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YEAR IN REVIEW
2006-2007

**FUNDING:** Overall, 2006-2007 was another excellent year in which the department continued to excel in education, research and service. Research funding in the department was $5,081,445 (total costs) in NIH support (source: NIH Website). NIH discontinued the practice of ranking medical school departments based on the amount of funding received from NIH so we are not sure how that may have changed from last year. Also noteworthy is the fact that during the year, our faculty held more NIH grants than any other department at the Medical Center. Of even greater significance to me as chair is the fact that during the year, nearly every faculty member’s research program was supported by major external funding. Some major new grants were funded during the year. Most noteworthy among them was a NIH Center grant on male contraception headed by Dr. Joe Tash. This grant also provides major funding for the research programs of two additional department members, Dr. Leslie Heckert and Dr. Gustavo Blanco.

**EDUCATION:** This was a year of major change for the department’s role in medical education as a new curriculum focusing on integration across disciplines was rolled out for the incoming class of students. Guiding the department through this major transition was Dr. Merrill Tarr who continues as Director of Medical Education for the department. While in the previous year Merrill served as director of both the Fall and Spring Medical Physiology courses, the department now has primary responsibility for two modules in the new curriculum - Cardiopulmonary and Renal-Endocrine. While the new curriculum was not without its share of “growing pains”, overall, it seemed to be a success and students reported that they appreciated the integration of material. To the credit of all the individual faculty instructors and particularly to Merrill, the Cardiopulmonary and Renal-Endocrine modules both were viewed favorably by the students. This was also another successful year in terms of teaching awards. At the “Grande Affair” celebration on March 31st, Dr. John Wood and Dr. Gustavo Blanco again were recognized for excellence in teaching. They each won the Student Voice Award for 1st year teaching. We congratulate both John and Gustavo on their continuing success. Special recognition also goes to Gustavo who, to our knowledge, achieved something this year that has never before been attained by any faculty member in the history of KUMC. Gustavo won the “Triple Crown” of teaching. He won all three major teaching awards in the same year including the Kemper Award, the Bohan Award and the Chancellor’s Club Teaching Award.
OPENING OF THE KANSAS LIFE SCIENCES INNOVATION CENTER:
This year represented another major transition in the department’s history with the opening of a new 210,000 square foot, state-of-the art research building, fully outfitted with the new equipment. The intent of the building was to house research programs and, by so doing, bring together faculty members across departments with similar interests. The building has certainly achieved this and represents a major step forward in providing much needed additional research space on the campus. While we wish that all members of the department could have been given space in the new building, we are very pleased that about 70% of our faculty members are now enjoying terrific, energizing new space on either the 2nd floor of the new building, which houses the Neuroscience Program and the Kansas Intellectual and Developmental Disabilities Research Center or the 3rd floor which houses the Reproductive Science Center and Dr Tash’s newly funded Interdisciplinary Center for Male Contraceptive Research and Drug Development. The only downside to this space from a departmental view point is that the department office is now a considerable distance from most of the faculty members. However, we continue to work on ways to overcome this physical separation. Providing outstanding support for the activities of all department faculty members will continue to be the goal of the departmental office.

TENURE TRACK APPOINTMENTS: Dr. Andrei Belousov joined the Department as an associate professor on January 1, 2007. Andrei was previously an Associate Professor in the Department of Cell and Molecular Biology at Tulane University. His research interests include 1) glutamate-dependent neuronal plasticity and the regulation of cholinergic phenotype in developing and mature CNS neurons, 2) cellular and molecular mechanisms of regulation of electrical synapses (gap junctions) during development and traumatic injury, and 3) activity-dependent homeostatic plasticity in CNS neurons.

MARION M. OSBORN PROFESSORSHIP: Our deepest gratitude goes out to Jim Osborn for his enormous generosity toward the department over the years. With Jim’s continuing generous donations, this year the Professorship achieved activation status making it eligible for matching income funds from the state. We are very excited about this development and have begun to work on plans for how the Professorship might be put to work to strengthen our reproductive science research program. In addition to the Marion M. Osborn Professorship, Jim and Marion’s donations over the years have fully supported the highly successful Kathleen Osborn Memorial Lectureship, which completed its 36th year this year, and have also provided funds in support of the Gil Greenwald Symposium, which is now in its 4th year and growing stronger. Thank-you Jim!

RESEARCH TRACK APPOINTMENTS: After a flurry of appointments in the past few years, this year there were no appointments to the Research Track.
ADJUNCT APPOINTMENTS: One faculty member was granted a secondary appointment in the department. Dr. Zhiming Suo, is a Research Associate Professor in Neurology at KUMC and Director of the Laboratory for Alzheimer’s Disease and Aging Research at the Kansas City Veterans Affairs Medical Center. Zhiming has a strong research program funded by a VA Merit Award.

We are also very pleased to have added another appointment to our department from the Stowers Institute for Medical Research. Ho Yi Mak was appointed as an assistant professor level. He joined the Stowers Institute from the Harvard University where he completed a postdoctoral fellowship with Dr. Gary Ruvkun. Ho Yi works on fundamental issues of fat storage using C. elegans as a model system.

FACULTY PROMOTIONS: There were no promotions or appointments of tenure during the year.

FACULTY DEPARTURES: Long standing department member and former Chair of the department, Jim Voogt, retired at the end of December. He finished his 30 year career at KUMC as Senior Associate Vice Chancellor for Research. Jim was a major contributor to the department’s growth and success. We are pleased that in his role as Emeritus Professor he will remain connected with the Department and plans to continue helping with the Greenwald Symposium and the Osborn Lectureship. We thank him for his many contributions to the department and the institution and wish him the best in retirement. We know he will be busy with many new activities.

At the end of the year, Dr. Mehmet Bilgen left for a new opportunity at the University of South Carolina. Since 2002, Mehmet had been an associate professor in the department and Director of the High Field MRI laboratory at the Hoglund Brain Imaging Center. We wish Mehmet the best in his new position.

GRADUATE PROGRAM AND PHYSIOLOGY SOCIETY: The graduate students in the department had another active year. The “Physiology Society” leadership included Stephanie Fiedler as President, Lynda McGinnis as Vice President, Emily McDonald as Secretary and Sara Turk as Social Event Coordinator. We are very pleased with the growth of the graduate program in Physiology. In August of 2006, nine new students were recruited to the department including: Crystal Bethel-Brown working with Dr. John Stanford, Jeffrey Cotitta working with Dr. Joseph Tash, Tim Donohue working with Dr. Peter Smith, Argenia Doss working with Dr. Peter Smith, David Guggenmos working with Dr. Randolph Nudo, Anisha Gupte working with Dr. Paige Geiger, Emily McDonald working with Dr. Michael Wolfe, Sarah Tague working with Dr. Peter Smith, and Rachel Williams working with Dr. Shilpa Buch. In January, Won-Mee Park and Jitu Wilson George transferred from Tulane University with Dr. Andrei Belousov to the department graduate program. And in May, Aritra Bhattacharjee transferred from the graduate program at Bowling Green State University to the department graduate program working with Dr. Peter Smith.
Three students completed their degrees during the year. Marie-Helene Boudrias received her Ph.D. with Dr. Paul Cheney. She is doing a postdoctoral fellowship at the University of Oxford. Ines Eisner-Janowicz received her Ph.D. with Dr. Randolph Nudo. She is searching for a postdoctoral fellowship in China. Jennifer Ho-Chen received her Ph.D. with Dr. Michael Soares. She is doing a postdoctoral fellowship at the University of California in San Diego.

**Student Awards:** Congratulations to the graduate students and postdoctoral fellows in the department who received awards from the KUMC Biomedical Research Training Program. This was another outstanding year for the department. The award winners this year were: Gwenaelle Wernli, a Ph.D. student with Dr. Peter Smith, Stephanie Fiedler, a Ph.D. student working with Dr. Lane Christenson, Anisha Gupta, a Ph.D. student working with Dr. Paige Geiger and Alison Ting, a Ph.D. student working with Dr. Brian Petroff. In the postdoctoral category, awards went to Huizhen Wang working with Dr. Raj Kumar and Susan Smittkamp working with Dr. John Stanford.

Also deserving recognition are three students in our department who won first place awards at this year’s Student Research Forum. Session winners included Anisha Gupte (mentor Dr. Paige Geiger), Greg Onyschuk (mentor Dr. Bill Brooks) and Alison Ting (mentor Dr. Brian Petroff). Also, congratulations to the poster presentation winners Anh-Nguyet Nguyen (mentor Dr. Gustavo Blanco) and Mariam Riazi-Kermani (mentor Dr. Paul Cheney).

Prepared by:

Dr. Paul D. Cheney
Professor and Chair
October 25, 2007
Department of Molecular and Integrative Physiology Faculty
2006-2007

Top Row: Stan Svojanovsky, Thomas Imig, Erik Plautz, Mihai Popescu, Andrei Belousov, Shawn Frost, Paul Terranova
Middle Row: Merrill Tarr, Gustavo Blanco, T. Rajendra Kumar, Norberto Gonzalez, Wohaib Hasan, Michael Wolfe, Melissa Larson, Navneet Dhillon, Paige Geiger, Sam Enna, Gaurav Chaturvedi
Bottom Row: John Stanford, Leslie Heckert, Peter Smith, Randy Nudo, Paul Cheney, David Albertini, Shilpa Buch, Joseph Tash
Not Pictured: Lane Christenson, Sang-Pil Lee, Steven LeVine, John Wood
Department of Molecular & Integrative Physiology Graduate Students
2006-2007

Top Row: Lynda McGinnis, Darcy Griffin, Mariam Riazi-Kermani, Heather Hudson, Rachel Williams Emily McDonald, Anh Nguyen, Sara Turk, Stephanie Fielder, Crystal Bethel-Brown, Anisha Gupte
Bottom Row: Susan Barrett, Gwenaelle, Wernli, Tim Donohue, Sarah Tague, David Guggenmos, Greg Onyszchuk
Not Pictured: Aritra Bhattacherjee, Marie-Helene Boudrias, Martha Carletti, Jeffrey Cotitta, Argenia Doss, Ines Eisner-Janowicz, Jitu Wilson George, Jennifer Ho-Chen, Joe McDonald, Won-Mee Park, Alison Ting, George Thomas
DEPARTMENT ROSTER
July 1, 2006– June 30, 2007

a. Faculty

Primary Appointment in Physiology
Paul D. Cheney, Ph.D., Professor & Chairman
David F. Albertini, Ph.D., Hall Endowed Professor
Mehmet Bilgen, Ph.D., Associate Professor & Director, High Field MRI Research (Hoglund Brain Imaging Center)
V. Gustavo Blanco, M.D., Ph.D., Associate Professor
Andrei Belousov, Ph.D., Associate Professor
Shilpa J. Buch, Ph.D., Associate Professor
Lane K. Christenson, Ph.D., Assistant Professor
Salvatore J. Enna, Ph.D., Professor
Paige Geiger Ph.D., Assistant Professor
Norberto C. Gonzalez, M.D., Professor
Leslie L. Heckert, Ph.D., Associate Professor
Thomas J. Imig, Ph.D., Professor
T. Rajendra Kumar, Ph.D., Assistant Professor
Sang-Pil Lee, Ph.D., Assistant Professor (Hoglund Brain Imaging Center)
Steven M. LeVine, Ph.D., Professor
Randolph J. Nudo, Ph.D., Professor & Director of The Landon Center on Aging
Peter G. Smith, Ph.D., Professor & Director, Ralph L. Smith Center for Mental Retardation
John A. Stanford, Ph.D., Assistant Professor
C. Merrill Tarr, Ph.D., Professor
Joseph S. Tash, Ph.D., Associate Professor
Paul F. Terranova, Ph.D., Professor, Director of the Center for Reproductive Sciences, & Senior Associate Dean of the School of Medicine
Michael W. Wolfe, Ph.D., Associate Professor
John G. Wood, Ph.D., Associate Professor

Emeritus
Lawrence P. Sullivan, Ph.D., Professor
James L. Voogt, Ph.D., Professor

Stowers Affiliates
Scott Hawley, Ph.D., Professor
Rong Li, Ph.D., Professor
Ho Yi, Mak, Ph.D., Assistant Professor
Kausik Si, Ph.D., Assistant Professor
Research Track Faculty
Gaurav Chaturvedi Ph.D., Research Assistant Professor
Shawn Frost, Ph.D., Research Assistant Professor
Wohaib Hasan, Ph.D., Research Assistant Professor
Melissa Larson, Ph.D., Research Assistant Professor, Director of Transgenic Facility
Erik Plautz, Ph.D., Research Assistant Professor
Mihai Popescu, Ph.D., Research Assistant Professor
Stanislav Svojanovsky, Ph.D., Research Assistant Professor
Hongyu Zhang, Ph.D., Research Assistant Professor
Elena Zoubina, Ph.D., Research Assistant Professor

