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ANOTHER YEAR IS GONE
ANOTHER YEAR IS COMING

It is hard to believe that another year has slipped away already. I am having so much fun at this chair's job I can hardly stand it. In reality, I do really enjoy seeing so many of our faculty continue to build their programs, especially those in the younger ranks. Looking back, a lot of good things have happened this past year.

Dr. Alan Godwin joined our faculty in January and quickly established himself as a valuable member of our department. His experience in genetics and gene targeting is a valuable addition to our overall program and other faculty have already benefitted by his expertise. Other personnel changes also occurred. Drs. Girish Shah and Mike Insana left for other academic positions and we are currently recruiting with Urology and the Kansas Cancer Institute for a faculty member working in prostate biology/cancer. The search committee is chaired by Dr. Leslie Heckert. Dr. Warren Nothnick recently joined our department with a joint appointment, and Dr. Sullivan went into phased retirement in January (although he still is here most of the time). Dr. B.C. Paria was appointed to a tenure-track position in Pediatrics earlier this month and joins Dr. Das as faculty who have moved from the research track in our department to the tenure track in a clinical department.

This has been a huge year for Dr. Dey. First he received a MERIT Award from NIH for his important work in the area of implantation, virtually guaranteeing him 10 years of grant support starting September 1. Second, he received the Higuchi Research Achievement Award, which includes $10,000. Finally, he recently was named University Distinguished Professor and joins the select group of Drs. Grantham and Greenwald with this title at KUMC.

This also was an important year for the administration. Dr. Chapman retired after many years, and Dr. Michael Welch was named Vice Chancellor for Research, KUMC and President of the Research Institute. He retains his title of Senior Associate Dean of Research and Graduate Studies, School of Medicine. There currently is a search for a Vice Chancellor of Academic Affairs and Dean of the Graduate School. Our Executive Dean, Dr. Deborah Powell, finished her second year here (a record for modern times). She is currently recruiting for several key chair positions, including Internal Medicine, Pathology and Neurology. She continues to support our faculty recruitment efforts primarily through Dr. Welch.

I also had my six-year review this past year. Interviews with both the review committee and Dr. Powell went well and it is likely that I will be around for a while longer. What I enjoyed most when gathering data for this review was the tremendous progress you, the faculty, have made during this time period. This makes me look good, but you deserve all the credit.

Research

This has been another strong year in terms of grants and publications. A total of six new grants have been awarded during this time period. This includes a Mellon Foundation grant to Drs. Terranova, Dey, Das, and Roby, NIH grants to Drs. Cheney, LeVine, and Taylor, a NIH postdoctoral award to Dr. Daggett and a NSF Japan-US travel grant to Drs. Terranova, Roby, Das and Dey.

The NIH report for FY'98 (10/01/97-9/30/98) ranked us 32nd out of 128 medical schools. The amount of money generated placed our department just ahead of physiology departments at the University of Cincinnati College of Medicine, Oregon Health Sciences Center and Johns Hopkins University School of Medicine. The total NIH dollars was
$3,532,002, with 21 research grants and 1 training grant. The KUMC Research Administration Summary Report for the Department of Molecular and Integrative Physiology shows that during FY99 principal investigators in the department received a total of $4,839,457 in extramurally-funded grants, with a direct cost of $3,425,131. This includes funds generated by both Randy Nudo and Paul Cheney, who unfortunately often are not counted in the departmental totals. These grants generated $1,414,326 in indirect costs. From what I have heard from many of you concerning news from NIH, this next year could be a real banner grant period for the department. New or competing renewal grants from NIH may be coming to Drs. Paria, Reese, Nothnick, Smith, Heckert, Terranova, Wood (also AHA), Cheney, Dey, Dai, Soares; and a Hunter’s Hope grant to Dr. LeVine.

As we have stated before, grants are only a means to an end and publications remain the best criterion to measure research productivity. A total of 90 papers were authored and published this past year by faculty, postdoctoral trainees and students in the department and 37 are in press.

A number of faculty participated in national service by being members of editorial boards, study sections or review panels. These included Drs. Cheney, Imig, Nudo, Soares, Sullivan, Terranova, Valenzeno and Wood on editorial boards, and Drs. Cheney, Gonzalez, Nudo, Terranova, Das, Paria, Heckert, and Smith on study sections or review panels.

Dr. Norberto Gonzalez received the Faculty Research Award and presented a seminar to the entire faculty during Faculty Research Day in November.

**Education**

Three students received their doctoral degrees this past year: Brian McKiernan, Jade Hyunjung Lim (honors) and Youngsoo Lee (honors). Dr. McKiernan is on the Physical Therapy Education faculty at KU. Dr. Lim is doing postdoctoral work with Dr. Richard Moss at Harvard and Dr. Lee is with Dr. Peter McKinnon at St. Judes in Memphis. We look forward to Leigh Raymond, Elena Zoubina, Gerald Call, Jeremy Chien and Don Warn finishing their degrees this year.

We finished the second year of the Interdisciplinary Graduate Program for Basic Sciences. Retention from these first two years is good. Our department has 5 students from the first two years of the program and 2 more expected from this third year class. Recruitment shows a steady increase in number of applications received; however, the quality of the students who have joined the IGPBS program as measured by GPA and GRE scores has not gone up the past two years. An interesting study found that choice of mentor was not influenced primarily by exposure to lecturers in the core curriculum, but relies more on faculty forum presentations and departmental and personal interactions.

Medical Physiology was under the expert direction of Dr. Dennis Valenzeno, who did a masterful job of keeping everything moving along smoothly. As we have come to expect, the medical students loved the small group discussions and rated our discussion topics very high in terms of clinical relevancy. Medical Neuroscience was again directed by Dr. Tom Imig, who has done this very well for many years. In response to criticisms from the students, this course will be given more time in the curriculum in the coming year. Advanced Human Physiology, a course for physical therapy students, nurse anesthesia students and students from UMKC, was directed by Dr. LeVine. Dr. Peter Smith was coordinator of Module 5 of the IGPBS course and helped maintain a significant presence of physiology faculty in that course.

The award for Excellence in Teaching in Medical Physiology went to Dr. John Wood. This award is given by Student Voice.
Finances and Facilities

During this past year the department received $68,780 in Research Overhead funds and $64,274 in the Excellence Account from salary savings. We also received about $50,000 in Endowment accounts and $40,000 from the Dean’s Office as part of Dr. Godwin’s startup package. Expenditures included laboratory renovations, ES laboratory equipping and staffing, supplements for office staff salaries, faculty salaries, startup funds for new faculty, and service contracts for equipment. Similar expenses are expected this year.

In order to prepare for an evaluation of faculty productivity a departmental committee designed a faculty self-evaluation form which was approved by the department. This was completed this spring by all faculty, and used for discussions between each faculty member and me. A summary of each was turned into the Dean’s Office and I met with Dr. Powell to discuss them. This evaluation in turn was used to determine salary raises for FY00. This process will continue in the future.

The School of Medicine also is embarking on a program known as mission-based budgeting or management. As part of this development, outside consultants (ECG Consultants) are using our department on a trial basis to develop the system for measuring departmental productivity and determining whether the current sources of funds adequately and accurately pay for this productivity. I serve on the Compensation and Finance Committee that is involved in this project which meets twice monthly.

Staff

Another year has gone by and we still have all four of our support staff with us, for which I am very grateful. Unfortunately the university is doing their best to drive the office staff away with the newly instituted Peoplesoft program for purchasing, personnel and payroll. As you are aware, the problems with this new software are enormous and only time will tell whether it will be better in the end. In the meantime, we all must have patience. Please be especially supportive of Linda, Joella and Linda during this stressful time.

Future

I am really excited about this next year. I see numerous new grants on the horizon. Many of our faculty have remained very active in both research and teaching. We are not standing still, but moving in research areas that are part of the burning edge. However, I also see clouds on the horizon - mainly how do we continue to fulfill our very important obligation to teach medical students integrative physiology as our senior faculty retire. We all will have to look within ourselves to find the answers to this.

In many ways this has been a magical year for me. One year ago I was still in chemotherapy, extremely fatigued, and not very optimistic about my future. However, this past year has seen a return to full strength and a new awareness of how precious each day is for my family and me. We were able to witness the marriage of our son Jason to Tara in Colorado this June, which became our main goal when they became engaged in the spring of 1998. We have done more travelling and will continue to do so in the future. I continue to covet your thoughts and prayers as we continue to re-integrate activities into our daily life.
a. Faculty

Primary Appointment in Physiology
James L. Voogt, Ph.D., Professor and Chairman
Paul D. Cheney, Ph.D., Professor (Director of Ralph L. Smith Center for Mental Retardation)
Richard L. Clancy, Ph.D., Professor
Sudhansu K. Dey, Ph.D., Professor
Norberto C. Gonzalez, M.D., 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., Associate Professor (Assoc. Director of Research, Center on Aging)
Peter G. Smith, Ph.D., Professor
Michael J. Soares, Ph.D., Professor (Director, NIH Training Grant)
Lawrence P. Sullivan, Ph.D., Professor
Merrill Tarr, Ph.D., Professor
Joseph S. Tash, Ph.D., Associate Professor
Paul F. Terranova, Ph.D., Professor (Director of Center for Reproductive Sciences)
Dennis P. Valenzeno, Ph.D., Associate Professor
Alan R. Godwin, Ph.D., Assistant Professor
Leslie L. Heckert, Ph.D., Assistant Professor
Michael W. Wolfe, Ph.D., Assistant Professor
John G. Wood, Ph.D., Assistant Professor

Emeritus
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
B. C. Paria, Ph.D., Research Assistant Professor
Christopher C. Taylor, Ph.D., Research Assistant Professor

Joint Appointment in Physiology
Sanjoy K. Das, Ph.D., Research Assistant Professor
Michael Insana, Ph.D., Associate Professor (Radiology)
Donald C. Johnson, Ph.D., Professor Emeritus (Ob-Gyn)
Jeffrey Radel, Ph.D., Assistant Professor (Occupational Therapy Ed.)
Janet Pierce, D.S.N., Assistant Professor (School of Nursing)
Jeffrey Reese, M.D., Assistant Professor (Pediatrics)
## DEPARTMENT ROSTER (continued)

