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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 31<sup>st</sup>, Dr. John Wood and Dr. Gustavo Blanco again were recognized for excellence in teaching. They each won the Student Voice Award for 1<sup>st</sup> 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 2<sup>nd</sup> floor of the new building, which houses the Neuroscience Program and the Kansas Intellectual and Developmental Disabilities Research Center or the 3<sup>rd</sup> 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 best 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 36<sup>th</sup> year this year, and have also provided funds in support of the Gil Greenwald Symposium, which is now in its 4<sup>th</sup> 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 Onyszchuk (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 Bhattacharjee, 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, Schiefelbusch 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)*

<b>b. Graduate Students</b>	<b>Prelims</b>	<b>Candidate</b>	<b>Requirements Fulfilled</b>
Susan Barrett*		Ph.D.	May 2007
Crystal Bethel-Brown		Ph.D.	
Aritra Bhattacharjee		Ph.D.	
Marie-Helene Boudrias	10/04	Ph.D.	June 2007
Martha Carletti		Ph.D.	
Jeffrey Cotitta		Ph.D.	
Tim Donohue		M.D./Ph.D.	
Argenia Doss		Ph.D.	
Ines Eisner-Janowicz	3/05	Ph.D.	June 2007
Stephanie Fiedler		Ph.D.	
Jitu Wilson George		Ph.D.	
Darcy Griffin	3/05	Ph.D.	
David Guggenmos		Ph.D.	
Anisha Gupte		Ph.D.	
Jennifer Ho-Chen	4/05	Ph.D.	June 2007
Heather Hudson	6/07	Ph.D.	
Emily McDonald		Ph.D.	
Joe McDonald	7/03	M.D./Ph.D.	
Lynda McGinnis		Ph.D.	
Anh Nguyet-Nguyen	12/06	Ph.D.	
Greg Onyszchuk	10/05	Ph.D.	
Won-Mee Park		Ph.D.	
Mariam Riazi-Kermani**		Ph.D.	
Sarah Tague		Ph.D.	
George Thomas		M.D./Ph.D.	
Alison Ting		Ph.D.	
Sara Turk		Ph.D.	
Gwenaelle Wernli		Ph.D.	
Rachel Williams		Ph.D.	

\* 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 Chakraborty  
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

**e. 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

**f. 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*)



## Notes Concerning Graduate Students

Martha Carletti successfully defended her grant proposal for her comprehensive exam in June, entitled *Post-Transcriptional Gene Regulation in Perioovulatory 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 Natiuretic 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 Perioovulatory 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 36<sup>th</sup> 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 36<sup>th</sup> 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 37<sup>th</sup> 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 3<sup>rd</sup> 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*



*through second polar body extrusion.*” Lynda was the primary author of a publication entitled, “*Localized activation of Src-family protein kinases in the mouse egg,*” *Developmental Biology* 306:241-254. She also co-authored a paper entitled, “*Long-term storage of mouse spermatozoa after evaporative drying,*” *Reproduction* 133:919-929.

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 Neuroimmune 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 815 – *Cardiopulmonary*. Drs. Gonzalez, Smith, Tarr, and Wood.

CORE 820 – *GI/Nutrition*. Dr. Tash.

\*CORE 825 – *Renal/Endocrine*. Drs. Blanco and Wolfe.

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

(\*Physiology has primary responsibility for these courses.)

### †Departmental Graduate Courses

PHSL 846 – *Advanced Neuroscience*. 5 credits. Summer 2007. Drs. Bilgen, Cheney, Enna, Frost, Hasan, Imig, Nudo and Smith. Enrollment 13. Dr. Imig, Course Director.

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.

PHSL 848 – *Molecular Mechanisms of Neurological Disorders*. 3 credits. Fall 2006. Taught by Drs. Biswas, Buch, Festoff, LeVine, Nudo, Stanford, and Suo. Enrollment 10. Dr. LeVine, Course Director.

### †IGPBS Courses

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

IGPBS 894 – *Module 4: Cell and Developmental Biology*. 5 credits. Spring 2007. Drs. Blanco, Christenson, Kumar, Wolfe.

IGPBS 895 – *Module 5: Molecular and Physiological Basis of Disease*. 3 credits. Spring 2007. Drs. Albertini, Blanco, Christenson, Geiger, Gonzalez, Stanford. Dr. Albertini, Course Coordinator.

IGPBS 896 – *Module 6: BioGraphics*. 1 credit. Spring 2007. Drs. Kumar and Radel.