Joint Appointment in Physiology
Ken Audus, Ph.D., Professor (Professor & Dean, School of Pharmacology, KU, Lawrence)
Richard Barohn, Ph.D., Professor (Chair, Neurology)
Sangita Biswas, Ph.D., Research Assistant Professor (Senior Research Scientist MidAmerica Neuroscience Institute)
William Brooks, Ph.D., Professor (Director, Hoglund Brain Imaging Center)
Jeffery Burns, Ph.D., Assistant Professor (Neurology, Director, Alzheimer and Memory Center & Alzheimer’s Disease Clinical Research Program)
In-Young Choi, Ph.D., Assistant Professor (Neurology & Hoglund Brain Imaging Center)
Jill Jacobson, M.D., Professor (Chief, Endocrinology/Diabetes, Children’s Mercy Hospital)
Benyi Li, Ph.D., Assistant Professor (Internal Medicine)
Warren Nothnick, Ph.D., Associate Professor (Ob-Gyn)
Brian Petroff, DVM, Ph.D., Assistant Professor (Internal Medicine, & Scientific Director, Breast Cancer Prevention Center)
Janet Pierce, D.S.N., Professor (School of Nursing)
Vidudula Prasad, Ph.D., Research Assistant Professor (VA Medical Center)
Jeffrey Radel, Ph.D., Associate Professor (Occupational Therapy Education)
Antonio Sastre, Ph.D., Associate Professor (Midwest Research Institute)
Michael Soares, Ph.D., Professor (Director, Institute of Maternal-Fetal Biology, Professor, Pathology)
Darren Wallace, Ph.D., Research Assistant Professor (Internal Medicine)
Steven Warren, Ph.D., Professor (Applied Behavioral Science, KU, Lawrence; Director, Schiefelbush Institute for Life Span Studies)
Carl Weiner, Ph.D., Professor (Chair, Ob-Gyn)
William Truog, Ph.D., Professor (Children’s Mercy Hospital, University of Missouri – Kansas City School of Medicine)
<table>
<thead>
<tr>
<th>b. Graduate Students</th>
<th>Prelims</th>
<th>Candidate</th>
<th>Requirements Fulfilled</th>
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<tbody>
<tr>
<td>Susan Barrett*</td>
<td></td>
<td>Ph.D.</td>
<td>May 2007</td>
</tr>
<tr>
<td>Crystal Bethel-Brown</td>
<td></td>
<td>Ph.D.</td>
<td></td>
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<tr>
<td>Aritra Bhattacherjee</td>
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<td>Ph.D.</td>
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<tr>
<td>Marie-Helene Boudrias 10/04</td>
<td></td>
<td>Ph.D.</td>
<td>June 2007</td>
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<tr>
<td>Martha Carletti</td>
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<td>Ph.D.</td>
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<tr>
<td>Jeffrey Cotitta</td>
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<td>Ph.D.</td>
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<td>Tim Donohue</td>
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<td>M.D./Ph.D.</td>
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<td>Argenia Doss</td>
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<td>Ph.D.</td>
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<td>Ines Eisner-Janowicz 3/05</td>
<td></td>
<td>Ph.D.</td>
<td>June 2007</td>
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<td>Stephanie Fiedler</td>
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<td>Jitu Wilson George</td>
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<td>Ph.D.</td>
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<td>Darcy Griffin 3/05</td>
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<td>Ph.D.</td>
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<td>David Guggenmos</td>
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<td>Ph.D.</td>
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<td>Anisha Gupte</td>
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<td>Ph.D.</td>
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<td>Jennifer Ho-Chen 4/05</td>
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<td>Ph.D.</td>
<td>June 2007</td>
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<td>Heather Hudson 6/07</td>
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<td>Ph.D.</td>
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<td>Emily McDonald</td>
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<td>Ph.D.</td>
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<td>Joe McDonald 7/03</td>
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<td>M.D./Ph.D.</td>
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<tr>
<td>Lynda McGinnis</td>
<td></td>
<td>Ph.D.</td>
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<tr>
<td>Anh Nguyet-Nguyen 12/06</td>
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<td>Greg Onyszchuk 10/05</td>
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<td>Won-Mee Park</td>
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<tr>
<td>Mariam Riazi-Kermani**</td>
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<td>Ph.D.</td>
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<td>Sarah Tague</td>
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<td>Ph.D.</td>
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<td>George Thomas</td>
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<td>M.D./Ph.D.</td>
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<tr>
<td>Alison Ting</td>
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<td>Ph.D.</td>
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<td>Sara Turk</td>
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<td>Ph.D.</td>
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<tr>
<td>Gwenaelle Wernli</td>
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<td>Ph.D.</td>
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<td>Rachel Williams</td>
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<td>Ph.D.</td>
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* Ph.D. Student at Tufts working with Dr. David Albertini
** Ph.D. Student in Department of Hearing & Speech, KUMC working with Dr. Paul Cheney
c. Postdoctoral Fellows
   Scott Bury
   John Bromfield
   Anuradha Chakrabarty
   Pei-Chun Fang
   Vijayalaxmi Gupta
   Karla Hutt
   Tatiana Karpova
   Young-Hwan Kim
   Ravichandiran Kumarasamy
   Susan Smittkamp
   Huizhen Wang
   Yongfu Wang

d. Temporary Students
   James Allen
   Rachel Ashworth
   Nooreen Baig
   Bryan Banz
   Allison Boehm
   Eric Burns
   Damayanti Chakrabarty
   Jie Chao
   Beth Dille
   John Dollerschell
   Meredith Esteep
   Brittany Gorres
   Bliss Hartnet
   Sonia Hegde
   Tamara Jimenez
   Brian Kim
   Jill Koehler
   Angela Link
   Namrata Mayanil
   Will Messamore
   Amanda Moradi
   Jill Morris
   Vinit Nanavaty
   Amanda Obaidat
   Chris Redford
   Miguel Salas
   Duncan Renfrow-Simon
   Paty Rodriguez
   Vivek Sastri
   Jesse Smith
   Eva Selfridge
   S. Kendall Smith
   Nicholas Stucky
   Chris Tanzie
   Chad Touchberry
   Parker Tuley
   Edward Urbin
   Gustaf Van Acker
### Research Staff

- Dora Agbas – Research Associate
- Valentine Agbor – Research Assistant
- Julie Allen – Research Associate
- Scott Barbay – Research Associate
- Janna Belousova – Senior Res. Associate
- Gregory Bomhoff – Research Assistant
- Shannon Callen - Research Assistant
- Erin Cambron – Research Assistant
- Robert Cross – Research Associate
- Navneet Dhillon – Senior Res. Associate
- Ian Edwards – Research Assistant
- Stan Fernald – Research Assistant
- Aneesha Garry – Research Assistant
- Xiaoman Hong – Research Associate
- Erica Hoover – Research Technician
- Kaori Iha-Hornbaker – Research Associate
- Jacquelyn Huff – Research Associate
- Elza Kharatyan – Research Assistant
- Zhaohui Liao – Research Assistant
- Darlene Limback – Research Associate
- Sotirios Macheras – Research Assistant
- Joanne Marcario – Senior Scientist
- Sachin Mathur – Research Analyst
- Christina McClendon – Research Assistant
- Jeffrey McDermott – Research Associate
- Fuwang Peng – Research Associate
- Daren Rice – Research Associate
- Gladis Sanchez de Blanco – Research Associate
- Aziz Shaibekov – Research Assistant
- Suja Sukumaran – Research Associate
- Lovella Tejada – Research Assistant
- Brady Timmerberg – Research Assistant
- Michelle Tsai – Research Assistant
- Patricia Wolfe – Research Assistant
- Stacy Wolfe – Research Assistant
- Xuhui Zhu – Research Assistant
- Aline Zorian – Research Assistant

### Support Staff

- Nicole Banman – Financial Officer
- Virginia Bertrand – Administrative Assistant (IUPHAR)
- Linda Carr – Administrative Officer
- Ted Gleason – Electronics Technician II
- Lynn LeCount – Managing Editor
- Robin Marks – Administrative Assistant (Reproductive Sciences Center)
- Cindy Martin – Editorial Coordinator
- Melanie Meyer – Administrative Assistant
- Barbara Shull – Administrative Assistant (Interdisciplinary Center for Male Contraceptive Research & Drug Development)
Martha Carletti successfully defended her grant proposal for her comprehensive exam in June, entitled Post-Transcriptional Gene Regulation in Periovulatory Granulosa Cells. She is the first author on an abstract for the 40th meeting of the Society for the Study of Reproduction, Regulation of the Natriuretic Peptide Pathway by LH and CEBPbeta in Mouse Granulosa and Cumulus Cells. She was awarded a Graduate Student Travel Scholarship to present a poster at the SSR meeting. Martha is in the third year of her 4-year Self Graduate Fellowship from the University of Kansas.

Jeffrey Cotitta received a $500 travel award from the Office of Graduate Studies to attend the Future of Male Contraception meeting to be held in Seattle, Washington in September where he will present a poster, Live imaging to visualize the effect of the candidate male contraceptive agent Gamendazole on actin organization in Sertoli Cells in vitro. He was a co-author on a paper, entitled The Multiple Roles of Mps1 in Drosophila Female Meiosis published in PLoS Genetics. Jeffrey also presented a poster at the 2006 ASCB meeting held in San Diego, California, entitled Live Imaging Reveals that Chiasmata Ensure Timely Coorientation During Drosophila Meiosis.

Tim Donohue served as a MD/PhD Student Council secretary and treasurer. He also was the Physiology student representative to the Graduate Student Council. Tim was co-chair of both the volunteer and photography committee for Student Research Forum, and he also created the brochure for the Student Research Forum. Tim was co-author on a paper entitled, Sympathetic hyperinnervation and inflammatory cell NGF synthesis following myocardial infarction in rats, Hasan, et al, Brain Res. 2006 Dec 8;1124(1):142-54. Epub 2006 Nov 7.

Argenia Doss made an oral presentation at the 2007 KUMC Student Research forum, entitled The Effects of Estrogen on the Course of Diabetic Peripheral Neuropathy.

Stephanie Fiedler was selected for the Biomedical Research Training Program pre-doctoral fellowship for 2008. She received the DC Johnson travel award, as well as a travel grant from the Office of Graduate Studies to give an oral platform presentation at the Society for the Study of Reproduction’s 40th annual meeting in San Antonio. Her work, entitled LH/hCG Induced Expression of MicroRNAs in Murine Granulosa Cells During the Periovulatory Period, was also presented at
the 2007 Student Research Forum. Stephanie served as President of the department's student organized Physiology Society for the ’06-’07 school year.

Darcy Griffin received a Graduate Student Travel Scholarship to present a first author poster, entitled “Stability of effects in stimulus trigger averages of EMG activity under different task conditions,” at the 36th annual Society for Neuroscience conference in Atlanta, Georgia. Darcy also presented this research at both this year’s KUMC Student Research Forum and the Biomedical Training Program’s Research Symposium. She received the Biomedical Research Training Grant Award for the fiscal years 2005-07. She also co-authored the abstract “Output properties of the hindlimb representation of primary motor cortex in rhesus macaques.”

Anisha Gupte was awarded a KUMC Graduate Student Travel Scholarship to present her first author poster, entitled “Heat shock mediated JNK inactivation improves insulin signaling in skeletal muscle,” at the Experimental Biology meeting (FASEB) held in Washington DC, in April 2007. Anisha also gave an oral presentation and a poster presentation at the annual Student Research Forum 2007. She won the best oral presentation award in the Musculoskeletal session. Anisha was awarded the Biomedical Research Training Program pre-doctoral fellowship for 2007-2008 for her research in insulin resistance and stress kinases.

Heather Hudson presented a poster, on which she was first author, entitled “Output Properties of the Hindlimb Representation of the Primary Motor Cortex in the Rhesus Macaque,” at the 36th annual Society for Neuroscience meeting in Atlanta, Georgia in October 2006. She submitted an abstract, on which she was first author, entitled “Cortical Control of Fast and Slow Muscles of the Ankle in the Rhesus Macaque,” for the 37th annual Society for Neuroscience meeting. At the Student Research Forum in April 2007, Heather gave a presentation entitled, “Output Properties of the Hindlimb Representation of the Primary Motor Cortex (M1) in the Rhesus Macaque.” In March 2007, she presented a seminar for the Neuroscience program, entitled “Cortical Motor Control of the Hindlimb in Primates.” In June 2007, Heather successfully passed her comprehensive exams. Heather was also an active member of the KUMC Student Recycling organization.

Lynda McGinnis presented a poster at the Society for the Study of Reproduction annual conference, Omaha, NE August 2006. She received first place in the 3rd Annual Gilbert S. Greenwald Symposium on Reproduction Poster competition, Kansas City, KS October 2006, entitled “Distribution of activated Src family kinases and phospho-tyrosine containing proteins in mouse eggs from meiosis"

Mariam Riazi-Kermani was first author on a paper, entitled “Observations on mastoid versus ear canal recorded cochlear microphonic in newborns and adults,” which was accepted for publication in the Journal of the American Academy of Audiology. She was second author on a paper, entitled “Effect of morphine on the neuropathogenesis of SIVmac infection in Indian Rhesus macaques,” accepted for publication in the Journal of Neuroimmune Pharmacology. Mariam was awarded the Debra L. Park Award for Outstanding Student in Hearing Science. At the 2007 KUMC Student Research Forum, she tied first place for her poster presentation, entitled “Motor and sensory evoked potentials in a rhesus macaque model of opiate dependence and neuro-AIDS.” She was also a recipient of a USA-Caribbean HIV/AIDS and Drug Abuse Travel Award as well as a KUMC Graduate Student Travel Scholarship for her first author poster, entitled “Motor and sensory evoked potentials in a rhesus macaque model of opiate dependence and neuro-AIDS,” which was presented at the USA-Caribbean Conference on HIV/AIDS and Drug Abuse meeting in San Juan, Puerto Rico and Psychoneuroimmunology Research Society meeting in Arcachon, France. Mariam was also co-author on a poster, entitled “Effect of morphine on SIV concentrations in brain of macaques,” which was presented at the Society on NeurolImmune Pharmacology meeting in Salt Lake City, UT.