### b. Graduate Students

<table>
<thead>
<tr>
<th>Name</th>
<th>Prelims</th>
<th>Candidate for</th>
<th>Degree Requirements Fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerald Call</td>
<td></td>
<td>Ph.D.</td>
<td></td>
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<tr>
<td>Jeremy Chien</td>
<td>9/98</td>
<td>Ph.D.</td>
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<tr>
<td>Kathleen Friel</td>
<td></td>
<td>Ph.D.</td>
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<tr>
<td>Kyle Henderson</td>
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<td>Ph.D.</td>
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<tr>
<td>Yue-Ping Hou</td>
<td></td>
<td>M.S.</td>
<td>7/98</td>
</tr>
<tr>
<td>Kelly Humpherys</td>
<td>1/96</td>
<td>M.D./M.S.</td>
<td></td>
</tr>
<tr>
<td>Htet Khant</td>
<td></td>
<td>Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Young Soo Lee</td>
<td>12/97</td>
<td>Ph.D.</td>
<td>4/99</td>
</tr>
<tr>
<td>Jade Hyunjung Lim</td>
<td>10/97</td>
<td>Ph.D.</td>
<td>10/98</td>
</tr>
<tr>
<td>Brian McKiernan</td>
<td>4/93</td>
<td>Ph.D.</td>
<td>7/98</td>
</tr>
<tr>
<td>Michael Park</td>
<td></td>
<td>M.D./Ph.D.</td>
<td>(Univ. Of Texas)</td>
</tr>
<tr>
<td>Erik Plautz</td>
<td></td>
<td>Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Leigh Raymond</td>
<td>12/97</td>
<td>Ph.D.</td>
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<tr>
<td>Haengseok Song</td>
<td></td>
<td>Ph.D.</td>
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<tr>
<td>Jena Steinle</td>
<td></td>
<td>Ph.D.</td>
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<tr>
<td>Theingi Thway</td>
<td></td>
<td>Ph.D.</td>
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<tr>
<td>James Warn, Jr.</td>
<td></td>
<td>Ph.D.</td>
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<tr>
<td>Elena Zoubina</td>
<td>7/98</td>
<td>Ph.D.</td>
<td></td>
</tr>
</tbody>
</table>

### c. Postdoctoral Fellows

- Rupasri Ain
- Dora Agbas
- Beth Albrecht
- Scott Barbay
- Melissa Daggett
- Shawn Frost
- Wohaib Hasan
- Jyotsnabaran Halder
- Jeffrey Kleim
- Gregory Knipp
- Alma Levy
- Xuelin Li
- Tatiana Pedchenko
- Vadim Pedchenko
- Brian Petroff
- Margaret Petroff
- Xiu-jun Pi
- Frank Samson
- Deok-Soo Son
- Danhua Wang
- Charles Xing
- Shu-ping Yang

### d. Temporary Students

- Paul Beebe
- Al Cassilian
- Hughes Danis
- Steven Delia
- Fabrice Favret
- Archie Heddings
- Thomas Helling
- James Homan
- Shane Kim
- Robert Kraft
- Kaori Mizuyachi
- Marine Neveaux
- Francis Orzulak
- Samia Quadri
- Andy Rahardia
- Tandace Shaffer
- Kevin Shields
- Jesica Sperry
- Whitney Smalley
e. Research Staff

Julie Allen - Research Assistant
Cindy Bailey - Research Assistant
Abderraouf Belhaj-Saif - Research Associate
Geracimo Bracho - Research Associate
Illya Bronshteyn - Research Assistant
Belinda Chapman - Research Assistant
Jiang-kai Chen - Research Assistant
Judy Dummore - Senior Research Associate
Jason Eppler - Research Technician
Qin Fan - Research Associate
Jennifer Helber - Research Assistant
Jennifer Johnson - Research Assistant
Mary Landis - Research Assistant
Diane Larson - Research Assistant
Darlene Limback - Research Associate
Bing Liu - Research Assistant
Manxi Liu - Research Assistant
Lu Lu - Research Assistant
Wen-ge Ma - Research Assistant
Joanne Marcario - Research Associate
Tracy Newman - Research Assistant
Judy Pace - Senior Research Associate
Daren Rice - Research Assistant
Eko Setiawan - Programmer II
Karen Smith - Research Assistant
Jeffrey Sweetwood - Student Lab Assistant
Anjna Tahiliani - Student Lab Assistant
Haiying Wang - Research Assistant
Jue Wang - Research Associate
Renjie Zhang - Research Associate
Xuemei Zhao - Research Assistant
Ying Zhu - Research Assistant

f. Support Staff

Linda Carr - Administrative Assistant
Ted Gleason - Electronics Technician II
Joella Martinez - Office Specialist
Robin Larsen - Administrative Assistant (Reproductive Sciences Center)
Linda Simons - Office Specialist
Gerald Call was awarded the Sutton scholarship in the amount of $6722 for research in genetics. He was also awarded a $200 travel scholarship from the Center for Reproductive Sciences to attend a national conference. He was a member of the KUMC Graduate Council and the physiology department Graduate Student Affairs Committee as a student representative. He was co-author on an abstract entitled Repression of early growth response protein 1 (Egr1) and steroidogenic factor-1 (SF-1) transactivation of the luteinizing hormone-subunit promoter by NGFI-A-binding protein (Nab) and DAX-1 which was presented at a NIDDK workshop: Co-Activators and co-repressors in gene expression. Gerald also co-authored a publication entitled Early growth response protein 1 binds to the luteinizing hormone-promoter and mediates gonadotropin-releasing hormone-stimulated gene expression published in Molecular Endocrinology (1999) 13:752-763. He gave a seminar to the Zoology Department of Brigham Young University entitled Gonadotropin-releasing hormone: Insights into pulsatile signal transduction.

Jeremy Chien was coauthor on the following publications:

Abstracts:

Kathleen Friel passed her comprehensive exam in September 1998. She presented the poster "Restraint of the unimpaired hand is not sufficient to retain spared primary motor hand representation after focal cortical injury" at the 28th Annual Meeting for the Society for Neuroscience. She received a Graduate Student Travel Scholarship to attend that meeting. She also presented "Comparison of the Effects of Different Rehabilitative Strategies on Reorganization of Motor Cortex after Cortical Microlesions in Primates" in the 5th Internet World Congress on Biomedical Sciences (http://www.mcmaster.ca/inahis98/schallert/friel0817/two.html). She published "Recovery of Motor Function after Cortical Injury in Primates: Compensatory Movement Patterns used during Rehabilitation" in Somatosensory and Motor Research 15(3):173-189 (1998).
Kyle Henderson was co-author for a presentation made by Dr. González at the Proceedings of the 3rd World Congress in Mountain Medicine and High Altitude Physiology held in Matsumoto, Japan entitled "Hemoglobin O₂ Affinity and Exercise Performance at Altitude". He was co-author on a paper titled "Effect of Increased O₂ Affinity of Hemoglobin on O₂ Transport and Uptake in Normoxic and Hypoxic Exercise" published in the Journal of Applied Physiology. Kyle presented a paper entitled "Lowering Hemoglobin P50 Increases Convective O₂ Delivery but Lowers O₂ Extraction in Hypoxic Exercise" at the 1999 Student Research Forum at KUMC and was first author of a presentation of the same title at the FASEB meeting in Washington, D.C. for which he received a Graduate Student Travel Scholarship to attend. Kyle is also currently serving as a tutor for Medical Physiology and Physiology 822.

Youngsoo Lee served as a volunteer Korean interpreter for Korean patients at KUMC last three years. He was awarded a Graduate Student Travel Scholarship to attend the 28th Annual meeting of the Society for Neuroscience held in Los Angeles, CA, and presented a poster entitled "Trophoblast cell signals regulating prolactin secretion and Fos expression in the arcuate nucleus during pregnancy in the rat" at the meeting. He gave a departmental seminar entitled "Feedback effects of placental lactogens on prolactin secretion during pregnancy in the rat" and presented the same seminar to the Department of Genetics at St. Jude Children’s Research Hospital. In April, 1999, he successfully defended his Ph.D. dissertation with honors. He is currently at St. Jude Children’s Research Hospital in Memphis, Tennessee, studying neuronal apoptosis during CNS development. He was first author and co-author on the following publications and abstracts:

**Publications:**
5. Shu-Ping Yang, Youngsoo Lee and James L. Voogt: Involvement of beta-endorphin in modulation of prolactin secretion in response to mating. Submitted

**Abstracts:**
1. Y. Lee, S-P. Yang, M. Soares and J.L. Voogt. Distribution of prolactin releasing peptide mna in the brain. the 29th meeting of the Society of Neuroscience
Michael Park gave a computer presentation entitled "Mapping Primary Motor Cortex Output to Twenty-Four Muscles of the Forelimb in Rhesus Macaques" at the 27th annual Student Research Forum at KUMC. He presented a departmental seminar of the same title on May 24, 1999. Michael was awarded a K.U. Medical Center Bookstore Academic & Community Achievement Award in the amount of $500 for his academic achievement and community involvement. Michael currently serves as the president of the M.D./Ph.D. Student Association.

Jena Steinle is the first author on a submitted manuscript entitled "Regional Regulation of Choroidal Blood Flow by Autonomic Innervation in the Rat". She gave a slide presentation at the 1999 KUMC Student Research Forum entitled "Autonomic Nervous System Regulation of Choroidal Blood Flow". Jena also served on the Kirmayer Fitness Center Steering Committee.

Elena Zoubina was first author on a paper with Qin Fan and Dr. Peter Smith published in the Journal of Comparative Neurology entitled "Variations in Uterine Innervation During the Estrus Cycle in Rat". She successfully passed her comprehensive exam in July 1998. During Fall semester she served as a facilitator for Physiology Study Group Sessions of the Health Career Pathway Programs.
COURSES TAUGHT

Major Service Courses


Departmental Graduate Courses

803 - General & Electrophysiology. 1 credit. Fall 1998. Taught by Dr. Tarr. Enrollment 2.


DEPARTMENT SEMINARS

The Departmental Seminar program was directed by Dr. Merrill Tarr. Forty-seven speakers made presentations, ten 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.

7/2/98 Brian McKiernan
Department of Molecular and Integrative Physiology, KUMC
Corticomotoneuronal Representation of Functional Muscle Synergies in the Forelimb

7/24/98 Brian Petroff, D.V.M., Ph.D.
Department of Animal Sciences
Ohio State University
Regulation of Ovarian and Uterine Function by Prostaglandin F_2α

8/21/98 Peter W. Nathanielsz, M.D., Ph.D., Sc.D.
Lab. for Pregnancy & Newborn Research
College of Veterinary Medicine
Cornell University
Antenatal Glucocorticoids: Can you have too much of a good thing?

8/21/98 Beth A. Albrecht, Ph.D.
Department of Clinical Sciences
Cornell University
Luteotropic Effects of Equine Chorionic Gonadotropin

8/25/98 Kellie A. Fecteau, Ph.D.
Department of Animal Science
University of Tennessee
Fetal Serotonin as a Key for Placental Detachment and Delivery

9/16/98 Barbara Foster, Ph.D.
Department of Cell Biology
Baylor College of Medicine
Deregulation of the FGF Axis in Prostate Cancer Using Transgenic Models

9/21/98 Gregory Reed, Ph.D.
Dept. of Pharmacology, Toxicology and Therapeutics, KUMC
Estrogen Carcinogenicity: A Role for Aneuploidy?