† 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.*

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

10/23/06	Hinrich Staecker, MD Associate Professor Otolaryngology, KUMC	<i>Vector Based Strategies for Gene Delivery in the Inner Ear</i>
10/30/06	Darren Wallace, Ph.D. Research Assistant Professor Nephrology and Hypertension, KUMC	<i>Epithelial Cell Proliferation in polycystic Kidney Disease</i>
11/06/06	Janette M. McAllister, Ph.D. Professor Department Cellular & Molecular Physiology and OB/GYN Penn State Hershey Medical Center	<i>Androgen Excess in the PCOS Ovary: What are the Underlying Defects?</i>
12/04/06	Carl Wiener, MD, MBA The K.E. Krantz Professor and Chair, Obstetrics and Gynecology Professor, Molecular & Integrative Physiology KUMC	<i>Fetal Adaptive Responses to Chronic Hypoxia and the Prevention of Brain Damage</i>
12/11/06	Mihai Popescu, Ph.D. Research Assistant Professor Molecular & Integrative Physiology, KUMC	<i>Assessment of Fetal Cardiac Electrophysiology Using Multi-Channel Magnetocardiographic (MCG) Recordings</i>
1/08/07	Sang-Pil Lee, Ph.D. Assistant Professor Molecular & Integrative Physiology, Hoglund Brain Imaging Center, KUMC	<i>Anatomical and Functional Imaging of Transgenic Mice Using Magnetic Resonance</i>
1/22/07	Lisa Stehno-Bittel, Ph.D., PT Associate Professor and Chair Physical Therapy and Rehabilitation Sciences KUMC	<i>The Makings of a Pancreas</i>

1/29/07	Ronald J. Korhuis, Ph.D. George L. and Melna A. Bolm Distinguished Professor in Cardiovascular Health Chairman, Department of Medical Pharmacology and Physiology, University of Missouri-Columbia	<i>Antecedent Ethanol Ingestion Prevents Postischemic Leukosequestration and Injury: Cellular Mechanisms</i>
2/05/07	Mehmet Bilgen, Ph.D. Associate Professor Molecular & Integrative Physiology, Hoglund Brain Imaging Center, KUMC	<i>High Field MRI Applications in Biomechanics and Neuroscience Research</i>
2/12/07	John Stanford, Ph.D. Assistant Professor Molecular & Integrative Physiology, KUMC	<i>Clinically-Analogous Measures of Motor Function in Rodent Models of Normal Aging and ALS</i>
2/19/07	Dale Abrahamson, Ph.D. Professor & Chairman Anatomy and Cell Biology KUMC	<i>Development of the Kidney Filtration Barrier: Origin of Glomerular Endothelial Cells and their Role in Basement Membrane Assembly</i>
2/26/07	Amy O'Brien Ladner, MD Division Director Pulmonary & Critical Care Medicine, KUMC	<i>Iron: Regulatory Activities in the Lung</i>
3/05/07	Sangita Biswas, Ph.D. Senior Research Scientist MidAmerica Neuroscience Research Foundation Lenexa, KS	<i>Treatment of Multiple Sclerosis with High Dose Intravenous Methotrexate with Leucovorin</i>
3/12/07	William Brooks, Ph.D. Director Hoglund Brain Imaging Center KUMC	<i>Translational Studies in Traumatic Brain Injury: From Man to Rodent</i>

- 3/26/07 Kottarappat N. Dileepan, Ph.D. *Regulation of Endothelial Cell Innate Immune Function and Inflammatory Responses by Histamine*  
 Professor  
 Allergy/Clinical Immunology /Rheumatology  
 Department of Internal Medicine, KUMC
- 4/02/07 Hiroshi Nishimune, Ph.D. *Organization of the Nerve Terminal by Synaptic Cleft Components*  
 Assistant Professor  
 Anatomy and Cell Biology  
 KUMC
- 4/09/07 Zijian Xie, Ph.D. *The Non-Pumping Na/K-ATPase and Cardiovascular Physiology of Endogenous Cardiotonic Steroids*  
 Professor  
 Physiology, Pharmacology, Metabolism, and Cardiovascular Sciences  
 The University of Toledo  
 Toledo, Ohio
- 4/16/07 Dianne Durham, Ph.D. *CNS Plasticity Following Auditory Deprivation*  
 Professor  
 Otolaryngology, KUMC
- 4/23/07 David Albertini, Ph.D. *Like Rome, All Good Things Must Fall: A Case History About the Ovarian Stem Cell Controversy*  
 Hall Endowed Professor  
 Molecular & Integrative Physiology, KUMC
- 4/30/07 Ho Yi Mak, Ph.D. *Genetic Regulation of Fat Storage in C. Elegans*  
 Assistant Investigator  
 Stowers Institute for Medical Research, Kansas City, MO
- 5/07/07 Zhiming Suo, MD *GRK Dysfunction and Alzheimer's Pathogenesis*  
 Director  
 Lab for Alzheimer's Disease & Aging Research, Kansas City VA Medical Center  
 Departments of Neurology and Physiology, KUMC
- 5/14/07 John Wood, Ph.D. *Hypoxia and Microvascular Acclimatization*  
 Associate Professor  
 Molecular & Integrative Physiology, KUMC