Sarah Tague attended the Society for Neuroscience meeting in Atlanta, Georgia with the help of a graduate student travel award. At this meeting she presented a poster, entitled “Expression of estrogen receptor alpha splice variants in sympathetic ganglia is regulated by estradiol and targets of neuron projection.” Shortly afterwards she was invited to give a short oral presentation at the Greenwald symposium on the same topic. This spring she participated in the student research forum giving a presentation, entitled “The possible antagonistic regulation of CGRP by vitamin D and estrogen in sensory neurons and its effect on muscle nociception.” In June she attended the Midwest regional pain interest group meeting in St. Louis. Sarah also co-authored two papers published this year from work done before entering the physiology program in the Journal of Orthopaedic Research and The Journal of Histochemistry and Cytochemistry. In the coming year she is organizing the formation of a Kansas City regional Estrogen Focus Group and heading the KUMC Neuroscience Journal Club. She also plans to attend the American Society for Cell Biology meeting in Washington DC, where she will present a poster, entitled “Vitamin D and estrogen interact to regulate neuritogenesis in dorsal root ganglion neurons.”
Alison Ting was first author on a paper, entitled *Characterization of a preclinical model of simultaneous breast and ovarian cancer progression*, published in Carcinogenesis. She also coauthored on a paper, entitled *Ovarian endocrine disruption underlies premature reproductive senescence following environmentally relevant chronic exposure to the aryl hydrocarbon receptor agonist 2,3,7,8-tetrachlorodibenzo-p-dioxin*, published in Biology of Reproduction. She was awarded first place in the Oncology session for the presentation, entitled *Effects of tamoxifen on a preclinical model of simultaneous breast and ovarian cancer progression*, at the 2007 Student Research Forum. She attended the Frontiers in Cancer Prevention Research meeting in Boston and the IDeA Network of Biomedical Research Excellence Symposium in Kansas City at which she won an award for presenting a poster, entitled *Tamoxifen prevents mammary but not ovarian preneoplasia in a preclinical model of simultaneous breast and ovarian cancer progression*. Alison received an award from the NSF for participation in the *2007 East Asia and Pacific Summer Institutes Program for US Graduate Students*.

Gwenaëlle Wernli was awarded a Biomedical Research Training Program fellowship. She was co-author on a paper, entitled *Sympathetic hyperinnervation and inflammatory cell NGF synthesis following myocardial infarction in rats*, published in Brain Research. She was awarded a travel scholarship to present a poster, entitled “*Noradrenergic regulation of proNGF in the rat heart,*” at the 2006 Society for Neuroscience meeting.
COURSES TAUGHT

†Medical Curriculum Core Courses


CORE 820 – GI/Nutrition. Dr. Tash.


CORE 830 – Sexuality/Reproductive Medicine. Dr. Wolfe.

(*Physiology has primary responsibility for these courses.)

†Departmental Graduate Courses


PHSL 847 – Developmental Neurobiology. 2 credits. Spring 2007. Enrollment 10. Drs. Werle and Wright, are course directors. This course is co-listed with Physiology but there were no Physiology faculty instructors.


†IGPBS Courses

IGPBS 893 – Module 3: Molecular Biology. 4 credits. Fall 2006. Dr. Heckert.


† Only Physiology instructors for these courses are listed.
**DEPARTMENT SEMINARS**

The Departmental Seminar program was directed by Dr. Norberto Gonzalez. Thirty two speakers made presentations, nine of which were from outside the university. In addition to support from the department, the Office of the Dean of the School of Medicine, the MRRC, and the Center for Reproductive Sciences made important financial contributions to our program. The Kathleen M. Osborn Lecture Series sponsored Dr. Iain C.A.F. Robinson from the National Institute for Medical Research in London.

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>9/11/06</td>
<td>Steven LeVine, Ph.D.</td>
<td>Pathophysiological Manifestations Induced by Anthrax Lethal Toxin in Mice</td>
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<tr>
<td></td>
<td>Professor, Molecular &amp; Integrative Physiology</td>
<td>KUMC</td>
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<td>9/18/06</td>
<td>Jacob I. Sznajder, MD</td>
<td>The Effects of Hypoxia on the Lung Epithelium</td>
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<td>Professor, Medicine and Cell &amp; Molecular Biology</td>
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<td></td>
<td>Chief, Pulmonary and Critical Care Medicine</td>
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<td>Northwestern University</td>
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<td>Chicago, IL</td>
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<td>9/25/06</td>
<td>Brenda J. Rongish, Ph.D.</td>
<td>Extracellular Matrix Dynamics in Vivo</td>
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<td>Assistant Professor</td>
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<td>Anatomy &amp; Cell Biology</td>
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<td>KUMC</td>
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<td>10/02/06</td>
<td>Iain C.A.F. Robinson, Ph.D.</td>
<td>Shedding Light on the Growth Hormone Axis: Tall Tales from Short Tails</td>
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<tr>
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<td>Division of Neurophysiology</td>
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<td>National Institute for Medical Research</td>
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<td>London, UK</td>
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<td>10/09/06</td>
<td>Shilpa Buch, Ph.D.</td>
<td>NeuroAids: A Tango of HIV and the Host</td>
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<td>Associate Professor, Molecular &amp; Integrative Physiology, KUMC</td>
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<td>10/16/06</td>
<td>Richard N. Sifers, Ph.D.</td>
<td>Mis-Regulation of a Glycan-Based Dialog as a Modifier of Conformational Disease</td>
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<td>Associate Professor</td>
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<td></td>
<td>Pathology, Baylor College of Medicine, Houston, TX</td>
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10/23/06  Hinrich Staecker, MD  
Associate Professor  
Otolaryngology, KUMC  
**Vector Based Strategies for Gene Delivery in the Inner Ear**

10/30/06  Darren Wallace, Ph.D.  
Research Assistant Professor  
Nephrology and Hypertension, KUMC  
**Epithelial Cell Proliferation in polycystic Kidney Disease**

11/06/06  Janette M. McAllister, Ph.D.  
Professor Department  
Cellular & Molecular Physiology and OB/GYN  
Penn State Hershey Medical Center  
**Androgen Excess in the PCOS Ovary: What are the Underlying Defects?**

12/04/06  Carl Wiener, MD, MBA  
The K.E. Krantz Professor and Chair, Obstetrics and Gynecology  
Professor, Molecular & Integrative Physiology  
KUMC  
**Fetal Adaptive Responses to Chronic Hypoxia and the Prevention of Brain Damage**

12/11/06  Mihai Popescu, Ph.D.  
Research Assistant Professor  
Molecular & Integrative Physiology, KUMC  
**Assessment of Fetal Cardiac Electrophysiology Using Multi-Channel Magnetocardiographic (MCG) Recordings**

1/08/07  Sang-Pil Lee, Ph.D.  
Assistant Professor  
Molecular & Integrative Physiology, Hoglund Brain Imaging Center, KUMC  
**Anatomical and Functional Imaging of Transgenic Mice Using Magnetic Resonance**

1/22/07  Lisa Stehno-Bittel, Ph.D., PT  
Associate Professor and Chair  
Physical Therapy and Rehabilitation Sciences  
KUMC  
**The Makings of a Pancreas**
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<tr>
<th>Date</th>
<th>Name</th>
<th>Title</th>
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<tr>
<td>1/29/07</td>
<td>Ronald J. Korhuis, Ph.D. George L. and Melna A. Bolm</td>
<td>Antecedent Ethanol Ingestion Prevents Postischemic Leukosequestration and Injury: Cellular Mechanisms</td>
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<td></td>
<td>Distinguished Professor in Cardiovascular Health Chairman, Department of Medical Pharmacology and Physiology, University of Missouri-Columbia</td>
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<td>2/05/07</td>
<td>Mehmet Bilgen, Ph.D. Mehmet Bilgen, Ph.D.</td>
<td>High Field MRI Applications in Biomechanics and Neuroscience Research</td>
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<td></td>
<td>Associate Professor Molecular &amp; Integrative Physiology, Hoglund Brain Imaging Center, KUMC</td>
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<td>2/12/07</td>
<td>John Stanford, Ph.D. John Stanford, Ph.D.</td>
<td>Clinically-Analogous Measures of Motor Function in Rodent Models of Normal Aging and ALS</td>
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<td>Assistant Professor Molecular &amp; Integrative Physiology, KUMC</td>
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<td>2/19/07</td>
<td>Dale Abrahamson, Ph.D. Dale Abrahamson, Ph.D.</td>
<td>Development of the Kidney Filtration Barrier: Origin of Glomerular Endothelial Cells and their Role in Basement Membrane Assembly</td>
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<td>Professor &amp; Chairman Anatomy and Cell Biology KUMC</td>
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<td>2/26/07</td>
<td>Amy O'Brien Ladner, MD Amy O'Brien Ladner, MD</td>
<td>Iron: Regulatory Activities in the Lung</td>
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<td></td>
<td>Division Director Pulmonary &amp; Critical Care Medicine, KUMC</td>
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<td>3/05/07</td>
<td>Sangita Biswas, Ph.D. Senior Research Scientist MidAmerica Neuroscience Research Foundation Lenexa, KS</td>
<td>Treatment of Multiple Sclerosis with High Dose Intravenous Methotrexate with Leucovorin</td>
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<td></td>
<td>Director Hoglund Brain Imaging Center KUMC</td>
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3/26/07  Kottarappat N. Dileepan, Ph.D.  
Professor  
Allergy/Clinical Immunology/Rheumatology  
Department of Internal Medicine, KUMC  
Regulatio of Endothelial Cell Innate Immune Function and Inflammatory Responses by Histamine

4/02/07  Hiroshi Nishimume, Ph.D.  
Assistant Professor  
Anatomy and Cell Biology  
KUMC  
Organization of the Nerve Terminal by Synapteic Cleft Components

4/09/07  Zijian Xie, Ph.D.  
Professor  
Physiology, Pharmacology, Metabolism, and Cardiovascular Sciences  
The University of Toledo  
Toledo, Ohio  
The Non-Pumping NA/K-ATPase and Cardiovascular Physiology of Endogenous Cardiotonic Steroids

4/16/07  Dianne Durham, Ph.D.  
Professor  
Otolaryngology, KUMC  
CNS Plasticity Following Auditory Deprivation

4/23/07  David Albertini, Ph.D.  
Hall Endowed Professor  
Molecular & Integrative Physiology, KUMC  
Like Rome, All Good Things Must Fall: A Case History About the Ovarian Stem Cell Controversy

4/30/07  Ho Yi Mak, Ph.D.  
Assistant Investigator  
Stowers Institute for Medical Research, Kansas City, MO  
Genetic Regulation of Fat Storage in C. Elegans

5/07/07  Zhiming Suo, MD  
Director  
Lab for Alzheimer's Disease & Aging Research, Kansas City VA Medical Center  
Departments of Neurology and Physiology, KUMC  
GRK Dysfunction and Alzheimer's Pathogenesis

5/14/07  John Wood, Ph.D.  
Associate Professor  
Molecular & Integrative Physiology, KUMC  
Hypoxia and Microvascular Acclimatization
5/21/07  Dr. Richard N. Sandford, MB, Ph.D., FRCP
Wellcome Trust Senior Fellow in Clinical Research and University Lecturer
Department of Medical Genetics
University of Cambridge
Cambridge, England

Polycystin-1 – Mapping New Functional Networks

6/19/07  Marie-Helene Boudrias
Molecular & Integrative Physiology, KUMC

Properties of Forelimb Muscle Representations in the Primate Cerebral Cortex (Dissertation Defense)

6/25/07  Ines Eisner-Janowicz
Molecular & Integrative Physiology, KUMC

Role of the remote motor cortex in recovery from an ischemic motor lesion in non-human primates (Dissertation Defense)

6/27/07  Jennifer Ho-Chen
Molecular & Integrative Physiology, KUMC

Maternal and Placental Adaptations to Hypoxia (Dissertation Defense)
a. Manuscripts Published


b. Manuscripts in Press


Nudo, R.J. “The role of skill vs. use in the recovery of motor function after Stroke,” *OTJR: Occupation, Participation and Health.*


c. Abstracts


Boudrias, M.H. and Cheney, P.D. “Representation of distal and proximal forelimb muscles in SMA, PMd and PMv of rhesus macaques,” Federation of European Neuroscience Societies (FENS), Vienna, Austria, July 8-12, 2006.


Choi, I.-Y., and Lee, S.-P. “In vivo measurement of glutathione in the human brain in aging and alzheimer’s disease using magnetic resonance spectroscopy at 3T” 8th international conference Alzheimer’s and Parkinson’s Diseases: Progress and New


Sanchez G, Timmerberg B, Tash JS and Blanco G. “The Na,K-ATPase alpha4 isoform from humans has distinct enzymatic properties and is important for sperm motility.” American Society of Andrology Meeting, 2006.


RESEARCH SUPPORT

Grant awards, direct and indirect, that were received during FY2007 for principal investigators in the department totaled $6,230,883.