9/22/98 Paul F. Terranova, Ph.D.
Department of Molecular and Integrative Physiology, KUMC
Src Kinase and Ovarian Function

9/28/98 Michael W. Wolfe, Ph.D.
Department of Molecular and Integrative Physiology, KUMC
Gonadotropin Subunit Expression: New Insights into Why GnRH Must be Secreted in a Pulsatile Manner

10/05/98 Sudhansu K. Dey, Ph.D.
Department of Molecular and Integrative Physiology, KUMC
Bidirectional Effects of Estrogen on Implantation
10/12/98 Joseph S. Tash, Ph.D. Department of Molecular and Integrative Physiology, KUMC Identification of FP130 as a Critical Axonemal Component of Cell Signalling in Regulation of Flagellar Motility

10/19/98 Dianne Durham, Ph.D. Department of Otolaryngology KUMC Peripheral and Central Auditory System Plasticity

10/20/98 Hyunjung Lim Department of Molecular and Integrative Physiology, KUMC Molecular Signaling in Embryo-Uterine Interactions During Implantation

10/27/98 Shu-ping Yang, Ph.D. Department of Molecular and Integrative Physiology, KUMC Noradrenergic Activity During the Preovulatory LH Surge in Rabbits

11/2/98 Leslie L. Heckert, Ph.D. Department of Molecular and Integrative Physiology, KUMC Transcriptional Regulation of the FSH Receptor in Testicular Sertoli Cells

11/9/98 Glen Andrews, Ph.D. Department of Biochemistry and Molecular Biology, KUMC Metallothioneins and Zinc Homeostasis

11/16/98 Michael J. Soares, Ph.D. Department of Molecular and Integrative Physiology, KUMC Uteroplacental Signals in the Establishment of Pregnancy

11/23/98 Thomas J. Imig, Ph.D. Department of Molecular and Integrative Physiology, KUMC Monaural and Binaural Mechanisms of Azimuth Sensitivity in the Cat’s Cochlear Nucleus

11/24/98 Christopher Taylor, Ph.D. Department of Molecular and Integrative Physiology, KUMC PDGF Signaling Cascades in Thecal Cells

11/30/98 Lisa Freeman, D.V.M., Ph.D. Department of Anatomy & Physiology Kansas State University Molecular Basis and Functional Role of K+ Channels in Ovarian Granulosa Cells

12/7/98 Paul Terranova, Ph.D. Department of Molecular and Integrative Physiology, KUMC Experimental Models of Ovarian Cancer

12/8/98 Joan Hunt, Ph.D. Department of Anatomy & Cell Biology, KUMC Soluble HLA-G and Maternal-Fetal Immunity
12/14/98  Wilford Arnold, Ph.D.  
Department of Biochemistry and  
Molecular Biology, KUMC  
Xanthopsia and Van Gogh’s Yellow  
Palette

1/11/99  Norberto Gonzalez, M.D.  
Department of Molecular and  
Integrative Physiology, KUMC  
Systemic Oxygen Transport in  
Hypoxia: Effects of Acclimatization

1/25/99  Ronald T. Borchardt, Ph.D.  
Dept. of Pharmaceutical Chemistry  
University of Kansas, Lawrence  
Attempts to Fool Mother Nature:  
Strategies to Orally Deliver  
Therapeutic Peptides and  
Peptidomimetics

2/1/99  Michael Welch, Ph.D.  
Office of Graduate Studies and  
Research, KUMC  
Functional MRI Studies of Migraine  
Aura: Indirect Evidence for  
‘Spreading Depression of Leao’ in  
Human Brain

2/8/99  Radhakris Padmanabhan, Ph.D.  
Department of Biochemistry and  
Molecular Biology, KUMC  
Molecular Biology od Dengue Virus:  
A Human Pathogen of Global  
Significance

2/9/99  Gregory Knipp, Ph.D.  
Department of Molecular and  
Integrative Physiology, KUMC  
Fatty Acid Transport Regulatory  
Proteins in the Developing Rat  
Placenta and in Trophoblast Cell  
Culture

2/15/99  Dennis P. Valenzeno, Ph.D.  
Department of Molecular and  
Integrative Physiology, KUMC  
Cell Calcium as a Trigger for Cell  
Death

2/22/99  Youngsoo Lee  
Department of Molecular and  
Integrative Physiology, KUMC  
Feedback Effects of Placental  
Lactogens on Prolactin Secretion  
During Pregnancy in the Rat

3/1/99  Alan Poisner, M.D.  
Dept. of Pharmacology, Toxicology  
and Therapeutics, KUMC  
Neurotoxin and Monoamine Cation  
Transporters and Placental Toxicity

3/9/99  William Kinsey, Ph.D.  
Department of Anatomy and Cell  
Biology, KUMC  
Regulation of Phospholipase-C in  
the Fertilized Sea Urchin Egg

3/10/99  William T. Newsome, Ph.D.  
Department of Neurobiology  
Stanford Univ. School of Medicine  
Making Decisions: The Brain’s Link  
Between Perception and Action
3/15/99  Richard Clancy, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Assessing and Treating Diaphragm Fatigue

3/22/99  Joanne Marcario, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Movement, Memory and Motivation: Behavioral Impairment in a Model of HIV-1 Infection

3/23/99  Danhua Wang, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Decidual Prolactin Related Protein (dPRP), a Regulator of Intrauterine Immunological Milieu?

3/29/99  Walter Imagawa, Ph.D.  
Department of Molecular & Integrative Physiology, KUMC  
Compartmentalization of Hormone and Growth Factor Regulation in Mammary Development

4/5/99  Alan R. Godwin, Ph.D.  
Department of Molecular & Integrative Physiology, KUMC  
Hoxc13: Its Involvement in Hair Follicle Development and the Hair Cycle

4/12/99  Victor D. Vacquier, Ph.D.  
Center for Marine Biotechnology and Biomedicine  
University of California, San Diego  
Biochemistry and Evolution of Species Specific Fertilization

4/19/99  Keith L. Parker, Ph.D.  
Department of Internal Medicine and Pharmacology  
Univ. of Texas Southwestern Med. Ctr.  
Gene Knockout Models of Steroidogenesis

4/23/99  YoungSoo Lee  
Department of Molecular and Integrative Physiology, KUMC  
Neuronal Mechanism Regulating Prolactin Secretion During Pregnancy

4/26/99  Steven M. LeVine, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Mechanisms of Demyelination

4/27/99  B. C. Paria, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Ligand-Receptor Signaling with Histamine in Implantation

5/11/99  Jeffrey Reese, Ph.D.  
Department of Pediatrics, KUMC  
The Impact of COX-1 Deficiency on Reproduction in the Mouse

5/17/99  John Wood, Ph.D.  
Department of Molecular and Integrative Physiology, KUMC  
Hypoxia and Microcirculation
5/24/99  Michael Park  
Department of Molecular and Integrative Physiology, KUMC  

5/25/99  Brian Petroff, D.V.M.  
Department of Molecular and Integrative Physiology, KUMC  

Mapping Primary Motor Cortex Output to Twenty-Four Muscles of the Forelimb in Rhesus Macaques  

Combined Effects of Dioxins and Exogenous Estrogen on the Female Rat
a. Manuscripts published


b. Manuscripts in press


Imagawa, W., Yang, J, Guzman, R., Nandi, S. Collagen gel method for the primary culture of mouse mammary epithelium. Journal of Mammary Gland Biology and Neoplasia,


Plautz EJ, Milliken GW and Nudo, RJ Effects of Repetitive Motor Training on Movement Representations in Adult Squirrel Monkeys: Role of Use Versus Learning. Neurobiology of Learning and Memory.


Tan J, Paria BC, Dey SK and Das SK Differential uterine expression of estrogen and progesterone receptors correlates with uterine preparation for implantation and decidualization in the mouse. Endocrinology

c. Abstracts


Pedchenko, TV and LeVine, SM (1999) IL-6 deficiency enhances pathology in twitcher mice. American Society of Neurochemistry, 30th annual meeting, New Orleans, LA, March 13-17, abstract S70C.


Son D-S, Roby KF, Rozman KK, and Terranova PF. Estradiol enhances the effect of 2,3,7,8 tetrachlorodibenzo-p-dioxin on 7-ethoxyresofugin-o-deethylase (EROD) activity in a mouse ovarian epithelial cancer cell line. 38th Annual Meeting of the Society of Toxicology, New Orleans, LA, March 1999.


Terranova PF, Roby KF, and Son D-S. Alterations of events related to ovarian function in TNF receptor type 1 (p55) knockout mice. 12th Ovarian Workshop, August 1998, Houston, Texas.
RESEARCH SUPPORT

Grant awards, direct and indirect, that were received during FY '99 for principal investigators in the department totaled $4,889,457.


Spinal Cord Research Foundation. Mechanisms of neural compensation for motor disabilities following lesions of the corticospinal system. Total costs: $62,201; Direct costs: $58,270; Indirect costs $1,680. (Research Fellowship grant for Dr. Belhaj-Saif).

NIH-NICHD. Program for a research center in mental retardation. P30 Center Grant. Co-director with Dr. Stephen Schroeder (P.I.). Total $1,027,886; Direct costs $706,473; Indirect costs $321,413.


Department of Defense. Effects of Dopamine on Diaphragm Fatigue. Co-Investigator. (Principal Investigator - Janet Pierce). Direct costs $70,166; Indirect costs $29,733.


NIH/NICHD. Identification of bHLH proteins in Sertoli cells. Co-Investigator; Paul Terranova P.I. April 1, 1998 through March 31, 1900. Direct costs $25,273/year; Indirect costs $12,637/year. Total Award $75,000.

W.T. Imagawa: US Army Breast Cancer Research Program. Mechanisms of Altered Control of Prolactin by Cyclic AMP/Protein Kinase, A During Mammary Tumor Progression. Direct costs $67,000; Indirect costs $33,000.


S. M. LeVine: NIH - The Role of Iron in CNS Demyelinating Diseases. Principal Investigator. Direct costs $61,368; Indirect costs $24,130.

NIH - Pathogenic Mechanisms of Leukodystrophies. Principal Investigator. $86,128 direct costs; $38,025 Indirect costs.


B.C. Paria (continued):

NICHD - Center for Reproductive Sciences. Associate Director of Transgenic Core. Principal Investigator Paul Terranova. Direct Costs: $ 271,252/year.

KUMC Research Institute - Histamine Ligand-receptor Signaling in Implantation. Total award $25,000.


Andrew P. Mellon Foundation - Center for Reproductive Sciences. April 1, 1999 - March 31, 2000. $50,000 direct costs only.


ACTIVITIES OF STAFF

Paul D. Cheney, Ph.D., Professor (Director, MRRC)

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, neuroimaging and neuroanatomical methods.