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	<i>Polycystin-1 – Mapping New Functional Networks</i>
6/19/07	Marie-Helene Boudrias Molecular & Integrative Physiology, KUMC	<i>Properties of Forelimb Muscle Representations in the Primate Cerebral Cortex (Dissertation Defense)</i>
6/25/07	Ines Eisner-Janowicz Molecular & Integrative Physiology, KUMC	<i>Role of the remote motor cortex in recovery from an ischemic motor lesion in non-human primates (Dissertation Defense)</i>
6/27/07	Jennifer Ho-Chen Molecular & Integrative Physiology, KUMC	<i>Maternal and Placental Adaptations to Hypoxia (Dissertation Defense)</i>



## PUBLICATIONS

### a. Manuscripts Published

- Albina, J-S, Roser, J.F., Bousfield, G.R., Wolfe, M.W., Sibley, L.E., Colgin, M., and Boime, I. 2007. "Expression and bioactivity of a single chain recombinant equine luteinizing hormone (reLH)." *Theriogenology* 67:311.
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## b. Manuscripts in Press

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## RESEARCH SUPPORT

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

**D. F. Albertini**: NIH - "Coordination of folliculogenesis and oogenesis," April 1, 2006 – March 31, 2008. Principle Investigator: David Albertini. Direct costs \$175,770.

ESHE Fund - "Embryo Imaging," December 1, 2006 – November 30, 2007. Direct costs \$18,865.

Italian Ministry of Science - "Oocyte Cryopreservation," March 1, 2007 – February 28, 2008. Direct cost \$20,000.

**A. Belousov**: NIH – "Cholinergic Regulation In The Hypothalamus," January 1, 2007 – December 31, 2007. Principle Investigator: A. Belousov. Direct costs \$157,859; Indirect costs \$74,193.

**V. G. Blanco**: NIH – "The Na,K-TPase alpha 4 isoform in male germ cell physiology," July 1 2003 - June 30, 2008. Direct costs \$223,500, Indirect costs \$157,500.

Polycystic Kidney Foundation Award – "Ouabain-Na,K-ATPase effect in polycystic kidney disease," 2006-2007. Total direct and indirect costs \$65,000.

Center of Excellence Faculty Development Award – "The Na,K-ATPase in male germ and prostate cells: function and regulation," September 1, 2005 - August 31, 2006. Total costs \$30,000.

NIH – "Cardenolides inhibition of the sperm Na,K-ATPase  $\alpha$ 4 isoform as contraceptive agents," January 1, 2007 – December 31, 2011.

**S. Buch**: NIH – "HIV Encephalitis and Cocaine Abuse: Mechanism of Synergy and Therapy." May 1, 2006 – April 30, 2011. Principle Investigator: S. Buch. Direct costs \$217,200.

NIH/NCRR – "Novel Approaches for Control of Microbial Pathogens," July 1, 2006 – June 30, 2011. Principle Investigator: O. Narayan; Luminex Core D Section Director: S. Buch. Direct costs \$1,550,667.

**P. D. Cheney**: NIH-NINDS – “Electrical stimulation of cortical motor output,” April 15, 2005 – March 31, 2009. Principle Investigator: Paul Cheney. Direct costs \$925,000; Total costs \$1,359,752.

NIH-NICHD – “Program for a research center in mental retardation,” P30 Center Grant. Theme Leader for “Neurobiology of MR/DD.” August 1, 2001 - July 31, 2006. Principle Investigator: Steven Warren. Direct costs \$4,683,985; Total costs \$6,810,352

**L. Christenson**: NIH/NICHD – “Post-transcriptional gene regulation in the ovary,” August 15, 2006 – July 31, 2007. Principle Investigator: L. Christenson. Direct costs \$135,000; Indirect costs \$63,450.

NIH/NICHD – “Decidual Cell Adaptations to Physiological Stressors,” April 12, 2007 – March 31, 2012. Principle Investigator: M. Soares; Co-Investigator: L. Christenson. Direct cost \$250,000; Indirect costs \$117,500.

**S. Enna**: Elsevier – “Editorial Office,” 2003 – Present. \$175,224.

International Union of Basic and Clinical Pharmacology – “Secretary-General Office,” 2006 – 2010. \$36,538.

**S. Frost**: NIH/NINDS - “An Experimental Model of White Matter Infarct,” June 1, 2007 – March 31, 2007. Principle Investigator: Shawn Fost. Direct costs \$192,938.

**N. C. Gonzalez**: NIH/NHLBI – “Microvascular Function in Environment Hypoxia,” January 12, 2007 – December 31, 2011. Principle Investigator: N.C. Gonzalez. Total Direct costs \$ 175,000.

NIH/NICHD – “Regulation of Pregnancy-Dependent Adaptations,” July 20, 2005 – June 30, 2010. Principle Investigator: M. Soares; Co-Investigator: N.C. Gonzalez. Direct costs \$270,978.

NIH/NICHD – “Decidual Cell Adaptations to Physiological Stressors,” April 1, 2007 – March 31, 2012. Principle Investigator: M. Soares; Co-Investigator: NC. Gonzalez. Direct costs \$250,000.

**W. Hasan**: NIH/NHLBI – “NGF and Post-Infarct Cardiac Sympathetic Neuroplasticity,” April 1, 2005 – March 31, 2010. Principle Investigator: Peter Smith; Co-Investigator: Wohaib Hasan. Total direct costs \$1,000,000.

NIH/NICHD – “Female Pelvic Pain, Hormones, and Neuroplasticity,” April 16, 2006 – January 31, 2011. Principle Investigator: Peter Smith; Co-Investigator: Wohaib Hasan. Total direct costs \$1,125,000 .

**L. L. Heckert**: NIH/NICHD - “Hormonal and cell-specific regulation of Dmrt1,” August 1, 2002 – July 31, 2007. Principle Investigator: Leslie L. Heckert. Direct costs \$202,500; Indirect costs \$101,250.

NIH/NICHD - “Gonadal expression of FSH receptor,” April 1, 2007 – March 31, 2012. Principle Investigator: Leslie L. Heckert. Direct costs \$212,500; Indirect costs \$99,875.

NIH/NICHD - “Interdisciplinary Center for Male Contraceptive Research and Drug Development,” March 26, 2007 – February 29, 2012. Principle Investigator: Joseph S. Tash; Principle Investigator for project 3: “Small molecular inhibitors of Dmrt1-regulated target genes as male contraceptive agents:” Leslie L. Heckert. Direct costs \$1,211,452; Indirect costs \$288,549; Project 3 direct costs \$152,577.

**T. J. Imig**: Tinnitus Research Consortium - “A neural correlate of tinnitus,” July 2005 – June 2008. Principle Investigator: Thomas J. Imig. Total costs \$100,000 per year.

**T.R. Kumar**: NIH/NIDDK – “Carbohydrates in the Sorting of Lutropin and Follitropin,” June 1, 2005 – May 31, 2007. Principle Investigator: T.R. Kumar. Direct costs: \$ 17, 000; Indirect costs: \$ 8,000.

**M. Larson**: Kansas-Idea Network of Biomedical Research Excellence (K-INBRE) - “Investigation of the DNA Recombinase, Dre, in Genetic Engineering,” May 1, 2007 – April, 30, 2008. Direct costs \$14,500.

Kansas City Area Life Sciences Institute – “Role of WISP2/CCN5 in a Breast Cancer Mouse Model,” January 1, 2007 – December 31, 2007. Principle Investigator: S. Banerjee. Direct cost \$22,728.

Kansas City Area Life Sciences Institute – “Transgenic Rats Created via Rat Embryonic Stem Cell Technology,” January 1, 2007 – December 31, 2007. Principle Investigator: Mark Weiss, K-State. Direct costs \$22,500.

**R. J. Nudo**: KUMC Research Institute - “Reorganization of Motor Cortex Following Brain Injury,” May 1, 2007 – April 30, 2008. Principal Investigator: R.J. Nudo. Direct costs \$35,000.

NIH/NINDS – “Cortical Stimulation to Enhance Recovery After Stroke,” September 1, 2005 – May 31, 2009. Principal Investigator: R.J. Nudo. Direct costs \$773,253.

Helicon Therapeutics, Inc. – “Effect of HT-0712 on motor recovery after cortical ischemia in a non-human primate,” May 1, 2007 – July 31, 2007. Principal Investigator: R.J. Nudo. Direct costs \$37,000.

NIH/NINDS – “An experimental model of white matter infarct,” June 1, 2007 – May 31, 2009. Principal Investigator: S.B. Frost; Co-Investigator: R.J. Nudo. Direct Costs \$131,250.

NIH – “Motor Performance and Cortical Changes in Chronic Stroke,” December 15, 2004 – November 30, 2009. Principal Investigator: B. Quaney. Mentor: R.J. Nudo. Direct costs \$98,242.

NIH – “Detection of Live Fibers in Injured Spinal Cord,” 1 April 20, 2006 – February 29, 2008. Principal Investigator: M. Bilgen; Co-Investigator: R.J. Nudo. Direct costs \$135,000.

American Heart Association - “Arm Movement Patterns in Stroke: Neural Substrates,” July 1, 2005 – June 30, 2007. Principal Investigator: W. Brooks; Co-Investigator: R.J. Nudo. Direct costs \$65,000.

American Heart Association – “Neurobiology of amphetamine use in stroke recovery,” July 1, 2006 – June 30, 2008. Principal Investigator: E.V. Zoubina; Co-investigator: R.J. Nudo. Direct costs \$65,000.

American Heart Association – “Effects of NEP 1-40 plus motor training on behavioral recovery and neuroplasticity following cortical infarction in rats,” January 1, 2007 – December 31, 2008. Principal Investigator: P. Fang; Mentor: R.J. Nudo. Direct costs \$41,000.

**E. J. Plautz**: NIH/NINDS - U54 Cooperative Program in Translational Research “Cortical stimulation to enhance recovery after stroke,” September 1, 2005 - May 31, 2009. Principle Investigator: RJ Nudo; Co-Investigator: EJ Plautz. Direct costs \$232,232; Indirect costs \$100,315.

Helicon Therapeutics, Inc. – “Effect of HT-0712 on motor recovery after cortical ischemia in a non-human primate,” May 30, 2007 - May 29, 2008. Principle Investigator: RJ Nudo; Co-Investigator: EJ Plautz. Direct costs \$37,000; Indirect costs \$17,390.

**P. G. Smith:** “Female Pelvic Pain, Hormones, and Neuroplasticity,” April 1, 2006 – March 31, 2011. Principle Investigator: P.G. Smith. Direct costs \$186,750; Indirect costs \$87,773.

“NGF and Post-Infarct Cardiac Sympathetic Neuroplasticity,” April 1, 2005 – March 31, 2010. Principle Investigator: P.G. Smith. Direct costs \$200,000; Indirect costs \$94,000.

“Mechanisms of Sympathetic Axon Pruning,” March 1, 2007 – February 28, 2011. Principle Investigator: P.G. Smith. Direct costs \$225,000; Indirect costs \$105,750.

KUMC Research Institute Program Project Development Grant - “Estrogen and neural pathways in female pain syndromes,” April 1, 2005 – March 31, 2007. Principle Investigator: P.G. Smith. Total direct costs \$25,000.

Hall Family Foundation – “Genomics, SNPs and Clinical Neonatology,” July 1, 2005 – June 30, 2007. Co-Principle Investigators: P.G. Smith and W.E. Truog. Total direct costs \$129,949.

NIH/NICHHD – “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-I NBRE Associate Director: P.G. Smith. Direct costs for this core (KUMC only) \$515,000; Indirect costs \$242,050.

**J. A. Stanford:** NIH/NIA - “Age-related changes in rats’ orolingual motor function,” August 1, 2004 – July 31, 2009. Principle Investigator: John A. Stanford. Direct costs \$90,000; Indirect costs \$42,300.

NIH/NIA - “Preclinical Motor Function in Aging and Parkinsonism,” August 1, 2006 – July 31, 2011. Principle Investigator: John Stanford. Total costs \$572,314.

**S. Svojanovsky:** NIH – “Female pelvic pain, hormones, and neuroplasticity.” Principle Investigator: P. Smith; Co-Investigator: S. Svojanovsky. Total costs \$181,334.

NIH – “Kansas Mental Retardation and Developmental Disabilities Research Center (MRDDRC).” Principle Investigator: Dr. P. Smith. Total costs \$359,210.

Halls Foundation – “Genomics, SNP’s and Clinical Neonatology.” Principle Investigator: Dr. W. Truog (CMH). Total costs \$174,037.

DOD – “Early treatment in hemorrhagic shock.” Principle Investigator: Ch. VanWay (UMKC).

**J. S. Tash**: NIH – “U54 Interdisciplinary Center for Male Contraceptive Research & Drug Development,” March 26, 2007 – February 29, 2008. Direct costs \$1,211,452; Indirect costs \$288,549.

NASA – “Negative Impacts of Altered Gravity Models on Male Mammalian Reproductive Capacity,” October 1, 2006 – September 30, 2007. Total costs \$1,048,047.

NIH – “Synthesis and Testing of Non-Steroidal and Non-Hormonal Male Contraceptive Agents,” June 1, 2007 – May 31, 2008. Direct costs \$40,000; Indirect costs \$10,000.

**P.F. Terranova**: NIH/NICHD – “Center for Reproductive Sciences,” April 1, 2001 – March 31, 2007. Principle Investigator: Paul Terranova. Direct costs \$791,005; Indirect costs \$371,772 indirect

NIH – “Biostatistics/Informatics Shared Resource,” April 1, 2004 – March 31, 2007. Principle Investigator: Mayo; Internal Advisory Board: P. Terranova. Total costs \$195,300.

NIH – “Kansas Idea Network of Biomedical Research Excellence,” July 21, 2004 - April 31, 2009. Principle Investigator: Hunt. Total Costs \$2,745,681.

NIH – “Training Program in Environmental Toxicology,” July 1, 2006 – June 30, 2011. Principle Investigator: Klaassen; Associate Director: P. Terranova. Total Costs \$267,186.

NIH – “The Role of the Aryl Hydrocarbon Receptor in the Ovary,” September 15, 2006 – June 30, 2008. Principle Investigator: Flaws. Total Costs \$70,000.

**M.W. Wolfe**: NIH/NICHD – “Trophoblast differentiation,” May 1, 2006 – April 30, 2007. Principle Investigator: M. Soares. Direct costs \$202,500; Indirect costs \$101,250.

NIH/NIDDK – “Regulation and function of Egr in Gonadotropes,” March 1, 2006 – February 28, 2007. Principle Investigator: M. Wolfe. Direct costs \$214,830; Indirect costs \$100,970.

KUMC RI/Lied – “Human trophoblast differentiation,” February 1 2006 –  
January 31, 2007. Principle Investigator: M.Wolfe. Direct costs \$35,000.

**E.V. Zoubina**: American Heart Association’s Beginning Grant-in-Aid -  
“Neurobiology of amphetamine use in stroke recovery,” July 1, 2006 – June 30,  
2008. Direct costs \$65,000; Indirect costs \$6,500.





## 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, 3<sup>rd</sup> 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):

Invited Speaker, European Society of Human Reproduction and Embryology Symposium on “How gametes influence embryo development” Lyons France, July 2007.

Interactive session leader for ASRM annual meeting 2007 (October)

Teaching Activities:

IGBPS 1<sup>st</sup> 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



**Gustavo V. Blanco, Ph.D.**, Associate Professor

*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<sup>+</sup> and low internal Na<sup>+</sup> concentrations characteristic of most animal cells. The transporter comprises a group of isozymes, each characterized by unique enzymatic properties and a cell-dependent and developmentally regulated pattern of expression. 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:

- November 2006 – “The hormone ouabain stimulates proliferation of epithelial cells of human polycystic kidneys through the Na,K-ATPase and the kinases MEK-ERK,” XXII Latinamerican and I Iberoamerican Congreso of Physiological Sciences, Buenos Aires, Argentina.
- November 2006 – “Alveolar macrophages participate in the systemic inflammation induced by alveolar hypoxia,” XXII Latinamerican and I Iberoamerican Congreso of Physiological Sciences, Buenos Aires, Argentina, November 2006.
- 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,” Experimental Biology, Washington DC.
- April 2007 – “Ouabain stimulates protein phosphorylation in rat spermatozoa via the Na,K-ATPase,” American Society of Andrology Meeting, Tampa, FL.

**Dr. Blanco** (continued)

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  $\alpha 4$  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



**Shilpa J. Buch, Ph.D.**, Associate Professor

*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 interplay in the CNS,” the International Symposium on Drug Abuse and HIV/AIDS held at Trivandrum, India.
- December 2, 2006 – “Cytokine, Chemokine and Macrophage Interplay in NeuroAIDS,” the World AIDS Day, Tianjin, China.
- December 8-12, 2006 – “NeuroAIDS: A Tango of HIV and the Host,” the USA-Caribbean Conference of HIV/AIDS and Drug Abuse at Puerto Rico.
- July 22-25, 2007 – “PDGF Synergistically Enhances IFN- $\gamma$  Induced Expression of CXCL10 in Blood-Derived Macrophages,” the International AIDS Meeting in Sydney, Australia.

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:

- Sept. 7, 2006 - “NeuroAIDS: A Tango of HIV and the Host,” Department of Anatomy Seminar Series, KUMC.
- Sept 13, 2006 - “HIV and the Host Interplay in NeuroAIDS,” Department of Pharmacology, University of Missouri – Kansas City.
- October 9, 2006 - “HIV and CNS Complications,” Department of Physiology, KUMC.
- February 15, 2007 - “NeuroAIDS: An Interplay of HIV and the Host,” Kansas State University.
- March 28<sup>th</sup>, 2007 - “New Developments in Gene Therapy of HIV-associated Dementia,” Seton Hall University.

**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

**Paul D. Cheney, Ph.D.**, Professor and Chair

*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 - 35<sup>th</sup> 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, Shinying 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 40<sup>th</sup> 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 Riazzi Kermani - Graduate student

Darcy Griffin - Graduate student

Heather Hudson - Graduate student

Gustaf Van Acker - Summer MD/PhD student

Nicholas Stucky - Summer MD/PhD student

**Lane K. Christenson, Ph.D.**, Assistant Professor

*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 - 39<sup>th</sup> Annual Meeting of the Society for Study of Reproduction, Omaha, NE.

April 3-4, 2007 - 8<sup>th</sup> 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<sub>B</sub> receptor expression and function in response to physiological and pharmacological manipulations. Experiments are also being conducted to assess the possible beneficial effects of GABA<sub>B</sub> receptor antagonists in slowing or reversing neurodegeneration in an animal model of Parkinson's disease.*

Meetings Attended:

June 29 – July 7, 2006 - 15<sup>th</sup> World Congress of Pharmacology, Beijing, China.

Dec. 1 -7, 2006 - American College of Neuropsychopharmacology, Hollywood, Florida.

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<sub>B</sub> Nomenclature Database Committee, International Union of Basic and Clinical Pharmacology

Editorial and Grant Reviews:

Editor-in-Chief, *Biochemical Pharmacology*

Executive Editor-in-Chief, *Pharmacology & Therapeutics*

Editor-in-Chief, *Pharmacology International*

Co-Editor, *xPharm*

Co-Editor, *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<sub>B</sub> Receptors in Neurological and  
Psychiatric Disorders,” Department of Psychiatry, University of  
Texas Southwestern Medical School, Dallas, Texas.  
November 8, 2006 – Art Hancock Memorial Lecture in  
Neuropharmacology, Research Department, Abbott Laboratories,  
Chicago, Illinois.  
April 20, 2007 – “Neuropharmacology of GABA<sub>B</sub> Receptor Systems,”  
Department of Pharmacology, University of Catania, Catania, Sicily.  
April 29, 2007 – “Behavioral Phenotype Testing,” Experimental Biology  
Meeting, Washington, D.C.

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

Adrienne 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



**Paige C. Geiger, Ph.D.**, Assistant Professor

*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:

John T Reeves Award for best oral presentation, International Hypoxia Symposium, Lake Louise, Alberta, Canada. March 3, 2007.

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 – 36<sup>th</sup> 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 (KIDDDRC) 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

**Dr. Heckert** (*Continued*)

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.  
May 8, 2007 - "Transcriptional response to signals at the membrane," Frontiers in Reproduction, Marine Biological Laboratory, Woods Hole, Massachusetts.  
May 15, 2007 - "Gene regulation in the testis," Frontiers in Reproduction, Marine Biological Laboratory, Woods Hole, Massachusetts.

Academic Honors:

Visiting Faculty, Frontiers in Reproduction Course May 15-19, 2007, Marine Biological Laboratory, Woods Hole, Massachusetts.  
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

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

*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.*

Meetings Attended:

February 11-14, 2007 - Mid-Winter meeting of the Association for Research in Otolaryngology, Denver, CO.

Committees:

Departmental

Chair, Graduate Student Affairs  
Chair, P and T committee

KUMC

Member, Academic Committee (SOM), Admissions subcommittee  
Member, Year 1-2 Committee  
Member, Graduate Council  
Member, IGPBS Advisory board, Admissions committee  
Member, Neuroscience Graduate Program Advisory committee,  
SOM P and T Committee

Editorial and Grant Reviews:

Ad hoc Reviewer, *Journal of Comparative Neurology*  
Ad hoc Reviewer, *Journal of Neuroscience*  
Ad hoc Reviewer, *Cerebral Cortex*  
Ad hoc Reviewer, *Journal of Physiology*

Teaching Activities:

Advanced Neuroscience (Director)  
8 hours lecture





**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, 3<sup>rd</sup> 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.  
May 22, 2007 - "Mouse models for male infertility," Frontiers in Reproductive Biology, Woods Hole, MA.

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



**Sang-Pil Lee, Ph.D.**, Assistant Professor (Hoglund Brain Imaging Center)

*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  $\beta$ -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, A $\beta$  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:

- August 20-25, 2006 - Gordon Research Conference: Brain Energy Metabolism and Blood Flow, Magdalen College, Oxford, UK.
- 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 Estee - Graduate Student, Bureau of Child Research



**Steven M. LeVine, Ph.D.**, Professor

*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, 4<sup>th</sup> 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.
- October 11, 2006 - Annual Meeting of the American Neurological Association, Chicago, Illinois.
- November 1-3, 2006 - NINDS Workshop entitled *Models of Geriatric Epilepsy*, Gaithersburg, Maryland.
- November 9-11, 2006 - The National Academies and Keck Futures Initiative Workshop entitled *Smart Prosthetics: Exploring Assistive Devices for the Body and Mind*, Irvine, California.
- December 8, 2006 - Asia-Pacific Symposium on Neural Regeneration, Shanghai, China.
- February 1, 2007 - Conference sponsored by The American Occupational Therapy Foundation entitled "Habit and Rehabilitation: Promoting Participation", Pacific Grove, California.
- 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.  
October 11, 2006 - Invited Speaker, "Plasticity in Motor Cortex," in Symposium entitled *Neural Plasticity and Recovery of Function*, 131st Annual Meeting of the American Neurological Association, Chicago, Illinois.  
October 14, 2006 - Keynote Speaker, "Brain mechanisms of recovery after stroke: a new age of brain repair," Interactive Metronome Professional Conference, Austin, Texas.  
November 1-3, 2006 - Invited Participant, NINDS Workshop entitled *Models of Geriatric Epilepsy*, Gaithersburg, Maryland.  
November 9-11, 2006 - Invited Participant, the National Academies and Keck Futures Initiative Workshop entitled *Smart Prosthetics: Exploring Assistive Devices for the Body and Mind*, Irvine, California.  
November 15, 2006 - Invited Speaker, "Brain Plasticity and Recovery after Stroke," West Virginia University, Department of Neurology.

**Dr. Nudo** (continued)

Seminars Presented (continued):

- November 30, 2006 - Invited Speaker, "Plasticity in Motor Cortex," Karolinska Institute, Stockholm, Sweden.
- November 30, 2006 - Invited Speaker, "Brain mechanisms of recovery After stroke: a new age of brain repair," Stockholm Brain Institute, Stockholm, Sweden.
- December 8, 2006 - Invited Speaker, "Brain mechanisms of recovery after stroke: a new age of brain repair," Asia-Pacific Symposium on Neural Regeneration, Shanghai, China.
- February 1, 2007 - Invited Speaker, "The Role of Skill vs. Use in the Recovery of Motor Function After Stroke," Conference sponsored by The American Occupational Therapy Foundation entitled *Habit and Rehabilitation: Promoting Participation*, Pacific Grove, California.
- March 26, 2007 - Invited Speaker, "Brain Plasticity and Recovery after Stroke," Institut interdisciplinaire des Sciences du Vivant des Saints-Pères, Université René Descartes Paris.
- June 4, 2007 - Invited Speaker, "Brain mechanisms of recovery after stroke," World Confederation of Physical Therapy, Vancouver, Canada.
- June 7, 2007 - Invited Speaker, "Brain mechanisms of recovery after stroke," Kuopio Stroke Symposium, Kuopio, Finland.
- June 16, 2007 - Keynote Speaker, "Brain mechanisms of recovery after stroke: the coming age of brain repair," conference entitled "Advances in Neurorehabilitation, Toronto, Canada.
- June 22, 2007 - Invited Speaker, "Mechanisms underlying recovery after stroke," Symposium entitled *Activity-dependent plasticity in the brain*, Turino, Italy.

Academic Honors:

- Invited Speaker, IBRO Satellite Meeting on Motor Control, Darwin, Australia, July 2007.
- Invited Speaker, Annual Neuroscience Symposium, University of South Dakota, Vermillion, South Dakota, September 8, 2007.
- Invited Speaker, Masterclasses in Neuroscience, Windsor Great Park, London, United Kingdom, September 26, 2007.
- Invited Speaker, 12<sup>th</sup> International Symposium on Neural Regeneration, Pacific Grove, California, December, 2007.
- Invited Speaker, RIKEN Brain Science Institute Summer Program, Tokyo, Japan, August 2008.
- Invited Speaker, 6<sup>th</sup> World Stroke Congress, Vienna, Austria, September 2008.
- Invited Speaker, Restauración Neurológica 2009, International Center for Neurological Restoration (CIREN), Havana, Cuba, March 2009.

**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:

August 20-26, 2006 - 15th International Conference on Biomagnetism (*BIOMAG 2006*), Vancouver, British Columbia, Canada.

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





**Peter G. Smith Ph.D.**, Professor and Director, R.L. Smith MRRC

*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.
- May 15-16, 2007 - Developmental Disabilities Research Centers Directors Meeting, Washington D.C.

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 Aritra Bhattacharjee
- 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 Bhattacharjee – 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.
- January 13, 2007 – K-INBRE 2007 Symposium, Kansas City, MO.
- June 19-23, 2007 – Beyond Genome 2007 Conference: Statistical Design for the Microarray Experiments, San Francisco, CA.

Committees:

Local

- Member, Kansas City Area Life Science Institute (KCALS),  
Development Grand Peer Review Committee

Seminars Presented:

- January 12, 2007 – “Computer Assisted Drug Design: New perspectives in anticancer Drug discovery,” JCCC Faculty/Staff Research Symposium at JCCC, Overland Park, KS,
- 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



**Joseph S. Tash, Ph.D.**, Associate Professor and Director of Interdisciplinary Center for Male Contraceptive Research & Drug Development

*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:

Invited to present platform seminar at the Future of Male Contraception Conference in Seattle, Washington on September 27 – 28, 2007.

**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  $\alpha$  and  $\beta$ -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 39<sup>th</sup> 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:

November 11-15, 2006 - American Heart Association. Chicago, IL.

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 – 2<sup>nd</sup> year MD student, KUMC Summer Research Program