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Faculty Activities
The Department of Molecular and Integrative Physiology continues under the leadership of Dr. V. Gustavo Blanco, who serves as the Kathleen M. Osborn Chair and Dr. Warren Nothnick, who is the Vice Chair. The department maintains a relatively large size, currently having 16 tenured faculty members, 3 research track faculty, 3 postdoctoral fellows, 3 senior scientists, and 17 doctoral graduate students. In May of 2018, a new faculty member, Dr. Ning Wang, joined our department as an assistant professor. Dr. Wang came from Harvard University and with his work in male reproduction, he represents a great addition to our group of reproductive researchers.

During this past year the physiology department has successfully continued working towards its academic goals, which include: 1) engaging in high quality research to generate new discoveries of physiological relevance in basic and translational science that contribute to advance human health; 2) training new generations of physicians, graduate students, and postdoctoral fellows in physiology and pathophysiology through high quality and innovative teaching, to contribute to the academic excellence of KUMC and 3) providing academic service through participation in different committees and task forces that help the functioning of our department and school.

Research programs in the department span various areas of research and the investigators have continued to maintain a consistent level of publications. This past year approximately 60 peer reviewed original articles were published in top research journals and as book chapters. The main research areas of the department include male and female reproduction, neuroscience, muscle, metabolism and integrative physiology. Studies are performed at the molecular and whole animal level and utilize a wide diversity of methods and approaches. In addition, research in the department complements the research efforts of several centers in our institution.

Regarding teaching, the department has had another outstanding year. Our faculty continued to maintain a high presence in medical education during the first and second year of the Active Competency based and Excellence driven (ACE) curriculum. Dr. Wood served as Discipline Leader, and he and Dr. Stanford lead the Cardiopulmonary and Muscle and Movement blocks respectively as Module Directors. Dr. Wolfe has been working on the upcoming Reproductive block. All our faculty were involved as Facilitators, leading the small group Case Based Clinical Learning (CBCL) activities of the ACE medical curriculum. The hard work of our faculty in teaching has been recognized with important awards given to individual lecturers and to course directors for their excellence in education. Members of our department have also continued to play a major role in the education of graduate students by participating in the core Integrated Graduate Program in Biological Sciences (IGPBS) curriculum. Faculty also taught in our department’s mandatory courses for graduate students, including the Comprehensive Human Physiology and Human Pathophysiology courses, led by Drs. Andrei Belousov and Steve LeVine respectively. In addition, various advanced physiology courses were offered, which cover new advances in specific areas of physiology. As a testament to the work of our faculty these courses have received
excellent reviews from the students. Moreover, several of our faculty were invited to
give educational seminars at other universities; Drs. Blanco and Christenson taught
lectures and a laboratory in the prestigious Frontiers in Reproduction international
course offered every year at the Marine Biological Laboratories in Woods Hole,
Massachusetts.

We are also proud that members of the physiology department have continued serving
in numerous key committees and leadership roles at the university level which are
essential to the overall mission of our school. Dr. Smith serves as the Senior Associate
Dean for Research and the Co-Director of the Kansas Intellectual and Developmental
Disabilities Research Center (KIDDRC); Dr. Nothnick is the Director of the Center for
Reproductive Sciences; Dr. Stanford is the Program Director of the KUMC Biomedical
Research Training Program and the Campus Coordinator, K-INBRE Program Director;
Dr. Blanco is the K-INBRE Research Developmental Core Director; Dr. Geiger is the
Facility Co-Director of the Metabolic and Obesity Research Phenotyping Facility
(MORPh); Dr. Thyfault is the Scientific Director of Children’s Mercy Healthy Lifestyle
and Nutrition Center (KUMC/CMH joint funded center), and Dr. Wolfe is the Research
Integrity Officer of our school. In addition, we have maintained our presence at the
national and international level. Our faculty have served on different review panels of
the National Institutes of Health as well as review panels of other funding agencies.
They have also participated as editors, or as members of the editorial boards for a
variety of journals. We are very grateful to our faculty who through talent and hard work,
have continued to maintain the high academic standards and success that gives our
department great national and international visibility.

The physiology department has also undergone some challenges this year. This
consisted in difficulties related to obtaining extramural funding, which is a problem
common to other departments and schools. This has been caused by the continuous
reduction in funding from local and national agencies. Funding was further impacted by
some changes in the allocation model for the distribution of funds in our university,
which occurred at the beginning of 2018. The department has taken initiatives, by
starting an enhancement program, with the idea of facilitating faculty obtaining grants.
We are confident that this should improve our ability to obtain new funds.

Regarding the department’s office, we continue operating with Shari Standiferd, who
serves as the Director of Operations, and Jennifer Wallace and Liam Higgins, who are
our coordinators for financial accounting support. Our special thanks go to them. They
provide outstanding administrative support to our department through their hard work
and continuous dedication. In addition, we would like to thank our work study students,
Alexis Battershell and Mackenzie Boone, who provided additional excellent clerical
support to our office.

We would like to especially recognize our benefactor and continuous supporter Mr. Jim
Osborn. His generous contributions over the years, in memorial of his daughter
Kathleen, and wife Marion, as well as his recent commitment have significantly
contributed to our success. The Kathleen M. Osborn Endowed Chair, the Marion M.
Osborn Professorship, and the lectureship in honor of Kathleen M. Osborn have made a great difference to our department. These funds continue to support the department’s goals and our students. We all immensely appreciate the exceptional support that Jim Osborn has given in honor of his family.
HIGHLIGHTS FROM THE 2017 – 2018 ACADEMIC YEAR

RESEARCH FUNDING: The loss of faculty, as well as the difficulties in obtaining new grants, has resulted in a decrease in research funding to the department. Most universities today face a climate of low general funding levels. Currently members of our department continue to work hard to produce and submit high quality grant proposals. This has resulted in new grants being funded; however, our goal is to increase this number. Based on data provided by KUMC Enterprise Analytics, total NIH funding was $3,184,810, which is higher than that of last year ($2,571,231). The latest data available shows that our department was ranked 52nd at the national level for NIH research funding among 81 medical schools receiving NIH funding. While this is a good position, we would like to improve this ranking. During fiscal year 2018 grant requests from the department indicated total costs of $47,599,374 (which included $34,479,119 in direct costs and $13,120,255 in indirect costs). From these, $44,936,433 corresponded to grant proposals submitted to the National Institutes of Health.