Meetings Attended:
October 16-17, 1998 - Attended the University of Kansas School of Medicine annual faculty retreat held in Wichita, KS.
November 5-7, 1998 - Attended the symposium on Peripheral and Spinal Mechanisms in the Neural Control of Movement held in Tucson, Arizona.
November 8-12, 1998 - Attended the Society for Neuroscience annual meeting held in Los Angeles, California.
April 17, 1999 - Attended the Kansas Junior Academy of Science Judging held at Trailridge Middle School in Lenexa, KS.
June 6-10, 1999 - Attended the Gordon Conference on Neurovirology held at Colby-Sawyer College in New London, New Hampshire.
June 10-11, 1999 - Attended the Spring Mental Retardation Research Center Directors Meeting held in Birmingham, Alabama.

Committees:
Departmental
Member, Dept. of Physiology Promotions and Tenure Committee
Member, Dept. of Physiology, Graduate Student Admissions Committee
Member, Don Warn Dissertation Committee
Member, Kathleen Friel Dissertation Committee
Member, Jena Steinle Dissertation Committee
Member, Leigh Raymond Dissertation Committee
Member, Michael Park Dissertation Committee

University
Member, Center on Aging Internal Advisory Committee
Mentor, Center on Aging Pepper Center Grant from NIA
Member, Institutional Grant Proposal Committee seeking funds for LAR building construction.
Member, Children’s Development Unit Advisory Committee
Member, Neurology Chair Search Committee
Member, School of Medicine Faculty Council
Member, Life Span Institute Support Committee
Co-organizer with Eli Michaelis of a proposal for a doctoral degree granting cross-campus training program in neuroscience.
Dr. Cheney (continued)

Member, School of Medicine Strategic Planning Committee for Neuroscience
Member, Kansas MRRC Internal Scientific Advisory Committee
Member, Kansas MRRC Statistics Advisory Board
Judge, Student Research Forum, April 7, 1999

External
Organizer, Grass Traveling Neuroscientist Lectureship
President, Kansas City Chapter, Society for Neuroscience.
Member, Midwest Research Institute Liaison Committee
Mentor for Dr. Pat Pohl’s NIH-K01 Award on "Motor Learning on Individuals
Post-Stroke"
Member, NIH Neuroscience Study Section, February 15-17 and June 23-25,
1999 in Washington, D.C.

Editorial and Grant Reviews:
Associate Editor, Neuroscience Letters
Ad hoc reviewer Journal of Neurophysiology
Ad hoc reviewer Journal of Neuroscience
Ad hoc reviewer Journal of Neurovirology
Ad hoc reviewer Somatosensory and Motor Research
Ad hoc reviewer Journal of Experimental Brain Research
Ad hoc reviewer Mental Retardation and Developmental Disabilities Reviews
Ad hoc reviewer Nature
Ad hoc reviewer PNAS

Teaching Activities:
Medical Neuroscience
  6 lecture hours
Neurobiology of Mental Retardation and Developmental Disabilities
  3 lecture hours (Lawrence Campus)
PHSL 784 - Faculty Research Program
  1 lecture hour
IGP Module 6
  3 lecture hours
Director, PHSL 846 - Advanced Neuroscience
  10 lecture hours

Trainees:
  Joanne Marcario - Postdoctoral Fellow
  Brian McKiernan - graduate student
  Leigh Raymond - graduate student
  Michael Park - M.D./Ph.D. student
Richard L. Clancy, Ph.D., Professor

Summary of Research: My research interest is cardiopulmonary physiology. Currently we are evaluating the efficacy of sympathomimetic agents in attenuating diaphragm fatigue resulting from increased inspiratory resistance. The other research program involves assessing how high altitude hypoxia affects exercise capability.

Meetings Attended:
April 17-21, 1999 - Attended Experimental Biology meeting held in Washington, DC

Committees:
Member, Promotion and Tenure Committee
Chairman, IACUC External Affairs Committee

Reviews:
Journal of Applied Physiology - ad hoc

Seminars Presented:
March 15, 1999 - Presented a departmental seminar entitled "Assessing and Treating Diaphragm Fatigue"

Teaching Activities:
Medical Physiology 800/801
11 hours lecture - cardiovascular
34 hours - conference & laboratory sessions
Physiology 802 - Advanced Human Physiology
1 hour conference
Prematriculation Course (Minority Students)
6 hours lecture
4 hours laboratory & computer exercise
USMLE Review
2 hours lecture

Trainees:
Nancy Smith-Blair - School of Nursing Ph.D. student, Co-Chair
Robert Kraft - Summer Medical Student
Kyle Henderson - Graduate Student
Sudhansu K. Dey, Ph.D., Professor

Summary of Research: Molecular and cellular aspects of implantation: (1) Studies on the roles of growth factors and prostaglandins in embryo-uterine interactions during implantation and (2) studies on the roles of cannabinoid-like molecules in preimplantation embryo development and implantation.

Meetings Attended:
July 28 - August 1, 1998 - attended the International meeting on COX-2 held in Hawaii as an invited speaker.
September 10-11, 1998 - attended the Southeast Pharmacology Meeting held at Vanderbilt University in Nashville, Tennessee as an invited speaker.
October 22, 1998 - attended the Video-tape on panel discussion: Is COX-2 a physiologic necessity? sponsored by Boehringer Ingellheim Pharmaceuticals held in Boston, MA
October 23, 1998 - attended the National Toxicological Meeting held in Detroit, Michigan as an invited speaker.
March 16-18, 1999 - attended the NICHD cooperative grant meeting held at University of North Carolina in Chapel Hill, NC.
June 30 - July 2, 1999 - attended the Frontiers in Reproduction Symposium sponsored by NICHD held in Woodshole, MA

Committees:
Departmental:
Member, Departmental Promotion and Tenure Committee
Member, Departmental Retreat Committee
Member, Ph.D. Committee, Elena Zoubina, Physiology Graduate Student
Member, Ph.D. Committee, Theingi Thway, Physiology Graduate Student
Member, Ph.D. Committee, Gerald Call, Physiology Graduate Student

KUMC:
Member, Internal Medicine Chair Search Committee
Member, Microbiology Chair Search Committee
Member, KUMC Research Strategic Plan
Member, Howard Hughes Selection Committee

National:
Member, NIH Fellowship Study Section, July 9-10, 1998
Organizer & Chair, SSR minisymposium on: Recent Developments in Preimplantation Biology to be held at Washington State University, Pullman, WA, July 31-August 2, 1999

Editorial and Grant Reviews:
ad hoc reviewer for:
Biology of Reproduction
Journal Reproduction and Fertility
Development
Endocrinology
Molecular Human Reproduction
Seminars Presented:
March 20-21, 1999 - Invited speaker, Vanderbilt University, Nashville, Tennessee

Honors:
Invited speaker, University of Illinois, Urbana, Champaign, IL, September 21-23.
Invited speaker, Recent developments in implantation Physiology, NICHD/NIH, Bethesda, MD, November 15-16, 1999.

Teaching Activities:
Medical Physiology
4 hours lecture - GI Physiology
Reproductive Physiology Course
2 hours lecture
IGPBS Graduate Program
1 lecture hour

Trainees:
Rupasri Ain, Ph.D. - Postdoctoral Fellow
J. B. Halder, Ph.D. - Postdoctoral Fellow
Anne Robinson, ENT - Resident
Elise Jaeckel, ENT - Resident
Beverly Tong, Ob/Gyn - Resident
Hyunjung Lim - Graduate Student
Jianli Guo - Graduate Student
Hang Sook Song - Graduate Student
Marine Neveaux - student, INSERM, France
Andy Rahardja - high school student, summer 1999
Whitney Smalley - undergraduate student, summer 1999
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. Major emphasis will be directed toward determining which genes are turned on and off by Hoxc12 and Hoxc13. Hoxc13 is an ideal gene with which to start these endeavors, as it is one of the first Hox genes with good potential candidates for downstream targets: the hair keratin genes and the hair keratin associated genes.

Meetings Attended:
June 13-17, 1999 - attended the 58th annual meeting of the Society for Developmental Biology held at the University of Virginia in Charlottesville, VA.

Committees:
Departmental
Member, Search Committee for Prostate Cancer Researcher

Editorial and Grant Reviews:
ad hoc reviewer Proc. Nat. Acad. Sci. USA

Seminars Presented:
April 5, 1999 - Presented a departmental seminar entitled "Hoxc13: Its Involvement in Hair Follicle Development and the Hair Cycle.
April 30, 1999 - Presented a seminar entitled "Naked mice: Hair today, gone tomorrow" to the Department of Biochemistry and Molecular Biology, KUMC.
June 18, 1999 - Presented a seminar entitled "Hoxc13 and Naked mice" to the Developmental Biology group at Vanderbilt University Medical Center, Nashville, Tennessee.
Summary of Research: The general goal of my research is the study of the mechanisms of adaptation to environmental hypoxia in the intact organism. For the past few years, my studies have centered on the effect of acute and chronic hypoxia on the transport of \( O_2 \) from the atmosphere to the cell. A preparation developed in my laboratory has made it possible to determine the mechanisms by which hypoxia influences each of the links of the \( O_2 \) transport system. While these studies are continuing, new studies are being carried out in collaboration with Dr. John Wood, on the effect of hypoxia on vascular endothelial function.

Meetings Attended:
- March 25-28, 1999 - Attended the meeting of the Japanese Society of Respiratory Medicine held in Yokohama, Japan.
- April 17-21, 1998 - Attended the Experimental Biology 99 meetings held in Washington, DC.

Committees:
- Departmental Chairman, Promotions and Tenure Committee
- KUMC Member, M.D./Ph.D. Program Committee
- National Member, Respiratory and Applied Physiology Study Section, NIH

Editorial and Grant Reviews:
- ad hoc reviewer Journal of Applied Physiology

Seminars Presented:

Honors:
- November 13, 1998 - Investigator Research Award, KUMC

Teaching Activities:
- Medical Physiology
  - 10 lectures - Respiratory Physiology
  - 1 review session - Respiratory Physiology
  - 10 conference sessions
- National Board Review
  - 2 hour lecture - Physiology of Respiration
- Integrated Graduate Program for Basic Sciences
  - 4 lectures - Physiology of Respiration
Trainees:
  Kyle Henderson, Graduate student
  Fabrice Favret, ARPE, Univ. Paris, France - Visiting Grad. Student, March-May, 1999
  Thomas Helling, Summer Medical Student
Gilbert S. Greenwald, Ph.D., Distinguished Professor Emeritus

Summary of Research: Reproductive Physiology emphasizing factors regulating the growth and regression of follicular and luteal development.

