purpose. Presently, we are investigating the effects highly reactive oxygen species (ROS) and/or free radicals have on the ionic currents responsible for generating electrical activity in single heart cells. Free radicals and ROS play a major role in tissue damage following the reintroduction of oxygen to ischemic tissue. In the heart, such reintroduction of oxygen can result in the production of arrhythmias, fibrillation and death. We want to understand how ROS and free radicals alter the electrical properties of heart tissue.

Committee Activities:

KUMC

Member, Conflict of Interest in Research
Member, Faculty Council

Teaching Activities:

PHSL 801 - Medical Physiology
8 hours lecture (8 sessions)
24 hours conferences (12 sessions)
4 hours laboratory (2 sessions)

PHSL 822 – Advanced Human Physiology
3 hours lecture (3 sessions)

PHSL 892 - Module 4 of IGPBS course
3 hours lecture (3 sessions)

PHSL 846 – Advanced Neuroscience
6 lectures (1 hour each)
Cardiology – 3 lectures (1 hour each)
Physical Therapy – 1 lecture (1 hour)
Summary of Research: Our research is currently focused in two main areas. In one area, we are funded by NIH to design and test novel non-steroidal, non-hormonal reversible male contraceptives. This project is collaboration between our lab and Dr. Gunda Georg of the Department of Medicinal Chemistry at KU-Lawrence. The second project, is funded by NASA, in that project we are examining the underlying mechanism that determine the loss of spermatogenesis that occurs in rats exposed to long term simulated microgravity using the rat hindlimb suspension model.

Meetings Attended:
April 2001 – Attended the FASEB in Orlando, Florida.
July 28 to August 1, 2001 – Attended the Society for the Study of Reproduction meeting in Ottawa, Ontario, Canada.
November 7 to 10, 2001 – Attended the American Society for Gravitational and Space Biology meeting in Alexandria, Virginia.

Committees:
KUMC:
Member, Institutional Animal Use and Care Committee
Member, Biotechnology Oversight Committee
Chairman elect, Election Committee
Member, School of Medicine Executive Committee
National:
Member, NASA Developmental Biology Study Section

Editorial and Grant Reviews:
ad hoc reviewer, Biology of Reproduction
ad hoc reviewer, Journal of Andrology
NASA

Seminars presented:
July 28 to August 1, 2001 – Presented a seminar entitled, “Six-week simulation of microgravity inhibits spermatogenisis in adult male rats” to the Society for the Study of Reproduction meeting in Ottawa, Ontario, Canada.
Dr. Tash (continued)

Academic Honors:
U.S. Patent Serial no. 6,309,815 issued for Preparation, Storage and Activation of Large Populations of Immotile Sperm

Teaching activities:
PHSL 802 - Medical Physiology
  3 hours lecture
  4 hours lab
  8 hours conference sessions
PHSL 821/822 - Advanced Human Physiology
  4 lecture hours
PHSL 894 - IGPBS Module 4
  13 hours lecture
Paul F. Terranova, Ph.D., Professor (Director of Center for Reproductive Sciences)

Summary of Research: We are determining the molecular mechanism by which tumor necrosis factor alpha inhibits aromatase expression and estradiol secretion in mouse granulosa cells. This approach targets NfkappaB and cAMP response element binding protein. A second project determines the role of Src tyrosine kinase in ovarian follicular development. Lastly, we are developing new ovulation blocking drugs, which are agonists of the aryl hydrocarbon receptor.

Meetings Attended:
July 28-August 1, 2001 – Attended the 34th Annual Meeting of the Society for the Study of Reproduction, Ottawa, Ontario, Canada.
September 27-29, 2001 – Attended the Kansas City Area Life Sciences Initiative, Merrill Conference, University of Kansas sponsor, Phoenix, Arizona.
March 17-21, 2002 – Attended the 41st Annual Meeting of the Society of Toxicology, Nashville, Tennessee.
May 8-10, 2002 – Attended the NICHD Directors Meeting held at the University of California, San Diego.