NIH/NICHD – “Kansas Mental Retardation Research Center, P30 Center grant,” July 1, 2006 – June 30, 2011. Principle Investigator Steven Warren; Co-Director: P.G. Smith. Direct costs $370,000; Indirect costs $162,800 (KUMC site only).

NIH - “Kansas IDeA Network for Biomedical Research Excellence (K-INBRE),” September 1, 2004 – June 30, 2009. Principle Investigator: J. Hunt; Director of Bioinformatics and K-INBRE Associate Director: P.G. Smith. Direct costs for this core (KUMC only) $515,000; Indirect costs $242,050.


ACTIVITIES OF STAFF

David F. Albertini, Ph.D., Hall Endowed Professor

The mechanisms of ovarian development and physiology that underlie the causes of infertility and cancer remain a focus for the laboratory. Collaborations with the Kinsey and Petroff (Brian) labs have been established to explore cumulus-oocyte signaling and endocrine disruptors respectively over the past year. The major efforts are on (1) the role of stem cells in the generation of germ line and somatic lineages in the ovary, (2) optimizing methodologies for the cryopreservation of oocytes and ovarian tissue, (3) establishing mechanisms for growth factor and hormonal stimulation during oocyte maturation in vivo and in vitro, and (4) defining modifications in cell cycle regulation that occur during the transition from meiosis to mitosis in the developing embryo.

Meetings Attended:
October 4-7, 2006 - International Congress on Oocyte Cryopreservation, Bologna, Italy.

Committees:
Departmental
Member, Chairs committee on salary
KUMC
Member, Executive Faculty Council
Member, Johnson Seminar Series
Member, 3rd Floor KLSIC Representative
National
Scientific Advisor, Cambridge Healthcare Institute “Back to the science of stem cell research,” organizing committee
Member, Organizing Committee, Meeting on Oocyte Cryopreservation
Member, Fertility Advisory Panel, NIH
Study Section Chair, TEDCO Stem Cell Program, Maryland State

Editorial and Grant Reviews:
Editorial Board, Reproduction (UK)
Editorial Board, Human Reproduction (UK, served final year)
Ad hoc Reviewer, Science
Ad hoc Reviewer, PNAS
Ad hoc Reviewer, Nature
Ad hoc Reviewer, Development
Ad hoc Reviewer, Biology of Reproduction
Ad hoc Reviewer, Reproduction
Ad hoc Reviewer, Tissue Engineering
Dr. Albertini (Continued)

Editorial and Grant Reviews (continued):
Ad hoc Reviewer, Developmental Biology
Ad hoc Reviewer, Molecular Endocrinology
Ad hoc Reviewer, Physiological Genomics
Ad hoc Reviewer, Cell
Ad hoc Reviewer, Molecular Reproduction and Development
Ad hoc Reviewer, Stem Cell
Ad hoc Reviewer, Fertility and Sterility
Grant Reviewer, American Cancer Society: Cell Growth and Cell Cycle Study Section
Grant Reviewer, State of Maryland Stem Cell Research Program
Grant Reviewer, Worcester Polytechnic Institute Advisory Panel on Biological Sciences

Seminars Presented:
September 20, 2006 - “The risky business of building good eggs,”
Johnson Seminar Series, Center for Reproductive Sciences, KUMC.
October 6, 2006 - “An oocentric view of folliculogenesis,” Second International Congress on Oocyte Cryopreservation, Bologna, Italy.
October 13, 2006 - “Understanding the causes of oocyte aneuploidy,” Worcester Polytechnic Institute, Dept. of Biology and Biotechnology, Worcester MA.
November 8, 2006 - “Building better eggs and embryos through assisted reproductive technology,” Frontiers in Biomedical Sciences Lecture Series, Colorado State University, Fort Collins, CO.
March 7, 2007 - “The link between oocyte quality and embryo quality,” Cornell-Weill Medical Center, Division of Reproductive Endocrinology, New York, N.Y.
March 29, 2007 - “Causes and consequences of meiotic dysfunction in mammalian oocytes,” Endocrinology-Reproductive Physiology Program, University of Wisconsin, Madison WI.
April 23, 2007 - “Ovarian stem cells: Facts and fallacies,” Department of Molecular and Integrative Physiology, KUMC.
June 12, 2007 - “Clinical correlates of human oocyte quality after cryopreservation and in vitro maturation,” Chicago Area Reproductive Endocrinologists, Chicago, IL.

Academic Honors:
Coordinated Environmental Toxicology Program at MBL, Woods Hole, MA
Served third year as Co-Director of the Frontiers in Reproduction Course At Marine Biological Laboratory, Woods Hole MA.
Organized Symposium on “Our Reproductive Future” June 1, 2007, MBL.
Served as Member, NIH Advisory Committee on Fertility Restoration
Dr. Albertini (Continued)

Academic Honors (continued):
Interactive session leader for ASRM annual meeting 2007 (October)

Teaching Activities:
IGBPS 1st year curriculum
  4 hour lectures
IGBPS Module 5
  Coordinator

Trainees:
  Susan Barrett – Graduate Student
  Lynda McGinnis - Graduate Student
  Paty Rodriguez - Graduate Student
  Will Messamore - MD Student
  Karla Hutt - Post Doctoral Fellow
  John Bromfield - Post Doctoral Fellow
  Jesse Smith - Summer Student
Andrei B. Belousov, Ph.D., Associate Professor

I am interested in glutamate-dependent neuronal plasticity and the regulation of cholinergic phenotype in developing and mature CNS neurons, the cellular and molecular mechanisms of regulation of electrical synapses (gap junctions) during development and traumatic injury, and activity-dependent homeostatic plasticity in the CNS neurons.

Editorial and Grant Reviews:
- Editorial Board Member, *The Open Neuroscience Journal (ON)*, Bentham Science Publishers
- Ad hoc Reviewer, *Neuroscience*
- Grant Reviewer, proposals for Alzheimer’s Association

Seminars Presented:
- May 4, 2007 – “Glutamate-dependent neuronal plasticity in the CNS,” Department of Biochemistry and Molecular Biology, the University of Kansas Medical Center.
- June 14, 2007 – “Glutamate-dependent neuronal plasticity in the CNS,” Department of Human and Animal Physiology, Kazan State University, Kazan Russia.
- June 15, 2007 – “Glutamate-dependent neuronal plasticity in the CNS,” Department of Normal Physiology, Kazan State Medical University, Kazan Russia.

Teaching Activities:
- PHTH 863 - Pathobiology of Human Function II
- 1 hour lecture

Trainees:
- Jitu Wilson George – Graduate Student
- Won-Mee Park – Graduate Student
- Yongfu Wang – Post Doctoral Fellow
Our 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 isoymes, each characterized by unique enzymatic properties and a cell-dependent and developmentally regulated pattern of expression. We are interested in the function of alpha4, a particular isoform of the catalytic subunit of the Na,K-ATPase that is selectively expressed in spermatozoa. We have found that this isoform, both in rats and humans has functional properties that are different from all other Na,K-ATPases. The polypeptide is significantly upregulated at postmeiotic stages of spermatogenesis and its expression is maximal in mature spermatozoa. Alpha4 is expressed in the mid-piece of the sperm flagellum, and is important for the motility of the cells. A variety of molecular and cellular biology methods are used to study the regulation and activity of alpha4, as well as to understand the role of this Na,K-ATPase in the physiology of the male gametes. These studies will help understand the importance of ion transport in male germ cell fertility and contraception.

In addition, we are studying the role of the Na,K-ATPase in autosomal dominant polycystic kidney disease (ADPKD). We have found that, in renal cells from patients with ADPKD, the Na,K-ATPase exhibits an abnormally increased sensitivity to ouabain, a hormone released by the adrenal glands. We are currently investigating how ouabain may affect cyst formation and progression in the disease.

Meetings Attended:
Meetings Attended (Continued):
April 2007 – “Ouabain stimulates proliferation of epithelial cells from kidneys of patients with autosomal dominant polycystic kidney disease via the Na,K-ATPase and MEK-ERK pathway,” Student Research Forum, KUMC.
April 2007 – “Ouabain dependent Na,K-ATPase signaling in epithelial cells from kidneys of patients with autosomal dominant polycystic kidney disease takes place via the Na,K-ATPase and the EGFR-Src kinase-MEK-ERK pathway,” Student Research Forum, KUMC.

Committees:
Departmental
Member, Ph.D. Thesis Committee for Jennifer Ho-Chen
KUMC
Member, Committee to oversee the Biotechnology Support Facility at KUMC
Member, Medical Students Wescoe Academic Society
Member, Ph.D. Thesis Committee for Erica Perryn, Department of Anatomy
Member, Ph.D. Thesis Committee for Neal Alcalay, Department of Anatomy
Member, Ph.D. Thesis Committee for Yi Miao, Department of Pharmacology

Editorial and Grant Reviews:
Editorial Board Member, American Journal of Physiology: Endocrinology and Metabolism
Reviewer, Journal American Society of Nephrology
Reviewer, American Journal of Physiology
Reviewer, Journal Biological Chemistry
Reviewer, Biology of Reproduction
Ad hoc Grant Reviewer, the National Science Foundation
Grant Reviewer, the National Agency for Scientific Promotion and Technology, Argentina
Grant Reviewer, German Israeli Foundation for Scientific Research and Development, Israel

Seminars Presented:
April 2007 – “Sperm Na,K-ATPase α4 isoform as a target for contraception,” Reproductive Sciences, KUMC.

Academic Honors:
Student’s voice Award for Excellence in Teaching in Medical Physiology.
Dr. Blanco (continued)

Teaching Activities:
- PHSL 802 - Medical Physiology
  - 10 hours Lecture
  - 8 hours Problem Sessions
  - 2 hours Review
- IGPBS Module 4
  - 4 hours lecture

Trainees:
- Anh Nguyet-Nguyen – Graduate Student
- Tamara Jimenez – IGPBS Rotation Student
- Young-Hwan Kim – Post Doctoral Fellow
- Miguel Salas – Summer Student
My research focuses on mechanism(s) involved in the development of HIV-associated dementia and pneumonias using the rhesus macaque model of AIDS. Additionally, I am also interested in developing therapeutic strategies aimed at virus abrogation in the brain and CNS using nanoparticles encapsulated with antisense DNAs. Another aspect of my research is aimed at understanding how drugs of abuse, such as cocaine exacerbate HIV-associated end-stage diseases in HIV-infected drug-abusing population.

Meetings Attended:
November 6, 2006 – “Cocaine and HIV inteplay in the CNS,” the International Symposium on Drug Abuse and HIV/AIDS held at Trivandrum, India.

Editorial and Grant Reviews:
Editorial Board, Journal of Neurovirology
Ad hoc Reviewer, Journal of Virology
Ad hoc Reviewer, FASEB
Ad hoc Reviewer, Journal of Neuroscience
Ad hoc Reviewer, Journal of Neurovirology
Member, NAED study section (permanent member)
Ad hoc Grant Reviewer, NIAAA
Ad hoc Grant Reviewer, NINDS program Projects

Seminars Presented:
October 9, 2006 - “HIV and CNS Complications,” Department of Physiology, KUMC.
Dr. Buch (continued)

Seminars Presented (continued):
April 18, 2007 - “Great Things Come in Little Packages: Use of Nanoparticles in the Therapy of AIDS,” Internal Medicine Grant Rounds, KUMC.

Academic Honors:
NIH Study section (NAED) Member (2007-2010)
Chaired two scientific sessions at the World AIDS Day Meeting in Tianjin, China (2006)
Appointed as an at-large delegate of the Executive Committee of the Faculty Council (2007-2008)

Teaching Activities:
Research Topic Presentation
  10 hours lecture
  4 hours lab and conference
Advanced Topic
  2 hours lecture
  2 hours lab and conference

Trainees:
James Allen – Summer Student
Noreen Baig – Summer Student
Eric Burns – Summer Student
Sonia Hegde – Summer Student
Amanda Moradi – Summer Student
Vinit Nanavaty – Summer Student
Duncan Renfrow-Simon – Summer Student
Rachel Williams – Graduate Student
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 (action potential) 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. This model is used to investigate interactions between SIV infection and drugs of abuse using neurobehavioral, neurophysiological, and neuroanatomical methods.

Meetings Attended:
- October 14-18, 2006 - 35th Annual Meeting of the Society for Neuroscience in Atlanta, GA. Was co-author on a poster presentation.
- October 12-13, 2006 - Cambridge Electronic Design workshop, Atlanta, GA.
- November 29 – December 3, 2006 - Association of Chairs of Departments of Physiology meeting, Costa Rica.
- March 8, 2007 - Four Corners Research Alliance Retreat, Kansas City, MO.

Committees:
Departmental
- Member, Ines Eisner comprehensive & dissertation exam committees
- Member, Greg Onyschuck comprehensive & dissertation exam committees

KUMC
- Member, Meredith Estep comprehensive & dissertation exam committees
- Member, Shinya comprehensive & dissertation exam committees
- Member, Mimi Urish comprehensive & dissertation exam committees
- Member, Dean's Leadership Committee
- Member, Ophthalmology Chair Search Committee
- Member, Brain Bank Advisory Board directed by Dr. Larry Carver
- Interviewed numerous candidates for various positions
- Judge for Student Research Forum

KUMC-KU/Lawrence
- Co-Director, cross campus Ph.D. program in neuroscience
- Member, Neuroscience Ph.D. Program Executive Committee
- Member, Kansas MRRC Internal Scientific Advisory Committee
Dr. Cheney (continued)

Committees (continued):
KUMC-KU/Lawrence
Member, Kansas MRRC 40th anniversary planning committee
Theme Leader, Neurobiology of Mental Retardation and Developmental Disabilities Theme within the Kansas MRDDRC
Member, Committee to review Eli Michaelis as Director of the Higuchi Bioscience Center
Member, Internal Advisory Committee for Neuroscience COBRE application led by Eli Michaelis
Member, Neuroscience Advisory Committee

Editorial and Grant Reviews:
Ad hoc Reviewer, J. Neurophysiology
Ad hoc Reviewer, J. Neuroscience
Ad hoc Reviewer, J. Neuroscience Methods
Ad hoc Reviewer, Experimental Brain Research
Ad hoc Reviewer, Cerebral Cortex
Ad hoc Reviewer, J. Experimental Medicine
NIH – Chair, Sensory Integration and Cognition Special Study Section, October 10, 2006
Grant Reviewer, Medical Research Council of Great Britain

Teaching Activities:
Advanced Neuroscience
14 hours lecture
Physical Therapy - Pathobiology of Human Function II
2 hours lecture

Trainees:
Marie-Helene Boudrias - Graduate student
Mariam Riazi Kermani - Graduate student
Darcy Griffin - Graduate student
Heather Hudson - Graduate student
Gustaf Van Acker - Summer MD/PhD student
Nicholas Stucky - Summer MD/PhD student
My laboratory’s primary focus is on understanding the process of ovulation. Present studies are centered on elucidating the molecular mechanisms via which a key transcription factor downstream of the LH surge, CCAAT/enhancer-binding protein, regulates this process. These studies are identifying genes that could be used to control fertility. Post-transcriptional gene regulation via during the periovulatory period is also being studied using a novel approach (i.e., ribonomics) to identify novel genes for contraceptive development. The role micro RNAs play in ovarian function are also being investigated. My laboratory has also entered the assisted reproductive technologies (ART) research arena, addressing the issue of embryo quality. In a first of its kind we have completed a proteomic (tandem mass spectrometry) analysis of conditioned medium from preimplantation embryos. The proteins identified are now being studied for their predictive value as well as their functional role in embryo development. This area of research has the potential to not only improve ART procedures but also the health of children conceived through ART.

Meetings Attended:
July 29 - August 2, 2006 - 39th Annual Meeting of the Society for Study of Reproduction, Omaha, NE.
April 3-4, 2007 - 8th Annual Midwest Embryologist Meeting, Madison, WI.

Committees:
Departmental
Advisor, Martha Carletti, Ph.D. Dissertation Committee
Advisor, Stephanie Fielder, Ph.D. Dissertation Committee
Member, Allison Ting, Ph.D. Dissertation Committee
Member, Sara Turk, Ph.D. Dissertation Committee
Member, Lynda McGinnis, Ph.D. Dissertation Committee
Member, Emily McDonald, Ph.D. Dissertation Committee

KUMC
Member of the IACUC Animal Transition Committee
Member of the Institutional Oversight for Human Embryonic Stem Cell Committee (ESCRO) at the University of Kansas
Member of the Advisory Committee for the Microarray Facility
Member of the Mass Spectrometry Oversight Committee

National
Chairman of Bylaws Committee, Society for Study of Reproduction

Editorial and Grant Reviews:
Editorial Board Member, Reproduction
Ad hoc Reviewer, Molecular Endocrinology
Ad hoc Reviewer, Biology of Reproduction
Ad hoc reviewer, Human Reproduction
Dr. Christenson: (Continued)

Academic Honors:
   Adjunct Professor in Department of Animal Science at University of Nebraska - Lincoln.

Teaching Activities:
   IGPBS Module 4
      4 hours Lecture

Trainees:
   Martha Carletti – Graduate Student
   Stephanie Fiedler – Graduate Student
   Allison Boehm – Summer Student
   Rachel Ashworth – Summer Student
S. J. Enna, Ph.D., Professor

The overall objectives of the research program is to define the pharmacological and biochemical properties of neurotransmitter receptors, in particular those for GABA. Currently, emphasis is placed on characterizing the regulation of GABA\textsubscript{B} receptor expression and function in response to physiological and pharmacological manipulations. Experiments are also being conducted to assess the possible beneficial effects of GABA\textsubscript{B} receptor antagonists in slowing or reversing neurodegeneration in an animal model of Parkinson’s disease.

Meetings Attended:
- June 29 – July 7, 2006 - 15\textsuperscript{th} World Congress of Pharmacology, Beijing, China.
- April 27 – May 2, 2007 - Experimental Biology, Washington, D.C.

Committees:
- Departmental
  - Chair, T-90 Training Grant Applications Committee
  - Member, Salary Committee
- KUMC
  - Member, GCRC Education Activities Oversight Committee
  - Member, K-30 External Advisory Committee Advisory Board
  - Member, CTSA Subcommittees on Education and Industrial Partners
  - Member, Research and Training Committee
  - Member, Intercampus Communications Committee
- National
  - Member, Scientific Advisory Council, National Alliance for Autism Research
  - Chair, Publications Committee, American College of Neuropsychopharmacology
  - Member, Nebraska-BRIN External Advisory Committee
  - Member, PhRMA Foundation Pharmacology Advisory Panel
  - Member, University of Nebraska Alpha-2 Adrenergic Receptor Agonist Program Project Committee
  - Member, GABA\textsubscript{B} Nomenclature Database Committee, International Union of Basic and Clinical Pharmacology

Editorial and Grant Reviews:
- Editor-in-Chief, \textit{Biochemical Pharmacology}
- Executive Editor-in-Chief, \textit{Pharmacology & Therapeutics}
- Editor-in-Chief, \textit{Pharmacology International}
- Co-Editor, \textit{xPharm}
- Co-Editor, \textit{Current Protocols in Pharmacology}
Dr. Enna (continued)

Editorial and Grant Reviews (continued):
   Guest Editor, Biological and Pharmaceutical Bulletin
   Section Head (Neuropharmacology and Psychopharmacology), Faculty of 1000 Biology Literature Search Service
   Editorial Advisory Board, Brain Research
   Editorial Advisory Board, Life Sciences
   Editorial Advisory Board, CNS Drug Reviews
   Editorial Advisory Board, Current Opinion in Pharmacology
   Grant Reviewer, National Alliance for Autism Research
   Grant Reviewer, PhRMA Foundation
   Consultant, Abbott Laboratories
   Consultant, Cephalon, Inc.
   Consultant, Nereus Pharmaceuticals, Inc.

Seminars Presented:
   September 13, 2006 – “Role of GABA\textsubscript{B} Receptors in Neurological and Psychiatric Disorders,” Department of Psychiatry, University of Texas Southwestern Medical School, Dallas, Texas.
   April 20, 2007 – “Neuropharmacology of GABA\textsubscript{B} Receptor Systems,” Department of Pharmacology, University of Catania, Catania, Sicily.

Academic Honors:
   Elected Secretary-General of the International Union of Basic and Clinical Pharmacology
   Invited to lecture at The Institute of Pharmacology in the Polish Academy of Sciences, Krakow, Poland

Teaching Activities:
   Medical Pharmacology
      18 hours Small Group Discussion Leader
   Medical Physiology
      12 hours Small Group Discussion Leader
   Advanced Neuroscience Course
      6 hours Lecture
   Psychiatry Residents Lectures
      5 hours Lecture
   Faculty Advisor
      Orr Society: Jennifer Liebenthal and Emily Blakenship
Dr. Enna (continued)

Teaching Activities (continued):
- Integrative and Organ Systems Pharmacology Course (University of Nebraska)
  - 1 hour Lecture
  - Course Director, Central Nervous System, Integrative and Organ Systems Pharmacology Course, University of Nebraska

Trainees:
- Vanja Duric – Post Doctorate, Landon Center on Aging
- Adrianne Hontz – Graduate Student, Pharmacology, Toxicology and Therapeutics
- Andrew Ralya – Graduate Student, Pharmacology, Toxicology and Therapeutics
- Jerri Rook – Graduate Student, Pharmacology, Toxicology and Therapeutics
Shawn B. Frost, Ph.D., Research Assistant Professor

Our laboratory studies neural plasticity in response to neurological injury and behavioral experience. Currently we are developing a nonhuman primate model to examine the neuroanatomical, neurophysiological and behavioral effects of focal infarcts in the internal capsule; a common site for clinical strokes in the cerebral white matter. This non-human primate model of white matter infarct will be extremely valuable in future studies examining the underlying mechanisms of recovery after subcortical ischemic stroke and can be used in the development of therapeutic interventions in stroke treatment.

Editorial and Grant Reviews:
Ad-hoc Reviewer, Journal of the Neurological Sciences
Ad-hoc Reviewer, Brain Research

Teaching Activities:
PHTH 863 - Pathobiology of Human Function II
1 hour lecture
Graduate Neuroscience 846
2 hours of lecture

Trainees:
Pei-chen Fang – Post Doctoral Fellow, R.J. Nudo primary advisor
David Guggenmos - Graduate Student, R.J. Nudo primary advisor
Ines Eisner-Janowicz - Graduate Student, R.J. Nudo primary advisor
Angela Link – MD Summer Student, R.J. Nudo primary advisor
Insulin sensitivity decreases significantly with advancing age, and insulin resistance represents an important underlying risk factor for type 2 diabetes, for metabolic syndrome, obesity, cardiovascular disease, and hypertension. It is known that the age dependent decrease in insulin signaling through the insulin receptor-PI3 kinase pathway results in reduced glucose uptake in skeletal muscle. The insulin receptor substrate-1 (IRS-1) functions as a molecular switch in insulin sensitive tissue with tyrosine phosphorylation of IRS-1 resulting in normal insulin signaling. In contrast, serine phosphorylation of IRS-1 is normally present as an off-switch for unchecked insulin action; at chronic levels, this can function to inhibit downstream insulin signaling and is a primary cause of insulin resistance. Aging muscle, characterized by significant atrophy, loss of fast muscle fiber types, and presence of relatively high levels of oxidative stress, may be especially vulnerable to serine IRS-1 phosphorylation. While serine phosphorylation of IRS-1 likely contributes to the development of insulin resistance, the underlying factors contributing to chronic increased serine phosphorylation of IRS-1 with aging are still not known. Our long-term goal is to identify factors contributing to age-related insulin resistance and identify novel interventions to improve insulin sensitivity in skeletal muscle.

Meetings Attended:
April 28 – May 2, 2007 - Experimental Biology Meeting, Washington, D.C.

Committees:
Departmental
Advisor, Ph.D. Thesis committee for Anisha Gupte
Member, Thesis committee for Gwenaelle Wernli
Member, Thesis committee for Argenia Doss
KUMC
Grant Reviewer, KUMC Biomedical Research Training Program
Member, IGPBS Interview Team Spring 2007
Member, Thesis committee for Scott Richmond (KU Lawrence)

Editorial and Grant Reviews:
Ad hoc Reviewer, European Journal of Physiology
Ad hoc Reviewer, Experimental Physiology
Ad hoc Reviewer, Journal of Applied Physiology
Ad hoc Reviewer, American Journal of Physiology Endocrinology and Metabolism
Ad hoc Reviewer, Free Radical Biology and Medicine
Ad hoc Reviewer, Applied Physiology, Nutrition, and Metabolism
Dr. Geiger (continued)

Seminars Presented:
March 8, 2007  - “The role of stress kinases in the development of skeletal muscle insulin resistance and type 2 Diabetes,” Department of Anatomy and Cell Biology, KUMC.
June 1, 2007  - “Targeting stress kinases in the treatment of age-related skeletal muscle insulin resistance.” Diabetes Research Group, KUMC.

Teaching Activities:
PHSL 800 - Medical Physiology
  8 hours laboratory
  4 hours conference
IGPBS Module 5
  5 hours lecture
PHSL 863 – Physical Therapy: Pathobiology of Human Function I
  3 hours lecture

Trainees:
John Dollerschell - Pre-medical student, undergraduate, KU Lawrence
Anisha Gupte – Graduate student
Brittany Gorres - IGPBS rotation student
Jill Morris - IGPBS rotation student
Amanda Obaidat - IGPBS rotation student
Vivek Sastri - High School Student Summer Volunteer
Chad Touchberry – Graduate student (KU Lawrence)
Norberto C. Gonzalez, M.D., Professor

My research centers on the mechanisms of adaptation to acute and chronic hypoxia in intact animals. This includes the study of the effects of hypoxia, induced by a reduction on the levels of inspired oxygen, on each of the linked conductances of the oxygen transport system in resting and exercising animals, and the effects of exercise training on the strategies of acclimatization to hypoxia and their impact on the oxygen transport system. Another important research line is the study of the underlying mechanisms of the microvascular inflammatory response to systemic hypoxia, which may have functional relevance to acute altitude diseases such as acute mountain sickness, high altitude pulmonary edema and high altitude cerebral edema. Recent work in my laboratory has led to the novel observation that the ubiquitous inflammatory response to alveolar hypoxia is not triggered by the reduction of the local tissue PO$_2$, but rather by a mediator released by alveolar macrophages and transported by the circulation. Current research efforts are directed to identify this substance and to determine the physiological relevance of this response.