Meetings Attended:

Editorial and Grant Reviews:
Biology of Reproduction
Journal of Reproduction and Fertility
Human Reproduction
Molecular Reproduction and Development
American J. Physiology - Endocrinology and Metabolism
National Science Foundation
CUNY - Lehman College

Seminars Presented:
September 27, 1998 - Gave the Summary presentation at the Ovulation Symposium held in Salt Lake City, Utah
Leslie L. Heckert, Ph.D., Assistant Professor

Summary of Research: Our research focuses on understanding the transcriptional and cell-signaling processes that are 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, and steroidogenic factor 1 (SF1), an orphan nuclear receptor required for gonad and adrenal formation. Through the characterization of these genes, we hope to identify key regulatory proteins that are 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. Studies are also underway to identify members of the helix-loop-helix family that are expressed in Sertoli cells and developing gonads. Proteins in this family are typically transcriptional regulators involved in cell proliferation and differentiation. We are currently investigating the embryonic and postnatal expression profiles of a novel member of this family using in situ hybridization and RNase protection assays.

Meetings attended:
April 7-10, 1999 - Attended the XVth Testis Workshop held in Louisville, KY

Committees:
Departmental
Chair, Faculty Search Committee for prostate cancer researcher
Member, Ph.D. Thesis Committee for Gerald Call
Member, Ph.D. Thesis Committee for Theingi Thway
Member, Evaluation Committee for Dr. Barbara Foster for position vacated by Girish Shah
Member, Committee to Develop Faculty Evaluation Form

University
Member, Ph.D. Thesis Committee for Brook Sanger, Anatomy and Cell Biology Graduate Student
Member, Ph.D. Thesis Committee for Suzanna Harju, Graduate Student, Biochemistry
Member, Research Committee Task Force
Member, Transgenic Steering Committee
Member, Strategic Planning Committee
Member, Travel Committee
Member, Ph.D. Thesis Committee for Lisa J. Martin, Graduate Student in Anthropology, KU Lawrence.

Editorial and Grant Reviews:
ad hoc reviewer for Molecular Endocrinology
ad hoc reviewer on BCE study section February 1999
ad hoc reviewer for The Pilot & Feasibility Program, Diabetes and Endocrinology Research Center, The University of Iowa, May 1999
Seminars Presented:
  October 26, 1998 - Presented a departmental seminar entitled "Transcriptional regulation of the FSH receptor and SF1 genes in testicular Sertoli cells".
  November 16, 1998 - Presented a seminar entitled "Regulation of the FSH Receptor Gene in Sertoli Cells" at the MO-KAN Reproductive Biology Workshop held at KUMC.

Honors:
  Invited to chair minisymposium: "Mechanisms of Gonadotropin Actions" at the 32nd annual meeting for the Society for the Study of Reproduction to be held August 1999 in Pullman, WA.
  Invited Speaker at the 32nd annual meeting for the Society for the Study of Reproduction to be held August 1999 in Pullman, WA.

Teaching activities:
  Module 3 of IGPBS, Fall 1998
    3 one hour lectures
  PHSL 834 - Reproductive Physiology, Fall 1998
    2 one hour lectures
  PHSL 802 - Medical Physiology
    2 one hour conferences

Trainees:
  Melissa Daggett, Ph.D. - Post-doctoral Fellow
  Jennifer Shott - summer student, 1998
Walter T. Imagawa, Ph.D., Assistant Professor

Summary of Research: Regulatory interactions between mammogenic hormones and stromally-derived growth factors in mammary gland development and tumorigenesis. Alterations in proliferation-associated G protein-coupled MAP kinase signaling pathways that occur during mammary tumor progression.

Committees:
Departmental
Member, Graduate Student Affairs Committee

Seminars Presented:
March 29 1999 - Presented a departmental seminar entitled "Compartmentalization of Hormone and Growth Factor Regulation in Mammary Development".

Teaching activities:
PHSL 834 - Reproductive Physiology
1 hour lecture
PHSL 821/822 - Human Physiology
4 hours lecture

Trainees:
Vadim Pedchenko - Post-doctoral Fellow
Charles Xing - Post-doctoral Fellow
**Summary of Research:** My research focuses on understanding the neural representation of sound in the central auditory system of cats. Monaural directional (MD) cells may play a role in sound localization as they respond strongly to monaural noise stimulation at some sound directions and weakly at others. Spectral notches centered on a cell's characteristic frequency (CF) reduce the amount of energy in excitatory relative to inhibitory frequency domains and cause a reduction in neural responsiveness (notch inhibition). We have found MD cells in auditory cortex (ACX), medial geniculate body (MGB), inferior colliculus (IC) and cochlear nucleus (CN). Pauser neurons in the dorsal cochlear nucleus (DCN) neurons exhibit stronger notch inhibition than neurons in other subdivisions of the CN. The goal of our research is to test the hypothesis that pathways from the DCN convey notch inhibition to MD cells in the ACX.

**Meetings Attended:**
November 7-12, 1998 - attended the annual meeting of the Society for Neuroscience held in Los Angeles, CA.
March 7-12, 1999 - attended the Audition Workshop held at the University of Minnesota Institute for Mathematics and Its Applications, Minneapolis, MN

**Committees:**
Departmental:
Librarian
Chair, Graduate Affairs Committee
Member, Dissertation Committee for Elena Zoubina
Member, Dissertation Committee for Michael Parks
Member, Dissertation Committee for Leigh Raymond
Member, Dissertation Committee for Jena Steinle

KUMC:
Member, Interdisciplinary Graduate Program in Biomedical Sciences Advisory Board
Member, Academic Committee
Member, Student Promotions Subcommittee of the Academic Committee

External:
Member, Editorial Board Journal of Neurophysiology

**Editorial and Grant Reviews:**
ad hoc reviewer Journal of Comparative Neurology
ad hoc reviewer Hearing Research
Neuroscience Letters
National Science Foundation

**Seminars Presented:**
October 23, 1998 - presented a departmental seminar entitled "Monaural and binaural mechanisms of azimuth sensitivity in the cat's cochlear nucleus".
February 1, 1999 - presented a seminar entitled "Monaural and binaural mechanisms of azimuth sensitivity in the cat's cochlear nucleus" to the Department of Molecular Bioscience, KU.
Dr. Imig (continued)

Teaching Activities:
PHYS/ANAT 840 - Medical Neuroscience (Course Director)
  4 hours lecture
Advanced Neuroscience
  9 hours lecture

Trainees:
Frank Samson - Postdoctoral Fellow
Nikolai Bibikov - Visiting Scientist
Donald C. Johnson, Ph.D., Professor Emeritus

Summary of Research: Research is focused upon collaborative studies with various faculty members. Included are Dr. Richard Silverstein (Biochemistry) endocrine factors in septic shock), Dr. Sanjoy Das (Physiology & Ob/Gyn) reproductive toxins and Dr. S.K. Banerjee (Medicine) growth factors and estrogen in tumor formation.

Meetings attended:
October 10-12, 1998 - Attended the Vibo Valentia Seminars on Shock held in Vibo Valentia, Italy.

Committees:
Ph.D. Thesis Committee for Jade Lim

Editorial and Grant Reviews:
Biology of Reproduction
Infection and Immunity
Environmental Health Perspectives
Journal of Endotoxin Research

Teaching Activities:
Medical Physiology
8 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 the role of cytokines and free radicals in the pathogenesis of these diseases. We are also exploring various therapeutic regimens designed to slow the disease course.

Meetings Attended:
July 22-25, 1998 - Attended the Seventeenth Leukodystrophy National Conference, United Leukodystrophy Foundation, held at Northern Illinois University in DeKalb, IL.
November 7-12, 1998 - Attended the 28th annual meeting of the Society for Neuroscience held in Los Angeles, CA.
March 13-17, 1999 - Attended the 30th annual meeting of the American Society of Neurochemistry held in New Orleans, LA.

Committees:
Departmental:
Member, Ph.D. Thesis Advisory Committee for YoungSoo Lee
University:
Judge, Student Research Forum

Editorial and Grant Reviews:
ad hoc reviewer Journal of Histochemistry and Cytochemistry
Department of Veteran’s Affairs - reviewer for a merit grant

Seminars presented:
April 12, 1999 - Presented a seminar entitled "Biological applications of FT-IR microspectroscopy", to the Department of Chemistry, University of Kansas, Lawrence, KS.
April 26, 1999 - Presented a departmental seminar entitled "Mechanisms of demyelination".

Honors:
Joint appointment with the Department of Physical Therapy.
Invited to act as guest editor of a special issue of Cellular and Molecular Biology devoted to the role of metals in the brain.
Invited to present at the 18th Annual Leukodystrophy National Conference.

Teaching Activities:
PHSL 842 - Medical Neuroscience
2 hours lecture
PHSL 800 - Medical Physiology
3 hours lecture
PHSL 821/822 - Advanced Human Physiology - Course Director
7 hours lecture
PHSL 846 - Advanced Neuroscience
7 hours lecture
PHSL 784 - Advanced Topics - Faculty Research Forum
  0.5 hour lecture
PHSL 896 - Module 6 of the IGPBS - Molecular & Physiological Basis of Disease I
  2 hours lecture
ANAT 830 - Cell and Tissue Biology
  3 hours lecture
  4 hours lab
  2 hours review sessions
Brain Awareness Week - Spring 1998
  one 60 minute presentation

Trainees:
  Tatyana Pedchenko - Postdoctoral Fellow
  Samia Qadri - Undergraduate Student
  James Homan - Summer Medical Student
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 motor "maps", we employ standard techniques combining microelectrode stimulation with electromyographic recording. By tracking changes in motor cortex during the practice of new motor tasks, it is hoped that we can better understand the neurophysiological bases for motor control and the acquisition of motor skills. 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 physical use of affected muscles on subsequent reorganization -- that is, physical therapy - we hope to develop a simple model of the neurophysiological processes operating during recovery of motor function.