Committees:
Departmental:
Member, Promotion & Tenure Committee (OB/GYN)
Member, Dissertation Committee for Ning Lei
Member, Dissertation Committee for Brian Hermann
Member, Dissertation Committee for Gerald Call
Member, Dissertation Committee for Haengseok Song

KUMC:
Member, Dissertation Committee for Eric Hardstat, Pharmacology
Chair, School of Medicine Space Committee, 9/00-present
Member, MRRC Internal Advisory Committee
Theme Leader, Cellular and Molecular Biology of Early Development, MRRC
Member, Kansas Cancer Institute Internal Advisory Committee
Member, Deans Advisory Council, School of Medicine
Member, Transgenic and Genetic Technologies Advisory Committee
Recruitment Coordinator, IGPBS Center for Reproductive Sciences
Member, Advisory Committee, Institute of Child Development

Local:
Member, Kansas Biomedical Research Infrastructure Network Advisory Committee
Member, Kansas Cancer Experimental Therapeutics Advisory Committee

National:
Member, Editorial Board, Endocrine
Member, Editorial Board, Journal of Pharmacology and Experimental Therapeutics
Member, NIH Study Section, Alcohol and Toxicology 4
Member NIEHS Center review Panel
Member, EPA Scientific Advisory Panel (FIFRA)
Member, EPA Reproductive and Developmental Toxicology Advisory Committee
Chair, Ovarian Physiology and Pathophysiology Focus Group, NICHD
Editorial Board Meeting, XPHARM, May 23, 2002, Omaha, Nebraska
Dr. Terranova (continued)

Editorial and Grant Reviews:
- Editorial Board, Endocrine
- Editorial Board, Journal of Pharmacology and Experimental Therapeutics
- ad hoc reviewer, Endocrinology
- ad hoc reviewer, Biology of Reproduction
- ad hoc reviewer, Journal of Reproduction, Fertility, and Development (Australia)
- ad hoc reviewer, Comparative Biochemistry and Physiology
- ad hoc reviewer, Toxicology and Applied Pharmacology
- ad hoc reviewer, Molecular and Cellular Endocrinology
- ad hoc reviewer, Journal of Endocrinology
- ad hoc reviewer, Proceeding of the National Academy of Sciences, USA
- ad hoc reviewer, Molecular Human Reproduction
- ad hoc reviewer, Toxicological Sciences
- Regular NIH Study Section (ALTX4)
- NIH Special Study Section-review of applications from study section members
- NIEHS Center Review Panel
- NIEHS Center Site Visit, University of Wisconsin
- NIH K08 Special Emphasis Panel Chair, Grant review by Teleconference

Seminars Presented:
- September 3, 2001 – Presented a seminar entitled “Effects of Dioxin on Ovarian Function” at the Department of Veterinary Physiology Tokyo University Agriculture and Technology.
- September 5, 2001 – Presented a seminar entitled “Ovarian Tumor Necrosis Factor”, to the Department of Obstetrics & Gynecology, Yamaguchi University, School of Medicine, Ube, Japan.
- September 24, 2001 – Presented a seminar entitled “Endocrine Disruption of the Reproductive System: Dioxin Models”, to the Department of Molecular and Integrative Physiology, KUMC.
- October 2, 2001 – Presented a seminar entitled “Endocrine Disruption of the Reproductive System: Dioxin Models”, to the Department of Pharmacology, Toxicology and Therapeutics, KUMC.
- March 1, 2002 – Presented a seminar entitled “Endocrine Disruption of the Reproductive System: Dioxin Models”, to the Department of Biological Sciences, University of Wisconsin, Milwaukee
Dr. Terranova (continued)

Teaching Activities:
- PHSL 800 - Medical Physiology
  10 conference sessions - 2 hours each
- IGPBS - Endocrinology
  4 – 2 hour lectures
- Toxicology 898 - Endocrine Toxicology
  2 – 2 hour lectures
- Prematriculation Course - Reproductive Endocrinology
  6 – 2 hour lectures

Trainees:
- Shalmica Williams, Graduate student
- Claire Redmon Croutch, Pharmacology Graduate student
- Soheila Hamidpour, M.D., post-doctoral fellow
- Xin Gao, M.D., M.S., post-doctoral fellow
- Okinola Oluola, M.D., post-doctoral fellow
- Koji Arai, DVM, Ph.D., post-doctoral fellow
- Anju Idiculla, Undergraduate student
- Jeremy Kirchoff, Undergraduate student
Dennis P. Valenzeno, Ph.D., Associate Professor

Summary of Research: Recent work has centered on the Digital Photobiology Compendium, a project that involves the creation of, and evaluation of the effectiveness of, a web-based learning tool designed for photobiologists from the level of upper undergraduate through practicing professional.