EDUCATION: Continuing a long tradition the physiology department has had another outstanding year with respect to teaching. As mentioned previously, Drs. John Wood and Stanford led the Cardiopulmonary and Muscle and Movement blocks of the ACE curriculum. Cardiopulmonary was awarded best module and Drs. Blanco and Wood received Student Voice awards for excellence in teaching. These awards were presented by the medical students at the Grande Affair celebration on January 20, 2018. These awards are a testimony to the long-lasting commitment of our faculty members to education. As a continuation of our commitment to education, our faculty participated in developing the new ACE medical curriculum. Dr. John Wood served as a Discipline Leader. Due to the importance of physiology in years 1 and 2 of the medical curriculum, faculty in our department will continue to have an important role in teaching new generations of physicians. Regarding the graduate student curriculum, we continued offering our two main courses, Human Physiology and Human Pathophysiology, directed by Drs. Belousov and LeVine respectively. In addition, several advanced courses were taught. These included the Integrative Physiology of Exercise course (directed by Drs. Geiger and Thyfault) and the Molecular Mechanisms of Neurological Disorders (lead by Dr. LeVine).

TENURE TRACK APPOINTMENTS: We are pleased and excited to have added Dr. Ning Wang to the department as a new assistant professor. Ning Wang, Ph.D., started as an assistant professor on May 1, 2018. His research focuses on the study of male germ cell development and the molecular mechanisms involved in meiosis during spermatogenesis.

RESEARCH TRACK APPOINTMENTS: No new appointments occurred this fiscal year.

JOINT AND ADJUNCT APPOINTMENTS: No new appointments this fiscal year.
FACULTY PROMOTIONS: Dr. Lane Christenson was promoted to full professor with tenure starting July 1, 2018. Dr. Christenson’s work focuses on ovarian function and microRNA-vesicle mediated (exosome) cellular communication.

Dr. Paige Geiger was promoted to full professor with tenure starting July 1, 2018. Dr. Geiger’s work focuses on muscle physiology and the effects of exercise, diet and hormonal levels on muscle metabolism and insulin resistance, type II diabetes.

Dr. Phil Lee was promoted to full professor with tenure starting July 1, 2018. Dr. Lee’s work focuses on neurophysiology and neuroimaging, specifically on the characterization of functional and physiological processes of the brain in vivo in health and disease, using advanced non-invasive neuroimaging techniques.

Dr. John Stanford was promoted to full professor with tenure starting July 1, 2018. Dr. Stanford’s work focuses on motor function in neurological disorders across the lifespan.

Dr. John Thyfault was promoted to full professor with tenure starting July 1, 2018. Dr. Thyfault’s work focuses on chronic physical inactivity, sedentary behavior, and low aerobic fitness and their relationship to the development of chronic disease conditions (obesity, insulin resistance, fatty liver disease, type 2 diabetes, and cardiovascular disease).

FACULTY/STAFF DEPARTURES: Joseph S. Tash, Ph.D. finished his phased retirement period and fully retired on January 14, 2018. He was recruited to KUMC on June 24, 1990. Dr. Tash was named Emeritus Professor on January 15, 2018 and we wish him the best retirement after 27 years of dedicated service as Professor of Physiology.

FACULTY AWARDS/ACCOMPLISHMENTS: Numerous members of our department have been serving on review panels from NIH and other agencies. They have also served as editors or on the editorial board of different journals and presented invited lectures at different national and international meetings and seminars at other universities.

GRADUATE PROGRAM AND PHYSIOLOGY SOCIETY: The student led “Physiology Society” continued functioning well this year. A new president was elected and a new committee was chosen. The leadership of the Physiology Society is currently:

Zahraa Alali, President
Younshim Park, Vice-President/Stowers Chair
Joshua Curry, Social Chair

The graduate students in the department had another active year. In 2017-2018 eight new students were recruited to the department. These include students who are working with our affiliate members at Stowers Research Institute and joint appointment faculty at KUMC. Currently, our department has a total of 17 enrolled doctoral students. Several of our students were awarded external fellowships to support their training. Funding came
from different sources, including the SELF Fellowship program, the KUMC Biomedical Training Program, National Science Foundation, and National Institute of Health.

The new graduate students that joined the department in the 2017-2018 fiscal year included the following individuals (their respective mentors are listed in parenthesis):

- Fatimah Aljubran (Dr. Vargheese Chennathukuzhi)
- Ashley Cloud (Dr. Vargheese Chennathukuzhi)
- Page Hayley (Dr. Randolph Nudo)
- Rikki Nelson (Dr. Lane Christenson)
- Diego Paez-Moscoso (Dr. Peter Baumann)
- Consuelo Perez Sanchez (Dr. Kausik Si)
- Elizabeth Thoenen (Dr. Tomoo Iwakuma)
- Alex Von Schulze (Drs. Paige Geiger/John Thyfault)

Four students completed their Ph.D. degrees during the summer of 2017. Congratulations to all of them and their mentors.

**Summer 2017**  
†Amy Cantilena, Ph.D.  
Liyin Li, Ph.D.  
Margaret Pruitt, Ph.D.  
Archana Raman, Ph.D.

**Fall 2017**  
No Graduates for Fall  
No Graduates for Spring

**Spring 2018**

†Amy Cantilena, Ph.D. (May 8, 2017) received her degree with Dr. Buddhadeb Dawn in the Cardiovascular Department. The title of her dissertation was “The Role of Endoglin in the Immunomodulatory Capacities of Mesenchymal Stem Cells and the Relationship to Hyperbaric Oxygen Therapy”.