Meetings Attended:
- August 15-17, 1998 - Attended the American Physical Therapy Association Conference held in Newport, Rhode Island
- September 16-24, 1998 - Attended the Jacques Monod Conference on Plasticity and Adaptation in Motor Control held in Aussois, France
- September 26-28, 1998 - Attended the Conference on Neuroplasticity and Reorganization of Function after Brain Injury held at Baylor College of Medicine in Houston, Texas
- November 7-12, 1998 - Attended the Society for Neuroscience Annual Meeting, Los Angeles, CA
- February 4-5, 1999 - Attended the 24th AHA International Conference on Stroke and Cerebral Circulation held in Nashville, Tennessee
- March 5-7, 1999 - Attended the Consensus Conference on Stroke Drug Development held in Orlando, FL
- April 7-10, 1999 - Attended the European Stroke Conference held in Venice, Italy
- April 13-14, 1999 - Attended the 2nd World Congress on Neurorehabilitation held in Toronto, Canada
- April 18-19, 1999 - Attended the American Academy of Neurology held in Toronto, Canada
- June 3-6, 1999 - Attended the American Psychological Society Annual Meeting held in Paris, France

Committee activities:
- KUMC
  Member, Faculty Council
- National
  Member, Editorial Board, Neuroscience and Biobehavioral Reviews
  Member, Editorial Board, Journal of Neurorehabilitation and Neural Repair
  Special Emphasis Study Panel Chairman, National Institutes of Health, NICHD, National Center for Medical Rehabilitation Research Review Committee
  Consultant, Telethon Foundation of Italy (Scientific Research in Muscular Dystrophy)
Editorial and Grant Reviews:
Ad-hoc reviewer, Experimental Brain Research
Ad-hoc reviewer, Journal of Neurophysiology
Ad-hoc reviewer, Journal of Comparative Neurology
Ad-hoc reviewer, Somatosensory and Motor Research
Ad-hoc reviewer, Journal of Cerebral Blood Flow and Metabolism
Ad-hoc reviewer, Institute for Laboratory Animal Research Journal
Temporary reviewer, National Institutes of Health, NICHD, National Center for Medical Rehabilitation Research Review Committee
Grant reviewer, Comitato Telethon Fondazione Onlus (Italian funding agency for muscular dystrophy research)

Seminars Presented:
August 16, 1998 - Presented a seminar entitled: "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the American Physical Therapy Association Conference held in Newport, Rhode Island.
September 19, 1998 - Presented a seminar entitled "Adaptive plasticity in motor cortex" as an Invited speaker at the Jacques Monod Conference on Plasticity and Adaptation in Motor Control, Aussois, France.
September 27, 1998 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the Conference on Neuroplasticity and Reorganization of Function after Brain Injury held at Baylor College of Medicine, Houston, Texas.
October 15, 1998 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker to Lilly Pharmaceuticals in Indianapolis, Indiana.
November 8, 1998 - Presented a seminar entitled "Plasticity in motor cortex following repetitive use" as an Invited speaker at the Symposium on Neural Bases of Dystonia, Society for Neuroscience Annual Meeting held in Los Angeles, CA.
December 1, 1998 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the Physical Therapy Education Seminar held at KU Medical Center, Kansas City, KS
January 27, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the Clinical Center Grand Rounds, National Institutes of Health, Bethesda, MD.
January 28, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the Merge Conference, Human Cortical Physiology Unit, National Institutes of Health, Bethesda, MD.
February 5, 1999 - Presented a seminar entitled "Neuroimaging techniques in stroke recovery" as the Moderator of the 24th AHA International Conference on Stroke and Cerebral Circulation held in Nashville, TN.
March 6, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker, at the Consensus conference on stroke drug development held in Orlando, FL.
March 12, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the Proseminar course, University of Kansas, Lawrence, KS.

April 9, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker and session chairman at the European Stroke Conference held in Venice, Italy.

April 14, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the 2nd World Congress on Neurorehabilitation held in Toronto, Canada.

April 19, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the Breakfast seminar, American Academy of Neurology, Toronto, Canada.

June 6, 1999 - Presented a seminar entitled "Adaptive plasticity in motor cortex" as an Invited speaker at the American Psychological Society Annual Meeting held in Denver, CO.

June 18, 1999 - Presented a seminar entitled "Functional remodeling of motor cortex: implications for stroke rehabilitation" as an Invited speaker at the French Neurological Society Annual Meetings, Paris, France.

Honors:
Invited speaker, Behavior assessment of research animals, Sept. 25, 1999, Boston, MA
Invited speaker, New Biology of Aging, Sept. 27, 1999, Kansas City, MO
October 20, Invited speaker, Neuronal Plasticity: The Key to Stroke Recovery, March 21, 2000, Kanasaskis, Canada
Invited speaker, Motor development conference, June 1, 2001, Amsterdam

Teaching Activities:
PHSL 846 - Advanced Neuroscience
  6 hours lecture
PHSL 895 - Interdisciplinary graduate curriculum, module 5
  2 hours lecture
ANAT 880 - Faculty Research Series
  1/2 hour lecture

Trainees:
Erik Plautz, graduate student
Kathleen Friel, graduate student
Scott Barbay, post-doctoral fellow
Jeff Kleim, post-doctoral fellow
Shawn Frost, post-doctoral fellow
Archie Heddings, summer medical student
Jesica Sperry - summer undergraduate student
Francis Orzulak - medical student
Steven Delia - medical student
Bibhash C. Paria, Ph.D., Research Associate Professor

Summary of Research: Establishment of pregnancy depends on successful development of the fertilized eggs to blastocyst stage and differentiation of the uterus to the receptive stage. The cellular and molecular processes involved in these processes are not well understood. The mission of our laboratory is directed towards understanding the role of receptor-ligand signaling of growth factors and biogenic amines in the process of embryo development and embryo implantation.

Editorial and Grant Reviews:
- ad hoc reviewer Biology of Reproduction
- ad hoc reviewer Endocrinology
- ad hoc reviewer Developmental Biology
- ad hoc reviewer Life Sciences
- ad hoc reviewer Lancet
- ad hoc reviewer Journal of Reproduction and Fertility
United States Department of Agriculture
Frederick E. Samson, Ph.D., Professor Emeritus

Summary of Research: The general theme of my research is neurobiology; health and disease in the central nervous system studied at the neurochemical level. Emphasis is on free radicals in normal functions and in tissue damage, neurodegeneration, aging. My approach largely is to collaborate with young scientist colleagues.

Meetings Attended:
- September 3, 1998 - Attended the Kansas EPSCoR Directors Meeting with the Kansas Technology Enterprise Corporation Board held in Topeka, KS.
- December 21, 1998 - Attended the Research Review for Human Life Span Research & Higuchi Research Center for KUMC Senior Associate Dean Michael Welch in Lawrence, KS.
- March 4-6, 1999 - Attended The Oxygen Club of California "99 World Congress" held in Santa Barbara, CA.

Committees:
- Departmental:
  - Scrivener-Scribe
- University:
  - Coordinator, KUMC proposal to NIH for Institutional Development Award
  - Member, Round Table Speakers Committee, Cancer Institute
  - Member, Thesis Committee for Sung-K Jung, Dept. of Chemistry Ph.D. candidate
- Local:
  - Member, Kansas EPSCoR Project Directors
  - Director, Kansas NIH EPSCoR Program (Inst. Develop. Award, IDeA)
- National:
  - Member, Advisory Committee, NIH Program Project "Free Radical in Aging"
  - Member, Scientific Advisory Board, Encyclopedia of Neuroscience, Birkhauser Verlag
  - Member, Scientific Advisory Board, Encyclopedia of Neuroscience Year Book

Editorial and Grant Reviews:
- ad hoc reviewer, V.A. Medical Centers Research Applications
- ad hoc reviewer, Free Radical Biology and Medicine

Seminars Presented:
- September 3, 1998 - Presentation to the Kansas Technology Enterprise Corporation (KTEC) Board on the success of the Institutional Development Award at KUMC, Topeka, Kansas
Dr. Samson (continued)

Trainees:

- Mitchell Emerson - Ph.D. candidate with T.L. Pazdernik
- Michael Farber - Medical Student, Washington University St. Louis, MO, (Advisor S.R. Nelson, M.D.)
- Wallace Webster - Medical Student (Advisor: S.R. Nelson, M.D.)
Peter G. Smith, Ph.D., Professor

Summary of Research: Research in this laboratory investigates relationships between peripheral nerves and their supporting and target cells. We examine how support and target cells modulate peripheral nerve growth during normal development and in mature animals in association with changes in hormonal milieu and repair following tissue damage. We also examine how nerves in turn affect the phenotype and function of their support and target cells.

Meetings Attended:
November 11-16, 1998 - Attended the annual meeting of the Society for Neuroscience held in Los Angeles, CA.

Committees:
Departmental:
Chair, Student Advisory Committee for Jena Steinle
Chair, Student Advisory Committee for Don Warn
Chair, Student Advisory Committee for Elena Zoubina
Member, Student Advisory Committee for Leigh Raymond
Member, Student Advisory Committee for Jeremy Chien
Member, Student Advisory Committee for Michael Park
Member, Student Advisory Committee for Yue-ping Hou
Member, Student Advisory Committee for Kyle Henderson
Member, Student Advisory Committee for Young Soo Lee
Member, Student Advisory Committee for Kelly Humpherys
Member, Student Advisory Committee for Kathleen Friel
Member, Graduate Student Advisory Committee
Coordinator, Molecular and Physiological Basis of Disease I (PHSL 896)

KUMC:
Director, Histology and Image Analysis Core of the Smith MRRC
Member, Student Advisory Committee, Nichole Vansell, Pharmacology Ph.D. Candidate
Member, Student Advisory Committee, Deb Park, Hearing & Speech Ph.D. Candidate
Member, Student Advisory Committee, Amy Mize, Pharmacology Ph.D. Candidate
Member, MRRC Internal Scientific Advisory Committee
Member, Department of Neurology Chair Search Committee
Member, Neuroscience Research Taskforce Subcommittee
Member, Ad Hoc Committee on MRRC Animal Facilities
Member, Faculty Assembly Library Committee
Coordinator, Neuroscience Seminar Committee

Editorial and Grant Reviews:
Journal of Comparative Neurology
Journal of Hypertension
NIH DRG Brain Disorders and Clinical Neurology 2 Study Section
University of Vermont School of Medicine
University of Calcutta
Dr. Smith (continued)

Teaching activities:

PHSL 800 - Medical Physiology
  6 hours lecture
  4 laboratory sessions
  4 case conferences

PHSL 822 (Advanced Human Physiology)
  11 hours lecture

PHSL 842 - Advanced Neuroscience
  2 hours lecture

Brain Awareness Week Outreach Program
  2 presentations to Kansas City Elementary School Students

Trainees:

Don Warn, Graduate Student
Elena Zoubina, Graduate Student
Jena Steinle, Graduate Student
Dora Krizsan-Agbas, Ph.D., Post-doctoral Fellow
Wohaib Hasan, Ph.D., Post-doctoral Fellow
Iftikhar Rasul, M.B.B.S., Postgraduate Physician
Michael J. Soares, Ph.D., Professor

Summary of Research: Our laboratory is investigating mechanisms underlying the control of viviparity and the regulatory pathways leading to developmental disorders, including those associated with the initiation of pregnancy, fetal growth retardation, and gestational trophoblast disease.

Meetings Attended:
February 1999 - Attended the International Workshop on Embryogenesis and Implantation held in Hawaii, Hawaii
June 1999 - Attended the Arbeitskreis Molekularbiologie in der Frauenheilkunde (AMF) Workshop held in Rostock, Germany

Committees:
Departmental:
Member, Dissertation Committee for Gerald Call
Member, Dissertation Committee for Jeremy Chien
Promotion and Tenure Committee, September 1996 to present
Member, Search Committee for a Prostate Biologist

KUMC:
Member, Steering Committee for the Kansas Health Foundation Scholarship Program in Cancer
Member, Dissertation Committee for Peter Opdam (Pharmacology)
Director, Reproductive Biology Training Program
Director, Center for Reproductive Sciences DNA Sequencing Core
Associate Director, KUMC Training Program in Biomedical Research
Member, Advisory Committee for the KUMC Mental Retardation and Human Development Research Center
Member, Interdisciplinary Graduate Program Advisory Committee
Member, School of Medicine Research Task Force Committee

National:
Member, Editorial Board for the journal Trophoblast Research
Member, Editorial Board for Endocrinology
Member, Program Committee for the Annual Meeting of the Society for the Study of Reproduction, College Station, Texas
Member, Membership Committee for the Endocrine Society

Editorial and Grant Reviews:
ad hoc reviewer for - Development
- Developmental Biology
- Biology of Reproduction
- Molecular Endocrinology
- Journal of Endocrinology
- American J Reprod Immunology
- Analytical Biochemistry
- Biochimica Biophysica Acta
- Journal of Reproductive Immunology
- Life Sciences
- Molecular & Cellular Endocrinology
- Molecular Reproduction & Development
Seminars Presented:

February 1999 - Presented a seminar entitled "Uteroplacental signals in the establishment of pregnancy" at the International Workshop on Embryogenesis and Implantation held in Hawaii, Hawaii.