Meetings Attended:
  February 27-March 4 2007 - International Hypoxia Symposium, Lake Louise, Alberta, Canada.
  April 28-May 2, 2007 - Experimental Biology 07, Washington DC.

Committees:
  Departmental
    Member, Promotion and Tenure Committee
    Coordinator, Physiology Seminars

Editorial and Grant Reviews:
  Reviewer, The Journal of Applied Physiology
  Reviewer, The European Journal of Exercise Physiology
  Reviewer, Medicine and Sciences in Sports and Exercise
  Reviewer, The Journal of Physiology

Academic Honors:

Teaching Activities:
  Medical Physiology
    10 hours lecture
    2 hours small group conferences
    1 hour laboratory
  IGPBS
    6 hours lectures

Trainees:
  Jie Chao – IGPBS Rotation Student
Wohaib Hasan, Ph.D., Research Assistant Professor

My research is primarily directed at understanding how peripheral nerves interact with their targets and other nerve populations. My studies indicate that the Nerve Growth Factor (NGF) protein is synthesized by a variety of cell types in development and maturity. After an ischemic episode in the rat heart there is increased NGF synthesis by a variety of cell types in the peri-infarct area. Sympathetic nerves are also attracted to the peri-infarct region and are closely spatially associated with the NGF-expressing cells. In culture, sympathetic nerve outgrowth towards peri-infarct tissue can be reversed by anti-NGF antibodies. These studies indicate that NGF may be responsible for sympathetic hyperinnervation and ultimately contribute to fatal cardiac arrhythmias. Understanding nerve-target interactions after myocardial ischemia is a prime focus of my studies.

With increasing time after infarct, cardiac sympathetic control is progressively altered leading to cardiac damage and death. The increased sympathetic drive may occur because parasympathetic nerves, that normally inhibit sympathetic nerves, no longer are in close association with the sympathetic nerves. I have previously shown that parasympathetic nerves synthesize NGF and this may underlie sympathetic-parasympathetic axo-axonal synapses. Whether alterations in availability of NGF from parasympathetic neurons are responsible for uncoupling of these nerves is also an important ongoing research question.

Meetings Attended:
   October 14-18, 2006 – 36th Annual meeting, Society for Neuroscience, Atlanta.

Committees:
   Departmental
   Member, PhD Dissertation Committee for Gwenaelle Wernli
   Member, PhD Dissertation Committee for Timothy Donohue

Editorial and Grant Reviews:
   Ad hoc Reviewer, Journal of Molecular Histology

Academic Honors:
   President, Society for Neuroscience, Kansas City Chapter

Teaching Activities:
   NURO 846 – Advanced Neuroscience: Autonomic Nervous System
   2 hours lecture
   Student Research Forum
   Forum Judge
Leslie L. Heckert, Ph.D., Associate Professor

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. Molecular approaches, comparative genomics, and transgenic mouse models are employed to explore events regulating gene expression and function. Through characterization of these genes, we hope to enhance our understanding of the processes controlling gonadal development and Sertoli cell-specification.

Meetings Attended:
April 18-21, 2007 - XIX North American Testis Workshop, Tampa, FL.

Committees:
Departmental
Member, Graduate Student Advisory Committee
Member, Ph.D. Dissertation Committee for Stephanie Fiedler
Member, Ph.D. Dissertation Committee for Sarah Tague
Member, Ph.D. Dissertation Committee for Jeff Cotitta
Member, Ph.D. Dissertation Committee for Elizabeth Dille
Member, Ph.D. Dissertation Committee for Emily McDonald

KUMC
Member, Ph.D. Dissertation Committee for Adnan Abu-Yousif, Pharmacology, Toxicology, and Therapeutics
Member, Ph.D. Dissertation Committee for Shuyi Chen, Anatomy and Cell Biology.
Member, Ph.D. Dissertation Committee for Aaron Gottschalk, Biochemistry and Molecular Biology
Chair, Transgenic Advisory Committee
Member Scientific Review Committee for Kansas Intellectual and Developmental Disabilities Research Center (KIDDRC) and Leader of Theme 4.
Member, 2008 Greenwald Symposium Scientific Organizing Committee
Member, committee to develop bridging guidelines for faculty salaries and research programs
Member, Women in Medicine and Science Task Force.

National
Member, program committee for XIX North American Testis Workshop April 18-21. 2007 Tampa, FL
Session Chair; “Regulation of Gene Expression”; The XIX North American Testis Workshop, April 18-21. 2007 Tampa, FL
Member, nominations committee, Society for the Study of Reproduction
Editorial and Grant Reviews:
- Member, Editorial Board for Molecular Endocrinology
- Member, Editorial Board for Journal of Andrology
- Ad hoc Reviewer, Endocrinology
- Ad hoc Reviewer, Biology of Reproduction
- Ad hoc Reviewer, Developmental Biology

Seminars Presented:
- August 18, 2006 - "Regulation of the FSH receptor; past, present, and future," Distinguished alumni Presentation, Washington State University annual retreat.

Academic Honors:
- Director of Module, 1 Frontiers in Reproduction course, Woods Hole, MA.
- Member, planning committee 2007 Testis Workshop.
- Member, nominations committee, Society for the Study of Reproduction.

Teaching Activities:
- IGPBS - Module 3
  - 5 hours lectures
  - Frontiers in Reproduction course at Marine Biological Laboratory, Woods Hole, Massachusetts on Transcriptional regulation, May 3-20, 2007, Visiting Faculty and Course Director.
  - 3 hours lectures
  - 1 hour laboratory

Trainees:
- Tatiana Karpova, Ph.D., - Post Doctoral Fellow
- Kumarasamy Ravichandiran, Ph.D. – Post Doctoral Fellow
- Beth Dille – IGPBS Rotation Student
Aberrant spontaneous activity in the auditory system is commonly believed to be a cause of tinnitus. Current research projects utilize behavioral methods in combination with 2-deoxyglucose and single unit measures of spontaneous activity to test the hypothesis that the tonotopic profile of aberrant SA is a neural correlate of tinnitus, and to identify mechanisms of control of SA in the central auditory system using the rat as an experimental model.
T. Rajendra Kumar Ph.D., Assistant Professor

Over the past several years, research in my lab has been directed towards elucidating the signaling mechanisms in the mouse hypothalamus-pituitary-gonadal axis using both gain-of-function (transgenic) and loss-of-function (gene knockout) approaches. These studies are clinically relevant and will have significant impact in understanding the normal physiology and pathology of the mammalian reproductive axis, including pituitary and gonadal cancers and male and female infertility.

Meetings Attended:
April 18-21, 2007 - XIX North American Testis Workshop, Tampa, FL.

Committees:
Departmental
Member, Graduate Student Advisory Committee

KUMC
Member, Laboratory Animal Research Advisory Committee
At-Large Department Member, Faculty Executive Council
Member, Gilbert Greenwald Symposium Organizing Committee
Member, Transgenic and Gene Targeting Facility Oversight Committee
Member, IGPBS International Graduate Students' Selection Committee
Member, Biomedical Research Training Program Fellowships Selection Committee
Member, NIH Postdoctoral Training Program Committee
Member, DC Johnson Scholar Travel Award Committee

National
Chair, Session on Cell signaling within the reproductive tract, 3rd Annual Greenwald Symposium, University of Kansas Medical Center, October 27-28, 2006.

Editorial and Grant Reviews:
Ad hoc Reviewer, American Journal of Pathology
Ad hoc Reviewer, American Journal of Physiology: Endocrinology & Metabolism
Ad hoc Reviewer, Asia Journal of Endocrinology
Ad hoc Reviewer, Biology of Reproduction
Ad hoc Reviewer, Clinical Endocrinology
Ad hoc Reviewer, Endocrine
Ad hoc Reviewer, Endocrine-Related Cancer
Ad hoc Reviewer, Endocrinology
Ad hoc Reviewer, Experimental Gerontology
Ad hoc Reviewer, Expert Opinion on Therapeutic Patents
Ad hoc Reviewer, FEBS Letters
Ad hoc Reviewer, Journal of Andrology
Ad hoc Reviewer, Journal of Biotechnology
Ad hoc Reviewer, Journal of Cell Science
Ad hoc Reviewer, Journal of Clinical Endocrinology & Metabolism
Dr. Kumar (Continued)

Editorial and Grant Reviews (continued):
- Ad hoc Reviewer, Journal of Endocrinology
- Ad hoc Reviewer, Journal of Physiology
- Ad hoc Reviewer, Molecular and Cellular Endocrinology
- Ad hoc Reviewer, Molecular Endocrinology
- Ad hoc Reviewer, Molecular Reproduction and Development
- Ad hoc Reviewer, Oncogene
- Ad hoc Reviewer, Reproductive Biology and Endocrinology
- Ad hoc Reviewer, Reproduction
- Ad hoc Reviewer, RNA
- Ad hoc Reviewer, The FASEB Journal
- Ad hoc Reviewer, Trends in Endocrinology and Metabolism

Seminars Presented:
- October 9, 2006 - "Genetic approaches to study FSH actions in the Mouse," Department of Biology, Wichita State University, Wichita, KS.
- January 22, 2007 - "Genetic Analysis of Somatic-Germ Cell Interactions in The Mouse Testis," Department of Biochemistry, Molecular Biology and Cell Biology, Northwestern University, Evanston, IL.

Academic Honors:
- Elected Member, Editorial Board, Endocrinology (January 2006-December 2009)
- Invited speaker, Department of Dept. of Biological Sciences, Thomas W. Cole Jr. Research Center, Clark Atlanta University Atlanta, GA, September 21, 2007.
- Invited Speaker, 2nd International Symposium on Molecular and Clinical Aspects of Gonadal and Non-gonadal actions of gonadotropins; New Delhi, India, February 08, 2008.

Teaching Activities:
- IGPBS - Module IV
  - 2 hours lecture (Cell Signaling III)
  - 2 hours lecture (Cleavage, Gastrulation and Mesoderm Induction)
  - 2 hours lecture (Reproductive Tract Development)
- Reproductive Physiology
  - 9 hours lecture (Hypothalamus & Pituitary; Gonadotropins and PRL; Other pituitary hormones, Male reproductive endocrinology, Spermatogenesis)

Trainees:
- Damayanti Chakraborty - IGPBS Rotation Student
- Huizhen Wang, Ph.D. – Post Doctoral Fellow
Melissa A. Larson, Ph.D., Research Assistant Professor; Director, KUMC Transgenic and Gene-Targeting Institutional Facility

The TGIF is a fee-for-service facility supporting the research efforts of investigators at KUMC and the surrounding research community. In this capacity, we are providing the services of generation of transgenic and chimeric mice, targeting of embryonic stem cells, genotyping, sperm cryopreservation, rederivation by embryo transfer and in vitro fertilization. We also provide consultation, demonstration and training on construct generation, embryo handling and mouse surgeries and will be adding the services of embryo cryopreservation, intracytoplasmic sperm injection and de novo construct creation. We welcome the opportunity to research new projects, and we are developing new techniques and services to offer to investigators. My lab is also investigating the in vivo function of a novel recombinase for use in genetic engineering.

Meetings Attended:
   October 2006 - Gilbert S. Greenwald Symposium, Kansas City, MO.

Committees:
   KUMC
   Member, KUMC Transition Committee

Editorial and Grant Reviews:
   Member, Special Emphasis Panel to review proposals in response to RFP NIH ES -07-03, entitled "Knock-Out Mouse Development."

Seminars Presented:
   February 6, 2007 - “Transgenic and Gene-Targeting Facility: What we can do for you…,” VA Hospital, KC, MO.

Teaching Activities:
   Consultation and training for Soares lab personnel, KUMC
   Consultation and training for Weiss lab personnel, K-State
   Consultation and training for Feng lab personnel, UMKC
Dr. Lee received his Ph.D. in Biophysical Sciences and Medical Physics from University of Minnesota. His research topic was the physiological bases of functional MRI signals. Dr. Lee completed his postdoctoral training at the Center for Magnetic Resonance Research in University of Minnesota. His research continued at the Nathan Kline Institute as a senior research scientist and focused on the early detection of neurodegenerative diseases including Alzheimer's disease using MRI by visualizing β-amyloid plaques in the brain. Dr. Lee's current research interests include the characterization and understanding of biological processes in the brain in vivo at the cellular and molecular level using novel non-invasive magnetic resonance techniques, for example, in vivo measurements of iron contents, Aβ plaques and axonal transport using contrast agents in transgenic animal models of Alzheimer's disease. Dr. Lee’s research goal is early diagnosis and identification of changes in functional and physiological aspects of neurodegenerative diseases during the disease progression.

Meetings Attended:
- March 14-18, 2007 - International Conference on AD/PD, Salzburg, Austria.
- May 19-25, 2007 - International Society of Magnetic Resonance in Medicine (ISMRM) / European Society of Magnetic Resonance in Medicine (ESMRM), Berlin, Germany.

Editorial and Grant Reviews:
- Ad hoc Reviewer, Magnetic Resonance in Medicine
- Ad hoc Reviewer, NMR in Biomedicine
- Grant Reviewer, Medical Research Council, January 2006, UK

Seminars Presented:
- January 8, 2007 - “Anatomical and Functional Imaging of Transgenic Mice using Magnetic Resonance," Department of Physiology, KUMC.

Teaching Activities:
- Independent study
  10 hours lecture

Trainees:
- Meredith Esteep – Graduate Student, Bureau of Child Research
Multiple sclerosis and globoid cell leukodystrophy (Krabbe disease) are diseases of myelin that result in loss of motor and sensory functions. We are examining the role of stress response proteins and free radicals in the pathogenesis of these diseases, and we are interested in examining a range of different therapeutic interventions. Additional research focuses on toxin-mediated pathogenesis.

Meetings Attended:
- September 29-30, 2006 - Midwest Regional Center of Excellence Retreat & Planning Meeting, Innsbrook Conference Center, Wright City, MO.
- April 15-17, 2007 - Regional Centers for Biodefense and Emerging Infectious Diseases Research, 4th Annual Meeting, St. Louis, MO.

Committees:
- KUMC Member, Statistics Advisory Committee for the MRRC

Editorial and Grant Reviews:
- Ad hoc Reviewer, Journal of Neurochemistry
- Ad hoc Reviewer, Journal of Neuroscience Research
- Ad hoc Reviewer, Neuroscience Letters
- Ad hoc Reviewer, Schizophrenia Bulletin

Seminars Presented:
- September 11, 2006 – “Pathophysiological manifestations induced by anthrax lethal toxin in mice,” Physiology Department Seminar, KUMC.

Teaching Activities:
- PHSL 848 - Molecular Mechanisms in Neurological Disorders
  Course Director, Lecturer, and Mentor for Student Presentations
Randolph J. Nudo, Ph.D., Professor & Director of the Landon Center on Aging

Our laboratory is studying the brain's capacity for self-repair after damage. We utilize a non-human primate model of stroke recovery to determine the neurophysiologic, neuroanatomic, and biochemical bases for recovery. By tracking changes in the structure and function of motor areas of the cerebral cortex as a result of a focal vascular infarct, we are beginning to describe the cascade of events that give rise to the reorganized brain. We are also studying novel forms of treatment in chronic stroke to enhance and accelerate the recovery process. These treatment interventions include both physiotherapy and pharmacotherapy, either alone or in combination. It is our goal to translate directly the information we gain through brain plasticity research into effective clinical applications.

Meetings Attended:
October 3, 2006 - Neurorehabilitation Research Symposium, Tübingen, Germany.
November 1-3, 2006 - NINDS Workshop entitled Models of Geriatric Epilepsy, Gaithersburg, Maryland.
December 8, 2006 - Asia-Pacific Symposium on Neural Regeneration, Shanghai, China.
June 4, 2007 - World Confederation of Physical Therapy, Vancouver, Canada.
June 7, 2007 - Kuopio Stroke Symposium, Kuopio, Finland.
June 22, 2007 - Symposium entitled “Activity-dependent plasticity in the brain, Turino, Italy.

Committees:
Departmental
Member, Department Promotion and Tenure Committee
KUMC
Member, K30 grant Internal Advisory Board
Member, General Clinical Research Center Advisory Committee
Member, General Clinical Research Center Executive Committee
Chair, Laboratory Animal Resources Advisory Committee
Member, Animal Transition Committee
Member, Board of Directors, American Society of Neurorehabilitation
Dr. Nudo (continued)

Editorial and Grant Reviews:
- Editorial Board, *Restorative Neurology and Neuroscience*
- Editorial Board, *Neurorehabilitation and Neural Repair*
- Editorial Board, *Neuroscience and Biobehavioral Reviews*
- Ad hoc Reviewer, *Journal of Neurophysiology*
- Ad hoc Reviewer, *Stroke*
- Ad hoc Reviewer, *Journal of Cerebral Blood Flow and Metabolism*
- Ad hoc Reviewer, *Cerebral Cortex*
- Ad hoc Reviewer, *Journal of Neuroscience*
- Ad hoc Reviewer, *Brain*
- Ad hoc Reviewer, *Learning and Memory*
- Ad hoc Grant Reviewer, Pilot Study Research Program, Medical College of Georgia
- Ad hoc Grant Reviewer, Fondazione Italiana Sclerosi Multipla
- Temporary Study Section Member, American Heart Association Brain 1 Study Section, September, 2006.
- Ad hoc Grant Reviewer, Dept of Veterans Affairs Rehabilitation Research Merit Review, August, 2006.
- Consultant, Medical Matters Group
- Consultant, SG Cowan
- Consultant, Vista Research LLC

Seminars Presented:
- September 26, 2006 - Invited Tutorial Speaker, “Prosthetics Applications in Plastic Brain/Learning and Training,” National Academies Keck Futures Initiative (NAKFI), Los Angeles, California.
- October 3, 2006 - Invited Speaker, Neurorehabilitation Research Symposium, Tübingen, Germany.
- November 1-3, 2006 - Invited Participant, NINDS Workshop entitled *Models of Geriatric Epilepsy*, Gaithersburg, Maryland.
- November 15, 2006 - Invited Speaker, “Brain Plasticity and Recovery after Stroke,” West Virginia University, Department of Neurology.
Dr. Nudo (continued)

Seminars Presented (continued):


Academic Honors:


Invited Speaker, Annual Neuroscience Symposium, University of South Dakota, Vermillion, South Dakota, September 8, 2007.


Invited Speaker, 12th International Symposium on Neural Regeneration, Pacific Grove, California, December, 2007.

Invited Speaker, RIKEN Brain Science Institute Summer Program, Tokyo, Japan, August 2008.

Invited Speaker, 6th World Stroke Congress, Vienna, Austria, September 2008.

Dr. Nudo (continued)

Teaching Activities:

- PHSL 848 - Molecular Mechanisms in Neurological Disorders
  - 1 hour lecture
- PHSL 846 - Advanced Neuroscience
  - 4 hours lecture
- AMED 900 - Ambulatory Medicine/Geriatrics Clerkship
  - 8 hours lecture
- Faculty Research Series
  - 1 hour lecture
- PTRS 863 - Pathobiology of Human Function II
  - 1 hour lecture
- Introduction to Clinical Research
  - 1 hour lecture

Trainees:

- Ines Eisner-Janowicz - Graduate Student
- David Guggenmos - Graduate Student
- Edward Urban - Graduate Student
- Pei-chun Fang – Post Doctoral fellow
- Scott Bury – Post Doctoral fellow
Erik J. Plautz, Ph.D., Research Assistant Professor

Our laboratory studies neural plasticity (the capacity of the brain to undergo physiological and anatomical changes) in response to behavioral experience and neurological injury. We utilize a non-human primate model of ischemic stroke to examine changes in motor areas of the cerebral cortex following injury and during recovery. Several projects are focused on identifying and describing the widespread cascade of events that occur in the days, weeks, and months after injury. Other projects involve evaluation of novel techniques or methods for improving functional recovery from chronic disability, including physiotherapy, pharmacotherapy, and device-assisted electrotherapy.

Committees:
KUMC
Member, IACUC Committee (2005-2008)
Faculty Judge, KUMC Student Research Forum (April 2007)

Editorial and Grant Reviews:
Ad hoc Reviewer, Behavioral Brain Research

Teaching Activities:
PTRS 863 - Pathobiology of Human Function II
1 hour lecture

Trainees:
Scott Bury – Post Doctoral Fellow, Dr. Nudo primary advisor
Vanja Duric – Post Doctoral Fellow, Dr. Nudo primary advisor
Pei-chun Fang – Post Doctoral Fellow, Dr. Nudo primary advisor
David Guggenmos - Graduate Student, Dr. Nudo as primary advisor
Ines Janowicz - Graduate Student, Dr. Nudo primary advisor
Angela Link - Medical Summer Student, Dr. Nudo primary advisor
Chris Tanzie - MD/PhD Summer Student, Dr. Nudo primary advisor
Michael Taylor – Post Doctoral Fellow, Dr. Nudo primary advisor
Edward Urban – MD/PhD Graduate Student, Dr. Nudo primary advisor
Mihai Popescu, Ph.D., Research Assistant Professor

My research activities are directed towards the design and evaluation of algorithms that provide improved estimates of the spatio-temporal dynamics of brain activity from multi-channel MEG recordings. Current experimental work focuses on understanding specific brain mechanisms underlying the evoked auditory responses in children with specific language impairment and in children with Asperger syndrome. A second area of research focuses on developing algorithms for the reconstruction of fetal cardiac currents from multi-channel fMCG recordings, including the integration of 3D ultrasound information of the feto-abdominal anatomy into the discrete formulation of the forward electromagnetic problem. Applications include examining the longitudinal changes of fetal cardiac electrophysiology and differences in cardiac electrophysiology across clinical conditions.

Meetings Attended:

Committees:
International Member, International Program Committee for the International Workshop on Nonlinear Signal and Image Processing (NSIP 2007), September 10-12, 2007, Bucharest, Romania.

Editorial and Grant Reviews:
Ad hoc Reviewer, IEEE Transactions on Neural Systems & Rehabilitation Engineering
Ad hoc Reviewer, Computer Methods and Programs in Biomedicine

Seminars Presented:
December 12, 2006 – “Assessment of fetal cardiac electrophysiology from multichannel magnetocardiographic (MCG) recordings,” Molecular & Integrative Physiology, KUMC.

Academic Honors:
Faculty Travel Award to attend the 15th International Conference on Biomagnetism (BIOMAG 2006), Aug 20 – 26, 2006, Vancouver, Canada.

Teaching Activities:
HP&M 810 - The Health Care System
1 hour lecture

Trainees:
TszPing Chan – Graduate Student, Electrical Engineering & Computer Science Department, KU
Nerves regulate function and structure of peripheral cells. In turn, target cells provide molecular signals that govern the quantity and type of innervation they receive. Our research is concerned with this interplay between nerve and target in a variety of systems including the cardiovascular system, eye, skin, and reproductive tract. We study the factors that make a tissue attractive or repulsive to autonomic and sensory nerves, and regulate neuronal growth and survival. We also study how some nerves alter target properties, such as rates of wound healing and growth of blood vessels. We are interested in how hormones can affect these relationships. A particular focus is the molecular mechanisms by which estrogen influences patterns of innervation, and consequences of hormonally induced changes in innervation on cardiovascular and reproductive tract functions. This research has direct implications for recovery from cardiac injury, and with regard to changes neural function that occur with changing hormonal status in women.

Meetings Attended:
- July 21-22, 2006 - National meeting, IDeA Network for Biomedical Research Excellence, Washington D.C.
- October 4-5, 2006 - NIH UKGD Study Section Meeting, Bethesda MD.
- October 14-18, 2006 - Society for Neuroscience meeting, Atlanta GA.
- January 13-14, 2007 - Kansas IDeA Network for Biomedical Research Excellence Student Symposium, Kansas City MO.

Committees:
**Departmental**
- Member, Physiology Promotions and Tenure Committee
- Chair, Student Advisory Committee for Gwenaelle Wernli
- Chair, Student Advisory Committee for Argenia Doss
- Chair, Student Advisory Committee for Sarah Tague
- Chair, Student Advisory Committee for Tim Donohue
- Chair, Student Advisory Committee for Anitra Bhattacherjee
- Chair, Student Advisory Committee for Eva Selfridge
- Member, Student Advisory Committee for Ines Eisner-Janowicz
- Member, Student Advisory Committee for Crystal Bethel

**KUMC**
- Member, Student Advisory Committee for Mary Lee Dequeant, Anatomy and Cell Biology
- Member, Student Advisory Committee for Melinda Arnett, Anatomy and Cell Biology
- Member, Student Advisory Committee for Megan Johnson, Anatomy and Cell Biology
Dr. Smith (continued)

Committees (continued):
KUMC (continued)

- Member, Student Advisory Committee for Jerri Rook, Pharmacology, Toxicology & Therapeutics
- Member, Student Advisory Committee for Chris Liverman, Anatomy and Cell Biology
- Director, R.L. Smith Intellectual and Developmental Disabilities Research Center
- Director, K-INBRE Bioinformatics Network
- Associate Director, K-INBRE
- Director, Microarray Facility
- Member, KIDDRC Internal Scientific Advisory Committee
- Member, Confocal Microscopy Advisory Board
- Member, Mass Spectroscopy Advisory Board
- Member, Kansas INBRE Advisory Board
- Member, Biomedical Research Building Advisory Committee
- Member, CTSA Planning Committee
- Co-Director, Novel Methodologies and Translational Technologies, Heartland Institute for Clinical and Translational research
- Member, LAR Advisory Committee
- Chair, Animal Transition Committee (coordinating transfer of rodents to KLSIC vivarium)
- Board of Directors, KUMC Research Institute

Editorial and Grant Reviews:

- Ad hoc Reviewer, American Journal of Physiology: Renal Physiology
- Ad hoc Reviewer, Brain Research
- Ad hoc Reviewer, Neuroscience
- Ad hoc Reviewer, Reproduction
- Ad hoc Grant Reviewer, Urologic and Kidney Development and Genitourinary Disease Study Section, NIH CSR. October 4-5 2006

Seminars Presented:

- November 9, 2006 - “Adventures in Neuroplasticity: from brain to pain (by way of the ovary),” Chancellors Club Research Award seminar, Faculty Research Day, KUMC.
- December 6, 2006 - “Microarray Technology at KUMC,” Presentation to the University of Kansas Biomedical Engineering Society, KUMC.
- March 15, 2007 - “Neuroplasticity in the Female Reproductive Tract,” Department of Anatomy and Cell Biology, KUMC.
- April 20, 2007 - “A women’s pain research center at KUMC,” KU Endowment Advancement Board, KUMC.
- May 11, 2007 - “How to begin a laboratory,” KUMC Educators Breakfast Series, KUMC.
Dr. Smith *(continued)*

Academic Honors:
- 2006 University of Kansas Chancellor’s Club Research Award
- 2007 University of Kansas Chancellor’s Distinguished Teaching Award
- Invitation for platform presentation at IBRO Satellite meeting in Hualien, Taiwan
- Seminar invitation, University of Vermont
- Invitation for platform presentation, Experimental Biology

Teaching Activities:
- PHSL 800 - Medical Physiology
  - 4 hours lecture
  - 8 hours laboratory sessions
  - 2 hours conference
- Advanced Neuroscience
  - 2 lecture hours

Trainees:
- Karen Kuphal, Ph.D., - Assistant Professor of Physical Therapy & Education, BIRCWH Scholar
- Anuradha Chakrabarty, Ph.D. - Post Doctoral Fellow
- Gwenaelle Wernli - Graduate Student
- Argenia Doss - Graduate Student
- Sarah Tague - Graduate Student
- Aritra Bhattacherjee – Graduate Student
- Timothy Donahue - MD/PhD Student
- Eva Selfridge - MD/PhD Rotation Student
- Chris Tanzie - MD/PhD Rotation Student
- Bliss Hartnet - MD/PhD Rotation Student
John A. Stanford, Ph.D., Assistant Professor

My research is focused on analyzing motor and neural function in preclinical models of normal aging and age-related neurodegenerative diseases such as Parkinson disease (PD) and amyotrophic lateral sclerosis (ALS). In normal aging, changes in the functional dynamics of the nigrostriatal dopamine (DA) system may disrupt the normal processing of motor-related information throughout the basal ganglia. Motor function is measured using spontaneous behavior and following operant conditioning. Neural function is measured using electrophysiology under freely-moving conditions.