Meetings Attended:
July 7-12, 2001 - 29th Annual Meeting of the American Society for Photobiology in Chicago, Illinois.
November 15-18, 2001 - FIPSE/LAAP Project Directors’ Meeting in San Diego, California.

Committees:
Departmental:
Course Director, Medical Physiology 801 & 802 and Summer Coordinator, Departmental Web Site Chair, Department Teaching Committee

Local:
Member, Education Council
Member, Pre-Matriculation Program Steering Committee
Chair, Medical Faculty Year 1/2 Oversight Committee
Member, Academic Committee: Student Promotions
Member, Gross Anatomy Systematic Course Review Committee
Member, ad hoc Committee on Technological Upgrade of Medical Center Small Group Rooms

National:
Site Coordinator, Photobiology On-Line; World Wide Web site for 14 national and international societies
Member, European Society for Photobiology, Education and Training Group

Editorial and Grant Reviews:
Associate Editor – Photochemistry and Photobiology
ad hoc reviewer – Medical Education Online

Academic Honors:
Chair, Photophysics and Photobiology Platform Session, 29th Annual Meeting of the American Society for Photobiology, Chicago, Illinois.
Chair, Education in Photobiology, 10th Congress of the European Society for Photobiology, Lillehammer, Norway.
Elected to Council of American Society for Photobiology
Dr. Valenzeno (continued)

Teaching Activities:

PHSL 800 - Medical Physiology
  1 hour course introduction lecture
  5 hours lecture
  2 hour Question & Answer
  10 - 2 hour conferences
  2 – 1 hour organizational conferences
  4 - 2 hour laboratories

PHSL 801 - Summer Program
  3 hours – individual conference

PHSL 822 - Advanced Human Physiology
  10 hours lecture
  2 hours clinical correlation

IGPBS Faculty Research Series
  0.33 hour lecture

IGPBS Module 5
  2 hours lecture
  2 hours discussion

Prematriculation Health Careers Pathways Program
  8 hours lecture
  2 hours lab
Summary of Research: Prolactin is a hormone secreted by the anterior pituitary gland that is essential for maintenance of pregnancy in some mammals and milk production in all mammals. The overall goal of our research is to understand the cellular and molecular mechanisms utilized by hypothalamic neurons responsible for the regulation of prolactin secretion during mating, pregnancy and lactation. More specifically, we are investigating the neuronal pathways that regulate prolactin response to mating and suckling. Another area is to determine the role of the prolactin receptor in mediating hormonal signals that regulate prolactin secretion.

Meetings Attended:
- June 19-22, 2002 – Attended the 84th Annual Meeting of the Endocrine Society in San Francisco, California.

Committees:
- Departmental: Member, Student Advisory Committee for Audrey Blacklock

Editorial and Grant Reviews:
- ad hoc reviewer – Endocrinology
- ad hoc reviewer – Journal of Clinical Investigation
- ad hoc reviewer – Neuroendocrinology
- ad hoc reviewer – BioMed Central
- ad hoc reviewer – Journal of Endocrinology
- ad hoc reviewer – Stress

Academic Honors:

Trainees:
- Bo Zhang - postdoctoral fellow
- Xiujun Pi - postdoctoral fellow
Michael W. Wolfe, Ph.D., Assistant Professor

Summary of Research: Pituitary expression of luteinizing hormone and placental expression of chorionic gonadotropin are essential to mammalian reproduction. Research in my laboratory is directed towards understanding the cellular and molecular mechanisms involved in tissue-specific and hormonal regulation of the genes encoding the α- and β-subunits of these hormones. This involves studying the mechanisms regulating cell differentiation, elucidation of transcription factors regulating basal expression, and identifying the signal transduction pathways involved in gonadotropin-releasing hormone, growth factor and cytokine regulation of gene expression.

Committees:
Departmental:

Member, Teaching Committee
Chair/Coordinator Seminar Committee
Member, Dissertation Committee for Shalmica Williams, Ph.D. candidate
Member, Dissertation Committee for Ryan Thummel, Ph.D. candidate
Member, Dissertation Committee for Brian Hermann, Ph.D. candidate
Member, Dissertation Committee for Ning Lei, Ph.D. candidate
Member, Dissertation Committee for Audrey Blacklock, M.D./Ph.D. candidate
Member, Dissertation Committee for Naoko Brown, M.S. candidate
Chair, Dissertation Committee for Gerald Call, Ph.D. candidate
Chair, Dissertation Committee for Theingi Thway, Ph.D. candidate

KUMC
KUMRI Strategic Alliance Advisory Group, member

Editorial and Grant Reviews:
Biology of Reproduction
Biochemical Journal

Seminars Presented:
September 17, 2001 – Presented a talk entitled “Neuroendocrine regulation of Egr1 in gonadotropes” to the Department of Physiology at KUMC.

Teaching Activities:
PHSL 802 - Medical Physiology
  4 hours lecture
  16 hours conferences
PHSL 834 - Reproductive Physiology (Director)
  7 hours lecture
IGPBS Module 4: Cell & Developmental Biology
  6 hours lecture

Trainees:
Gerald Call – Graduate student
Theingi Thway – Graduate student
John G. Wood, Ph.D., Assistant Professor

Summary of Research: Systemic hypoxia occurs at high altitude and in a variety of cardio-pulmonary diseases. Few studies have examined its effects on the microcirculation despite considerable clinical evidence suggestive of microvascular inflammation during hypoxia (i.e., high altitude cerebral edema). In fact, it is generally accepted that microvascular injury occurs during elevated tissue oxygen levels (during reperfusion of organs after prolonged ischemia) rather than during low tissue oxygen levels during ischemia. Currently, our major goal is to examine mechanisms responsible for microvascular injury during acute systemic hypoxia as well as the mechanisms involved in adaptation to chronic hypoxia. These studies are in collaboration with Dr. Norberto Gonzalez. Intravital microscopy is used to examine the microcirculation of various organs in vivo, including the gastrointestinal tract, skeletal muscle, and brain. Measurements of microvascular function include: 1) adhesive interactions of circulating leukocytes with venular endothelium, 2) vascular permeability to proteins, 3) generation of reactive oxidant species, and 4) formation of nitric oxide.

Meetings Attended:
August 2001 – Attended the 7th World Congress of Microcirculation, Sydney, Australia.
April 2002 – Attended the spring FASEB meetings held in New Orleans, Louisiana.

Committees:
Departmental:
   Member, Graduate Student Advisory Committee
   Member, Ph.D. thesis committee for Don Warn
   Member, Ph.D. thesis committee for Audrey Blacklock
   Member, Seminar Advisory Committee

KUMC:
   Member, Bioengineering Center Advisory Panel

National:
   Member, American Physiological Society Education Committee

Editorial and Grant Reviews:
   Editorial board, International Journal of Surgical Research
   ad hoc reviewer, American Journal of Physiology: Gastrointestinal and Liver Section
   ad hoc reviewer, Journal of Cardiovascular Research
   ad hoc reviewer, Gastroenterology
   ad hoc reviewer, Free Radicals in Biology and Medicine
   ad hoc reviewer, Pharmacology and Toxicology
   ad hoc reviewer, Microvascular Research

Seminars Presented:
April 15, 2002 – Presented a seminar entitled “Mechanisms responsible for microvascular responses to systemic hypoxia.” to the Department of Medicine at KUMC.
Academic Honors:
   Student Voice Award for Excellence in Teaching in Medical Physiology
   Student Voice Award for Most Outstanding Educator in the Medical Curriculum
   Investigator Research Award from KUMC, November 2001

Teaching Activities:
   PHSL 801 - Medical Physiology
       17 hours lecture
       8 hours lab
       24 hours conference sessions
       3 hours pre-exam review
   IGPBS: Module 5
       5 hours lecture
   Physiology Board Review
       8 hours review sessions
   Summer Program in Medical Physiology
       6 hours lecture
   Pre-matriculation Course
       14 hours lecture
       2 hours lab

Trainees:
   Al Casillan, M.D./Ph.D. Student
   Joe McDonald, M.D./Ph.D. Student
   Steffan Anderson – summer research program
   Brice Zogleman – summer research program
Hongyang Zhang, Ph.D., Research Assistant Professor

Summary of Research: My research focuses on functional deficits induced by SIV infection of rhesus monkeys by taking advantage of recent advances in multi-electrode array implant technology to record activities of populations of neurons from primary motor cortex over the course of disease progression. The study attempts to provide evidence of functional injury to neurons and possible pathophysiological mechanisms underlie behavioral deficits.

Meetings Attended:
   November 10-15, 2001 – Attended the 31st Annual Neuroscience meeting in San Diego, California.

Trainees:
   Fengfeng Wang - postdoctoral fellow