June 1999 - Presented a seminar entitled "The uteroplacental prolactin family: activators of signaling pathways ensuring viviparity" at the Arbeitskreis Molekularbiologie in der Frauenheikunde (AMF) Workshop held in Rostock, Germany.

"Novel uteroplacental cytokines regulating immune cells: the prolactin family", Institute of June 1999 - Presented a seminar entitled "Medical Biochemistry and Molecular Biology" at the University of Rostock in Rostock, Germany.

Teaching activities:

PHSL 800 - Medical Physiology
- 8 two hour conferences
- 4 hours lecture

Reproductive Physiology
- 3 hours lecture
- 1 hour discussion

Integrated Graduate Program
- 2 hours lecture
- 1 hour discussion session

Trainees:

Beth Albrecht - Postdoctoral Fellow
Rupasri Ain - Postdoctoral Fellow
Gregory Knipp - Postdoctoral Fellow
Danhua Wang - Postdoctoral Fellow
Damandeep Walia - Fellowship in Reproductive Biology
Dr. Namita Sahgal - Assistant Professor of Pediatrics, KUMC
Lawrence P. Sullivan, Ph.D., Professor

Summary of Research: My major research interest is the study of membrane transport processes in epithelial cells. Currently I am investigating mechanisms that drive fluid secretion across epithelial cell layers. Epithelial fluid secretion contributes to the formation of cysts in the kidneys of patients with polycystic kidney disease and is defective in several epithelial tissues of patients with cystic fibrosis. We are attempting to develop means to alter the fluid secretion processes in each disease.

Meetings Attended:
October 25-28, 1998 - Attended the American Society of Nephrology annual meeting held in Philadelphia, PA.
May 2-6, 1999 - Attended the XVth International Congress of Nephrology, held in Buenos Aires, Argentina.

Committees:
Departmental:
   Member, Graduate Advisory Committee for Htet Khant
University:
   Coordinator, Renal Journal Club
   Member, Faculty Assembly Library Committee
National:
   Member, Editorial Board, Journal of the American Society of Nephrology

Teaching Activities:
PHSL 800 - Medical Physiology
   8 hours lecture - Renal Physiology
   8 hours problem sessions
   6 conferences
IGPBS Module I - Cell Biology
   6 hours lecture
Merrill Tarr, Ph.D., Professor

Summary of Research: The overall thrust of my research is to elucidate the electrophysiological properties of heart tissue. Isolated, single cardiac cells are used for this purpose. Presently, my laboratory is investigating the effects of highly reactive oxygen species (ROS) and/or free radicals on the ionic currents responsible for generating electrical activity in single heart cells. Free radicals and ROS play a major role in tissue damage which occurs 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 the ROS and free radicals alter the electrical properties of heart tissue.

Committee Activities:
Departmental
Member, Promotions and Tenure Committee
Coordinator, Departmental Seminar Program
Chairman, Committee to recruit Dr. Barbara Foster

KUMC:
Member, Committee on Promotional Raises and Salary Inequities

Editorial and Grant Reviews:
ad hoc reviewer Journal of Molecular and Cellular Cardiology

Academic Honors:
Invited speaker, Symposium on Photodynamic Cell Killing at the 27th annual meeting of the American Society of Photobiology to be held July, 1999.

Teaching Activities:
PHSL 801 - Medical Physiology
  8 hours lecture
  1 hour review
  28 hours conferences (14 sessions)
  8 hours laboratory (4 sessions)
  1 hour exam review session

PHSL 892 - Module 4 of IGPBS course - Cell and Molecular Biology
  5 hours lecture

PHSL 803 - General and Electrophysiology
  Course Director

PHSL 850 - Advanced Neuroscience
  6 hours lecture
Summary of Research: Our research focuses upon the role of second messenger signal transduction pathways in the regulation of sperm function including motility and early oocyte interaction processes. One major project involves the role of protein phosphorylation and protein phosphatases in the regulation of sperm motility as expressed in the modulation of dynein function. The second major effort involves the role of protein phosphorylation in the alterations in sperm motility in relation to sperm fertility. We have identified a 130 kDa axonemal phosphoprotein (FP130) with homologues in sea urchin, mouse and human sperm that is a key regulator of sperm motility. We will be focusing on cloning and sequencing FP130 and elucidating its mechanism of action in relation to sperm motility and altered human sperm fertility. Both of these research areas utilize a combination of biochemical, digital imaging, as well as cell and molecular biological technologies.

Meetings Attended:
October 26-31, 1998 - Attended the American Society for Gravitation and Space Biology meeting held in Houston, Texas.
November 2-6, 1998 - Attended the Workshop on Genetic Diversity and Conservation of Animal Genetic Resource, Tsukuba, Japan.

Committees:
Director, Cell Imaging and Photography Core Lab, Center for Reproductive Sciences
Coordinator, Reproductive Biology Workshop
Coordinator, Bohan Visiting Scientists in Reproduction Seminar Series
Member, Organizing Committee for KUMC Integrative Graduate Program
Member, Oversight Committee for KUMC Biotech Facility
Co-Coordinator, Modules 2 & 3 of first year graduate curriculum, Integrative Graduate Program

Editorial and Grant Reviews:
Biology of Reproduction
NSF

Seminars presented:
August 4, 1997 - Presented a seminar entitled "Identification of flagellar protein phosphorylations that initiate the activation of sperm motility in vivo" at Society for the Study of Reproduction meeting held in Portland, Oregon.
October 12, 1998 - Presented a departmental seminar entitled "Identification of FP130 as a Critical Axonemal Component of Cell Signalling in Regulation of Flagellar Motility"
October 28, 1998 - Presented a seminar entitled "Microgravity and Signal Transduction Pathways in Sperm - Biorack on Shuttle to MIR" at the American Society for Gravitation and Space Biology meeting held in Houston, Texas.
November 4, 1998 - Presented a seminar entitled "Using coordinated computer-assisted motility analysis (CASA) and western phosphoamino acid detection to elucidate significant signal transduction pathways in live sperm" as an invited speaker at the MAFF International Workshop on Genetic Resources: Genetic Diversity and Conservation of Animal Genetic Resource, Tsukuba, Japan.
Dr. Tash (continued)

Teaching activities:
- PHSL 800 - Medical Physiology
  - 3 hours lecture - G.I. Physiology
  - 8 hours conference sessions
- Physiology 784 - Faculty Research Forum
  - 2 contact hours
- IGPBS Module - Cell Biology
  - 20 hours lecture
  - 3 exam supervision
- PHSL 821/822 - Advanced Human Physiology
  - 4 contact hours

Trainees:
- Istvan Szabo, Ph.D. - Summer, 1998
- Tandace Shaffer - undergraduate summer student
- Kim Shane - summer medical student, 1999
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 estradiol secretion in mouse granulosa cells. A second project involves the effects of dioxins on endocrine disruption of the hypothalamic-pituitary-ovarian axis. Direct and indirect effects of dioxins are being assessed for their effects on blockade of ovulation.

Meetings Attended:
August 5-7, 1998 - Attended the 12th Ovarian Workshop held in Houston, TX.
October 7-9, 1998 - Attended the EPA/NIEHS Principal Investigators Workshop held at Research Triangle Park
November 14, 1998 - Attended the MO-KAN Reproductive Workshop held at KUMC
May 21, 1999 - Attended the North American Inhibin Conference held at Northwestern University in Chicago, IL.
June 21, 1999 - Attended the NICHD Directors’ Meeting held at NIH

Committees:
Departmental:
Member, Promotion & Tenure Committee
Member, Dissertation Committee for Jeremy Chien
Member, Dissertation Committee for Hyunjung Lim

KUMC:
Member, MRRC Space Committee
Member, MRRC Internal Advisory Committee
Member, Microbiology Chair Search Committee
Member, Pathology Chair Search Committee
Member, School of Medicine Promotion & Tenure Committee
Member, Kansas Cancer Institute Internal Advisory Committee
Member, Animal Building Construction Advisory Committee
Member, Dean's Advisory Council
Member, Transgenic and Genetic Technologies Advisory Committee
Member, Ph.D. Dissertation Committee for Eric Harstad, Pharmacology
Chair, M.S. Committee for Xin Gao, Pharmacology

National:
Member, Editorial Board, Endocrine
Member, Editorial Board, Journal of Pharmacology and Experimental Therapeutics
Member, NIH Study Section, Alcohol and Toxicology 4
Member, Special Emphasis Panel, NICHD, U54 Reproductive Center Reviews for 1998
Member, Department of Army Ovarian Cancer Review Panel
Member, Site Visit Team, Univ. California, San Diego for NICHD
Member, AVAX, Inc. Advisory Board for Ovarian Cancer
Consultant, Reproductive Biology, Bayer Corporation
Editorial and Grant Reviews:
- Endocrinology
- Biology of Reproduction
- Endocrine
- American Journal of Physiology
- Steroids
- Journal of Reproduction and Fertility
- Life Sciences
- Toxicological Sciences
- Journal of Clinical Endocrinology & Metabolism

Seminars Presented:
- November 16, 1998 - Presented a seminar entitled "Ovarian Tumor Necrosis Factor" at the VA Hospital in Kansas City, Missouri.
- December 7, 1998 - Presented a seminar entitled "A Mouse Model of Ovarian Cancer Model" at the KUMC Cancer Roundtable.
- March 17, 1999 - Presented a seminar entitled "Src Tyrosine Kinase Regulation of Steroidogenesis" to the Department of Physiology and Obstetrics & Gynecology at the University of South Dakota.
- May 4, 1998 - Presented a departmental seminar entitled "Animals Models of Ovarian Cancer".

Teaching Activities:
- PHSL 800 - Medical Physiology
  - 8 conference sessions - 2 hours each
- Prematriculation Course
  - 4 - 2 hour lectures
- Interdisciplinary Graduate Program
  - 1 - 2 hour session on Ovarian Function
  - 1 - 2 hour session on Growth
  - 1 - 30 minute session

Trainees:
- Deok-Soo Son, D.V.M., Ph.D., post-doctoral fellow
- Brian Petroff, D.V.M., Ph.D., post-doctoral fellow
- Muhammad Qamar, Ph.D., post-doctoral fellow
- Ashan Chaudery, M.D., post-doctoral fellow
- Shalmica Williams, Graduate student (Ph.D. Advisor)
- Claire Redmon, Pharmacology Graduate Student (Co-Advisor)
- Kaori Mizuyachi, visiting graduate student from Gifu University, Japan (has Rotary International Fellowship)
- Jeffrey Sweetwood, Undergraduate student
- Xin Gao, M.D., M.S. student in Pharmacology
Christopher C. Taylor, Ph.D., Research Assistant Professor

Summary of Research: Growth factor signaling cascades play important roles in cellular biology, generally opposing differentiation signals. My research program has two main objectives: Determine how growth stimulating cascades crosstalk with and modulate signals stimulating steroidogenesis by ovarian follicles, and secondly, determine how overactivation of signal transduction components contribute to neoplastic transformation of ovarian epithelial cells. We do this by forcing cells to express mutated genes for growth signaling proteins and examining the effects on cell growth and differentiation parameters.

Meetings Attended:
August 5-8, 1998 - Attended the XIIth Ovarian Workshop: Molecular and Genetic Approaches to Study Ovarian Function held in Houston, Texas.

Editorial and Grant Reviews:
ad hoc reviewer Biology of Reproduction

Seminars Presented:
November 24, 1998 - Presented a seminar entitled "PDGF Signaling Cascades in Porcine Thecal Cells" at the Reproductive Biology Workshop, KUMC.
January 20, 1999 - Presented a seminar entitled "Src Tyrosine Kinase: Roles in Gonadal Steroidogenesis and Ovarian Cancer" at the Veterans Administration Hospital in Kansas City, MO.
February 4, 1999 - Presented a seminar entitled "Src Tyrosine Kinase: Roles in Gonadal Steroidogenesis and Ovarian Cancer" to the Department of Anatomy and Cell Biology, KUMC.

Teaching Activities:
PHSL 834 - Reproductive Physiology
3 hours lecture
PHSL 800 - Medical Physiology
1 two hour conference
Summary of Research: My research interests fall into the two broad categories of cardiac electrophysiology and instrumentation for modern physiology. The primary thrust is a collaboration with Drs. C.M. Tarr and D.P. Valenzeno investigating the electrophysiologic effects of dye induced photosensitization in cardiac myocytes. The second component is the development of technology to integrate small laboratory computers into the experimental process for data acquisition and management as well as process control.

Committees:
Departmental:
- Electronic shop supervisory committee
- Photographer Pro-Tempore
- Departmental computer consultant/authority

KUMC:
- Member, Advanced Information Management Systems Committee

Local:
- Member, Biomedical Electronics Technician Advisory Committee, Johnson County Community College

Teaching Activities:
- Physiology 800 (Medical Physiology)
  - 3 conferences (5 hours contact)
  - 7 hours laboratory teaching and supervision
  - Laboratory management for all Medical Physiology Laboratories
- Physiology 822 - Advanced Human Physiology
  - 7 hours lecture and review - Respiration
Dennis P. Valenzeno, Ph.D., Associate Professor

Summary of Research: My current research continues previous studies of photosensitized modification of cell membranes. We continued to use our newly developed cell culture capabilities to study cell killing in a different cell line, H9c2 cardiac cells. This cell line allows accurate determinations of cell viability. We continue to study changes in cellular electrophysiology during photosensitized modification. We have completed pilot studies using fluorescent indicators to measure changes in intracellular Ca^{++} concentration and we have performed a pilot gene transfection study.

Meetings Attended:
July 13-18, 1998 - Attended the 26th annual meeting of the American Society for Photobiology held in Snowbird, Utah.
September 3, 1998 - Attended the World Association for Laser Therapy meeting held in Kansas City, MO.

Committees:
Departmental:
Course Director, Medical Physiology 801 & 802
Course Director, Summer Medical Physiology 801
Coordinator, Departmental Web Site

Local:
Chair, Informatics Committee
Member, Medical Faculty Year 1/2 Oversight Committee
Member, Education Council
Member, Pre-Matriculation Program Steering Committee
Member, Credit Hour Evaluation Committee
Consultant, Meet the Mentors Program

National:
Treasurer, American Society for Photobiology
Member, Publications Committee, American Society for Photobiology

International:
Member, American Society for Photobiology, Electronics Publications Committee

Editorial and Grant Reviews:
Associate Editor - Photochemistry and Photobiology (electronic publication)
ad hoc reviewer - Journal of Photochemistry and Photobiology
ad hoc reviewer - International Journal of Radiation Biology

Seminars Presented:
July 15, 1998 - Presented a seminar entitled "Cell Membrane Photomodification: Potassium and Calcium Current Block and Killing of GH3 Cells" at the 26th annual meeting of the American Society for Photobiology held in Salt Lake City, Utah.
Teaching Activities:
  PHSL 801/802 - Medical Physiology
    6 hours lecture
    14 hours lab and conference sessions
  PHSL 822 - Advanced Human Physiology
    10 hours lecture
  Prematriculation Health Careers Pathways Program
    12 hours lecture
  Summer Program in Medical Physiology 801
  IGPBS Module 6
    2.5 hours lecture
  National Board Exam Review
    2 hour review lecture
James L. Voogt, Ph.D., Professor and Chairman

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 hypothalamus secretes both neuropeptides and biogenic amines into the hypophysial portal blood to regulate prolactin secretion. 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.

Meetings Attended:
November 7-12, 1998 - Attended the annual meeting of the Society for Neurosciences held in Los Angeles, California

Committees:
Departmental:
Chair, Doctoral Committee, Youngsoo Lee
Chair, Master's Committee, Yue-ping Hou
Chair, Master's Committee, Kelly Humpherys
Member, Doctoral Committee, Elena Zoubina
Member, Doctoral Committee, Hyunjung Lim

KUMC:
Member, Council of Chairs, School of Medicine
Co-ordinator, Basic Science Chairs
Member, Finance and Compensation Committee
Member, Research Guide for Chairs Committee

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

Academic Honors:

Teaching Activities:
PHSL 800 - Medical Physiology
4 lectures
8 conferences
Reproductive Physiology
4 lectures
IGPBS
2 lectures
Trainees:
Kelly Humpherys - M.D./M.S. student
Young Soo Lee - doctoral student
Yue-ping Hou - Masters student
Shu-ping Yang - postdoctoral fellow
Alma Levy - postdoctoral fellow
Xiujun Pi - postdoctoral fellow
Michael W. Wolfe, Ph.D., Assistant Professor

Summary of Research: Pituitary expression of luteinizing hormone and follicle-stimulating 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.

Meetings Attended:
December 15-16, 1998 - Attended the NIDDK Workshop on co-activators and co-repressors in gene expression held in Bethesda, MD and gave a poster presentation.

Committees:
Departmental:
Member, Graduate Student Advisory Committee
Member, Dissertation Committee for Kelly Humpherys, Physiol. Ph.D. candidate
Member, Dissertation Committee for Don Warn, Physiology Ph.D. candidate
Member, Dissertation Committee for Elena Zoubina, Physiology Ph.D. candidate
Member, Dissertation Committee for Yue-Ping Hou, Physiology M.S. candidate
Member, Dissertation Committee for Htet Khant, Physiology Ph.D. candidate
Chair, Dissertation Committee for Gerald Call, Physiology Ph.D. candidate
Chair, Dissertation Committee for Theingi Thway, Physiology Ph.D. candidate

KUMC:
Judge, Student Research Forum
Member, Graduate Travel Committee
Member, Research Committee
Member, Research Task Force

Editorial and Grant Reviews:
USDA 'Enhancing Reproductive Efficiency Program'
Biology of Reproduction
Journal of Biological Chemistry

Seminars Presented:
September, 1998 – Presented a departmental seminar entitled "Gonadotropin subunit expression: New insights into why GnRH must be secreted in a pulsatile manner".

Teaching Activities:
PHSL 802 - Medical Physiology
4 hours lecture
8 hours conference sessions

PHSL 834 - Reproductive Physiology - Course Director
6 hours lecture

IGPBS Module 4: Cell & Developmental Biology
7 hours lecture
Dr. Wolfe (continued)

Trainees:
   Gerald Call - Graduate student
   Theingi Thway - Graduate student
   Shalmica Williams - Graduate student lab rotation
Summary of Research: Systemic hypoxia occurs at altitude and in a variety of cardio-pulmonary diseases. Few studies have examined its effects on the microcirculation. Currently, our major goal is to examine mechanisms responsible for microvascular injury during acute hypoxia as well as those involved in adaptation to chronic hypoxia. I am also continuing studies of mechanisms of microvascular injury in response to cadmium exposure and of thrombus formation. Intravital microscopy is used to quantitate microvascular alterations in individual blood vessels in situ, including: 1) vascular permeability to fluorescent proteins, 2) adhesive interactions of circulating leukocytes with venular endothelium, 3) vascular diameter and blood flow, and 4) thrombus formation following laser-induced endothelial injury.

Meetings Attended:
April 17-21, 1999 - Attended the spring FASEB meetings held in Washington, DC

Committees:
Departmental:
- Member, Graduate Student Advisory Committee
- Member, Ph.D. thesis committee for Leigh Raymond
- Member, Ph.D. thesis committee for Kyle Henderson
- Member, Ph.D. thesis committee for Jena Steinle

KUMC:
- Member, Bioengineering Center Advisory Panel
- Member, Chair Review Committee for Department of Preventative Medicine

National:
- Member, Editorial Board, International Journal of Surgical Research
- Member, Inflammatory Bowel Disease Committee, Gastroenterological Association

Editorial and Grant Reviews:
- ad hoc reviewer, American Journal of Physiology: Gastrointestinal and Liver Section
- ad hoc reviewer, Gastroenterology
- ad hoc reviewer, Free Radicals in Biology and Medicine
- ad hoc reviewer, Pharmacology and Toxicology
- ad hoc reviewer, Journal of Cardiovascular Research
- ad hoc reviewer, Microvascular Research
- ad hoc reviewer, Digestive Surgery
- ad hoc reviewer, Canadian Journal of Physiology and Pharmacology

Seminars Presented:
May 17, 1999 - Presented a departmental seminar entitled "Hypoxia and the Microcirculation".
Dr. Wood  (continued)

Academic Honors:
    Student Voice Award for Excellence in Teaching in Medical Physiology

Teaching Activities:
    PHSL 801/802 - Medical Physiology
        4 hours lecture
        8 hours lab
        28 hours conference sessions
    IGPBS: Module 5
        6 hours lecture
        2 hours conference

Trainees:
    Eldridge Avery - summer medical student, 1998
    Paul Beebe - summer medical student, 1999
    Al Cassilian - M.D./Ph.D. student, summer research program