Meetings Attended:
October 14-18, 2006 - Annual Meeting of the Society for Neuroscience, Atlanta, GA.

Committees:
KUMC
Member, Rodent Behavior Advisory Committee
Member, KUMC IACUC, September 2005-present

Editorial and Grant Reviews:
Reviewer, Brain Research
Reviewer, Journal of Cellular and Molecular Medicine
Reviewer, Journal of Neuroscience Methods
Reviewer, Neuroscience Letters
Reviewer, Psychopharmacology

Seminars Presented:
February 2007 – “Clinically-Analogous Measures of Motor Function in Rodent Models of Normal Aging and ALS,” Department of Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS.

Teaching Activities:
IGPBS Module 5
8 hours lecture

Trainees:
Crystal Bethel - Graduate Student
Brian Kim – High School Student
Jill Morris – IGPBS Rotation Student
Susan Smittkamp, Ph.D. – Post Doctoral Fellow
Stanislav Svojanovsky, Ing., Ph.D., Research Assistant Professor

The Bioinformatics Core provides consulting and bioinformatics applications in functional genomics, proteomics, structural biology and neural network to all Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) participants. Updated microarray equipment, data management and evaluation software allow us to investigate numerous genes at once and determine the degree of their expression in a particular cell type. We use this powerful technology to examine which genes are turned on and off in treated versus healthy tissues from various species and to establish the biological relevance of the expressed genes and the biological pathway between different classes of genes.

Meetings Attended:
October 8, 2006 – Bioinformatics Workshop at the University of Kansas, Lawrence, KS.
November 9, 2006 – KUMC Faculty Research Day and Poster Session, Kansas City, KS
January 12, 2007 – JCCC Faculty/Staff Research Symposium, Overland Park, KS.

Committees:
Local
Member, Kansas City Area Life Science Institute (KCALSI), Development Grand Peer Review Committee

Seminars Presented:
March 2007 – “Neural Network applications in bioinformatics research,” Department of Electrical Engineering and Computer Science, University of Kansas, Lawrence, KS.
April 12, 2007 – “Bioinformatics Applications of the Neural Network in Post-Genomic Era,” Department of Electrical Engineering and Computer Science, University of Kansas, Lawrence, KS.

Academic Honors:
In 2006 the patent was submitted to KUMC to protect the intellectual property: Mathur S, Wagh S, Svojanovsky SR, Smith PG.
GOAPhAR: A Web-based Application for Annotation and Biological Pathway Analysis of Microarray Data
Dr. Svojanovsky: (Continued)

Teaching Activities:
   Microarray Data Analysis Software – GeneSpring v. GX 7.3.1
       12 hours workshop
   EECS 833 - Neural Networks and Fuzzy Logic (KU-Lawrence)
       4 hours lecture
       4 hours review

Trainees:
   Chris Redford - Graduate Student, EECS, KU-Lawrence
   Bryan Banz - Graduate Student, EECS, KU-Lawrence
C. Merrill Tarr, Ph.D., Professor

My present research interest is the development and evaluation of interactive, computer-based teaching modalities that can be used to enhance the educational experience of students.

Committees:
KUMC
   Director, Cardiopulmonary Module in Year 1 Medical Curriculum
   Director, Renal-Endocrine Module in Year 1 Medical Curriculum
   Member, Education Council
   Member, Phase 1 Module Directors Committee

Teaching Activities:
   Cardiopulmonary Module Year 1 Medical
      8 hours of lecture
      8 hours of laboratory teaching conferences
      4 hours of small group teaching
My interests and involvement in research in reproductive biology and signal transduction began during my undergraduate years and have continued to the present time. I have felt for a long time that effective solutions to the problem of human overpopulation must include new male contraceptive approaches. Towards this end, a long term research goal is to understand the mechanisms underlying the development of sperm and sperm functions related to fertility with an eye towards identification of proteins in sperm or the testis that could be used as targets for development of male contraceptive agents. This effort was given a huge boost in 2001 and 2004 with the funding of the first of two major NIH contracts. The RFA’s for both of these NIH contracts specified that the PI must be a medicinal chemist. Accordingly, Dr. Gunda Georg became the PI and I became the PI for the subcontract effort on both of these major funded projects. The first contract with a total award of $2.2 million was just completed in May of 2005. The current 5 year contract was funded June 1, 2005, and awarded to KU is $7.9 million, of which $1.97 million is the subcontract to KUMC on which I am the subcontract PI. Details of both of these efforts are presented in the funding history below.

Committees:

KUMC
Member, School of Medicine Dean’s Leadership Committee
Member, School of Medicine Basic Chairs/Center Directors Committee
Director, Imaging Core Laboratory, Center for Reproductive Sciences. This core has provided continuous services to over 50 faculty, post-docs and students over the last year.
Member, KUMC Institutional Animal Care and Use Committee (IACUC)
Member, KUMC Biotech Facility Oversight committee

National
Member, Board of Governors, American Society for Gravitational and Space Biology

Editorial and Grant Reviews:
Reviewer, Biology of Reproduction
Reviewer, Journal of Andrology

Academic Honors:
Dr. Tash (continued)

Teaching Activities:
   PHYS 802 - Medical Physiology
       7 hours lecture
       16 hours conference

Trainees:
   Jeffrey Cotitta – Graduate Student
   Vijayalaxmi Gupta, Ph.D. – Post Doctoral Fellow
   Kendall Smith – MD/Ph.D. Summer Student
Paul F. Terranova, Ph.D., Professor & Vice Chancellor for Research

We are determining mechanisms by which Src tyrosine kinase regulates steroidogenesis in human ovarian theca and granulosa cells.

Meetings Attended:
Association of Academic Health Centers, Washington DC,

Committees:
Departmental
  Member, Ph.D. Dissertation Committee for Sarah Turk
  KUMC
  Member, Kansas Cancer Institute Internal Advisory Committee
  Member, Deans Leadership Council, School of Medicine
  Member, Transgenic and Genetic Technologies Advisory Committee, KUMC
  Member, Research Advisory Team, School of Medicine
  Director, Center for Reproductive Sciences
  Associate Director, Kansas Biomedical Research Network
  Director, Biomedical Research Training Program, KUMC
  Member, GCRC Advisory Group
  Chair, Search Committee, Chairman of Obstetrics and Gynecology, KUMC
  Internal Advisory Board, Biostatistics Core, Kansas Cancer Institute
  Member, KUMC Research Institute Advisory Board, Board of Director
  Member, Ph.D. Dissertation Committee for Kristian Fried, Pharmacology & Toxicology
  Member, Ph.D. Dissertation Committee for Pengli Pu, Pharmacology & Toxicology
  Member, Ph.D. Dissertation Committee for Erik Pacyniak, Pharmacology & Toxicology
  Member, Ph.D. Dissertation Committee for Yue Cui, Pharmacology & Toxicology
  Member, MRRC Internal Advisory Committee
  Theme Leader, Cellular and Molecular Biology of Early Development, MRRC

National
  Member, Kansas Biomedical Research Infrastructure Network Advisory Committee (KBRIN), KC
  Member, Kansas Cancer Experimental Therapeutics Advisory Committee (COBRE), Lawrence
  Member, National Academies of Sciences, Committee to evaluate the Health Effects of Dioxin
Dr. Terranova (Continued):

Editorial and Grant Reviews:
   Editorial Board, Endocrine
   Editorial Board, Endocrinology
   Ad hoc Reviewer, Biology of Reproduction

Trainees:
   Mark Cohen, MD - Assistant Professor, Surgery
   Benyi Li, MD, Ph.D. - Assistant Professor, Urologic Surgery
Michael W. Wolfe, Ph.D., Associate Professor

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 regulating pituitary and placenta function as well as 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, retinoid, growth factor, cytokine and adipokine regulation of gene expression.

Meetings Attended:
July 29 – August 1, 2006 – The 39th Annual meeting of the Society for the Study of Reproduction, Omaha, NE.
October 27-28, 2006 - The Gilbert S. Greenwald Symposium on Reproduction, Kansas City, MO.

Committees:
Departmental
Member, Committee organizing the Gilbert S. Greenwald Symposium on Reproduction
Member, Dissertation Committee for Jennifer Ho-Chen, Ph.D. Candidate
Member, Dissertation Committee for Anh-Nguyet Nguyen, Ph.D. Candidate
Member, Dissertation Committee for Martha Carletti, Ph.D. Candidate
Chair, Dissertation Committee for Sara Turk, Ph.D. candidate
Chair, Dissertation Committee for Emily McDonald, Ph.D. candidate

KUMC
Member, Dissertation Committee for Lindsey N. Canham, Ph.D. Candidate, Dept of Pathology and Laboratory Medicine
Member, Dissertation Committee for Barry Pruett, Ph.D. Candidate, Dept. of Anatomy and Cell Biology

Editorial and Grant Reviews:
Ad hoc Reviewer, Biology of Reproduction
Ad hoc Reviewer, Endocrinology
Ad hoc Reviewer, Animal Reproduction Science
Editorial board, Journal of Endocrinology
Dr. Wolfe (Continued)

Teaching Activities:
  IGPBS Module 4 - Signal Transduction Section
  2 hours lecture
  Pre-clinical phase - year 1, Renal-Endocrine Module
  14 hours lecture (team taught)
  Pre-clinical phase - year 1, Sexuality and Reproductive Medicine Module
  2 hours lecture
  Olathe South High School
  2 hours lecture on human embryonic stem cells

Trainees:
  Sara Turk - Graduate Student
  Emily McDonald - Graduate Student
John G. Wood, Ph.D., Associate Professor

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 the microvascular inflammatory response during acute hypoxia as well as to identify mechanisms responsible for microvascular acclimatization to chronic hypoxia. Intravital microscopy is used to quantitate microvascular alterations in individual blood vessels in various organs in vivo. These studies are done in collaboration with Dr. Gonzalez. I am also collaborating on projects examining microvascular injury following hemorrhagic shock/resuscitation with Dr. Michael Moncure and after mesenteric ischemia/reperfusion with Dr. James Thomas.

Meetings Attended:
- April 28 – May 2, 2007 - FASEB meeting, Washington, D.C.

Committees:
- KUMC
  Chair, Department of Surgery Research Committee,
  Member, Department of Surgery Education Committee

Editorial and Grant Reviews:
- Ad hoc Reviewer, Journal of Cardiovascular Research
- Ad hoc Reviewer, Pharmacology and Toxicology
- Ad hoc Reviewer, Microvascular Research
- Ad hoc Reviewer, Journal of Applied Physiology

Seminars Presented:
- August 8, 2006 - “Intravital Microscopy and the Microcirculation: Response To Hypoxia,” Department of Surgery, KUMC.
- October 12, 2006 - "Vascular Biology and Atherosclerosis." Department of Surgery, KUMC.
- December 11, 2006 - "Microvascular Research," Department of Surgery, KUMC.
- May 14, 2007 - "Hypoxia and Microvascular Acclimatization". Department of Molecular & Integrative Physiology, KUMC.

Academic Honors:
- Student Voice Award for Excellence in Teaching
Dr. Wood (Continued)

Teaching Activities:
Cardiopulmonary Module, First Year Medical Curriculum
  10 hours lecture
  8 hours lab
  4 hours conference
  4 hours pre-exam review
Pre-matriculation course, Cardiovascular physiology:
  20 hours lecture
  14 hours problem sessions
First Preparation Board Review of Cardiovascular Physiology
  4 hours
Worked with Dr. Merrill Tarr to write a PBL on congestive heart failure for the first year medical students.

Trainees:
Parker Tuley – 2nd year MD student, KUMC Summer Research Program