Margaret Pruitt, Ph.D. (May 11, 2017) received her degree with Dr. Peter Baumann at the Stowers Institute. The title of her dissertation was “Interrogating Telomerase Activity and Telomere Function through In-Flask Template Evolution”. Dr. Pruitt is now a M.D. student in her third year of clerkship at KU Medical Center.

Archana Raman, Ph.D. (June 12, 2017) received her degree with Dr. Darren Wallace in the Kidney Institute. The title of her dissertation was “The Role of Matricellular Signaling in Polycystic Kidney Disease”. Dr. Raman continued as a Postdoctoral Fellow in the Kidney Institute at KU Medical Center.

Liyin Li, Ph.D. (June 22, 2017) received her degree with Dr. Kausik Si at the Stowers Institute. The title of her dissertation was “Drosophila CPEB, Orb2, a Putative Biochemical Engram of Long-term Memory”. Dr. Li. is a Postdoctoral research associate at the University of California San Francisco.
Prepared by:

V. Gustavo Blanco, M.D./Ph.D.
Professor and Kathleen M. Osborn Chair
Molecular & Integrative Physiology  
Chairs of the Department

E. B. Brown Jr., PhD  
Chair (1961-1973)

A. M. Thompson, PhD  
Interim Chair (1973-1976)

G. S. Greenwald, PhD  
Chair (1976-1993)

J. L. Voogt, PhD  
Chair (1993-2001)

P. D. Cheney, PhD  
Interim Chair /Chair (2001-2012)  
Kathleen M. Osborn Chair (2012-2014)

P. G. Smith, PhD  
Interim Chair (2014-2015)

V. G. Blanco, MD/PhD  
Interim Chair (2015-2016)  
Kathleen M. Osborn Chair (2016-Present)
In Honor of Physiology Donors and the Continued Impact that their Generosity Provides

Mr. James Osborn (1919 – 2018)

Mr. Osborn’s relationship with our department began through his daughter Kathleen. She developed an interest in science and biology in high school and while attending college at the University of Missouri. During the summers of 1968 and 1969, Kathleen worked in the reproductive physiology lab of Dr. Gilbert Greenwald at the KU School of Medicine. This experience was particularly meaningful to Kathleen and might have motivated her to enter a career in science had she not been taken prematurely in an automobile accident in 1970. At the time of her death, Kathleen was in her junior year at the University of Missouri.

Mr. Osborn and his late wife Marion, had such high regard for Dr. Greenwald, who died in 2004, and deep gratitude for Kathleen’s experience, that they made plans to benefit the medical center through KU Endowment. Their generosity started with the Kathleen M. Osborn Lectureship in 1971. This lectureship remains the longest running and most successful lectureship in the history of the medical center. It has attracted a long list of preeminent scientists from around the world and funds from the Kathleen Osborn Lectureship have also supported the annual Gilbert S. Greenwald Symposium.

In 2006, in memory of his beloved wife, Mr. Osborn established the Marion M. Osborn Professorship to support reproductive science within the department. The inaugural and current recipient is Dr. Leslie Heckert.

Mr. Osborn continued his generosity in honor of his daughter in 2012, establishing the Kathleen M. Osborn Chair to support the leadership position of the department. Dr. Paul Cheney was the inaugural recipient and in 2016 Dr. Gustavo Blanco was named the second Kathleen M. Osborn Chair.

This year we are again the thankful beneficiaries of Mr. Osborn’s philanthropy with the establishment of the Kathleen M. Osborn Fellowship in Reproductive Physiology. This fellowship will support graduate students in our department interested particularly in reproductive science. The fellowship will enable recipient students to discover the same
enthusiasm for science and love of learning that Kathleen found so many years ago. The first student to receive this great honor was Rikki Nelson.

William Biklen Pendleton attended Liberty High School and graduated in 1939 from Shattuck High School in Minnesota. After graduation he attended the University of Kansas and joined the Beta Theta Pi fraternity. William served during World War II in the U.S. Army from 1942-1946 as a Lieutenant in the 593rd engineer boat and shore regiment that was attached to the Australian 6th Division for the invasion of Borneo. Following the war, he resumed his studies at the University of Kansas. He graduated with an AB in economics in 1946. He was hired by the accounting department of Link Belt Company of San Francisco. Later, he moved back to Lawrence and farmed for five years. In 1957 he received his JD from the University of Kansas Law School. During his law practice he was a municipal court judge from 1959-1967, and president of the Douglas County Bar Association in 1981.

In 1958 he married Edith Cottom Livingston and adopted her two children Stephen and Helen. Together, they had a son Martin William Pendleton. Edith and Martin both passed away in 1974 in an automobile accident.

When William retired he remained active in the community. He participated in many clubs including the KU Chancellors Club, Elizabeth M. Watkins Society, the Vestry of Trinity Episcopal Church and was treasurer in the 1960’s, Lawrence Breakfast Optimist Club was Optimist of the Year in 1992 and 1997, the Midland Railway Historical Association where he was a director, and the American Legion. He volunteered at the Heartland Medical Clinic at the Leo Center and Friends of Hidden Valley. When he was not volunteering or participating in clubs William enjoyed collecting one-cylinder antique engines, traveling and riding steam trains around the world, and going on rail excursions in his own Fairmont inspection car.

He passed away at the age of 95 on May 15th, 2015 at Pioneer Ridge Assisted Living in Lawrence, KS. Pendleton donated his body to research.

Pendleton graciously donated to the University of Kansas Endowment Association. He wished for the money to be used in reproductive biology for family planning and birth control research and counseling.
Dr. Louis R. Fletcher (1892 – 1973)

"Life is so precious and exciting, and there is so much to be learned, that I dislike to waste a minute."
Louis R. Fletcher, M.D.

Dr. Louis R. Fletcher left an unforgettable and generous mark on the University of Kansas. Described as a farm boy from Harper, Kansas, Dr. Louis R. Fletcher attended the University of Kansas and Southwestern College for medical school. Hardworking, humble, and adventurous are just a few words to describe the life Dr. Louis R. Fletcher lived. Dr. Fletcher was a modest man who worked extremely hard for his opportunities and income. Throughout college he paid for his expenses by washing dishes, lawn keeping, and working wheat fields. Additionally, he took breaks in his schooling to save money by working in various employment opportunities in Alaska including working in the gold mines, ore processing mills, and as a bridge carpenter. He returned to KU for the 1917-18 school year and then finished his last 2 years of education at Rush Medical College of the University of Chicago where he received his degree in medicine.

He spent much of his professional career (26 years) working for the United Fruit Company in hospitals in Panama, Guatemala, and Honduras. He served his country as a commissioned Lieutenant Commander in the Navy. Additionally, he also served as chief of surgery at the Camp White Naval Hospital in Medford, Oregon. He had a lifelong love of learning. He returned to KU for postgraduate study in anatomy, not for a degree, but for the inner desire to learn.

Dr. Fletcher rarely stayed idle in his work as he then served in many different medical positions. His adventurous spirit served as a driving factor as he traveled and worked in many different countries. He returned to the United Fruit Company for a few years, served at a hospital at Superior, Arizona, worked as the medical superintendent of the Valdez Community Hospital, was the project physician at the Naval Base at Point Barrow, and served as a surgeon for a construction company in the Marshall Islands. Following retirement from the medical profession, Dr. Fletcher spent time traveling to grand places. He began by sailing from New Orleans to South Africa and then continued his travels to Asia, Australia, and New Zealand.

Throughout his life, Dr. Louis R. Fletcher became intrigued with the prospect of being a “millionaire.” Fletcher made this happen through “frugality, skimping, and strict economy.” He invested his money and was very conservative with his spending and lifestyle. He lived modestly, ate low cost substantial food, and chose to travel by bus instead of train or plane. Dr. Fletcher humbly achieved that goal of a million dollars, in which he then said, “As you know, I have always dreamed of acquiring a million dollars. This has finally been accomplished and today I have given this million dollars to Kansas University, the school that I love so deeply and which has had such a tremendous good influence on my life. I
have done this with the greatest of pleasure and satisfaction.” His donation to the Kansas University Endowment Association has provided support for research in physiology, biochemistry, pharmacology, and anatomy at the University of Kansas Medical Center as well as construction of the Dr. Louis R. Fletcher Research Laboratories. The physiology department wants to extend a gracious and continued thank you to Dr. Louis R. Fletcher for the opportunities and support his generosity continues to provide.
Dr. Walter Joseph Meek (1878 – 1963)

Dr. Walter Joseph Meek demonstrated academic excellence throughout his life. Dr. Meek and his family’s generosity is continually valued and honored in the Physiology Department. Walter Joseph Meek was born in Dillion, KS in 1878. At age eight, Dr. Meek’s father passed away followed by his mother’s passing a few years later. Following their passing, he was raised with his first cousins. From a young age, Dr. Meek showed strong educational aspirations.

Dr. Meek graduated from the University of Kansas in 1902 where he was senior class president and editor of the school paper. As of 1983, Dr. Meek held the highest-grade point average of a University of Kansas Graduate. He continued his educational pursuits at Penn College and the University of Chicago obtaining his Ph.D. in Physiology in 1909. While pursuing his Ph.D. he taught at Penn College from 1903 – 1908 where he attained the rank of professor of biology. Dr. Meek then began teaching at the University of Wisconsin. He served as instructor in physiology (1908-1910), assistant professor (1910-1912), associate professor (1912-1918), and professor (1918-1948). He then assumed the position of chairman of Physiology Department until his retirement in 1948.

Additional professional accomplishments at the University of Wisconsin include assistant dean of medicine from (1920 – 1942), acting dean (1942 – 1945), and associate dean from 1945 until his retirement. Dr. Walter Joseph Meek also held the commission of major in the Chemical Warfare Service during the World War I. A chemical warfare unit was set up at the University, and Dr. Meek assisted with discovering the biological effects of mustard gas, lewisite, and phosgene.

Dr. Meek married Crescence Eberley on December 26, 1906. Six years later, they had their first child, Joseph Walter Meek, born in 1912. Joseph became a law school professor at the University of New Mexico. Their second child, Mary Crescence Meek, born in 1917, worked as a stewardess for American Airlines. Their third and final son, John Sawyer Meek, was born a year later in 1918. He became a professor of chemistry at the University of Colorado. The Meek family was very adventurous, embarking on many different outdoor endeavors. They visited Switzerland to hike over the high passes and climbed Pikes Peak. They also spent time at Yellowstone and Glacier National Parks. Additionally, Dr. Meek enjoyed side hobbies including photography, gardening, repairing and refinishing antique furniture, and collecting shells and stamps.

Dr. Meek's contributions to the study of the history of medicine are nothing short of extraordinary. His bibliography consisted of 110 scientific papers and one of his most clinically relevant contributions was the discovery, in collaboration with Maurice H.
Seevers and Ralph M. Waters, that catecholamines cause ventricular fibrillation in dogs anesthetized with cyclopropane.

Upon Dr. Meek’s retirement in 1948 he remained at the University of Wisconsin as a research professor for an additional year. He continued to lecture at the University of Texas and served on a committee to establish a medical school in Gainesville, Florida. His death occurred quietly in 1963 at the age of 84. Mrs. Meek passed away in 1973 at the age of 92. His ashes are buried with his wife’s in her family’s burial plot in Pennsylvania. The Physiology Department extends remembrance and sincere gratitude to Dr. Meek and his family for the generosity bestowed upon the Physiology Department. The allocation of funds is still greatly valued and utilized within the Department to continue Dr. Meek’s passion of advancing medicine.
Abrahams Lectureship Established
Mr. J. Hambleton Abrahams (1913 – 1996)

Abrahams and his wife, Julie, lived in Topeka, where he was born and raised. Mrs. Abrahams was a KU Endowment Association trustee. He attended Chattuck Military Academy, Northwestern University and graduated from the University of Chicago with a bachelor’s degree in philosophy. In 1978 he received an honorary doctor’s degree in Business from Washburn University. He served during World War II in the U.S. Navy and later in the Naval Reserve as an officer. Abrahams was active throughout the community. Serving as an officer or member on the board of banks, hospitals, the chamber of commerce, the Red Cross, and many other organizations.

Security Benefit is the parent company of the Security Benefit Group of Companies, a financial services organization that maintains more than $13 billion of life insurance in force and has $2 billion in assets under management. After joining the company in 1935 he later held the positions of secretary treasurer, executive vice president, president, and chairman. Abrahams encompassed the leadership skills to grow Security Benefit from a small, midwestern company to one of the largest life insurance companies in the United States.

The Security Benefit Group of Companies headquartered in Topeka, started an annual gift of $7,500 to the KU Endowment Association to fund the J Hambleton Abrahams lectureship in Physiology at KUMC. The lecture series honors Abrahams’s 50 years with Security Benefit.

According to Gilbert S. Greenwald, Ph.D., chairman of the Physiology Department in KUMC: “the funds will be used to bring annually to the center a person of national and international reputation in one of the physiology subspecialties: cardiovascular physiology, renal physiology, neurophysiology, endocrinology, biophysics or epithelial transport physiology.”

Mr. James Osborn (1919 – 2018)

Born December 18th 1919.

Jim Osborn 98, passed away on February 6th, 2018 at the Kahala Nui skilled nursing unit in Honolulu, Hawaii.

All members of our department express their sadness and deepest sympathy as we remember our benefactor, who always showed great interest and provided valuable and strong support for the research in reproductive physiology performed in our department.

A memorial service was held March 12th, 2018 at the National Memorial Cemetery of the Pacific in Honolulu Hawaii.

Floral arrangement sent from the Department of Molecular & Integrative Physiology to the service

A former student at KUMC, Amy Cantilena earned her doctorate in Molecular and Integrative Physiology in 2017.

As an undergraduate student, Amy attended Villanova University where she received her B.S. in Chemistry. In 2005 she began at the Liver Diseases Branch of the National Institute of Diabetes and Digestive and Kidney Diseases in a biochemistry laboratory studying hepatitis B virus. After receiving a post-baccalaureate intramural research training award, she joined Dr. Cynthia Dunbar’s laboratory in the Hematology Branch of the National Heart, Lung and Blood Institute. Together they worked on two projects; one of them was directed to develop lentivirus to reprogram somatic cells into pluripotent stem cells. Her second project was oriented to determine if membrane polarity of hematopoietic progenitor cells was necessary for engraftment in a transplant model.

She was later accepted into KUMC’s M.D./Ph.D. program and began medical school in August 2010. During her time at KUMC she researched the differences of immune-modulating properties of mesenchymal stem cells (MSC). She completed her first semester as a third-year medical student and completed her Ph.D. with Dr. Buddha Dawn this past spring.

Amy passed away on December 16th, 2017 in a tragic plane accident along with her father Dr. Louis Cantilena. Louis was a professor of medicine in clinical pharmacology at the Uniformed Services University of Health Sciences in Bethesda, Maryland. Surviving are his wife Kathleen “Cathy” Conry Cantilena, two sisters; and her brother. Amy and Louis were laid to rest Thursday, December 28th, 2017 at All Souls Cemetery in Germantown, Maryland.
Department of Molecular & Integrative Physiology Faculty
2017 – 2018

(Left to right): Melissa Larson, Phil Lee, Ning Wang, John Thyfault, Lane Christenson, Andrei Belousov, Sam Enna, Steven LeVine, Gustavo Blanco, Michael Wolfe, E. Matthew Morris, Warren Nothnick, Paige Geiger, John Stanford

Not Pictured:
Vargheese Chennathukuzhi, Leslie Heckert, Sumedha Gunewardena, Peter Smith, John Wood
Department of Molecular & Integrative Physiology Graduate Students  
2017 – 2018

Front Row (left to right): Consuelo Perez Sanchez, Page Hayley, Fatimah Aljubran, Preethi Kunchala

Back Row (left to right): Cameron Fox, Alex Von Schulze, Adrianna Maurer, Kelly Fuller, Ashley Cloud, Rikki Nelson, Younshim Park, Elizabeth Thoenen, Ayushi Vashisht

Not Pictured: Zahraa Alali, Bradley Lamb, Jianzheng Wu
DEPARTMENT ROSTER
July 1, 2017 – June 30, 2018

a. Faculty

Primary Appointment in Physiology
V. Gustavo Blanco, M.D., Ph.D., Professor & Kathleen M. Osborn Chair
Andrei Belousov, Ph.D., Associate Professor
Vargheese M. Chennathukuzhi, Ph.D., Associate Professor
Lane K. Christenson, Ph.D., Associate Professor
Salvatore J. Enna, Ph.D., Professor and Associate Dean for Research and
  Graduate Education
Paige C. Geiger, Ph.D., Associate Professor
Leslie L. Heckert, Ph.D., Marion M. Osborn Professor for Reproductive Sciences
Phil Lee, Ph.D., Associate Professor
Steven M. LeVine, Ph.D., Professor
Warren Nothnick, Ph.D., Professor and department Vice Chair
Peter G. Smith, Ph.D., John H. Wineinger, Professor, Senior Associate Dean for
  Research
John A. Stanford, Ph.D., Associate Professor
John P. Thyfault, Ph.D., Associate Professor
Ning Wang, Ph.D., Assistant Professor
Michael W. Wolfe, Ph.D., Associate Professor
John G. Wood, Ph.D., Professor and Director of Educational Programs

Emeritus
Paul D. Cheney, Ph.D., Professor
Norberto C. Gonzalez, M.D., Professor
Thomas J. Imig, Ph.D., Professor
Lawrence P. Sullivan, Ph.D., Professor
Joseph S. Tash, Ph.D., Professor
Paul F. Terranova, Ph.D., Professor
James L. Voogt, Ph.D., Professor

Stowers Affiliates
Peter Baumann, Ph.D., Professor
Ariel Bazzini, Ph.D., Assistant Professor
Randal Halfmann, Ph.D., Assistant Professor
Scott Hawley, Ph.D., Professor
Sue Jaspersen, Ph.D., Associate Professor
Nicolas Rohner, Ph.D., Assistant Professor
Kausik Si, Ph.D., Professor
Sarah Zanders, Ph.D., Assistant Professor
Research Track Faculty
Sumedha Gunewardena, D.Phil., Research Assistant Professor
Melissa Larson, Ph.D., Research Assistant Professor
E. Matthew Morris, Ph.D., Research Assistant Professor

Joint Appointment in Physiology
Shrikant Anant, Ph.D., (Cancer Biology)
Richard Barohn, M.D., (Neurology)
Sandra Billinger, PT, Ph.D., FAHA, (Physical Therapy and Rehabilitation Science)
William Brooks, Ph.D., (Neurology, Director of Hoglund Brain Imaging Center)
Jeffrey Burns, M.D., (Neurology)
Mark E. Chertoff, Ph.D., (Hearing and Speech)
In-Young Choi, Ph.D., (Neurology)
Animesh Dhar, Ph.D., (Cancer Biology)
Navneet Dhillon, Ph.D., (Internal Medicine – Pulmonary Division)
Shawn Frost, Ph.D., (Physical Therapy and Rehabilitation Science)
Tomoo Iwakuma, M.D., Ph.D., (Cancer Biology)
Jill Jacobson, M.D., (Pediatrics)
Benyi Li, Ph.D., (Urology)
Joan Lewis-Wambi, Ph.D., (Cancer Biology)
Joshua Mammen, M.D., (General Surgery)
Courtney Marsh, M.D., M.P.H. (Obstetrics and Gynecology, Reproductive Endocrinology and Infertility Division)
Ajay Nangia, M.B.,B.S., FACS, (Urology)
Jules Nazzaro, M.D., (Neurosurgery)
Randolph Nudo, Ph.D., (Physical Medicine and Rehabilitation)
Janet Pierce, Ph.D., ARNP, CCRN, (Nursing)
Jeff Radel, Ph.D., (Occupational Therapy)
William (Zhiming) Suo, M.D., (Neurology)
Russell H. Swerdlow, M.D., (Neurology)
Shahid Umar, Ph.D., (Surgery)
Darren Wallace, Ph.D., (Nephrology and Hypertension)
Carl Weiner, M.D., M.B.A., (OB/GYN)
Danny Welch, Ph.D., (Cancer Biology)
Alan Yu, MB, B.Chir., (Internal Medicine, Nephrology Division)
<table>
<thead>
<tr>
<th>b. Graduate Students</th>
<th>Joined Physiology</th>
<th>Prelims</th>
<th>Candidate</th>
<th>Requirements Fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zahraa Alali</td>
<td>08/15</td>
<td>05/16</td>
<td>Ph.D.</td>
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<tr>
<td>Fatimah Aljubran</td>
<td>08/17</td>
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<td>Ph.D.</td>
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<tr>
<td>Ashley Archer (Ward)</td>
<td>08/14</td>
<td>04/15</td>
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<tr>
<td>Li Chen</td>
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<td>Ashley Cloud</td>
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<td>Joshua Curry</td>
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<td>Blake Ebner</td>
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<td>Cameron Fox</td>
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<td>Kelly Fuller</td>
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<td>Page Hayley</td>
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<td>Liying Li</td>
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<tr>
<td>Rikki Nelson</td>
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<td>Zelha Nil</td>
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<tr>
<td>Younshim Park</td>
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<td>Archana Raman</td>
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<tr>
<td>Diego Paez- Moscoso</td>
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<td>Consuelo Perez Sanchez</td>
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<td>Alex Von Schulze</td>
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<tr>
<td>Elizabeth Thoenen</td>
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<tr>
<td>Jianzheng Wu</td>
<td>08/16</td>
<td>05/18</td>
<td>Ph.D.</td>
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</tr>
</tbody>
</table>
c. Postdoctoral Fellows
Pavla Brachova, Ph.D.
Colin McCoin, Ph.D.
Fu Chen (Jane) Yang, Ph.D.
Yi Feng, Ph.D.
Praveen Chakravarthi Ph.D.
Chu- Yu Lee Ph.D.
Sean Riordan Ph.D.
Xiaoyu Zhang Ph.D.
Aritra Bhattacherjee Ph.D.

d. Temporary Students
Marco Tulio Correa Pessoa
Abdouili Njai
India Barnett
Ganesh Aruna
Abril Lara
Kavya Shivashankar
Sean Ellis
Lauren Stubbs
Tyler Elmendorf
Jonathan Warren
Emily Fey
Emma Renwick
e. Research Staff
Gladis Sanchez, M.D. – Research Associate
Jana Belousova, M.S. – Senior Research Associate
Jake Cushing – Research Technician
Jeffrey McDermott – Senior Research Associate
Julie Allen – Senior Research Associate
Mariad Thatcher – Research Associate at Hoglund Brain Imaging Center
Naomi Holloway – Research Assistant
Peter Adany – Senior Research Scientist at Hoglund Brain Imaging Center
Theodore Budden – Part-time Research Technician
Xiaoman Hong, M.D. – Senior Research Associate
Anuradha Chakrabarty, Ph.D. – Senior Scientist
Sarah Tague, Ph.D. – Senior Scientist
Fengyan Deng – Research Assistant
Julia Draper – Research Associate
Clara Amat Fernandez – Clinical Research Coordinator
Fnu Sornakala Ganeshkumar – Research Assistant
Amanda Graham – Research Associate
Lesya Holets, Ph.D. – Senior Scientist
Roberto Noland Mora – Research Technician
Amamika Ratri – Research Technician (part-time)
Kimberly Stanford – Director of Operations
Catherine Traxler – Research Assistant
Zhaozhui Liao, M.D. – Research Associate
Dora Krizsan-Agbas – Senior Scientist
Illya Bronshteyn – Research Associate
Bailey Bye – Research Associate
Fengyan Deng – Research Assistant
Julia Draper – Research Associate
Clara Amat Fernandez – Clinical Research Coordinator
Fnu Sornakala Ganeshkumar – Research Assistant
Amanda Graham – Research Associate
Lesya Holets, Ph.D. – Senior Scientist
Roberto Noland Mora – Research Technician
Amamika Ratri – Research Technician (part-time)
Kimberly Stanford – Director of Operations
Catherine Traxler – Research Assistant
Zhaozhui Liao, M.D. – Research Associate
Dora Krizsan-Agbas – Senior Scientist
Illya Bronshteyn – Research Associate
Bailey Bye – Research Associate
f. Support Staff
Alexis Battershell – Student Assistant
MacKenzie Boone – Student Assistant
Liam Higgins – Accountant
Lynn LeCount – Managing Editor
Jennifer McNichols – Editorial Coordinator
Shari Standiferd – Director of Operations
Jennifer Wallace – Accountant
Activities of Graduate Students

Zahraa Alali

Publications:

Abstracts:

Presentations:
The 14th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine: Oral Presentation. The University of Kansas Medical Center, Kansas City, KS. October 19 – 20, 2017

Seminars:
A novel Role of Ribosomal Protein RPLP1 in Endometriosis Pathophysiology/The University of Kansas Medical Center, Molecular and Integrative Physiology Departmental seminar series, Kansas City, KS/ February 29, 2018, Kansas City, KS.

Meetings Attended:
65th Annual Meeting for the Society for Reproductive Investigation// San Diego, CA /March 7 – 10, 2018, San Diego, CA

Honors/Awards:
SRI- IN- Training Investigator Travel Award, Society for Reproductive Investigation, February 2018
Physiology Society Travel Award, The University of Kansas Medical Center, March 2018
Trainee Oral Presentation Award, The 14th Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine, Kansas City, KS, October 2017
Past President – KUMC Physiology Society
**Ashley Cloud**

Presentations:
- Student Research Forum: Oral Presentation. KUMC. April 2nd, 2018

Meetings Attended:
- Greenwald Symposium. KUMC. October 19 – 20, 2017

Honors/Awards:
- Physiology Society, Crescent E. Meek Excellence Award
- Top Oral Presentation in Molecular and Integrative Physiology, Student Research Forum

Other:
- President – KUMC Physiology Society

**Page Hayley**

Publications:

Other Activities:
- Acceptance into the Kansas University Training Program in Neurological and Rehabilitation Sciences (T32 Program), an institutional training program funded by the National Institutes of Health

**Rikki Nelson**

Honors/Awards:
- Kathleen M. Osborn Fellowship in Reproductive Physiology Fall 2017
Consuelo Perez Sanchez

Publications:

Elizabeth Thoenen

Publications:

Presentations:
  KUCC Cancer Biology Program Meeting: Poster Presentation. The Embassy Suites Kansas City. June 8, 2018
  Student Research Forum – Poster Presentation. KUMC. April 2 – 3, 2018
  University of Kansas Cancer Center Symposium- Poster Presentation. University of Kansas Edwards Campus. December 1, 2017
  Greenwald symposium- Poster Presentation. KUMC. October 19 – 20, 2017

Meetings Attended:
  KUCC Cancer Biology Program Meeting/The Embassy Suites Kansas City (Olathe Hotel & Conference Center)/June 8, 2018
  Student Research Forum/University of Kansas Medical Center/ April 2 – 3, 2018
  University of Kansas Cancer Center Symposium/University of Kansas Edwards Campus/December 1, 2017
  Greenwald Symposium/University of Kansas Medical Center/ October 19 – 20, 2017

Other:
  Social Chair – KUMC Physiology Society
Alex Von Schulze

Publications:


Presentations:

KUMC Student Research Forum: Poster Presentation. Kansas City, KS. April 26, 2018
The 2017 Saltin International Graduate Course in Exercise & Clinical Physiology: Poster and Oral Presentation. Ottawa, Ontario, Canada. September 18 – 21, 2017

Meetings Attended:

Keystone Symposia- Bioenergetics and Metabolic Disease: Keystone, CO. January 21 – 25, 2018
The 2017 Saltin International Graduate Course in Exercise & Clinical Physiology: Ottawa, Ontario, CAN. September 18 – 21, 2017

Honors/Awards:

KUMC Student Research Forum: Group 2 Poster Session – 1st place
Awarded the Self Graduate Fellowship
Jianzheng Wu

Publications:

Presentations:
Student Research Forum: Oral Presentation. KUMC, KS. April 2nd, 2018
Protein Homeostasis in Health and Disease: Poster Presentation. Cold Spring Harbor Laboratory, NY. April 19th, 2018

Seminars:
“Characterizing self-assembly of AB42 mutants in vivo”, Stowers Institute, MO. August 10th, 2018

Meetings Attended:
Protein Homeostasis in Health and Disease, Cold spring Harbor Laboratory, NY. April 17 – 21, 2018.

Honors/Awards:
ASCB (American Society for Cell Biology) Travel Award 2017
COURSES TAUGHT

Medical Curriculum Core Courses
CORE 815 – *Cardiopulmonary*. Dr. Wood, Dr. Geiger, Dr. Gonzalez, and Dr. Smith

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

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

CORE 830 – *Reproduction and Sexuality*. Dr. Wolfe

CORE 840 – *Brain and Behavior*. Dr. LeVine and Dr. Stanford

CORE 860 – *Integration and Consolidation*, Dr. Blanco and Dr. Wood

Departmental Graduate Courses
PHSL 800 – *Medical Physiology*. Dr. Smith

PHSL 834 – *Reproductive Physiology*. Dr. Chennathukuzhi

PHSL 835 – *Integrative Physiology of Exercise*. Dr. Geiger, Dr. Thyfault, and Dr. Gonzalez

PHSL 842 – *Comprehensive Human Physiology*. Dr. Belousov, Dr. Christenson, Dr. Chennathukuzhi, Dr. Geiger, Dr. LeVine, Dr. Wolfe, Dr. Heckert and Dr. Nothnick

PHSL 843 – *Physiology of Disease*. Dr. LeVine, Dr. Nothnick, Dr. Christenson, Dr. Chennathukuzhi, Dr. Thyfault, Dr. Wolfe, Dr. Stanford, Dr. Heckert, Dr. Geiger, and Dr. Blanco

PHSL 846 – *Advanced Neuroscience*. Dr. Stanford, Dr. Cheney, Dr. Lee, and Dr. Smith

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

PHSL 851 – *Seminar Course*. Dr. Christenson
**IGPBS Courses**
GSMC 851 – *Molecular Genetics*. Dr. Chennathukuzhi, Dr. Christenson

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

GSMC 854 – *Cell Communication*. Dr. Nothnick

GSMC 852 – *Introduction to Biomedical Research*. Dr. Christenson

GSMC 856 – *Introduction to Research Ethics*. Dr. Wolfe
DEPARTMENT SEMINARS

The Department Seminar program was directed by Dr. Vargheese Chennathukuzhi. Forty-five speakers made presentations, ten of which were from outside the university. In addition to support from the department, the J. Hambleton Abrahams Lectureship in Physiology Endowment Fund, Kathleen M. Osborn Memorial Lectureship in Physiology Endowment Fund, the Office of the Dean of the School of Medicine, the KIDDRC, Landon Center of Aging and the Center for Reproductive Sciences, Dr. Louis R. Fletcher Endowment Physiology Fund, and the School of Medicine Bohan Visiting Professor Program made important financial contributions to our program.

July 31, 2017
Faculty Candidate Seminar
Ning Wang, Ph.D.
Assistant Professor Obstetrics
Harvard Medical School
Massachusetts General Hospital
Boston, MA
Funded by the Dr. Louis R. Fletcher Endowment Physiology Fund

“Mechanism of Meiotic Initiation in Mammalian Germ Cells”

August 28, 2017
Faculty Candidate Seminar
Lacey Luense, Ph.D.
Post-Doctoral Fellow
Department of Cellular & Developmental Biology
University of Pennsylvania
Philadelphia, PA
Funded by the Dr. Louis R. Fletcher Endowment Physiology Fund

“Epigenetic Regulation of Histone Eviction During Spermatogenesis”

September 11, 2017
Andrei Belousov, Ph.D.
Associate Professor
Molecular & Integrative Physiology
KUMC

“Complex Contributions of Neuronal Gap Junctions to Cell Death and Survival”

September 18, 2017
Alexey S. Ladokhin, Ph.D.
Associate Professor
Biochemistry and Molecular Biology
KUMC

“Protonation-Dependent Conformational Switching in Membrane Proteins”
September 25, 2017
Chad Slawson, Ph.D.
Associate Professor
Biochemistry and Molecular Biology
KUMC

“New Insights into the Interplay Between O-GlcNAc and Metabolism”

October 2, 2017
R. Scott Rector, Ph.D.
Assistant Professor
Nutrition & Exercise Physiology and Medicine-GI
University of Missouri, Columbia, MO
Hosted by Dr. John Thyfault, Ph.D.
Associate Professor
Molecular and Integrative Physiology
KUMC

“Hepatocellular eNOS and NAFLD Susceptibility”

October 9, 2017
Thomas Mueller, Ph.D.
Research Assistant Professor
Biology
Kansas State University, Manhattan, KS
Hosted by Dr. John Stanford, Ph.D.
Associate Professor
Molecular and Integrative Physiology
KUMC

“The Zebrafish Amygdaloid Complex-Evolution and Deep Homologies with Mammals”

October 16, 2017
Sean M. Riordan, Ph.D.
Research Assistant Professor
Pediatrics
Division of Child Neurology
Children’s Mercy Kansas City
Hosted by Dr. John Stanford
Associate Professor
Molecular and Integrative Physiology
KUMC

“Variations in Variants and Variability: Tackling Genetic Susceptibility to Bilirubin”

October 23, 2017
Joshua Curry
Graduate Student
Molecular & Integrative Physiology
KUMC

“Claudin-2, Calcium, and Kidney Stones: A Tale of Two Tissues”
October 30, 2017
Sarah Dallas, Ph.D.
Lee M. and William Lefkowitz Endowed Professor
University of Missouri, Kansas City
School of Dentistry, Department of Oral and Craniofacial Sciences
Hosted by Dr. Lane Christensen
Associate Professor
Molecular and Integrative Physiology
KUMC

“Extracellular Vesicles as a Mechanism for Cell-Cell Communication in Bone”

November 6, 2017
Panying Rong, Ph.D.
Assistant Professor
Department of Speech-Language-Hearing and Disorders
University of Kansas
Hosted by Dr. John A. Stanford
Associate Professor
Molecular & Integrative Physiology
KUMC

“Toward better understanding and assessment of motor speech disorders- The application of biobehavioral and quantitative approaches”

November 13, 2017
School of Medicine Bohan
Distinguished Lecturer
Christian C.G. Naus, Ph.D.
Professor
Department of Cellular & Physiological Sciences
Canada Research Chair in Gap Junctions & Disease
The University of British Columbia
Vancouver, British Columbia
Hosted by Dr. