Annual Report of the

Department of Molecular & Integrative Physiology

University of Kansas Medical Center

Covering the period July 1, 2012 – June 30, 2013
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**YEAR IN REVIEW**

**2012-2013**

*Dedicated to the generosity and inspiration of James Osborn and family*

**KATHLEEN M. OSBORN CHAIR OF MOLECULAR & INTEGRATIVE PHYSIOLOGY:** Our department was once again the fortunate beneficiary of our long-time friend, Jim Osborn. No one has done more to help our department than Jim Osborn. Jim’s generous new gift established the Kathleen M. Osborn Chair in support of the chair position in the department. At an investiture ceremony held Wednesday, September 26th, 2012, Paul Cheney was installed as the inaugural Kathleen M. Osborn Chair of Molecular & Integrative Physiology. This was without doubt one of the proudest and most moving moments of his 40-year long career. Our deepest thanks and appreciation to Jim Osborn for his continued and unwavering support of our department.

This endowed chair is in honor of Kathleen Osborn, daughter of Jim and Marion Osborn. Kathleen worked in Dr. Gil Greenwald’s laboratory during the summers of 1968 and 1969 when she was a student at the University of Missouri, Columbia. This experience was particularly meaningful to Kathleen and might have motivated her to enter a career in science had she not been taken from us prematurely in automobile accident in 1970.

The generous gift of this endowed chair in memory of Kathleen and her excitement for science adds to several previous gifts from Jim Osborn and his wife Marion. Their generosity started with the Kathleen M. Osborn Lectureship in 1971. This lectureship remains as the longest running and most successful lectureship in the history of the medical center and has attracted a long list of preeminent scientists from around the world. Funds from the Kathleen Osborn lecturership have also supported the annual Gil S. Greenwald Symposium, which is now in its 10th year and every year draws a line up of big name speakers. Another major gift from the Osborn family established the Marion M. Osborn Professorship in memory of Jim Osborn’s wife Marion. This professorship was established in 2006 and supports reproductive science in the department. The inaugural recipient and current Marion M. Osborn Professor is Dr. Leslie Heckert.

Included below are photos shown as part of a presentation by the KU Endowment Association at the Kathleen M. Osborn investiture. The first panel includes photographs of Jim Osborn, his wife, Marion and their daughter Kathleen. The second panel shows photographs of the three department chairs who have had the pleasure of working with Jim Osborn and his family. Gil Greenwald was chair of the department from 1976 – 1993, Jim Voogt was chair from 1993 – 2001 and Paul Cheney has been chair from 2001 to the present. The third panel shows photographs of Jim Osborn taken soon after the investiture of Leslie Heckert as the Marion M. Osborn Professor. Note that Jim Osborn is also a proud and enthusiastic KU Jayhawk fan and enjoys sporting his KU Basketball National Championship T-shirt. The fourth panel includes a photograph of Paul Cheney with Jim Osborn taken in April of 2011 during a vacation trip Paul and his family made to Hawaii. It was a very memorable occasion and a great opportunity to meet Jim Osborn and thank him in person for his friendship and generosity to our department. The final panel is a news release from the KU Endowment Association announcing Jim Osborn’s generous gift in creating the Kathleen M. Osborn Chair of Molecular & Integrative Physiology.
Slides presented at the Kathleen M. Osborn Chair
Investiture Ceremony
September 26, 2012

Kathleen Osborn

James & Marion
Osborn

Gilbert
Greenwald

Paul
Cheney

Jim Voogt

Physiology Chairmen
Marion M. Osborn Professorship of Reproductive Sciences

Hawaii, 2011 - Paul Cheney with Jim Osborn
Major gift establishes physiology chair at KU Medical Center

KANSAS CITY, Kan. — An educational opportunity at the University of Kansas Medical Center made such a positive influence on his late daughter’s life that Jim Osborn, of Honolulu, made a gift to KU Endowment in 2012 to create the Kathleen M. Osborn Chair in Molecular and Integrative Physiology in her memory.

Paul Cheney, professor and chair of the Department of Molecular and Integrative Physiology, is the inaugural recipient. He is internationally recognized for his neuroscience research and has a 30-year track record of grant support from the National Institutes of Health. Through the years, he has received a number of awards for his teaching and mentoring, as well as for his research. His research focuses on two areas: the brain control of movement and the neurological disease associated with HIV/AIDS.

“Words alone cannot convey the depth of my gratitude to Jim Osborn and family for their amazing generosity to our department. Their gifts have made our department much stronger and competitive, and we will be forever thankful,” said Cheney. “Jim is such a delightful and thoughtful person whom I had the pleasure of meeting in person during a recent trip to Hawaii. It is truly incredible what a simple doctor’s visit by Kathleen Osborn to KU Medical Center back in the late 1960s has turned into. We are honored to keep the memory of Kathleen and her love of science alive through this professorship in her name.”
During the summers of 1968 and 1969, Kathleen worked in the reproductive physiology lab of Gilbert Greenwald at the KU School of Medicine. Osborn said this came about after Kathleen developed an interest in science and biology in high school and college. Greenwald offered her a summer job in his lab through a Ford Foundation grant. The position continued the following summer.

The experience was particularly meaningful to Kathleen, said Osborn. “It might have motivated her to enter a career in science, had she not been taken from us prematurely in an automobile accident in 1970,” he said. At the time of her death, Kathleen was in her junior year at the University of Missouri.

Osborn said he and his late wife, Marion, had such high regard for Dr. Greenwald, who died in 2004, and for the medical research objectives of the physiology department, along with such deep gratitude for Kathleen’s experience, that they made estate plans to benefit the medical center through KU Endowment.

“Marion and I have had a love affair with the University of Kansas Medical Center for over 40 years,” said Osborn.

While Jim’s estate would have created the chair honoring Kathleen after his death, a recent letter from KU that mentioned *Far Above: The Campaign for Kansas* prompted his decision to make the gift sooner.

“What evolved from that letter announcing the Far Above campaign was the decision to proceed with establishing a permanent and lasting memorial to Kathleen, which has now become a reality,” said Osborn.

Prior to establishing this chair, Osborn has made other significant gifts for the medical center. In 1972, he and his wife established a fund to honor their daughter through the Kathleen Osborn Lectureship at KU Medical Center. The ongoing lectureship features world-renowned scientists in reproductive biology. After Marion’s death in 2004, Osborn established the Marion M. Osborn Professorship for Reproductive Science at the KU School of Medicine; Leslie Heckert is the inaugural recipient.

Osborn said that “as the sole survivor of this once endearing family,” it gave him peace of mind to create the professorship honoring his wife and the chair honoring his daughter so that he could see the gifts doing good during his lifetime.

Both the professorship and chair qualify for the Kansas Partnership for Faculty of Distinction program, which encourages private donors to help recruit and retain renowned professors. The program provides endowed professorships with additional state funding in perpetuity.

The gift is part of *Far Above: The Campaign for Kansas*, the university’s comprehensive fundraising campaign. The campaign is managed by KU Endowment, the independent, nonprofit organization serving as the official fundraising and fund-management organization for
KU. Founded in 1891, KU Endowment was the first foundation of its kind at a U.S. public university.

RESEARCH FUNDING: Despite the very difficult funding environment at NIH our department continues to do well overall. Some of this success can be attributed to replacing NIH funding with funding from a variety of other sources. This year, total research funding for the department was just over eight million dollars based on data provided by KUMC Enterprise Analytics. While this is not a record amount, it is still a very healthy level of funding and actually represents a considerable increase over last year’s level of 6.3 million. NIH funding also improved this year rising to $4,364,350 from $3,909,282 last year. Based on the latest available data, our department was ranked 45th nationally in NIH research funding among 127 public and private medical schools. Nearly every faculty member’s research program was supported by major external funding. It is a tribute to the dedication and talent of our faculty that the department has continued to do so well in spite of the extremely difficult federal and private research funding environment.

EDUCATION: Dr. Merrill Tarr, long-time Director of Medical Education in the department, officially retired in June of 2012. With his retirement, Dr. John Wood took over as Director of the Cardiopulmonary module of the medical curriculum and Dr. Mike Wolfe took over as Director of the Renal-Endocrine module. Thanks to careful preparation for this transition and the dedication of Drs Wood and Wolfe, these modules did not miss a beat and have continued to perform at a high level. To the credit of all the individual faculty instructors and particularly to Drs Wood and Wolfe, the Cardiopulmonary and Renal-Endocrine modules were both rated highly by the students. This was again another very successful year in terms of teaching awards. At the “Grande Affair” celebration in April, Dr. Wood and Dr. Blanco were recognized for excellence in teaching. They each won the Student Voice Award for “Outstanding Lecturer” in the first year of the medical curriculum. Dr. Blanco also won outstanding lecturer from second year students for his teaching in the Integration and Consolidation module. This continues what is now many consecutive years for each of them winning this award. We congratulate both John and Gustavo on their teaching success. And once again this year our department was the recipient of the “Outstanding Module in the First Year” award, which went to the Cardio-pulmonary module. Dr. Wood serves as director of this module and deserves a lot of credit for the continued success of this module.

MORE BUDGET CUTS: The budget cuts continued this year with our department returning another 2% of the institutional funding. This continues to be a painful exercise that has resulted in permanent elimination of faculty and staff positions.

TENURE TRACK APPOINTMENTS: We are very pleased and excited that Dr. Warren Nothnick joined our department in July of 2012 as a transfer from OBGYN. Warren has collaborations with other members of our department and is a highly respected member of the reproductive biology group. Warren’s laboratory focuses on examining the mechanisms which regulate uterine development and function, identifying factors which contribute to these mechanisms and understanding how alterations in these mechanisms lead to uterine diseases such as endometriosis and endometrial cancer.

RESEARCH TRACK APPOINTMENTS: There were no new appointments to the research track during the year.

JOINT AND ADJUNCT APPOINTMENTS: Joan Lewis-Wambi, Ph.D. was approved for a joint appointment as assistant professor in our department beginning July 1st, 2013. Joan’s primary appointment is assistant professor in Cancer Biology. She is a molecular biologist who works on
mechanisms of endocrine-resistant breast cancer (e.g., tamoxifen resistant) and uses that knowledge to help develop alternative treatment options for patients with resistant and metastatic disease.

**FACULTY PROMOTIONS:** Three members of our faculty from Stowers were promoted during the year. Peter Bauman was promoted to full professor, Kausik Si was promoted to associate professor and Sue Jaspersen was promoted to associate professor. Dr. Bauman has a very impressive record of accomplishment with papers in *PNAS* and *Nature*. He also received an Early Career Scientist Award from the Howard Hughes Medical Institute. Peter has also been highly active in our department. He is a member of our graduate program advisory committee, serves as primary mentor for graduate students and gives several lectures for the IGPBS core curriculum. Peter has also been highly active in our department. He is a member of our graduate program advisory committee, serves as primary mentor for graduate students and gives several lectures for the IGPBS core curriculum. Dr. Si’s work has had a major impact on the field of synaptic plasticity, memory and learning. He has published some landmark studies including papers in *Cell, PNAS* and *Neuron* and he is very active in our graduate program. Dr. Jaspersen works on mechanisms that control the transfer of genetic information during cell division. She is highly accomplished with publications in prominent journals such as *Science*. She has taken an active role in our graduate program with development of a course on Advanced Genetic Analysis for the IGPBS curriculum.

**FACULTY/STAFF DEPARTURES:** We are pleased to report that there were no faculty (tenure track) or staff departures during the year.

**FACULTY AWARDS/AccOMPLISHMENTS:** Dr. Gustavo Blanco won the 2012 Research Investigator Award, which was presented at Faculty Research Day on October 26th, 2012. Congratulations to Dr. Blanco. Numerous members of our faculty served on NIH grant review panels, editorial boards for journals and gave invited lectures at other Universities and at national and international meetings.

**GRADUATE PROGRAM AND PHYSIOLOGY SOCIETY:** The graduate students in the department had another active year. The “Physiology Society” leadership included Jitu George as President, Jessica Johnson as Vice President and Keke Pounds as Social Event Coordinator. We are very pleased with the success of the graduate program in Physiology. In July of 2012, seven new students were recruited to the department. Including students who are working at Stowers with faculty members who have their academic appointment in Physiology, we now have 39 doctoral students actively enrolled in the department.

Prepared by:

Dr. Paul D. Cheney
Professor and Kathleen M. Osborn Chair
Front Row (left to right): T. Rajendra Kumar, V. Gustavo Blanco, Joseph Tash, Leslie Heckert, Vijayalaxmi Gupta, Lynda McGinnis

Middle Row (left to right): Satish Ramalingam, Sam Enna, Paige Geiger, John Stanford, Phil Lee, Shahid Umar, Ramakrishna Hegde, Melissa Larson, Vargheese Chennathukuzhi, Michael Wolfe, Peter Smith, David Albertini

Back Row (left to right): Dharmalingam Subramaniam, Paul Cheney, Lane Christenson, Andrei Belousov, Prabhu Ramamoorthy, Norberto Gonzalez, John Wood, Warren Nothnick, Steven LeVine

Not Pictured: Shrikant Anant, Shawn Frost, Sumedha Gunewardena, Dora Krizsan-Agbas, Randolph Nudo, Mihai Popescu, Paul Terranova
Front Row (left to right): Yuan Li, Keke Pounds, Jessica Johnson, Amanda Brinker and Nairita Roy

Back Row (left to right): Michelle McWilliams, Wei-Ting Hung, Anand Venugopal and Kelsey Hampton

DEPARTMENT ROSTER
July 1, 2012 – June 30, 2013

a. Faculty

Primary Appointment in Physiology
Paul D. Cheney, Ph.D., Professor & Kathleen M. Osborn Chair
David F. Albertini, Ph.D., Professor
Shrikant Anant, Ph.D., Kansas Mason Professor for Cancer Research, Associate Director for Prevention and Cancer Control, Associate Dean for Research, Tom and Teresa Walsh Professorship in Cancer Prevention and Survivorship
Andrei Belousov, Ph.D., Associate Professor
V. Gustavo Blanco, M.D., Ph.D., Professor
Vargheese M. Chennathukuzhi, Ph.D., Assistant Professor
Lane K. Christenson, Ph.D., Associate Professor
Salvatore J. Enna, Ph.D., Professor
Paige C. Geiger, Ph.D., Associate Professor
Norberto C. Gonzalez, M.D., Professor
Leslie L. Heckert, Ph.D., Marion M. Osborn Professor for Reproductive Sciences
T. Rajendra Kumar, Ph.D., Associate Professor
Phil Lee, Ph.D., Associate Professor
Steven M. LeVine, Ph.D., Professor
Warren Nothnick, Ph.D., Professor
Randolph J. Nudo, Ph.D., Professor & Director of The Landon Center on Aging
Peter G. Smith, Ph.D., Professor, Director of the Institute for Neurological Disorders, Co-Director of the Kansas Intellectual and Developmental Disabilities Research Center
John A. Stanford, Ph.D., Associate Professor
Joseph S. Tash, Ph.D., Professor & Director of the Interdisciplinary Center for Male Contraceptive Research and Drug Development
Paul F. Terranova, Ph.D., Professor, Vice Chancellor for Research, Senior Associate Dean for Research and Graduate Education
Shahid Umar, Associate Professor
Michael W. Wolfe, Ph.D., Associate Professor
John G. Wood, Ph.D., Associate Professor

Emeritus
Lawrence P. Sullivan, Ph.D., Professor
Thomas J. Imig, Ph.D., Professor
James L. Voogt, Ph.D., Professor
Stowers Affiliates
Peter Baumann, Ph.D., Associate Professor
Scott Hawley, Ph.D., Professor
Sue Jaspersen, Ph.D., Assistant Professor
Rong Li, Ph.D., Professor
Ho Yi Mak, Ph.D., Professor
Kausik Si, Ph.D., Assistant Professor

Research Track Faculty
Shawn Frost, Ph.D., Research Assistant Professor
Sumedha Gunewardena, D.Phil., Research Assistant Professor
Vijayalaxmi Gupta, Ph.D., Research Assistant Professor
Dora Krizsan-Agbas, Ph.D., Research Assistant Professor
Melissa Larson, Ph.D., Research Assistant Professor & Director of Transgenic Facility
Lynda McGinnis, Ph.D., Research Assistant Professor
Mihai Popescu, Ph.D., Research Assistant Professor
Satish Ramalingam, Ph.D., Research Assistant Professor
Prabhu Ramamoorthy, Ph.D., Research Assistant Professor
Dharmalingam Subramaniam, Ph.D., Research Assistant Professor

Joint Appointment in Physiology
Richard Barohn, Ph.D., Professor (Chair, Neurology)
Sandra Billinger, PT, Ph.D., FAHA, Assistant Professor (Physical Therapy and Rehabilitation Science)
William Brooks, Ph.D., Professor (Director, Hoglund Brain Imaging Center)
Jeffrey Burns, Ph.D., Associate Professor (Neurology, Director of Alzheimer and Memory Center & Alzheimer's Disease Clinical Research Program)
Mark Chertoff, Ph.D., Associate Professor (Hearing & Speech)
In-Young Choi, Ph.D., Assistant Professor (Neurology & Hoglund Brain Imaging Center)
Buddhadeb Dawn, Ph.D., Professor (Internal Medicine)
Animesh Dhar, Ph.D., Research Associate Professor (Cancer Biology)
Navneet Dhillon, PhD., Assistant Professor (Pulmonary and Critical Care Medicine)
Robyn (Honea) Dickinson, Ph.D., Research Assistant Professor (Alzheimer and Memory Program)
Dan Dixon, Ph.D., Associate Professor (Cancer Biology)
Tomoo Iwakuma, Ph.D., Associate Professor (Cancer Biology)
Benyi Li, Ph.D., Assistant Professor (Internal Medicine)
Joshua Mammen, M.D., Assistant Professor (General Surgery)
Ajay Nangia, Associate Professor (Urology Surgery)
Jules Nazzaro, M.D., Associate Professor (Neurosurgery)
Brian Petroff, DVM, Ph.D., Associate Professor (Internal Medicine & Scientific Director, Breast Cancer Prevention Center)
Janet Pierce, D.S.N., Professor (School of Nursing)
Joint Appointment in Physiology (continued)
Cary Savage, Ph.D., Director, CHBN and John H. Wineinger Professor of Psychiatry and Behavioral Sciences (Center for Health Behavior Neuroscience)
William (Zhiming) Suo, Ph.D., Research Associate Professor (Neurology)
Russell H. Swerdlow, Ph.D., Professor (Neurology)
R.C. Andrew Symons, M.D., Ph.D., Assistant Professor (Ophthalmology)
Darren Wallace, Ph.D., Associate Professor (Internal Medicine)
Steven Warren, Ph.D., Professor (Applied Behavioral Science, KU-Lawrence; Director, Schiefelbucsh Institute for Life Span Studies)
Carl Weiner, M.D., M.B.A., Professor (Chair, Ob-Gyn)
Danny Welch, Ph.D., Professor & Chairman (University of Kansas Cancer Center)
Alan Yu, MB, BChir, Professor & Director (Nephrology and Hypertension)

Adjunct Appointment in Physiology
Shilpa Buch, Ph.D., Professor (Pharmacology & Experimental Neuroscience, University of Nebraska Medical Center)
Jill Jacobson, M.D., Professor (Chief, Endocrinology/Diabetes, Children’s Mercy Hospital)
Gregory Kopf, Ph.D., Associate Vice Chancellor for Research
William Truog, Ph.D., Professor (Children’s Mercy Hospital, University of Missouri-Kansas City School of Medicine)
Mark Weiss, Ph.D., Professor (Kansas State University)
Rachel Williams, Ph.D., Research Instructor (Senior Research Scientist, MidAmerica Neuroscience Institute)
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<th>Candidate</th>
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<td>Elizabeth Dille</td>
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<td>Lacey Luense</td>
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<td>Nairita Roy</td>
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c. Postdoctoral Fellows
Ishfaq Ahmed, Ph.D.
Aritra Bhattacherjee, Ph.D.
Huyen Van Doan, Ph.D.
Jonathan Fitzgerald, Ph.D.
Lesya Holets, Ph.D.
Mahesh Jakkula, Ph.D.
Faezeh Koohestani, Ph.D.
Deep Kwarta, Ph.D.
Aramadhaka Lavakumar Reddy, Ph.D.
Parthasarathy Rangarajan, Ph.D.
Badal Roy, Ph.D.
Scott Sands, Ph.D.

d. Temporary Students
Juante Baldwin
Julia Balmaceda
Austin Carroll
Nitish Chaimalakondia
Garrett Cohan
Joshua Curry
Nick Duethman
Isabella Fuentes
Jessica Hogan, MD
Cassi Johnson
Bridget Kennedy
Andre Koop
Raulee Lucero
Alexandria Meyers
Chris Nothnick
James Odum
Vivek Panchananam
Clare Prohaska
Nicole Rogers
Kavya Shivashankar
Ravi Thombre
Alissa Urich
Ashley Ward
Kathleen White
David Wilson
e. Research Staff
Janna Belousova – Senior Research Assoc.
Illya Bronshteyn – Research Associate
Anuradha Chakrabarty – Senior Scientist
Ian Edwards – Research Assistant
Amanda Graham – Research Assistant
Ian Graham – Research Technician
Ramakrishna Hegde – Senior Scientist
Joshua Holbert – Research Assistant
Xiaoman Hong – Senior Research Assoc.
Lovella Inisienmay – Research Assistant
Zhuang Li – Senior Research Assoc.
Zhaohui Liao – Research Associate
Jeff McDermott – Research Associate
Jeremy Polk – Research Assistant
Sivapriya Ponnurangam – Research Assoc.
Daren Rice – Research Associate
Gladis Sanchez – Research Associate
David Standing – Research Technician
Sarah Tague – Senior Scientist
Shuan Sheila Tsau – Research Assistant
Suwen Wei – Senior Research Associate
Riley Wertenberger – Research Assistant
Jonathan Wheatley – Research Assistant
Huizhen Wang – Senior Scientist
Hongyu Zhang – Senior Scientist

f. Support Staff
Leigh Ann Arbuckle – Senior Coordinator
Lynn LeCount – Managing Editor
Cindy Martin – Editorial Coordinator
Jennifer McNichols – Administrative Assistant
Liz Meng – Grant Financial Accountant
Barbara Shull – Administrative Assistant

Interdisciplinary Center for Male Contraceptive Research & Drug Development
Shari Standiferd – Operations Manager
Jennifer Wallace – Administrative Assistant
Notes Concerning Graduate Students

Amy Cantilena had a small poster at the MD/PhD Retreat Student Research Poster Session, the abstract titled: "Exploring Immunologic Privilege in CD105+/CD105-Mesenchymal Stem Cells in the Context of Cardiovascular Disease Treatment." Also she passed her comprehensive exams in April 2013.

Guangbo Chen is the first author for the review "Whole chromosome aneuploidy: Big mutations drive adaptation by phenotypic leap" published on Bioessays as the cover story. He was also awarded with DeLill Nasser Award for Professional Development in Genetics from Genetics Society of America.

Li Chen presented his first author poster entitled "The role of spliceosomal cleavage in telomerase RNA biogenesis" at the fifth EMBO Conference on Telomeres and the DNA Damage Response in October 2012.


Jason Gill attended Neurobiology Group Meetings, Stowers Friday Club and Stowers Wednesday Seminar Series. He presented at the Friday Science Club in October 2012. On July 2013, he successfully defended his thesis.

Swathi Iyer’s research application was selected for funding in the FY14 Biomedical Research Training Program. She won the second place offering a 500$ travel award in the poster competition in 2012 KUCC Research Symposium for her poster presentation “Roles of genes regulating sphere-forming potential of osteosarcoma”. She also won a travel award for 500$ award in the 2012 STUDENT RESEARCH FORUM AWARDS sponsored by IRHRM/Center for Epigenetics and Stem Cell Biology Awards in KUMC. She won the Karen & Kelly Gregg “LaMar’s Donuts” student award for Cancer Research. She was the first author in the paper titled: A novel link between the HER2-Akt and MDM2-p53 pathways via CSN6 published in Cell Cycle.

Evan Janzen presented a first author poster entitled “Regulation of telomerase expression in fission yeast” at the European Molecular Biology Organization Telomeres and the DNA Damage Response Meeting in October, 2012, and again at the Stowers Institute for Medical Research’s Young Investigator Research Day in March, 2013.

Jessica Johnson delivered a poster presentation at the University of Kansas Medical Center 2012 Cancer Research Symposium titled “Gedunin causes G/M arrest and induces abnormal mitotic spindle formation.” Jessica served as Vice-President of the Physiology Society for the 2012-2013 academic year. She also presented a talk titled "Gedunin induced G2/M arrest and cell death in ovarian cancer cells" at the 2013 Annual Student Research Forum hosted by the University of Kansas Medical Center.
Ram Kannan was the first author on a paper titled ‘Intronic sequence elements impede exon ligation and trigger a discard pathway that yields functional telomerase RNA in fission yeast’ that was published in Genes and Development in March 2013. Ram successfully defended his dissertation titled ‘Mechanism and function of spliceosomal cleavage in fission yeast’ on June 5, 2013.


Danny Miller was co-author on a paper entitled "Binding of Drosophila Polo kinase to its regulator Matrimony is noncanonical and involves two separate functional domains" published in the Proceedings of the National Academy of Sciences. He was also first author on a commentary entitled "Bisphenol A and the primate ovary" also published in PNAS. He received a travel award from the Central Society for Clinical Research to present a poster at their annual meeting and presented a poster at the American Physician Scientist Association's annual meeting.

Naveen Neradugomma won a Graduate Student Travel Award on behalf of KU Cancer Center Symposium to present his poster entitled “Prolactin signaling stimulates colon cancer stem cells through the Erk- Notch pathway” at the FASEB- Summer Research Conference, Colorado. His work was also selected for an oral presentation at the University of Kansas Medical Center-Student Research Form, 2013. He is currently in the process of putting these novel observations into a first authored paper.

Bliss O'Bryhim was co-author on "Honokiol Inhibits Pathological Retinal Neovascularization in Oxygen-Induced Retinopathy Mouse Model" published in Biochemical and Biophysical Research Communications. She presented a poster at the American Society for Human Genetics. She gave a talk at the Biomedical Research Training Program, KUMC’s Student Research Forum, the Association for Research in Vision and Ophthalmology meeting and at the Foster Ocular Immunology Society. She received a travel grant from the Kansas Lions Sight Foundation and from the Office of Graduate Studies. She was a recipient of the Biomedical Research Training grant, Peterson Foundation scholarship, and D.S. Sutton Scholarship in Genetics. She was co-chair of Student Research Forum and successfully defended her thesis.

Lili Pan presented a first author poster entitled “The role of Rap1 in telomere length maintenance in fission yeast” at the 2012 EMBO Conference on Telomeres and the DNA Damage Response in L’Isle sur la Sorgue, France. She also received a Graduate Student Travel Award to present a talk entitled “Fission yeast telomere architecture and length regulation” at the Cold Spring Harbor Meeting on Telomeres and Telomerase in May 2013.
Lei Pei was a co-author on a paper entitled, "Conserved Aromatic Residue Confers Cation Selectivity in Claudin-2 and Claudin-10b." The Journal of biological chemistry. She was also a co-author on an abstract entitled "Comprehensive Scanning Cysteine Mutagenesis Reveals Claudin-2 Pore Lining Residues with Distinct Properties."

Robert S Rogers was awarded a Graduate Student Travel Scholarship to present a poster as first author entitled “Acute heat treatment alters adipose tissue fatty acid handling” at the Integrative Physiology of Exercise Conference, hosted by the American Physiological Society, in Denver, Colorado during October of 2012. Robert also had a first authored abstract accepted to the Adipose Tissue Biology section of the Keystone Symposia on Molecular and Cellular Biology in Keystone, Colorado during February 2013 entitled “Heat treatment alters adipose tissue fatty acid re-esterification and expression of heat shock proteins.” Robert gave a presentation entitled “Skeletal muscle heat shock protein content differs between rats selectively bred for low and high aerobic capacity” at the Student Research Forum at the University of Kansas Medical Center in April 2013. Finally, Robert received a fellowship from the University of Kansas Medical Center’s Biomedical Research Training Program for 2013-2014.

Archana Raman passed her comprehensive exams in April 2013.

Nairita Roy was a co-author on a paper entitled "Effect of cholinergic signaling on neuronal cell bioenergetics" published in the Journal of Alzheimer’s disease. She also co-authored a paper entitled "Bioenergetic flux, mitochondrial mass and mitochondrial morphology dynamics in AD and MCI cybrid cell lines" published in Human Molecular Genetics.

Sarah Smith was a co-author on a paper entitled “Non-uniform membrane diffusion enables steady-state cell polarization via vesicular trafficking” published in Nature Communications. She presented her work as a poster presentation entitled “More than a mark: The role of Rsr1 in symmetry breaking in budding yeast” at the annual meeting of the American Society of Cell Biology in San Francisco CA in December 2012, and as an oral presentation entitled “Distinct pathways govern Cdc42 activation and targeting during symmetry breaking in budding yeast” at Young Investigator Research Days at the Stowers Institute for Medical Research in Kansas City MO in March 2013. She successfully defended her dissertation titled “Mechanisms of symmetry breaking in budding yeast” on June 21st, 2013.

Edward Urban successfully defended his dissertation entitled, "Changes in Cortical Connectivity and Gene Expression of the Rostral Forelimb Area After Ischemic Infarct in Motor Cortex in the Rat" on June 11th. He was 1st author on an abstract that was accepted to be shown at the annual meeting of the Society for Neuroscience in Nov 2013 entitled, "Afferent and efferent cortical connections of the rostral forelimb area in rat."
Anand Venugopal is a co-author on two papers in preparation for submission. The first is "Bitter melon extracts enhance the activity of chemotherapeutic agents through the modulation of multiple drug resistance." in preparation for submission to PLOS ONE. The second is “Honokiol induces melanoma cancer cell death by modulating the Notch signaling cascade.” in preparation for submission to JBC. He is also the first author on an abstract entitled “Overexpression of RNA binding protein RBM3 enhances stem cell characteristics in colorectal cancer.” presented at The University of Kansas Cancer Center Research Symposium for which he won third place in the Post-Doc/Graduate Student competition. Additionally he was first author on an abstract entitled “RNA binding protein RBM3 enhances the cancer stem cell phenotype through increased ß-catenin activity” presented at the 2013 Student Research Forum for which he won second place in basic science IV. Finally, Anand was first author on an abstract entitled “RNA Binding Protein RBM3 enhances stem cell characteristics and Wnt/ß-catenin signaling in colorectal cancer.” which he presented at Digestive Disease Week 2013.
COURSES TAUGHT

**Medical Curriculum Core Courses**
CORE 815 – *Cardiopulmonary*. Drs. Gonzalez, Wood

CORE 820 – *Gastrointestinal Tract and Nutrition*. Dr. LeVine

CORE 825 – *Renal and Endocrine System*. Drs. Blanco and Wolfe

CORE 830 – *Reproduction and Sexuality*. Drs. Albertini and Wolfe


**Departmental Graduate Courses**
PHSL 834 – *Reproductive Physiology*. Drs. Chennathukuzhi, Christenson, Heckert, Kumar, McGinnis, Nothnick, Wolfe

PHSL 835 – *Integrative Physiology of Exercise*. Drs. Geiger, Gonzalez


PHSL 848 – *Molecular Mechanisms of Neurological Disorders*. Drs. LeVine, Stanford

**IGPBS Courses**
GSMC 851 – *Molecular Genetics*. Drs. Chennathukuzhi, Christenson, and Kumar

GSMC 853 – *Cellular Structure*. Drs. Belousov and Blanco

GSMC 854 – *Cell Communication*. Dr. Albertini
The Department Seminar program was directed by Dr. John Stanford. Forty eight speakers made presentations, eight 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 KIDDRC, Landon Center of Aging and the Center for Reproductive Sciences made important financial contributions to our program. The Kathleen M. Osborn Lecture Series sponsored Dr. Michael Griswold from Washington State University.

07/26/12  Wen Tang  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
Biogenesis of Telomerase RNA in fission yeast

08/31/12  William Messamore  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
Contralateral and Ipsilateral Output to Hindlimb Muscles in the Primate

08/31/12  Valentine Agbor, M.S.  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
The Role of DMRT1 in Postnatal Testis Differentiation

09/04/12  Dan Dixon, Ph.D.  
Associate Professor  
Cancer Biology  
KUMC  
Regulation of RNA Stability in Colon Cancer

09/10/12  Doug Wright, Ph.D.  
Professor  
Anatomy & Cell Biology  
KUMC  
Why is Diabetes Toxic to Sensory Neurons?

09/17/12  Esta Sterneck, Ph.D.  
Investigator  
Laboratory of Cell and Development Signaling  
National Cancer Institute  
Frederick National Laboratory for Cancer Research  
Frederick, MD  
C/EBPdelta: Dr. Jekyll and Mr. Hyde in Mammary Tumor Biology
09/24/12  **Fred Samson Lecture**  
Lee Miller, Ph.D.  
Edgar C. Stuntz Distinguished Professor in Neuroscience  
Department of Physiology  
Department of Physical Medicine and Rehabilitation  
Northwestern University Feinberg School of Medicine  
Chicago, IL  

Restoring Natural Motor Function with a Biomimetic BMI: Muscle-Like Cortical Neurons used to Control Functional Electrical Stimulation of Paralyzed Forearm Muscles

09/28/12  J. Eva Selfridge  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  

Altered Mitochondrial Retrograde Signaling in Response to MTDNA Depletion of a Ketogenic Diet

10/01/12  Jena Steinle, Ph.D  
Associate Professor  
Department of Ophthalmology  
Hamilton Eye Institute  
University of Tennessee Health Science Center  
Memphis, TN  

Beta-Adrenergic Receptor Actions in the Diabetic Retina

10/08/12  Kyle Jansson  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  

Ouabain, a Hormone that affects Progression of Autosomal Dominant Polycystic Kidney Disease

10/15/12  Jason Gill  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  

Persistent Memory: How Behavior and Gene Expression Contribute to Long Term Memory Formation in Drosophila

10/19/12  David Guggenmos  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  

Driving Functional Behavioral Recovery Using Activity-Dependent Stimulation

10/22/12  Naveen Neradugomma  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  

Functional Evaluation of Prolactin and Prolactin Receptor in Colorectal Tumorigenesis
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<thead>
<tr>
<th>Date</th>
<th>Name</th>
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<tr>
<td>10/29/12</td>
<td>Jitu George</td>
<td>Graduate Student</td>
<td>Decoding the Functional Role of Fast, a Long Noncoding RNA Transcribed at the Nr5A1 Locus</td>
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<td>11/19/12</td>
<td>Aracely Lutes</td>
<td>Graduate Student</td>
<td>Oogenesis in Unisexual Whiptail Lizards (genus Aspidoscelis)</td>
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<td>Li Yao, Ph.D.</td>
<td>Assistant Professor</td>
<td>Neural Tissue Engineering for Nerve Regeneration</td>
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<td>Jonathan Fitzgerald</td>
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<td>MicroRNA-21 and PDCD-4 Functions in Granulosa Cells and Leiomyoma</td>
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<td>Lacey Luense</td>
<td>Graduate Student</td>
<td>Hormonal Regulation of microRNA in the Ovary</td>
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<td>12/03/12</td>
<td>Todd Bradley</td>
<td>Graduate Student</td>
<td>Integrative Genome-Wide Analysis Reveals Combination Control of Alternative Splicing by the SR Protein Family</td>
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<td>12/10/12</td>
<td>Keke Pounds</td>
<td>Graduate Student</td>
<td>Evaluating the Bioactivity of KISS1 Deprived KISSpeptins</td>
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<td>12/17/12</td>
<td>Marco Bortolato, M.D., Ph.D.</td>
<td>Assistant Professor</td>
<td>Gene x Environment x Gender Interactions in Neurodevelopmental Disorders: A Translational Perspective</td>
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<td>01/07/13</td>
<td>T. Rajendra Kumar, Ph.D.</td>
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<td>Ovarian Function</td>
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<td>01/28/13</td>
<td>Pomila Singh, Ph.D., AGAf</td>
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<td>Significance of Cancer Stem Cell Markers</td>
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<td>02/04/13</td>
<td>Vargheese Chennathukuzhi, Ph.D.</td>
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<td>Pathogenesis of Uterine Fibroids</td>
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<td>- New Molecular Mechanisms</td>
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<td>02/11/13</td>
<td>Pamela Tran, Ph.D.</td>
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<td>Primary Cilia and Hedgehog</td>
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<td>Signaling in Cystic Kidney Disease</td>
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<td>02/18/13</td>
<td>Nancy Berman, Ph.D.</td>
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<td>How Aging Changes the Brain’s Response to Injury</td>
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<td>03/01/13</td>
<td>Aritra Bhattacherjee</td>
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<td>Mechanisms of Structural Plasticity in Mature Sensory Axons: Role of BMP4 in Female Reproductive Tract</td>
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<td>03/04/13</td>
<td>Steven LeVine, Ph.D.</td>
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<td>Vascular Changes in Response to Anthrax Lethal Toxin</td>
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<td>Gerd Heusch, M.D., Ph.D., FRCP</td>
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<td>Coronary Microembolization - From Bedside to Bench and Back to Bedside</td>
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<td>Anand Mehta, D.Phil.</td>
<td>Fucosylation in Liver Cancer: Not All Sugars are Sweet!</td>
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<td>Christie Befort, Ph.D.</td>
<td>Breast Cancer Prevention through Weight Control and Physical Activity</td>
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<td>03/25/13</td>
<td>Huan Yang</td>
<td>Characterization of Three Novel RNAi Machinery Components in C. elegans</td>
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<td>Irfan Saadi, Ph.D.</td>
<td>Role of SPECC1-Like Cytoskeletal Proteins in Craniofacial Morphogenesis and Malformation</td>
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<td>04/01/13</td>
<td>Swathi Iyer</td>
<td>Roles of Genes Regulating Sphere-Forming Potential of Osteosarcoma</td>
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<td>04/08/13</td>
<td>Tommaso Falcone, M.D.</td>
<td>Relationship between Pathophysiology and Management of Endometriosis Patients</td>
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<td>Department Chairman</td>
<td>Obstetrics &amp; Gynecology</td>
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<td>Professional Staff Affairs</td>
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<td>04/15/13</td>
<td>LuZhe Sun, Ph.D.</td>
<td>TGFβ Signaling in Tumor Microenvironment</td>
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<td></td>
<td>Professor</td>
<td>Department of Cellular &amp; Structural Biology</td>
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04/16/13 Elizabeth Dille  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
The Application of Histone Analysis for Identifying Distal Regulatory Elements – Regulation of FSHR

04/22/13 Mohammed Repon Khan.  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
Role of Drosophila Orb2 (CPEB) in Synaptic Protein Synthesis

04/29/13 Kathleen M. Osborn Lecture  
Michael Griswold, Ph.D.  
Regents Professor  
School of Molecular Biosciences  
College of Veterinary Medicine  
Washington State University  
Pullma, Washington  
Cycles, Waves and Retinoic Acid in Spermatogenesis

05/06/13 Joan Lewis-Wambi, Ph.D  
Assistant Research Professor  
Cancer Biology  
KUMC  
Endocrine Resistance and Breast Cancer: A Novel Approach for Treatment

05/10/13 Bliss O'Bryhim  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
Genetic Susceptibility to the Murine Model of Retinopathy of Prematurity: Identification of a Novel Role of Tyrosinase in Retinal Angiogenic Regulation

05/13/13 4th Annual Voyages Lecture  
Joan Hunt, Ph.D.  
University Distinguished Professor Emeritus  
Anatomy & Cell Biology  
KUMC  
Why Kansas?

05/20/13 Brooke Fridley, Ph.D.  
Associate Professor, Biostatistics  
Director, Biostatistics Shared Resource  
University of Kansas Cancer Center  
Site Director, K-INBRE Bioinformatics Core  
KUMC  
Statistical Genomics and Bioinformatics in Medical Genomic Research
<table>
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<th>Date</th>
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<th>Title</th>
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<tbody>
<tr>
<td>06/03/13</td>
<td>Jonathan Fitzgerald</td>
<td>Novel Direct Targets and Functional Roles for MicroRNA-21 in Granulosa Cells and Human Uterine Leiomyomas</td>
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<td>06/05/13</td>
<td>Ram Kannan, B.Tech</td>
<td>Mechanism and Function of Spliceosomal Cleavage in Fission Yeast</td>
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<td>06/06/13</td>
<td>Kyle Jansson</td>
<td>Novel Effects of Ouabain in Autosomal Dominant Polycystic Kidney Disease Cystogenesis</td>
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<td>06/11/13</td>
<td>Edward Urban, III</td>
<td>Changes in RFA After M1 Ischemic Infarct in Rat</td>
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<td>06/21/13</td>
<td>Sarah Smith</td>
<td>Mechanism of Cellular Symmetry Breaking in S. cerevisiae</td>
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a. Manuscripts Published


Belousov, A.B. (2012) Novel model for the mechanisms of glutamate-dependent excitotoxicity: role of neuronal gap junctions. Brain Res 1487 (Special Issue: From Electrical Synapses to the Clinics: A Translational Perspective), 123-130. PMID: 22771704, PMCID: PMC3500401 (Available on 2013/12/3) [this is an invited review]


Johnson JE, McIff TE, Lee P, Toby EB, Fischer KJ. Validation of radiocarpal joint contact models based on images from a clinical MRI scanner, Computer Methods in Biomechanics and Biomedical Engineering (2012) PMID:22631873


Rakesh M, Cate M, Vijay R, Anant, S., Shanjana A. A TLR4-interacting peptide inhibits lipopolysaccharide-stimulated inflammatory responses, migration and invasion of colon cancer SW480 cells. 2012 Dec 1;1(9)1495-1506 PMID: 23264896


Tophkhane, C., Yang, S.H., Jiang, Y., Ma, Z., Subramaniam, D., Anant, S.,
Yogosawa, S., Sakai, T., Liu, W.G., Edgerton, S., Thor, A., Yang, X.
(2012). p53 Inactivation Upregulates p73 Expression through E2F-1
30. PMID: 22952705, PMCID: PMC3431388

Touchberry CD, Gupte AA, Bomhoff GL, Graham ZA, Geiger PC*, Gallagher
PM*(2012). Hyperthermic preconditioning protects skeletal muscle from
damage and alters hypertrophic signaling. *Shared corresponding

Urban III E, Bury SD, Barbay HS, Guggenmos DJ, Dong Y and Nudo RJ (2012)
Gene expression changes of interconnected spared cortical neurons 7
days after ischemic infarct of the primary motor cortex in the rat. Molecular
and Cellular Biochemistry, 369:267-286. PMID: 22821175

Cancer Reports, 8:298-306.

Varghese BV, Koohestani F, McWilliams M, Colvin A, Gunewardenea S, Kinsey
WB, Nowak RA, Nothnick WB, Chennathukuzhi VM. (2013) The loss of
REST in uterine fibroids promotes aberrant GPR10 expression and
enables mTOR pathway activation. Proc Natl Acad Sci (USA) 110:2187-
2192. PMID: 23284171

Developmental programming: Gestational bisphenol-A treatment alters
trajectory of genital ovarian gene expression. Endocrinology. 2013 May;
154(5): 1873-84. PMID: 23525218.

Vo, D.T., Subramaniam, D., Remke, M., Vogel, C., Burton, T.L., Uren, P.J.,
Gelfon, J.A., Abreu, R.S., Burns, S.C., Qiao, M., Suresh, U., Valenti, C.L.,
Korshunov, A., Dubuc, A.M., Northcott, P.A., Smith, A.D., Pfister, S. M.,
Taylor, M.D., Jang, S.C., Anant, S., Penalva, L.O (2012). The RNA-
binding protein Musashi1 affects medulloblastoma growth via a network
of cancer related genes and is an indicator of poor prognosis. The American

Hepatocyte nuclear factor 4 alpha deletion promotes diethylnitrosamine-
induced hepatocellular carcinoma in mice. Hepatology. 2013 Jan 12. doi:
10.1002/hep.26251. PMID: 23315968

Hepatocyte-specific deletion of hepatocyte nuclear factor-4a in adult mice
results in increased hepatocyte proliferation. Am J Physiol Gastrointest
Epub 2012 Oct 25. PMID: 23104559

cyclins in the postnatal mouse epididymis. Gene Expression Patterns,
2012 Jan 24. [Epub ahead of print]
http://dx.doi.org/10.1016/j.gep.2012.01.003.

b. Manuscripts in Press


Adams HP, and Nudo RJ. Management of patients with stroke: Is it time to expand treatment options to improve recovery? *Annals of Neurology*, accepted

Albertini DR and Olsen R. 2013. Effects of fertility preservation on oocyte genomic integrity. In: Oocyte Biology in Fertility Preservaion; Editor S S Kim; Chapter 4 Springer-Verlag, N.Y.(in press)


Enna, S.J. GABA Receptor Allostrism. Proceedings of the Asia Pacific Federation of Pharmacologists Meeting, in press


c. Abstracts


Neradugomma, N., Subramaniam, D., Anant, S. Prolactin hormone signaling promotes cancer stem cell niche and migration in colorectal cancer. AACR, Chicago, 2012


Ponnurangam, S., Subramaniam, D., Kwatra, D., Sayed, A., Padhye, S. and Anant, S. Colon Cancer Stem Cells: DCLK1 as a Therapeutic Target for Prevention and Therapy. 32nd Annual Convention of Indian Association for Cancer Research. Delhi, India, February 13-16th 2013.


Rangarajan, P., Subramaniam, D., Anant, S., and Dhar, A. Targeting Colon cancer stem cells using Sulforaphane. AACR, Chicago 2012


Reddy LA, Reif GA, Wallace DP and Blanco G. Ouabain Enhances Programmed Cell Death In ADPKD cells. KU Postdoctoral Research Day & STEM Graduate & Ph.D. Career Fair, March 9th, 2013. Lawrence, Kansas, USA.


Subramaniam, D., Ponnurangam, S., Ramalingam, S., and Anant, S. Honokiol inhibits colon cancer stem cell growth and mechanism mediated through Notch signaling pathway. AACR, Chicago 2012


Subramaniam D., Ponnurangam, S., Standing, D., Rangarajan, P., Tandutinib targets the c-Kit/PI3Kinasae/Akt/mTOR signaling pathway to inhibit colon cancer growth. The University of Kansas Cancer Center, Research Symposium. November 2012.


RESEARCH SUPPORT


Biomedical Research Training Program, FY12 Postdoctoral Scholar Award. Principal Investigator: D Kwarta, Mentor. S Anant.


American Cancer Society. Principal Investigator: A Sugumar, Sponsor: S Anant.


NIH-NIDA – “Morphine and the Neuropathogenesis of SIV in Macaques.” September 30, 2007-August 31, 2012. Principal Investigator: S. Buch, Co-Investigator: P.D. Cheney (10% effort). Direct costs $2,484,734; Total costs $3,279,173. PI for KUMC subcontract ~200,000/year direct costs; 300,000/year total costs.


S.J. Enna: Elsevier – Editorial Office. $140,000

International Union of Basic and Clinical Pharmacology – Secretary-General Office. Total award $53,284.

NICHHD – “Kansas University Training Program in Neurological and Rehabilitation.” Principal Investigator: R.J. Nudo, Associate Director: S.J. Enna (10% effort). Total award $1,144,745 (Year 04 $244,129).


L.L. Heckert: Marion M. Osborn Endowment


NICHD/NIH R03 – “Role of Dicer in Gonadotrope and Reproductive Function.” 2012-2014. Total costs $151,000.


ApoPharma, Inc. – March 2013-March 2014. Direct costs $42,277, indirect costs $8,455.

Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) – “Modifier genes influence the disease course of Krabbe disease.” May 1, 2012-April 30, 2013. Principal Investigator: Austin Carroll, Undergraduate at Rockhurst University; Faculty Sponsor: S.M. LeVine. Direct costs $3,500, indirect costs $1,750.


MAITF - Computer-Enhanced Simulation for Pre-Clinical Medical Students
Principal Investigator: Emily Diederich

The causes of infertility and cancer remain a focus for the laboratory especially as they pertain to Women’s Health. Collaborations with Dr. Sam Kim (Ob/Gyn) and Dr. Brian Petroff (Medicine) are ongoing and explore the impact of chemotherapy, radiation, and endocrine disruptors on the function of the mammalian ovary. Projects underway include (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 that define oocyte and embryo quality as they pertain to assisted reproductive technologies and (4) defining modifications in cell cycle regulation that occur during the transition from meiosis to mitosis in the developing embryo.

Meetings Attended:
March 2013– ISMAAR, Nanjong China

Committee Activities:
Departmental
  Member, Promotion and Tenure Committee
KUMC
  Member, Executive Faculty Council
National
  Ad hoc, NIH CMIR Study Section
  Study Section Chair, TEDCO Stem Cell Program, Maryland State
  (February 8-9, 2013)

Editorial and Grant Reviews:
  Editorial Board, Journal of Assisted Reproduction and Genetics
  Editorial Board, Fertility and Sterility
  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
  Ad hoc Reviewer, Developmental Biology
  Ad hoc Reviewer, Molecular Endocrinology
Editorials and Grant Reviews (continued):
Ad hoc Reviewer, *Physiological Genomics*
Ad hoc Reviewer, *Cell*
Ad hoc Reviewer, *Cell Stem Cell*
Ad hoc Reviewer, *Molecular Reproduction and Development*
Ad hoc Reviewer, *Stem Cell*
Ad hoc Reviewer, *Fertility and Sterility*
Grant Reviewer, NIH
Grant Reviewer, CMIR
Grant Reviewer, ARRA
Grant Reviewer, State of Maryland Stem Cell Research Program
Grant Reviewer, Worcester Polytechnic Institute Advisory Panel on Biological Sciences
Grant Reviewer, Wellcome Trust, UK

Seminars Presented:
August 29, 2012 – “Coordinating oogenesis and folliculogenesis”, Japanese Society for Fertility and Infertility, Osaka, Japan
October 20, 2012 – “Overview of cryobiology in the field of fertility preservation”, Big Chill Symposium, American Society for Reproductive Medicine, San Diego
November 9, 2012 – “Testing the genetic integrity of oocytes derived from stem cells”, Ovarian Club II, Prague
November 11, 2012 – “Cell cycle control in human embryos-Why all the aneuploidy?” Ovarian Club II, Prague
February 1, 2013 – “Mechanisms of DNA Damage and Repair”, Fertility Preservation and Cancer Symposium, Hong Kong
February 3, 2013 – “Advances in human oocyte in vitro maturation” Fertility Preservation and Cancer Symposium, Hong Kong
February 12, 2013 – “Linking oocyte and embryo quality in the practice of human ARTs” Fertility Society of Mumbai, Mumbai India (via SKYPE)
Dr. Albertini (continued)

Seminars Presented (continued):


March 24, 2013 – “How advances in reproductive physiology are making a difference in human ARTs”, 3rd Symposium of the International Society for Mild Approaches in Assisted Reproduction, Nanjing, China

March 26, 2013 – “In Vitro Oocyte Maturation in the Treatment of Human Infertility. Department of Reproductive Medicine of Renji Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

April 9, 2013 – “Maintaining genetic integrity in the female germ line.” Animal Research and Biotechnology Institute, Colorado State University, Fort Collins, CO

Academic Honors:

Section Editor, *Handbook of Reproductive Physiology*, 4th edition

Visiting Scientist, School of Veterinary Medicine, Sassari University Sardinia, Italy

Teaching Activities:

CORE 830 – Reproduction and Sexuality
First year medical students (lecture and discussion group)

GSMC 854 – Cell Communication
2 lecture hours
1 discussion group
Shrikant Anant, Ph.D., Tom and Teresa Walsh Professor of Cancer Prevention, Kansas Mason Professor of Cancer Research, Associate Director of Cancer Prevention and Control, Associate Dean of Research

I am an RNA biologist with interests in understanding the mechanisms that regulate gene expression at the posttranscriptional levels of mRNA stability and translation during tumorigenesis. My laboratory has been a leader in the identification of novel RNA binding protein proto-oncogenes and tumor suppressors. In addition, we have been leading the efforts on determining the mechanism by which natural and synthetic compounds affect cell signaling pathways in gastrointestinal cancer cells. My lab members primarily focus their work on gastrointestinal cancers. Specific areas of research include: a) Regulation of gene expression at the levels of mRNA stability and translation, b) Cancer Stem Cells, and c) mechanisms of chemoprevention by dietary factors and its novel derivatives.

Committee Activities:

Departmental
   Member, Lili Pan Thesis Committee
   Member, Keke Pounds Thesis Committee

KUMC
   Member, Faculty Position Search Committee – Cancer Center
   Member, Faculty Position Search Committee – Cancer Biology
   Interviewer, Cancer Center and Molecular Regulation of Cell Development and Differentiation (COBRE)
   Member, KUCC Scientific and Clinical Research Sub-Committee
   Member, Genomic Facility Advisory Committee
   Member, Graduate Affairs Committee

KU
   Member, Amanda Erlund Thesis Committee, Molecular Biosciences
   Oklahoma University Health Sciences Center
      Member, Prachi Vilaker Thesis Committee, Pharmaceutical Sciences
      Member, Beverly Holden Thesis Committee, Cell Biology

National
   Member, Cancer Research UK Programme – Norbury Peer Review
   Member, GAST Review Committee
   Member, APS International Physiology Committee

Editorials and Grant Reviews:
   Ad hoc Reviewer, EMBO Journal
   Ad hoc Reviewer, PNAS USA
   Ad hoc Reviewer, Gastroenterology
   Ad hoc Reviewer, Molecular and Cellular Biology
   Ad hoc Reviewer, Journal of Lipid Research
   Ad hoc Reviewer, Metabolism
   Ad hoc Reviewer, American Journal of Physiology-GI
   Ad hoc Reviewer, Digestive Diseases and Science
Dr. Anant (continued)

Editorials and Grant Reviews (continued):
   Ad hoc Reviewer, American J. Physiology
   Ad hoc Reviewer, Cell Physiol
   Ad hoc Reviewer, Physiological Genomics
   Ad hoc Reviewer, Molecular Microbiology
   Ad hoc Reviewer, Infection and Immunity
   Ad hoc Reviewer, GI and Liver
   Ad hoc Reviewer, Journal of Biological Chemistry
   Ad hoc Reviewer, Cancer Research
   Ad hoc Reviewer, Digestion
   Ad hoc Reviewer, Cancer Letters
   Ad hoc Reviewer, Biotechniques
   Ad hoc Reviewer, Human Heredity
   Ad hoc Reviewer, Journal of Applied Physiology
   Ad hoc Reviewer, Journal of Cellular Biochemistry
   Editorial Board Member, BMC Physiology (2011-present)
   Editorial Board Member, Translational Gastrointestinal Cancer (2011-present)
   Editorial Board Member, Amer. J. Physiol-Gastro (2009-2013)
   Editorial Board Member, ECAM (2006-present)
   Editorial Board Member, International Journal of Oncology (2008-present)
   Editorial Board Member, European Journal of Clinical Medicine (2010-present)
   Grant Reviewer, FASEB Study Section, Snowmass, CO, July 2012
   Grant Reviewer, NIH/NCCAM Special Emphasis Panel, Washington DC, July 2012, January 2013
   Grant Reviewer, NCI SPORE Study Section, Washington DC, September 2012
   Grant Reviewer, NIH/MGB Study Section, San Francisco, CA
   Grant Reviewer, NIH/CDP Study Section, Anaheim, CA, October 2012
   Grant Reviewer, NIH/NCCAM Special Emphasis Panel, Washington DC, January 2013
   Grant Reviewer, NIH/CDP Study Section, Washington DC, February 2013
   Grant Reviewer, AACR Annual Meeting, Washington DC, April 2013
   Grant Reviewer, NCI Botanical Research Expert Panel, Washington DC April 2013
   Grant Reviewer, GAST 2013, Washington DC, May 2013
   Grant Reviewer, NIH/NCCAM Study Section (PK26), Washington DC, June 2013
   Grant Reviewer, NCI R21/R03, Washington DC, June 2013

Seminars Presented:
   July 2012 – “Novel targets for treating Colorectal Cancers.” Hong Kong, Hong Kong
   August 2012 – “Cancer Stem Cells: targets for prevention and therapy.” Georgia Health Sciences University, Augusta, GA
   November 2012 – “Targeting Stem Cells: It is ready for Prime Time.” Bontree Seminar Series, University Park, PA
Dr. Anant (continued)

Seminars Presented (continued):
  January 2013 – “Stem Cells in Colitis and Cancer: Identification and targeting.” FAV Health 2013 (Co-Chair), India
  February 2013 – “Cancer Stem Cells: Hit the Mother Bee, Not the Workers.” Nutrition and Food Science Spring 2013 Seminar Series, College Station, TX
  February 2013 – “Cancer Stem cells: start paying attention to the Mother bee in the hive.” 32nd Annual Convention of Indian Association for Cancer Research, India
  March 2013 – “Natural Products in Cancer.” PHYTOCONGRESS-2013 Natural Products in the Management of Cancer, Diabetes and Viral infections, India
  May 2013 – “Targeting Cancer Stem Cells: are natural products just smarter?” NIH Office of Dietary Supplements (ODS) 2013, Washington DC

Teaching Activities:
  Carcinogenesis and Cancer Biology course
    1 lecture

Trainees:
  Jessica Johnson – Graduate Student
  Naveen Neradugomma – Graduate Student
  Anand Venugopal – MD/PhD Graduate Student
  Gaurav Fnu, Ph.D. – Post Doctoral Fellow
  Deep Kwarta, Ph.D. – Post Doctoral Fellow
  Parasarathy Rangrajan, Ph.D. – Post Doctoral Fellow
  Julia Balmaceda – Summer Intern
  Nitish Chaimalakondia – Summer Intern
  Vivek Panchananam – Summer Intern
  Ravi Thombre – Summer Intern
  Alissa Urich – Summer Intern
Andrei B. Belousov, Ph.D., Associate Professor

My interests include (1) the cellular and molecular mechanisms for regulation of electrical synapses (gap junctions) during development and neuronal injury and (2) the role of gap junctions in neuronal death/survival mechanisms during development and injury.

Meetings Attended:
   October 2012 – Society for Neuroscience, New Orleans, LA

Committee Activities:
   Departmental
      Member, Graduate Student Advisory Committee
   KUMC
      Member, School of Medicine Faculty Council

Editorial and Grant Reviews:
   Ad hoc Reviewer, The Journal of Neuroscience (reviewed two papers in 2012)
   Ad hoc Reviewer, Journal of Neuroscience Methods
   Ad hoc Reviewer, Nature Communications
   Ad hoc Reviewer, The Open Neuroscience Journal
   Ad hoc Reviewer, Pharmacological Research
   Ad hoc Reviewer, PlosOne
   Ad hoc Reviewer, European Journal of Neuroscience
   Ad hoc Reviewer, Journal of Biomedicine and Biotechnology
   Editorial Board Member, The Open Neuroscience Journal (ON), Bentham Science Publishers

Seminars Presented:
   Department of Neurology, KUMC

Academic Honors:
   I have been invited by Dr. Kleopas A. Kleopa (Professor, Cyprus School of Molecular Medicine, Nicosia, Cyprus) to give a plenary lecture at the symposium “Gap junctions in the nervous system: from physiology to disease” at the 9th FENS meeting (Federation of European Neuroscience Societies), July 5-9 2014, Milan, Italy. The proposal has been submitted to the FENS organizing committee.
Dr. Belousov (continued)

Teaching Activities:
- PHSL 842 – Comprehensive Human Physiology
  - 9 – 2 hour lectures
- PTRS 863 – Pathobiology of Human Function
  - 1 – 2 hour lecture
- GSMC 853 – Cellular Structure
  - 2 – 2 hour lectures
  - 1 – 2 hour seminar
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 high intracellular K+ and low intracellular Na+ concentrations which are essential for maintaining cell volume, membrane potential, pH and ion balance. The Na,K-ATPase comprises a group of isozymes, each characterized by unique enzymatic properties and a cell-dependent and developmentally regulated pattern of expression. Research is focused on two main projects.

1. We are studying 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, has functional properties that are different from all other Na,K-ATPases. Alpha4 is expressed in the mid-piece of the sperm flagellum, and is important for sperm motility and fertility. A variety of molecular, cell biology and genetics approaches are being used to study the regulation, activity and mechanisms of action of alpha4 in sperm physiology. Also, we are searching for compounds that will inhibit alpha4 with the idea of using them as male contraceptive agents. These studies will help understand the importance of ion transport in male gamete fertility and contraception.

2. In addition, we are studying the role of the Na,K-ATPase in autosomal dominant polycystic kidney disease (ADPKD). Working with renal cells from patients with ADPKD and various mouse models of ADPKD, we have found that the Na,K-ATPase exhibits an abnormally increased sensitivity to ouabain, a hormone released by the adrenal glands. Importantly, ouabain stimulates cystogenesis in ADPKD cells and kidneys. Currently, we are investigating how ouabain affects cyst formation and progression in the disease.

Committee Activities:
Departmental
- Member, Ph.D. Thesis Committee for Valentine Agbor
- Member, Ph.D. Thesis Committee for Archana Raman
- Member, Ph.D. Thesis Committee for Lei Pei
- Member, Ph.D. Thesis Committee for Wei-Ting Hung

KUMC
- Member, Ph.D. Thesis Committee for Felcy Selwyn (Pharmacology)
- Member, Ph.D. Thesis Committee for Wen Zhao (Pharmacology)
- Member, Ph.D. Thesis Committee for Kelly Boxberger (Pharmacology)
- Member, Committee to oversee the Biotechnology Support Facility at KUMC
- Member, Organize the Greenwald Symposium in Reproduction Committee
- Member, Medical Students Wescoe Academic Society
- Member, Kidney Institute Executive Board
- Member, Admissions Committee for MD/PhD Program
- Member, Selecting the University Chancellor’s Teaching Award Committee
Dr. Blanco (continued)

Editorial and Grant Reviews:
Editorial Board Member, *American Journal of Physiology: Endocrine and Metabolism*
Editorial Board Member, *Journal of Assisted Reproduction and Fertility*
Reviewer, *American Journal of Physiology*
Reviewer, *Biology of Reproduction*
Reviewer, *Journal of Assisted Reproduction and Fertility*
Reviewer, *Journal Biological Chemistry*
Grant Reviewer, National Agency for Scientific Promotion and Technology, Argentina
Grant Reviewer, Latvian Research Council, Latvia
Grant Reviewer, German-Israeli Foundation for Scientific Research and Development (GIF)
Charter Member, NIH CMIR Study Section

Seminars Presented:
August 2012 – “The Na,K-ATPase alpha4 isoform. A brief story.” University of Sao Pablo, Brazil
August 2012 – “Alpha4, the Na,K-ATPase isoform that allows sperm to be fertile.” XXVII Annual Meeting of Experimental Biology, FeSBE, Brazil
August 2012 – “Ouabain, enhances cyst development in polycystic kidney disease.” XXVII Annual Meeting of Experimental Biology, FeSBE, Brazil
September 2012 – “Ouabain, a hormone with affects progression of polycystic kidney disease.” Sullivan Conference, KUMC

Academic Honors:
Faculty Research Investigator Award from KUMC in October 2012.
Students Voice Award for Excellence in Teaching (2012-2013), University of Kansas Medical Center.
Distinguished alumni, University of Cordoba, Argentina, April 2013.

Teaching Activities:
CORE 825 – Renal Endocrine System
11 hours lecture
4 hours Interactive clinical cases in renal physiology
2 hours review for renal physiology for Board preparation
6 hours remediation course
GSMC 853 – Cellular Structure
6 hours lecture
Biology of Reproduction
4 hours lecture
2 hours paper discussions
Renal Physiology for Medical Students
8 hours lecture
Dr. Blanco (continued)

Trainees:
  Kyle Jansson – Graduate Student
  Malinda Algaier – Graduate Student
  Madhulika Sharma, Ph.D. – Post Doctoral Fellow
  Aramadhaka Lavakumar Reddy, Ph.D. – Post Doctoral Fellow
  Joshua Curry – Rotation Student
Neurophysiological techniques are used to investigate the functional contribution of neurons in the cerebral cortex and brainstem to the control of voluntary movement. The spike (action potential) activity of single neurons is recorded in awake monkeys trained to perform various movement tasks. Computerized analysis techniques are used to reveal the functional contribution of a neuron or localized groups of neurons 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 13-17, 2012 – 42nd Annual Meeting of the Society for Neuroscience, Washington DC

Committee Activities:
Comprehensive Exam Committees:
Dissertation Advisor, MD/PhD Committee for William Messamore
Member, Ph.D. Committee for David Guggenmos
Member, Ph.D. Committee for Edward Urban
Member, Ph.D. Committee for Liying Li
Member, Ph.D. Committee for Mohammed Repon Khan
Member, Ph.D. Committee for Robert Rogers
Co-Dissertation Advisor, Ph.D Committee for Sommer Amundsen
(Biomedical Engineering, Co-Advisor: Dr. Carl Luchies)
Member, Comprehensive and Dissertation Committees for Anadia Barnds
(Biomedical Engineering PhD program)
Member, Comprehensive and Dissertation Committees for Austin Oder
(KU Hearing and Speech PhD Program)
Member, Comprehensive and Dissertation Committees for Ali Bani
(Rehabilitation Science PhD program)

Departmental
Coordinator, Fred Samson Annual Memorial Lecture

School of Medicine
Member, Executive Committee for the re-accreditation process
culminating in a site visit by the Liaison Committee on Medical Education (LCME) in the Fall of 2013
Chair, LCME Self-Study Committee on Faculty
Member, Dean’s Leadership Committee
Member, Internal Advisory Committee, Neuroscience Rehabilitation Training Grant, Dr. Nudo, PI.
Member, Mentoring Awards Review Committee
Member, EVC’s ad hoc committee to develop a bridging policy
Dr. Cheney (continued)

Committee Activities (continued):

KUMC
- Interviewed numerous candidates for various positions including EVC Member, Institute for Neurological Disorders Executive Committee
- Member, Institute for Neurological Disorders Advisory Committee
- Co-director, Neuromuscular and Movement Disorders Division of the Institute for Neurological Disorders
- Member, Professional Development and Faculty Affairs (PDFA) Planning Committee
- Panel Member, Animal Rights Extremism in the US and Kansas City Area

KUMC-KU Lawrence
- Member, KU Bioengineering Advisory Committee
- Member, KIDDRC Internal Scientific Advisory Committee
- KIDDRC Theme leader, Neurobiology of Mental Retardation and Developmental Disabilities
- Member, Bioengineering Program 5 year review committee

KU Chancellor’s Office
- Member, Chancellor’s Scholarly Achievement Award Committee

Editorials and Grant Reviews:
- Ad hoc Reviewer, PlosOne
- Ad hoc Reviewer, J. Neurophysiology
- Ad hoc Reviewer, J. Neuroscience
- Ad hoc Reviewer, J. Physiology
- Ad hoc Reviewer, Experimental Brain Research
- Ad hoc Reviewer, Brain
- Ad hoc Reviewer, Cerebral Cortex
- Ad hoc Reviewer, J. Comp Neurology
- Ad hoc Reviewer, Neuroscience Letters
- Reviewer, KUMC, Woodyard Fellowship Applications, Institute for Neurological Disorders

Seminars Presented:
- July 13, 2012 – Invited Speaker, “Negotiating Your First Position,” MD/PhD program retreat
- January 11th, 17th and 24th – LCME presentation for KUMC departments of OBGYN
- April 16-20, 2013 – Invited Speaker, “What have we learned from a century of studying primary motor cortex,” 23rd annual meeting of the Neural Control of Movement Society in San Juan, Puerto Rico

Academic Honors:
- Appointed as the inaugural Kathleen M. Osborn Chair of Molecular & Integrative Physiology at an investiture ceremony held September 26th, 2012.
Dr. Cheney (continued)

Teaching Activities:
  REHS 962 – Advanced Rehabilitation Science
    Fall 2012, 4 students
    2 hour lecture
  CORE 840 – Brain and Behavior: Small group lectures/labs/conferences
    Served as a back-up for the small groups in this course
    7, 2-3 hour small group sessions, I was not called upon to fill in for any
    sessions
  Mechanical Engineering – Biomechanics
    Fall 2012
    Dr. Carl Luchies – Director, 12 students
    2 hours lecture

Trainees:
  Will Messamore – M.D./Ph.D. Student
  Gustaf Van Acker – M.D./Ph.D. Student
  Sommer Amundsen – Ph.D. Bioengineering Student, co-advisor
  Stacey DeJong, Ph.D. – Post-Doc, mentor
  David Seecharan, M.D. – Senior neurosurgical resident, research mentor
  Hesham Soloman, M.D. – 5th year neurosurgical resident, research mentor
Vargheese M. Chennathukuzhi, Ph.D., Assistant Professor

My research interests include uterine fibroids, fertility and contraception. Our laboratory is currently trying to understand the roles of GPR10, and its upstream regulator REST, in the pathogenesis of uterine fibroids. We identified that the loss of REST, a tumor suppressor protein, leads to the overexpression of GPR10 in fibroids. We have generated transgenic mice overexpressing GPR10 in the myometrium in order to understand its role in the pathogenesis of fibroids. Additionally, we have generated a conditional knockout mouse model for REST to understand its role in the development of fibroids.

Meetings Attended:

Committee Activities:
Departmental
Member, Thesis Committee for J.B. Fitzgerald
Member, Thesis Committee for Jitu George
Member, Thesis Committee Elizabeth Dille
Member, Thesis Committee Wei-Ting Hung
Member, Thesis Committee Malinda Algaier

KUMC
Member, KU Cancer Center
Member, D3ET (Drug Discovery, Delivery and Experimental Therapeutics), IAMI
Member, KU Med Faculty Council

Editorial and Grant Reviews:
Reviewer, JARG
Reviewer, PLoS One
Reviewer, Obstetrics and Gynecology International
Reviewer, Human Reproduction Update
Ad hoc Reviewer, Cellular, Molecular and Integrative Reproduction Study Section [CMIR, NIH], June 2013
Grant Reviewer, CTSA pilot grants at KUMC

Seminars Presented:
November 16, 2012 – “Pathogenesis of Uterine Leiomyomas - New Molecular Mechanisms.” Invited seminar at the NIEHS, Research Triangle Park

Academic Honors:
Invited Seminar: Society for Gynecologic Investigation, “Fibroids: Where Are We With Respect to Viable Targets?” Florence, Italy March 26-29th 2014
Dr. Chennathukuzhi (continued)

Teaching Activities:
   PHSL 834 – Reproductive Physiology
   Course Co-Director
   15 hours
   GMSC 851 – Molecular Genetics
   6 hours lecture

Trainees:
   Michelle McWilliams – Graduate Student
   Faezeh Koohestani, PhD – Post doctoral fellow
   Kavya Shivashankar – Summer student
My research is focused on understanding the molecular processes of reproduction in order to enhance and inhibit fertility. My primary interest is focused on understanding the post-transcriptional gene regulatory mechanisms (i.e., microRNA-mediated) that facilitate ovulation and luteinization of the ovarian follicle following the LH surge. These studies have identified LH-regulated microRNAs and their target transcripts; ultimately these genes may be useful in controlling fertility and/or understanding diseases such as polycystic ovarian syndrome (PCOS), a major cause of human infertility. My laboratory also remains interested in understanding how cholesterol metabolism impacts ovarian function, we have established collaborations with two other laboratories to pursue this line of study. In conjunction with Dr. Annabelle Rodiguez (John Hopkins) we currently are studying single nucleotide polymorphisms in the scavenger receptor class B type 1 (SRB1) and the effects on cholesterol transport from HDL and LDL particles. Additionally, in conjunction with Dr. Brad Van Voorhis at U. of Iowa, we are identifying markers of embryo quality from spent medium of human in vitro fertilization (IVF) using high throughput proteomic approaches. Lastly, because of our interest in miRNA research, my laboratory has partnered with a clinician, Dr. Ajay Bansal at the Kansas City VA Hospital to use next generation sequencing and our established miRNA methods to identify biomarkers involved in the transition of gastric reflux disease (GERD) to the benign Barrett's Esophagus and ultimately esophageal cancer.

Meetings Attended:

Committee Activities:
Departmental
Co-Director, Graduate Student - GSAC
KUMC
Member, Advisory Committee for the Microarray Facility
Member, Mass Spectrometry Oversight Committee
National
Module Leader, Society for Study of Reproduction Program Committee

Editorial and Grant Reviews:
Editorial Board Member, Reproduction
Editorial Board Member, Journal of Assisted Reproduction and Genetics
Ad hoc Reviewer, Biology of Reproduction
Ad hoc Reviewer, Endocrinology
Ad hoc Reviewer, Molecular Endocrinology
Ad hoc Reviewer, Fertility and Sterility
U54 Project Reviewer, National Institute of Health, November 3-5, 2012 in Bethesda, MD
Dr. Christenson (continued)

Editorial and Grant Reviews (continued):
  Study Section Member for Transgenerational Effects of Environmental
  Exposures, National Institute of Environmental Health and Sciences,
  March 28, 2013, Raleigh, NC
  Ad hoc Reviewer, Israel Science Foundation, April 10, 2013

Seminars Presented:
  March 29, 2013 – “Pathways and genes regulated by LH-induced miR-21 in
  granulosa cells,” Department of Animal Science, University of Nebraska-
  Lincoln, Lincoln, NE

Academic Honors:
  Invited Speaker, Canadian Fertility and Andrology Society “Noncoding RNAs and
  ovarian events” Victoria, British Columbia, September 26-29, 2013
  Invited Speaker, American Society of Exosome and Mircovesicles, Florida,
  September 2013

Teaching Activities:
  Director, Section 1 in the Frontiers in Reproduction course at Woods Hole April
  29-May 11, 2013
  PHSL 834 – Reproductive Physiology
  3 – 2 hour lectures on ovarian function
  GSMC 851 – Molecular Genetics
  3 – 2 hour lectures on Post-transcriptional gene regulation

Trainees:
  Jon B. Fitzgerald – Graduate Student
  Wei-Ting Hung – Graduate Student
  Lacey Luense – Graduate Student
  Raphatphorn (Sine) Navakanitworakul – PhD Candidate
  Visiting PhD student October 2012-May 30, 2013
  Molecular Biology and Bioinformatics, Faculty of Science
  Prince of Songkla University, Hat Yai, Songkhla, Thailand, 90112
The overall objectives of the research program are to define the pharmacological and biochemical properties of neurotransmitter receptors, in particular those for GABA. Currently, emphasis is placed on characterizing the regulation of GABA\textsubscript{B} receptor expression and function in human brain autopsy material and laboratory animals.

Meetings Attended:
- August 2012 – Nebraska INBRE, Grand Island, Nebraska
- September 2012 – Brain Canada Scientific Advisory Panel Meeting, Montreal, Canada
- October 2012 – Wiley Editorial Board Meeting, Hoboken, New Jersey
- October 2012 – KUMC Training Grant Retreat and External Advisory Committee Meeting, Kansas City, Kansas
- October 2012 – PhRMA Foundation Meeting, Washington DC
- October 2012 – NC-IUPHAR Meeting, Paris, France
- November 2012 – Second World Congress on the Pharmacology of Natural and Traditional Medicines, Macau, China
- February 2013 – Training in Neurotherapeutics Discovery and Development for Academic Scientists, Bethesda, Maryland
- April 2013 – IUPHAR Executive Committee Meeting, Boston, Massachusetts
- April 2013 – NC-IUPHAR Meeting, Edinburgh, Scotland
- April 2013 – American Society for Pharmacology and Experimental Therapeutics Annual Meeting, Boston, Massachusetts

Committee Activities:
Departmental
- Member, Promotion and Tenure Committee
KUMC
- Associate Director, Internal Advisory Committee Kansas University Training Program in Neurological and Rehabilitation Sciences
- Member, Research and Training Committee
- Associate Dean, Research and Graduate Education
National
- Member, Nebraska-BRIN External Advisory Committee
- Member, PhRMA Foundation Pharmacology Advisory Panel
- Member, Research Advisory Council, University of Missouri-Kansas City School of Pharmacy
International
- Chair, Secretary General, International Union of Basic and Clinical Pharmacology Executive Committee
- Member, International Union Basic and Clinical Pharmacology Nomenclature Committee
Dr. Enna (continued)

Editorials 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*
- Series Editor, *Advances in Pharmacology*
- 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 Neuroscience and Therapeutics*
- Editorial Advisory Board, *Current Opinion in Pharmacology*
- Grant Reviewer, PhRMA Foundation
- Consultant, Simmons & Simmons LLP, Paris, France

Seminars Presented:
- November 6, 2012 – Invited Presentation Entitled: “Natural and Traditional Medicine Research: Challenges and Opportunities” at the Second World Conference on the Pharmacology of Natural and Traditional Medicines, Macau, China
- November 12, 2012 – Seminar Entitled: “GABA and Neuropsychiatric Disorders,” University of Hong Kong, Hong Kong, China
- January 18, 2013 – Seminar Entitled: “Herbal Pharmacology: Queen Hatshepsut to Mohammed Khayyal,” University of Munster, Munster, Germany
- February 16, 2013 – Invited Presentation Entitled: “GABA Receptors as Targets for Treating Neurological and Psychiatric Disorders,” Kansas Medical Education Foundation, Topeka, Kansas
  Kansas City, Kansas

Academic Honors:
- Invited to Present a Lecture Entitled “Alternative Approaches to Lead Generation” at the NIH-Sponsored “Training in Neurotherapeutics Discovery and Development for Academic Scientists” Course, February 19th- 22nd, 2014, in Bethesda, Maryland
- Invited to Present a Lecture Entitled “Phenotype Analysis in Drug Discovery” at the Foundation for Peripheral Neuropathy Symposium, March 12th-14th, 2014, in Chicago, Illinois
Dr. Enna (continued)

Academic Honors (continued):
Invited to serve as a Visiting Professor in the Department of Pharmacology, University of Catania, Catania, Italy, October 13th-16th, 2013
Elected as President (2014-2018) of the International Union of Basic and Clinical Pharmacology (IUPHAR)
Reappointed Guest Editor, Biological and Pharmaceutical Bulletin

Teaching Activities:
Faculty Advisor
Orr Society: Brandon Carlson, Matthew Wilson, Josh Mark and Andrew Kwan
Psychiatry Residents Lectures: Neurochemistry, Neurotransmitters and Psychiatric Illness
4 hours lecture
Neurochemistry and Neuropharmacology, Advanced Neuroscience Course
6 hours lecture
Research Integrity
2 hours
School of Pharmacy – Lawrence: Manuscript Preparation and Review
2 hours
Shawn Frost, Ph.D., Research Assistant Professor

Our research is focused on neuroplasticity in recovery of function after stroke, preclinical models of subcortical stroke and the development of an electronic device to bridge damaged pathways in spinal cord injury.

Meetings Attended:
April 15-21, 2013 – Neural Control of Movement 23rd Annual Conference, San Juan, Puerto Rico

Teaching Activities:
CORE 840 – Brain and Behavior
20 hours lab
Lectured during Brain Awareness at Lincoln College Preparatory Academy (High School)

Trainees:
Advisor/mentor in conjunction with Dr. Nudo as primary advisor/mentor:
Edward Urban, III – Medical Student
David Guggenmos – Graduate Student
Andrew Koehn – Graduate Student
David McNeal, Ph.D. – Post doctoral fellow
Maria Iliakova – Medical Student
Type 2 diabetes (T2D) is one of the leading causes of mortality and morbidity in the world. T2D is characterized by insulin resistance and is typically correlated with obesity and aging. In our lab, we study the molecular mechanisms underlying age-related and high fat diet-induced insulin resistance. We hypothesize that oxidative stress is responsible for inhibiting insulin signaling and for the impairment of glucose homeostasis. Stress kinases such as JNK and IKK-β are activated by oxidative stress and have recently been implicated in inhibiting insulin signal transduction. Thus, we are examining the targeted inhibition of stress kinases to improve insulin sensitivity. We are also exploring therapeutic interventions such as heat therapy, exercise and anti-oxidant treatment in high fat-fed rats.

Meetings Attended:
- October 10-13, 2012 – APS Integrative Biology of Exercise VI, Westminster, CO
- December 1-4, 2012 – AAMC Mid-Career Women Faculty Professional Development Conference, Austin, TX

Committee Activities:
- Departmental
  - Member, Graduate Student Advisory Committee
- KUMC
  - President, Women in Medicine and Science
  - Founding Member, Moms in Medicine and Science
  - Co-Founder and Faculty Advisor, Exercise is Medicine student organization
- Faculty Advisor, Orr Academic Society
- National
  - Member, Integrative Biology of Exercise conference planning committee

Editorials and Grant Reviews:
- Editorial Board Member, *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*
- Ad hoc Reviewer, *Journal of Applied Physiology*
- Ad hoc Reviewer, *American Journal of Physiology: Lung Cellular and Molecular Physiology*
- Ad hoc Reviewer, *Medicine and Science in Sports and Exercise*
- Ad hoc Reviewer, *Exercise and Sports Science Reviews*
- Ad hoc Reviewer, *Diabetes*
- Ad hoc Reviewer, *American Journal of Physiology: Regulatory Integrative and Comparative Physiology*
- Ad hoc Reviewer, NIH Integrative Physiology of Obesity (IPOD) Study Section, October 17-19, 2012
- Ad hoc Member, National Institute of Aging, NIH, PPG study section review, October 2012
Seminars Presented:

- September 4, 2012 – “Targeting heat shock proteins in the prevention of insulin resistance” Department of Pharmacology and Toxicology
- April 4-5, 2013 – “Heat Treatment and the Prevention of Insulin Resistance and Type 2 Diabetes. Effects of Heat Stress on Post-Absorptive Metabolism.” Iowa State University, Keynote Address
- April 25, 2013 – “Heat shock proteins: Novel therapeutic targets for the treatment of insulin resistance and type 2 diabetes.” The 9th Annual College of Biological Science Graduate Student Symposium, University of Guelph, ON, CA, Keynote Address

Academic Honors:

- KUMC Faculty Leadership Academy 2012-2013
- AAMC Mid-Career Women Faculty Professional Development Conference, competitive Application process, attendance supported by McCann Professorship of Women in Medicine and Science
- KU Women of Distinction Calendar Awardee 2013-1014

Teaching Activities:

- Human Physiology
  - 11 lecture hours
- Cardiopulmonary Module, M1 Students
  - 5 hours lecture
  - 4 hours small group
- Integrative Physiology of Exercise
  - 4 lecture hours per week

Trainees:

- Robert Rogers – Graduate Student
- Kathleen White – KU-Lawrence undergraduate, Summer student 2012-2013
- Ashley Ward – Truman State University graduate and Fulbright Scholar, Summer student 2012
- David Wilson – KU-Lawrence master’s student, Summer Student 2012-2013
Norberto C. Gonzalez, M.D., Professor

My research centers on the mechanisms of adaptation of organisms to hypoxia. This includes the study of the effects of acute and chronic 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. Longitudinal studies in rats artificially selected for diverging aerobic capacities have provided important clues on the development of the mechanisms of oxygen transport along several generations.

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. We have demonstrated that the ubiquitous inflammatory response to alveolar hypoxia is not triggered by the reduction of the local tissue PO2, but rather by a mediator, Monocyte Chemoattractant Protein -1 (MCP-1/CCL2) released by alveolar macrophages and transported by the circulation. These studies highlight the extrapulmonary functions of alveolar macrophages, which may play a role in the systemic effects of pulmonary diseases associated with low systemic oxygen levels.

On January 1, 2013 I started the Phased retirement program, with 50% effort for three years. I have closed my laboratory and ended the main source of support of my laboratory, a grant from the NIH which I maintained for 23 years. I continue some collaborative research efforts and will direct my efforts to teaching and publishing data collected during the last year.

Meetings Attended:
February 27-March 2, 2013 – International Hypoxia Symposium, Lake Louise, Alberta, Canada

Committee Activities:
Departmental
Member, Promotion and Tenure Committee

Editorial and Grant Reviews:
Reviewer, The Journal of Applied Physiology
Reviewer, Respiratory Physiology & Neurobiology
Reviewer, The American Journal of Physiology, Regulatory, Integrative and Comparative Physiology
Reviewer, American Journal of Physiology, Lung Cellular and Molecular Physiology
Reviewer, International Journal of Sports Medicine
Editorial Board, Journal of Hypoxia
Dr. Gonzalez (continued)

Seminars Presented:
  February 27-March 2, 2013 – “Increased Nitric Oxide Contributes to the Microvascular Acclimatization of Prolonged Hypoxia,” International Hypoxia Symposium, Lake Louise, Alberta, Canada

Teaching Activities:
  Respiratory Physiology, Cardiopulmonary Module
    5 lectures
    2 small group meetings, Cardiopulmonary Module
  Taught in the graduate course Integrative Physiology of Exercise directed by Dr. Paige Geiger
The first project that I am working on is to synthesize and test reversible non-hormonal non-steroidal male contraceptive agents. Specifically, my role involves testing novel compounds (in-vitro as well in-vivo) as potential male contraceptives. I also work on determining the mechanism of action of potent compounds and facilitating toxicology, fertility studies for the compound likely to advance towards clinical trials. A second major research interest, concerns whether reproductive potential is affected by space flight. To this effect, we examined the effects of microgravity on the female reproductive tract of mice that were flown on the space shuttle on flights STS-131, STS-133 and STS-135. Our studies on these three space shuttle missions were the first to examine the consequences of space flight on ovaries and uteri of mice. We found that with 12-15 days of space-flight exposure, female mice showed significantly small ovaries. Histological analysis showed that flight mice ovaries had fewer corpora lutea and most of the growing follicles in flight ovaries were atretic, indicative of blocked estrous cycle. Ground and flight mice had no significant difference in number of uterine glands, but there was a trend to-ward smaller uterus in flight mice based on the gross pictures, which correlates with the low estrogen receptor alpha (ERα) level. This sets the foundation for our hypothesis that drop in estrogen in reproductive system may be the cause of other estrogen regulated effects seen in the body (bone and muscle loss, wound-healing, immune functions etc.) when exposed to space-flight.

Meetings Attended:
August 2012 – Society for the Study of Reproduction, State College, PA
October 2012 – Greenwald Symposium, Kansas City, KS
November 2012 – American Society for Gravitational and Space Biology Annual Meeting, New Orleans, LA

Editorial and Grant Reviews:
Abstract Reviewer, Contraception section for Society for Study of Reproduction meeting to be held from July 22-26, 2013 in Montreal, Canada

Academic Honors:
Invited lecture: Lecture delivered to Master’s (Bioscience) students on “Introduction to research Methodology” at Kansas City University of Medicine and Biosciences, Kansas City, MO April 25-2013

Teaching Activities
Supervised research assistants and summer trainees
Leslie L. Heckert, Ph.D., Marion M. Osborn Professor for Reproductive Sciences

The research in our laboratory focuses on the transcriptional and cell-signaling processes for proper function and development of the gonads. Sequence and structural information of the genome are queried to identify new proteins and regulatory pathways that direct cellular differentiation and gametogenesis, with the goal of extending our understanding of the mechanistic requirements for fertility as a means to improve the options for contraception as well as diagnosis and treatment of infertility. The current research is focused primarily on genes that encode the follicle-stimulating hormone receptor (FSHR) and doublesex and mab-3 related transcription factor 1 (DMRT1). FSHR is required for cells to respond to the pituitary hormone FSH and thus hormone signaling occurs only in cells that produce the receptor. FSHR expression is highly cell-specific, limiting FSH response to only somatic cells of the gonads. DMRT1 is a transcription factor that is essential for male fertility. It is found only in the testis, where it is required for the differentiation and survival of both germ cells and Sertoli cells.

Meetings Attended:
April 2013 – The XXII North American Testis Workshop, San Antonio, TX

Committee Activities:
Departmental
Member, Graduate Student Advisory Committee
Member, Departmental P&T Committee
Member, Ph.D. Dissertation Committee for Lacey Luense
Member, Ph.D. Dissertation Committee for Elizabeth Dille
Member, Ph.D. Dissertation Committee for Valentine Agbor
Member, Ph.D. Dissertation Committee for Jitu George
Member, Oral Exam Committee for Wahid Mulla
Member, Oral Exam Committee for Danny Miller

KUMC
Member, Postdoctoral Advisory Committee
Member, IGPBS Curriculum and Oversight Committee
Member, Transgenic Advisory Committee
Member, Institution Research and Safety Committee
Member, Misconduct Inquiry Committee

National
Chair, Reproduction, Andrology and Gynecology Study Section, National Institute of Child Health & Human Development
Member, Future Meetings Committee, Society for the Study of Reproduction
Lecturer, Section 1, Frontiers in Reproduction, The Marine Biological Laboratory, Woods Hole, MA
Dr. Heckert (continued)

Editorial and Grant Reviews:
  Ad hoc Reviewer Board, *Biology of Reproduction*
  Ad hoc Reviewer, *FASEB Journal*
  Ad hoc Reviewer, *Developmental Biology*

Academic Honors:
  Session Chair, The 38th Annual Meeting of the American Society of Andrology, April 13-16, 2013. San Antonio, TX
  Session Chair, The XXII North American Testis Workshop, April, 2013. San Antonio, TX.
  Vice Chair, XXIII North American Testis Workshop (held 2015)
  Chair, XXIV North American Testis Workshop (held 2017)

Teaching Activities:
  Frontiers in Reproduction course at Marine Biology Laboratory, Woods Hole, MA. May 7, 2013
    1.5 lecture hour
  PHSL 834 – Reproductive Physiology
    4 – 1.5 hour lecture

Trainees:
  Valentine Agbor – Graduate Student
  Elizabeth Dille – Graduate Student
  Jitu George – Graduate Student
T. Rajendra Kumar, Ph.D., Associate Professor

Our laboratory studies developmental genetics and physiology of the mammalian pituitary-gonadal axis using both gain-of-function (transgenic) and loss-of-function (gene knockout) approaches. These unique genetic models mimic many of the human diseases and thus enable us to experimentally track them both in time and space. Specific projects focus on: mechanisms of origin and development of human pituitary null cell tumors, mechanisms of transcriptional/post-transcriptional regulation, biosynthesis and secretion of pituitary gonadotropins, and delineating mechanisms of gonadotropin regulation of testis and ovarian development and function, with a special emphasis on how male germline stem cell niche regulates male germ cell development and maintenance. These studies are clinically relevant and have significant translational impact on understanding the physiology and pathology of the mammalian reproductive axis including abnormal reproductive tract development, infertility, and cancer of the pituitary and gonads.

Meetings Attended:
August 2012 – Society for the Study of Reproduction, Pennsylvania State University, State College, PA
April 2013 – The Irving Boime Symposium, Washington University School of Medicine, St. Louis, MO

Committee Activities:
Departmental
Member, At-Large Department Member, Faculty Executive Council
Member, Department Physiology/Cancer Center Faculty Recruitment Committee
Member, Li Chen Comprehensive Exam Committee
Member, Naveen Neradugomma Thesis Committee

KUMC
Member, Kansas Intellectual and Developmental Disabilities Research Center User Advisory Committee for Core C, Research Design and Analysis
Member, KUMC Flow Cytometry Core Advisory Committee
Member, International IGPBS Student’s Selection Committee
Member, Planning Committee, Jim Voogt Annual Lectureship in Neuroendocrinology
Member, Review Panel Biomedical Research Training Fellowships Program
Member, Review Panel of Judges for poster competition, 9th Greenwald Symposium
Member, Review Panel for Lied Basic Science Pilot Grants
Member, Review Panel, Frontiers Clinical and Translational Research Grants
Member, Laboratory Animal Research Advisory Committee
Member, Todd Bradley (Pathology) Thesis Committee
Dr. Kumar (continued)

Committee Activities (continued):
National
   Expert Reviewer, Evaluating candidate membership to the Indian Academy of Sciences, Bangalore, India
   Member, P&T External Committee, Cornell University, Ithaca, NY
   Member, P&T External Evaluation, Virginia Health Sciences Center, Charlottesville, VA
   Member, Society for the Study of Reproduction: Committee on Reproduction and the Environment
   Member, Society for the Study of Reproduction National Program Committee, 46th Annual Meeting, Montreal, Canada
   Co-Leader, HORMONES module, 46th annual meeting, Society for the Study of Reproduction, Montreal, Canada
   Team Leader, Abstract Evaluation Committees on Conadotropins and Endocrinology-Other Sections, 46th annual meeting, Society for the Study of Reproduction, Montreal, Canada
   Chair, Hormones Module Session II on Gonadotropins, 46th Society for the Study of Reproduction annual meeting, Montreal, Canada
   Co-Chair, Reproductive Axis Determination, Development & Transgender Medicine-Platform Session, Endocrine Society Meeting, San Francisco, CA

Editorial and Grant Reviews:
   Associate Editor, Molecular Reproduction and Development
   Associate Editor, Journal of Assisted Reproduction and Genetics
   Editorial Board Member, Frontiers in Neuroendocrine Science
   Editorial Board Member, Board of reviewing editors, Biology of Reproduction
   Manuscript Reviewer, American Journal of Pathology
   Manuscript Reviewer, American Journal of Physiology: Endocrinology & Metabolism
   Manuscript Reviewer, Archives of Biochemistry and Biophysics
   Manuscript Reviewer, Asia Journal of Endocrinology
   Manuscript Reviewer, Biochimica Biophysica Acta (Molecular and Cellular Research)
   Manuscript Reviewer, Biology of Reproduction
   Manuscript Reviewer, Cell and Tissue Research
   Manuscript Reviewer, Clinical Endocrinology
   Manuscript Reviewer, Development
   Manuscript Reviewer, Developmental Biology
   Manuscript Reviewer, Endocrine
   Manuscript Reviewer, Endocrine-Related Cancer
   Manuscript Reviewer, Endocrinology
   Manuscript Reviewer, Expert Opinion on Therapeutic Patents
Dr. Kumar (continued)

Editorial and Grant Reviews (continued):
  Manuscript Reviewer, FEBS Letters
  Manuscript Reviewer, Fertility and Sterility
  Manuscript Reviewer, Genesis
  Manuscript Reviewer, Genomics
  Manuscript Reviewer, Journal of Andrology
  Manuscript Reviewer, Journal of Assisted Reproduction and Technology
  Manuscript Reviewer, Journal of Biomedicine and Biotechnology
  Manuscript Reviewer, Journal of Biotechnology
  Manuscript Reviewer, Journal of Cell Biology
  Manuscript Reviewer, Journal of Cell Science
  Manuscript Reviewer, Journal of Clinical Endocrinology & Metabolism
  Manuscript Reviewer, Clinical Investigation
  Manuscript Reviewer, Journal of Endocrinology
  Manuscript Reviewer, Journal of Physiology
  Manuscript Reviewer, Life Sciences
  Manuscript Reviewer, Microscopy Research & Technique
  Manuscript Reviewer, Molecular and Cellular Endocrinology
  Manuscript Reviewer, Molecular Endocrinology
  Manuscript Reviewer, Molecular Reproduction and Development
  Manuscript Reviewer, Oncogene
  Manuscript Reviewer, Peptides
  Manuscript Reviewer, PLoS One
  Manuscript Reviewer, PLoS Genetics
  Manuscript Reviewer, PNAS (USA)
  Manuscript Reviewer, Physiology & Behavior
  Manuscript Reviewer, Physiological Genomics
  Manuscript Reviewer, Reproduction
  Manuscript Reviewer, Reproductive Biology and Endocrinology
  Manuscript Reviewer, Reproductive Sciences
  Manuscript Reviewer, RNA
  Manuscript Reviewer, Science
  Manuscript Reviewer, The FASEB Journal
  Manuscript Reviewer, Trends in Endocrinology and Metabolism
  Member, NIH Special Emphasis Review Panel, 2012/10 ZRG1 EMNR-S (10) B, Small Business: Diabetes and Reproduction
  Member, Special Emphasis Panel-2012, ZRG1-F06-T 20, Fellowship applications assigned to the Endocrinology, Nutrition, Metabolism and Reproductive Sciences Integrated Review Group
  Ad-hoc Review Member, Integrative and Clinical Endocrinology and Reproduction (ICER) NIH Study Section Panel
  Member, NIH Special Emphasis Review Panel 2013, ZRG1-F06-T 20 for Fellowship applications assigned to the Endocrinology, Nutrition, Metabolism and Reproductive Sciences Integrated Review Group
Dr. Kumar (continued)

Editorial and Grant Reviews (continued):
   Member, 2013/08 ZHD1 DSR-Y (50) 1, NIH/NICHD Special Emphasis Review Panel, U01 program center grants on Fragile-X Syndrome

Seminars Presented:
   August 15, 2012 – “Genetics and patho-physiology of null cell tumors.” Department of Microbiology and Immunology, Drexel Institute for Biotechnology and Virology Research, Doylestown, PA
   September 28, 2012 – “Genetics and physiology of FSH secretion and function,” Department of Physiology Southern Illinois University School of Medicine, Carbondale, IL
   October 22, 2012 – “Fshb knockout mouse as a genetic model for studying the aging pituitary-gonadal axis,” Department of Biology, Wichita State University, Wichita, KS
   February 19, 2013 – “Gonadotropin re-routing and ovarian function,” Department of Obstetrics and Gynecology, McGill University, Montreal, CA
   February 20, 2013 – “Gonadotropin re-routing and ovarian function,” Department of Health Sciences, University of Montreal School of Veterinary Medicine, St. Hyacinthe, CA
   February 24, 2013 – “Genetic modification of intracellular trafficking and secretion pattern of FSH,” Harvard Reproductive Endocrine Sciences Center, General Hospital, Boston, MA
   March 19, 2013 – “Genetics and pathophysiology of pituitary null cell tumors,” KU Cancer Center & Department of Cancer Biology, KUMC
   April 5, 2013 – “Genetic approaches to study gonadotrope tumor biology,” Department of Biology, Clark Atlanta University, Atlanta, GA

Academic Honors:
   April 2014 – Department of Obstetrics and Gynecology Basic Sciences Lecture, University of Colorado Denver School of Medicine, Aurora, CO
   April 2014 – Department of Obstetrics and Gynecology, Clinical Grand Rounds, University of Colorado Denver School of Medicine, Aurora, CO

Teaching Activities:
   GSMC 851 – Molecular Genetics
      6 hours lecture
   PHSL 834 – Reproductive Physiology
      Course Director
      26 hours lecture

Trainees:
   Huyen Doan, Ph.D. – Post Doctoral Fellow
   Huizhen Wang, Ph.D. – Post Doctoral Fellow
   Sydnee Lim – Visiting Medical Fellow
Melissa A. Larson, Ph.D., Research Assistant Professor, Director of 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 and embryo 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 service of intracytoplasmic sperm injection. 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:
   November 5-8, 2012 – American Association of Laboratory Animal Science National Meeting, Minneapolis, MN

Committee Activities:
   KUMC
   Member, Institutional Animal Care and Use Committee
   Member, Programmatic Sub-Committee of the Institutional Animal Care Use Committee
   Member, Women in Medicine and Science Mentoring Committee
   Chair, Women in Medicine and Science Mentoring Committee
   Member, Institutional Research Safety Committee

   National
   Representative, American Association for Laboratory Animal Science on behalf of the International Society for Transgenic Technologies

Editorials and Grant Reviews
   Reviewer, Journal of Reproduction, Fertility and Development

Seminars Presented:
   August 24, 2012 – “Transgenic and gene-targeted mice: Services of the transgenic facility” Class presentation for Clinical Laboratory Sciences 730: Current Issues in Biotechnology
   November 30, 2012 – “Making transgenic and gene-targeted mice and other fun stuff we can do!” American Association for Laboratory Animal Science Kansas City Branch
Phil Lee, Ph.D., Assistant Professor

His research topic was the physiological bases of functional magnetic resonance imaging (MRI) signals and development of novel non-invasive magnetic resonance techniques for the biophysical investigation. Dr. Lee’s current research interests include the characterization and understanding of biological processes in the neurodegenerative brain at the cellular, molecular and functional levels using in vivo bioengineering approaches including state-of-the-art magnetic resonance techniques. For example, Dr. Lee’s one of research goals is early diagnosis and identification of changes in functional and physiological aspects of Alzheimer diseases during the disease progression. Through the identification and characterization of the disease in an early stage through in vivo measurements of axonal transport, iron contents and ß-amyloid (Aβ) plaques in transgenic animal models of Alzheimer disease, therapeutic responses can be objectively quantified and new treatment strategies can be developed.

Meetings Attended:
April 20-24, 2013 – 24th Biennial joint meeting of International Society for Neurochemistry (ISN) and American Society for Neurochemistry (ASN), Cancun, Mexico
April 20-26, 2013 – 21st Scientific Meeting & Exhibition of International Society of Magnetic Resonance in Medicine (ISMRM), Salt Lake City, Utah
May 20-23, 2013 – XXVIth International symposium on Cerebral Blood Flow, Metabolism and Function & XIth International Conference on Quantification of Brain Function with PET, Shanghai, China
June 21-25, 2013 – 73rd American Diabetes Association Scientific Conference, Chicago, IL

Committee Activities:
KU-Lawrence
Member, Doctoral Thesis Committee for Department of Mechanical Engineering
Member, Master’s Thesis Committee for Department of Mechanical Engineering

Editorials and Grant Reviews:
Ad hoc Reviewer, Journal of Alzheimer’s Disease
Ad hoc Reviewer, Journal of Neurochemistry
Ad hoc Reviewer, NeuroImage
Ad hoc Reviewer, NMR in Biomedicine
Ad hoc Reviewer, Conference proceedings of International Society for Magnetic Resonance in Medicine
Grant Reviewer, Alzheimer’s Disease Center Pilot Grant Review, KUMC
Dr. Lee (continued)

Seminars Presented:

Academic Honors:
Invited speaker of 24th Biennial joint meeting of International Society for Neurochemistry (ISN) and American Society for Neurochemistry (ASN), April 20 – 24, 2013, Cancun, Mexico:

Teaching Activities:
PHSL 846/ANAT 846 – Advanced Neuroscience
2 hours lecture
REHS 863 – Pathology of Human Function II
1 hour lecture

Trainees:
Abbey Hughes – Graduate Student (Psychology, KU), Teaching MR analysis strategies
Rodrigo Dennis Perea – Graduate Student (Mechanical Engineering, KU), Teaching MRI
Alex Roth – Graduate Student (Psychology, KU), Teaching MR analysis strategies
Our research is directed at advancing the understanding of the pathogenic mechanism in multiple sclerosis, which is a neurological disease that causes sensory, motor and/or cognitive declines. We also study novel interventions for this disease. Our research incorporates a team approach that includes clinical samples, immunology, and animal models. Additional studies address intervention strategies for globoid cell leukodystrophy. We also examine mechanisms of toxin-induced vessel injury.

Meetings Attended:
May 31-June 1, 2013 – Americas Committee on Treatment and Research in Multiple Sclerosis (ACTRIMS), 18th Annual Meeting, Orlando, FL

Committee Activities:
Departmental
Member, Department Promotions and Tenure Committee
Member, Graduate Student Advisory Committee
Member, Thesis Committee for Wen Tang
Member, Thesis Committee for Mohammed Khan
Member, Thesis Committee for Jason Gill

Seminars Presented:
March 4, 2013 – “Vascular Changes in Response to Anthrax Lethal Toxin,”
Department of Molecular & Integrative Physiology, KUMC

Teaching Activities:
CORE 820 – Gastrointestinal Tract and Nutrition
5 hours lecture to first year medical students
CORE 840 – Brain, Mind and Behavior
1 hour lecture
~4 hours of Neuropathology Labs for second year medical students
PHSL 842 – Comprehensive Human Physiology
4 hours lecture to graduate students
1 hour paper discussion
PHSL 848 – Molecular Mechanisms of Neurological Disorders
Course Director
2 – 1.5 hour lecture
Mentor for 4 student presentations

Trainees:
Scott Sands, Ph.D. – Post-Doctoral fellow
Austin Carroll – Student Employee, part time (enrolled at Rockhurst University)
Lynda K. McGinnis, Ph.D., Research Assistant Professor

Over 4 million children have been born from artificial reproductive techniques (ARTs). To protect the health of children born by ARTs, we need to improve our understanding of gamete biology, embryology and the signaling pathways essential for normal healthy development. Our research focuses on tyrosine kinase signaling in the oocyte during maturation and fertilization. Several of these kinases are activated in cultured somatic cells in response to stress. While some of these kinases, such as FYN and FER are very highly expressed in oocytes, their response to in vitro culture stress of oocytes and embryos is unknown. The long-term goal of my research is to define the regulation and targets of these kinase signaling pathways in oocytes and to determine if these pathways function properly during clinical in vitro maturation and fertilization procedures.

Meetings Attended:
August 12-15, 2012 – Society for the Study of Reproduction, Pennsylvania State University, University Park, PA

Committee Activities:
KUMC
Member, Post-doctoral Travel Awards Committee, Office of Post-Doctoral Affairs

Editorial and Grant Reviews:
Ad hoc Reviewer, African Journal of Biotechnology
Ad hoc Reviewer, BioMed Central: Biology
Ad hoc Reviewer, Biology of Reproduction
Ad hoc Reviewer, Developmental Dynamics
Ad hoc Reviewer, Fertility and Sterility
Ad hoc Reviewer, Human Reproduction
Ad hoc Reviewer, Journal of Assisted Reproduction and Genetics
Ad hoc Reviewer, Journal of Reproduction and Stem Cell Biotechnology
Ad hoc Reviewer, Molecular Human Reproduction
Ad hoc Reviewer, Molecular Reproduction and Development
Ad hoc Reviewer, Reproduction

Teaching Activities:
PHSL 834 – Reproductive Physiology
  3 hour lecture
  1.5 hour lab
The uterus is a vital organ for the successful propagation of all higher species. Understanding the molecular mechanisms that contribute to the development and subsequent function of the uterus are absolutely essential for successful reproduction to occur. It is well established that complex interactions among biological mediators dictate the normal pattern of uterine development and that disruption of these factors plays a causative role in uterine abnormalities, disease and infertility. Our research focuses on three major areas: 1) the role of microRNAs (miRNAs) in the pathophysiology of the female disease, endometriosis, 2) the role of miRNAs in uterine decidualization and early pregnancy loss/embryo implantation insufficiencies, and 3) the identification and development of novel, estrogen-sparing targets for endometriosis treatment. Collectively, the research in my laboratory focuses on examining the mechanisms which regulate normal uterine development and function, identifying those factors which contribute to these mechanisms and understanding how alterations in these mechanisms lead to uterine diseases such as endometriosis and recurrent pregnancy loss/infertility. The long-term goal of the research conducted in my laboratory is to better our understanding of the pathophysiology of these uterine diseases and in turn develop novel diagnostic/prognostic markers and therapeutic agents for their treatment.

Meetings Attended:
March 2013 – Society for Gynecological Investigation, Orlando, FL
June 2013 – Endocrine Society Meeting, San Francisco, CA

Committee Activities:
Departmental
Member, Doctoral Dissertation Committee for Malinda Algaier
Member, Doctoral Dissertation Committee for Wei-Ting Hung
Member, Doctoral Dissertation Committee for Lacey Luense
Member, Doctoral Dissertation Committee for Nairita Roy

KUMC
Member, Advisory Committee for the University of Kansas Medical Center Institutional Official, 2013-present
Member, Frontiers Clinical Pilot and Collaborative Studies Funding Program Study Section, 2012
Member, The Gilbert S. Greenwald Reproductive Biology Symposium Planning Committee, 2013

National
Co-Chairman, Female Reproductive Endocrinology (Session OR-44), the 95th Annual Meeting of the Endocrine Society, June 15th -18th, 2013 in San Francisco, CA
Member, Abstract Review Committee, American Society for Reproductive Medicine Endometriosis Special Interest Group, 68th Annual Meeting of the American Society for Reproductive Medicine, 2013
Committee Activities (continued):

   National (continued)
      Member, Abstract Review Committee, American Society for Reproductive Medicine Endometriosis Special Interest Group, 69th Annual Meeting of the American Society for Reproductive Medicine, 2013

Editorial and Grant Reviews:

   Ad hoc Reviewer, *American Journal of Obstetrics and Gynecology*
   Ad hoc Reviewer, *Biology of Reproduction*
   Ad hoc Reviewer, *Endocrinology*
   Ad hoc Reviewer, *Fertility and Sterility*
   Ad hoc Reviewer, *Gynecologic and Obstetric Investigation*
   Ad hoc Reviewer, *Human Reproduction*
   Ad hoc Reviewer, *Journal of Assisted Reproduction and Genetics*
   Ad hoc Reviewer, *Journal of Clinical Endocrinology and Metabolism*
   Ad hoc Reviewer, *Molecular Endocrinology*
   Ad hoc Reviewer, *Molecular Human Reproduction*
   Ad hoc Reviewer, *Molecular Reproduction and Development*
   Ad hoc Reviewer, *Reproduction*
   Ad hoc Reviewer, *Reproductive Biology and Endocrinology*
   Ad hoc Reviewer, *Reproductive Sciences*
   Ad hoc Reviewer, NIH/NICHD, Specialized Cooperative Centers Program in Reproduction Research (SCCPRR; RFAHD-13-005), ZHD1 DSR-L 55, November 7th-9th, 2012, Bethesda, MD
   Ad hoc Reviewer, NIH/EMNR Initial Review Group, Integrative and Clinical Endocrinology and Reproduction Study Section (ICER), June 20, 2013, Chicago, IL

Teaching Activities:

   PHSL 834 – Reproductive Physiology
   4 contact hours
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, pharmacotherapy, or device-based approaches, 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:
- September 15, 2012 – Annual Physical Medicine and Rehabilitation Conference, Cedars-Sinai Medical Center, Los Angeles, CA
- October 2012 – Society for Neuroscience Annual Meeting, New Orleans, LA
- November 2012 – 33rd Annual Braintree Neurehabilitation Conference, Cambridge, MA
- February 2013 – American Heart Association International Stroke Conference, Honolulu, HI
- February 2013 – International Workshop on Clinical Brain Neural Interfaces, Houston, TX

Committee Activities:
- Chair, Alzheimer’s Disease Center Internal Advisory Committee
- Member, Clinical Translational Science Award – Scientific Advisory Research Committee
- KL2 Program Co-Chair, Clinical and Translational Science Award Member, Frontiers/Clinical pilot/Lied awards study section
- Member, Executive Committee Institute for Neurological Discoveries
- Brain Injury and Repair Section Co-Director, Institute for Neurological Discoveries

National
- Member, American Heart Association International Stroke Conference Program Committee
- Board of Directors Member, American Society for Neurorehabilitation
- Member, NIH-NINDS Stroke Progress Review Group
- Member, Blue Ribbon Panel on Rehabilitation Research at the NIH
Dr. Nudo (continued)

Editorial and Grant Reviews:
- Deputy Editor, *Brain Stimulation*
- Associate Editor, *Neurorehabilitation and Neural Repair*
- Editorial Board, *Restorative Neurology and Neuroscience*
- Editorial Board, *Behavioral Brain Research*
- Editorial Board, *Frontiers: Neuroprosthetics*
- Ad hoc Reviewer, *Stroke*
- Ad hoc Reviewer, *Journal of Comparative Neurology*
- Ad hoc Reviewer, *Neuroscience*
- Ad hoc Reviewer, *Journal of Neural Engineering*
- Ad hoc Reviewer, *Neuroscience Letters*
- Ad hoc Reviewer, *Somatosensory and Motor Research*
- Ad hoc Reviewer, *Journal of Neuroscience Methods*
- Ad hoc Reviewer, *Nature Reviews Neurology*
- Ad hoc Reviewer, *Cerebral Cortex*
- Ad hoc Reviewer, *Journal of Neurotrauma*
- Ad hoc Reviewer, *Neurology*
- Ad hoc Reviewer, *Journal of Neurotherapies*
- Grant Reviewer, Fondazione Italiana Sclerosi Multiple (Italian Multiple Sclerosis Foundation)
- Grant Reviewer, NIH Director’s Common Fund, Transformative Research Awards, January 2013
- Grant Reviewer, NIH-NICHD Loan Repayment Program, March 2013
- External Reviewer, Medical University of South Carolina, Center on Aging, March 2013
- Grant Reviewer, NIH-NINDS Special Emphasis Panel, Brain Disorders and Clinical Neuroscience, June 2013

Seminars Presented:
- November 16, 2012 – Invited Speaker. “Neuroprosthetic tools for repair of the injured brain.” Neurology Grand Rounds, Emory University, Atlanta, GA
Seminars Presented (continued):

- November 16, 2012 – Invited Speaker. “Windows of opportunity for rehabilitative strategies after stroke.” Neurology Residency Lecture, Emory University, Atlanta, GA
- January 15, 2013 – Invited Speaker. “Neuroprosthetic tools for repair of the injured brain.” Basic Neuroscience Seminar Series, University of Texas-Southwestern, Dallas, TX
- April 2013 – Invited Speaker. “Neuroprosthetic tools for repair of the injured brain.” LeFeber Winter Lecture Series on Aging, University of Texas Medical Branch, Galveston, TX

Academic Honors:

- Keynote Speaker, Neuroprosthetic tools for repair of the injured brain, Third Rehabilitation Medicine Summit Forum, Beijing, China, August 10, 2013.
- Invited Speaker, World Congress of Neurology, Vienna, Austria, September, 2013.
- Invited Speaker, Brain Research Centre, University of British Columbia, Vancouver, Canada, October 11, 2013.
- Invited Speaker, III Workshop of Synaptic Plasticity: From Bench to Bedside, Taurmino, Sicily, June 2014.
Dr. Nudo (continued)

Teaching Activities:
- NEUS 840 – Medical Neuroscience
  6 lecture hours
- Faculty Research Series
  1 hour lecture
- Introduction to Clinical Research (Summer)
  1 hour lecture
- Introduction to Clinical Research (Fall)
  1 hour lecture
- Rehabilitation Medicine Residency Program
  1 hour lecture
- Topics in Rehabilitation Research (PTRS)
  2 hours lecture

Trainees:
- David Guggenmos, PhD – Post-doctoral fellow
- Stacey Dejong, Ph.D. – Post-doctoral fellow
- David McNeal, Ph.D. – Post-doctoral fellow
- Gustaf Van Acker, Ph.D. – Post-doctoral fellow
- Edward Urban, III – M.D./Ph.D. Graduate Student
- Andrew Koehn – Graduate Student (Bioengineering)
- Collin Kitzerow – Summer research (MD student in T32 program)
- Peter Riesz – Summer research (MD student in T32 program)
- Jake New – MD/PhD student summer rotation
- Blake Ebner – MD/PhD student summer rotation
- Dane Stephens – Undergraduate summer student (Texas Christian University)
- Allison Geier – Undergraduate summer student (University of Kansas)
- Aishwarya Kumar – Undergraduate summer student (University of Kansas)
The goal of my research is to determine the role of RNA Binding proteins in tumor progression and metastasis. Post-transcriptional regulation of gene expression by RNA binding protein is a crucial mechanism in regulating the timing and the amount of expression of genes. Growing evidence indicate that the alteration of the expression and function of RNA binding proteins could potentially play a role in inflammation and cancer. Hence, it is indispensable to identify the RNA binding protein alterations accumulate during cancer progression as well as during the acquisition of metastatic potential in cancer cells.

To understand the mechanisms behind the process of hemangiogenesis and lymphangiogenesis in metastasis. Metastasis entails the spread of cancer cells from a primary tumor throughout the body through the blood or lymphatic systems. Hence, blocking angiogenesis could be a strategy to arrest tumor growth. Therefore, understanding the molecular mechanisms underlying the hemangiogenesis and lymphangiogenesis processes and their regulation will lead to the discovery of pharmaceutical agents with anti-angiogenic activity.

Meetings Attended:
Ladies Auxillary to the Veterans of Foreign Wars of the United States
Postdoctoral cancer research fellowship review panel

Committee Activities:
KUMC
Member, IACUC Committee
Member, Graduate Affairs Committee

Editorial and Grant Reviews:
Ad hoc Reviewer, American Journal of Physiology
Ad hoc Reviewer, European Journal of Clinical Investigation
Ad hoc Reviewer, Letters in Drug Design & Discovery
Ad hoc Reviewer, Environmental Toxicology
Ad hoc Reviewer, Chemical Biology & Drug Design
Ad hoc Reviewer, Journal of Cellular and Molecular Medicine
Editorial Board Member, Frontiers in Pharmacotherapy of Inflammation
Colorectal cancer is a major malignancy worldwide and is the second leading cause of cancer death in the United States. Treatment and prevention of colon cancer is often unsuccessful and has an extremely high morbidity rate. The major feature of solid tumors is hypoxia; the decreased availability of oxygen has been shown to increase chemotherapy resistance thereby favoring tumor progression. Hypoxia and heat shock protein 90 (HSP90) stabilize HIF-1α (hypoxia inducible protein-1α), a transcription factor that regulates expression of vascular endothelial factor (VEGF) and inducible nitric oxide synthase (iNOS). In contrast, HSP90 inhibitors inhibit the expression of VEGF and iNOS suggesting that HSP90 is a critical player in HIF-1α mediated expression of these genes. My research focuses on understanding the mechanism of hypoxia-mediated regulation of cancer stem cells and the effect of hypoxia on hypoxia inducible factor. In addition, to determine the effect of natural HSP90 inhibitors, celastrol and triptolide on the growth and tumor formation of cancer stem cells. Addition to this, isolating cancer cells from fresh human cancer patient sample and to try HSP90 inhibitor with and without hypoxia.

Academic Honors:

Junior Faculty Poster Competition Award Winners- 3rd place "Effects of Hsp90 inhibitors on triple negative breast cancer: Notch as a therapeutic target for stem cells". KUCC Research Symposium, University of Kansas Medical Center, Kansas City, KS, 2012.
**Peter G. Smith, Ph.D.,** Professor, Director of the Institute for Neurological Discoveries, Co-Director of the Kansas Intellectual and Developmental Disabilities Research Center

*Nerves regulate function and structure of target 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 nerves and targets in controlling end organ activity and in processing sensory signals. We are particularly interested in how hormones and vitamins can regulate neuronal function in conditions such as chronic pain syndromes, and in how genetic variants can lead to developmental neurological disorders.*

Meetings Attended:
- June 4-5, 2013, NIH Somatosensory and chemosensory study section, Bethesda MD

Committee Activities:
- **Departmental**
  - Chair, Student Advisory Committee for Argenia Doss
  - Chair, Student Advisory Committee for Aritra Bhattacherjee
  - Chair, Student Advisory Committee for Eva Selfridge
  - Member, Student Advisory Committee for Ed Urban III
  - Member, Student Advisory Committee for Bliss O’Bryhim
- **KUMC**
  - Member, Student Advisory Committee for Angela Pierce (Neurology)
  - Member/Team Leader, Executive Vice Chancellor Search Committee
  - Chair, KUMC Genomics Core Advisory Committee
  - Chair, KUMC Research Institute Research Committee
  - Member, Mass Spectroscopy Advisory Board
  - Member, Research Institute Board of Directors
  - Affiliate Member, KU Cancer Center
  - Member, Alzheimer’s Disease Center Internal Advisory Board and Executive Committee
  - Chair, Ad Hoc Committee on Research Grant Bridging Discoveries
  - Chair, Executive Committee, Institute for Neurological Discoveries
  - Member, Bioinformatics Recruitment Committee, Department of Biostatistics
- **National**
  - North American Representative to the Executive Committee, International Society for Autonomic Neuroscience
  - Member, International Program Committee for the Joint Meeting of the European Federation of Autonomic Societies and the International Society for Autonomic Neurosciences
  - Editorial Board Member, Autonomic Neuroscience: Basic and Clinical
Editorials and Grant Reviews:
  Ad hoc Reviewer, *Journal of Neuroscience*
  Ad hoc Reviewer, *Journal of Molecular Histology*
  Ad hoc Reviewer, *Molecular and Cellular Biochemistry*
  Ad hoc Reviewer, *American Journal of Physiology: Regulatory, Integrative and Comparative*
  Ad hoc Reviewer, *PLOSOne*
  Ad hoc Reviewer, *Journal of Neuroscience Methods*
  Ad hoc Reviewer, *Circulation Research*
  Ad hoc Reviewer, NIH Somatosensory and chemosensory study section
  Reviewer, KUMC Research Institute

Seminars Presented:
  August 7, 2012 – “Neuroscience. It’s All In Your Head” (with Paul Camara and Cary Savage), KUMC Department of Neurology Grand Rounds. “
  February 11, 2013 – “Where does it hurt? New targets in pain therapy.” Wichita State University, Department of Biology.
  May 9, 2013 – “New targets in pain research”.KUMC Postdoctoral and Fellows Research Day

Teaching Activities:
  PHSL 800 – Medical Physiology
    3 hours lecture
    4 hours conference
  PHSL 846 – Advanced Neuroscience
    4 hours lecture
  Science and Rehabilitation of Pain
    1 hour lecture
John A. Stanford, Ph.D., Associate Professor

My research is focused on preclinical models of normal aging and age-related diseases and conditions that affect motor function, such as Parkinson’s disease (PD), Amyotrophic Lateral Sclerosis (ALS) and neonatal hyperbilirubinemia (kernicterus). We are currently examining the effects of a high fat diet-induced on neurological function in attempts to understand the co-morbidity between Type 2 Diabetes and age-related diseases such as PD and Alzheimer’s disease (AD). We are also studying the effects of isometric strength training on neuromuscular denervation in the SOD1-G93A rat model of ALS. Our most recent studies involve characterizing behavioral and neurological abnormalities in the Gunn rat model of kernicterus.

Meetings Attended:
- October 13-17, 2012 – 42nd Annual Meeting of the Society for Neuroscience, New Orleans, LA
- October 15, 2012 – Symposium on ALS, FTG and New Discoveries in C9or72, New Orleans, LA
- December 5-7, 2012 – 23rd International Symposium on ALS/MND, Chicago, IL

Committee Activities:
- Departmental
  - Member, Graduate Student Affairs Committee
  - Coordinator, Seminar Series
- KUMC
  - Member, KIDDRC Rodent Behavior Advisory Committee
  - Member, KIDDRC Core B Advisory Committee
  - Member, Neuroscience Graduate Program Advisory Committee
  - Member, Society for Neuroscience Kansas City Chapter Executive Committee
  - Member, Society for Neuroscience Kansas City Chapter Treasurer

Editorial and Grant Reviews:
- Reviewer, Brain Stimulation
- Reviewer, Food & Chemical Toxicology
- Reviewer, Neurobiology of Disease
- Reviewer, Neurobiology of Learning & Memory
- Reviewer, Neuromodulation: Technology at the Neural Interface
- Reviewer, Neurorehabilitation & Neural Repair
- Reviewer, Neuroscience Letters
- Reviewer, Nutritional Neuroscience
- Reviewer, Pharmacology Biochemistry & Behavior
- Reviewer, Philosophical Transactions of the Royal Society B
- Reviewer, Psychopharmacology
- Ad hoc Reviewer, Parkinson’s UK
Dr. Stanford (continued)

Seminars Presented:
October 19, 2012 – “Translatable measures of motor function in preclinical Models of Parkinson’s Disease and ALS: An update.” Neurology/Neurosurgery Grand Rounds, University of Kansas Medical Center, Kansas City, KS
February 18, 2013 – “Metabolism and preclinical models of neurodegenerative diseases.” Department of Chemistry, University of Kansas, Lawrence, KS

Teaching Activities:
CORE 840 – Brian and Behavior
25 hours small group teaching
PHSL 846 – Advanced Neuroscience
Course Director
10 hours classroom teaching
PHSL 848 – Molecular Mechanisms of Neurological Disorders
2 hours lecture
4 hours faculty mentor

Trainees:
James Odum – Medical Student, Summer research training program
Isabella Fuentes – IGPBS rotation student, Spring 2013
Cassi Johnson – IGPBS rotation student, Spring 2013
Alexandria Meyers – tutored for National Brain Bee
Nicole Rogers – Undergraduate Research Assistant
Dharmalingam Subramaniam, Ph.D., Research Assistant Professor

My research is focused on gastrin mediated carcinogenesis and chemoprevention.

a) Gastrin mediated carcinogenesis is to determine the response of gastric epithelial cells to gastrin, a small peptide hormone and also infection by Helicobacter pylori, which are gram negative, microaerophilic, spiral shaped bacilli. Infection with Helicobacter pylori results in hypergastrenemia and gastric cancer. In this area is to determine the different gastrin induced cellular signaling response in gastric and colon epithelial cells and its subsequent effects on the expression of proinflammatory gene COX-2 and IL-8 expression at the transcriptional and posttranscriptional levels.

b) Chemoprevention, to determine the signaling mechanisms of dietary phyto-chemicals & their analogues, and chemotherapeutic agents against colon and pancreatic cancer.

Meetings Attended:
April 6-10, 2013 – 104th American Association for Cancer Research Annual Meeting, Washington DC

Committee Activities:
Departmental
Member, Thesis Committee for Keke Pounds

Editorial and Grant Reviews
Ad hoc Reviewer, PlosOne
Ad hoc Reviewer, Current Cancer Drug Targets
Ad hoc Reviewer, Bioorganic & Medicinal Chemistry Letters
Ad hoc Reviewer, BMC Cancer European Journal of Clinical Investigation
Ad hoc Reviewer, International Journal of Biological Sciences
Ad hoc Reviewer, Molecular Oncology
Ad hoc Reviewer, International Journal of Nanomedicine
Ad hoc Reviewer, Acta Biochimica et Biophysica Sinica (ABBS)
Ad hoc Reviewer, Biotechnology and Applied Biochemistry
Ad hoc Reviewer, Canadian Journal of Physiology and Pharmacology
Ad hoc Reviewer, American Journal of Physiology and GI Liver Physiology
Ad hoc Reviewer, Evidenced based Complementary and Alternative Medicine

Academic Honors:
2013 – Kansas University Medical Center Research Institute Travel Award for the abstract entitled 1- “Honokiol affects stem cell viability in part through suppression of Hippo signaling pathway” 2- “Tandutinib inhibits the PI3 Kinase/Akt/mTOR signaling pathway to inhibit colon cancer growth” Poster presentation. 104th American Association of Cancer Research Annual meeting, Washington, DC, April 2013.
Dr. Subramaniam (continued)

Trainees:
Jessica Johnson – Graduate Student
Naveen Neradugomma – Graduate Student
Anand Venogopal – MD/Ph.D. Student
Gaurav Fnu, Ph.D. – Post doctoral fellow
Deep Kwarta, Ph.D. – Post doctoral fellow
Parthasarathy Rangarajan, Ph.D. – Post doctoral fellow
Alissa Urich – Summer Intern
Ravi Thombre – Summer Intern
Joseph S. Tash, Ph.D., Professor

My research is funded both by NIH and by NASA. My NIH-funded research focuses on reproductive biology and the regulation of sperm motility and sperm function, and identification of testis and/or sperm specific functional components that can be targeted for development of reversible non-hormonal male contraceptive agents. My ongoing NIH grant effort is focusing on continued drug development and elucidating the mechanism of action of H2-gamendazole (H2-GMZ), an 100% effective and 100% reversible orally-active, highly-potent anti-spermatogenic contraceptive agent. The project is also discovering alternative chemical scaffold lead agents that target the same Sertoli cell molecular targets as H2-GMZ. We recently met with the FDA to establish the first ever guidance for a non-hormonal male contraceptive that established the testing necessary to enable registering H2-GMZ as an IND and to ultimately enable first-in human clinical trials.

With regard to gravitational research, I have been funded by NASA since 1996 and examining the effects of space flight on both male and female reproductive health. I have had 5 flight experiments on the Space Shuttle from 1997-2011, including three of the last five shuttle flights. We recently completed a successful flight experiment in May, 2013 on a Russian BION satellite that was the largest and longest animal space flight experiment in NASA and Russian Space Agency history. We are examining the effects of 30 days of space flight, including continuous exposure to microgravity and space radiation, on testis function and sperm health in adult male mice. A new NASA grant scheduled to begin funding in Aug 2013, will be the first ever flight of mammalian and sea urchin sperm to the International Space Station National Laboratory to study the impact of space flight on sperm motility, metabolomics and signal transduction.

Meetings Attended:
- November 1-2, 2012 – NICHD Contraceptive Discovery and Development Branch Steering Committee Meeting, Baylor College of Medicine, Houston, TX
- November 28-December 2, 2012 – American Society for Gravitational and Space Research, New Orleans, LA
- March 21-22, 2013 – Mark III Rodent Habitat Workshop, NASA Ames Research Center, Moffitt Field, CA
- June 20-22, 2013 – Alliance for Contraception in Cats & Dogs Fifth International Symposium on Non-Surgical Contraceptive Methods for Pet Population Control, Portland, OR

Committee Activities:
- National Member, NICHD Contraceptive Discovery and Development Branch (CDDDB) Steering Committee
- Member, Board of Governors, American Society for Gravitational and Space Biology
Editorial and Grant Reviews:
Reviewer, NIH

Seminars Presented:
November 1-2, 2013 – “H2-Gamendazole Analogues as Reversible Non-Hormonal Male Contraceptive Agents,” NICHD Contraceptive Discovery and Development Branch Steering Committee Meeting, Baylor College of Medicine, Houston TX

Academic Honors:
President – November 2012: American Society for Gravitational and Space Research

Trainees:
Lesya Holets, Ph.D. – Post Doctoral Fellow
Clare Prohaska – Medical Student
Shahid Umar, Ph.D., Associate Professor

Research in my laboratory is focused on the role of bacterial infection in colonic crypt hyperplasia and/or inflammation and cancer. Specific research areas include: (a) Epigenetic regulation of cross-talk between components of the Wnt/β-catenin and Notch and NF-κB and Notch pathways in relation to complex inter-relationship amongst cell proliferation, inflammation and cancer; (b) Cancer Stem Cells, (c) miRNAs and (d) mechanism(s) of chemoprevention by dietary factors and its novel derivatives.

Meetings Attended:
May 18-21, 2013 – American Gastroenterology Association's Digestive Disease Week (DDW), Orlando, FL.

Editorial and Grant Reviews:
Reviewer, *Infection and Immunity*
Reviewer, *PLoS One*
Reviewer, *Oncogene*
Reviewer, *Gut*
Ad hoc Member, NIDDK’s Fellowship in Digestive Diseases and Nutrition

Seminars Presented:
April 16, 2013 – “Epigenetics and EMT: Role of Bacterial Infection.” Department of Pharmaceutical Chemistry Seminar Series. University of Kansas, Lawrence, KS

Academic Honors:
Invited Speaker – Late-breaking abstract, American Gastroenterology Association’s Digestive Disease Week (DDW) in Orlando, FL May 18-21, 2013
Invitation for Leading Editorial Review – Immuno-Gastroenterology – 2013

Teaching Activities:
Immunology Course
2 – 2 hour lectures
1 – 1 hour paper discussion

Trainees:
Ishfaq Ahmed, Ph.D. – Post-Doctoral Fellow
Mahesh Jakkula, Ph.D. – Post-Doctoral Fellow
Badal Roy, Ph.D. – Post-Doctoral Fellow
Miranda Machachek – MD/PhD student, KUMC
Michael W. Wolfe, Ph.D., Associate Professor

Summary of Research: Proper regulation of the hypothalamo-pituitary-gonadal axis as well as development and regulation of the placenta are essential to mammalian reproduction. Research in my laboratory is directed towards understanding the cellular and molecular mechanisms involved in pituitary and placenta function as well as tissue-specific and endocrine regulation of genes encoding hormones within these tissues. 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:  
October 2012 – 9th Annual Gilbert S. Greenwald Symposium on Reproduction, Kansas City, MO

Committee Activities:  
Departmental  
Member, Dissertation Committee for Kyle Jansson, Ph.D. candidate  
Member, Dissertation Committee for Edward Urban, M.D./Ph.D. candidate  
Member, Dissertation Committee for Lacey Luense, Ph.D. candidate  
Member, Dissertation Committee for Tamara Jimenez, Ph.D. candidate  
Member, Dissertation Committee for J.B. Fitzgerald, Ph.D. candidate  
Member, Dissertation Committee for Jitu George, Ph.D. candidate  
Member, Dissertation Committee for Naveen Neradugomma, Ph.D. candidate  
Chair, Comprehensive Exam for Wahid Mulla, Ph.D. candidate  
Chair, Comprehensive Exam for Amy Cantilena, Ph.D. candidate  
Chair, Comprehensive Exam for Robert Rogers, Ph.D. candidate  
Member, Comprehensive Exam for Lei Pei, Ph.D. candidate  
Member, Comprehensive Exam for Archana Raman, Ph.D. candidate  
Director, Graduate Program  
KUMC  
Member, Dissertation Committee for Damayanti Chakraborty, Ph.D. candidate (Dept. of Pathology)  
Member, IGPBS Admissions Committee  
Member, IACUC  
Member, IACUC Programmatic sub-committee  
Member, SOM Elections Committee  
Member, Phase I committee for Medical curriculum  
Member, Phase I sub-committee – review of the GIN module  
Member, Phase I sub-committee - Remediation  
Chair, 9th Annual Gilbert S. Greenwald Symposium Committee  
Member, James L. Voogt Lecture Committee
Committee Activities (continued):

National
Past-Chair, By-laws Committee; Society for the Study of Reproduction.
Member, Nominations Committee; Society for the Study of Reproduction.

Academic Honors:
Appointed KUMC Research Integrity Officer

Seminars Presented:
June 2013 – “Responsible conduct of Research,” 7th Annual KUMC MD/PhD student retreat

Teaching Activities:
PHSL 834 – Reproductive Physiology
8 hours lecture
PHSL 842 – Comprehensive Human Physiology
9 hours lecture
CORE 825 – Renal-Endocrine Module
Module Director
7 hours lecture
2 hour review session
CORE 825 – Remediation of Renal-Endocrine Module
Module Director
2 hour review session
CORE 830 – Reproduction and Sexuality Module
3 hours lecture
John G. Wood, Ph.D., Associate Professor

Microvascular inflammation occurs in a variety of clinical settings and is a significant contributor to patient mortality in these situations. I am working with faculty and residents in the Department of Surgery to study mechanisms involved in microvascular injury in hemorrhagic shock. I have continued my collaboration with Dr. Gonzalez, who examines mechanisms of microvascular inflammation during systemic hypoxia. I am also collaborating with Dr. Janet Pierce on a project examining the effect of coenzyme Q10, an antioxidant, on inflammation during shock/resuscitation.

Committee Activities:

Departmental
- Member, Kyle Jansson Thesis Committee
- Member, Bliss O'Bryhim Thesis Committee
- Member, Naveen Neradugoma Thesis Committee
- Member, Amy Cantilena Thesis Committee
- Member, Anand Venugopal Thesis Committee

KUMC
- Thesis Advisor, Garrett Coyan (Master’s degree)
- Member, Ben Woolbright Thesis Committee (Pharmacology, Toxicology & Therapeutics)
- Member, Yuchao Xie Thesis Committee (Pharmacology, Toxicology & Therapeutics)
- Member, Prematriculation Planning Committee
- Module Director, Prematriculation Program
- Member, Department of Surgery Education Committee
- Co-Chair, Department of Surgery Research Committee
- Member, IACUC Committee Member
- Member, Delp Academic Society
- Member, Student Applicant Interviews
- Member, Phase I Committee
- Chair, Committee for Systemic Review of the Infectious Disease Module (second year medical student curriculum)
- Member, Content Workgroup Subcommittee (Phase I)
- Member, Curriculum Development Committee (Wichita)
- Member, LCME Educational Program Self-Study Committee

Editorial and Grant Reviews:
- Ad hoc Reviewer, Journal of Biomedicine and Biotechnology
Dr. Wood (continued)

Academic Honors:
Student Voice Award for Outstanding First Year Teaching
Cardiopulmonary Module, Best module in first year curriculum 2012-13
Chancellor’s Club Teaching Professorship
Garret Coyan: Russell Haden Medal for First Place Overall Medical Student
Presentations at Student Research Forum, April 2013
Casey Hertzenberg, M.D.: First Place Oral Presentation for Residents at
Resident, Postdocs, and Fellows Day, May 2013
Jessica Hogan, M.D.: First Place Poster Presentation for Residents at Resident,
Postdoc, and Fellow Research Day, May 2013

Teaching Activities:
First Year Medical Curriculum – Cardiopulmonary Module
Module Director
20.5 hours lecture
1.5 hours review
4 hours small group discussion facilitator
Second Year Medical Curriculum – Integration & Consolidation Module
3 hours lecture
PHSL 842 – Comprehensive Human Physiology
11 lecture hours
2 paper discussion
PTOX887 – Toxologic Pathology
2 hours lecture
2 hours paper discussion
First Prep Board Review
2.5 hours lecture
Pre-Matriculation Program
21 hours lecture
18 hours problem sessions
2 hour laboratory
3 hours review
Vascular Surgery Program, Department of Surgery
2 hours lecture

Trainees:
Garrett Coyan – Fourth year Medical Student in a Master’s Degree Program
Jessica Hogan, M.D. – Second Year Resident in the Department of Surgery
Raulee Lucero – Second Year Medical Student
Nick Duethman – Second Year Medical Student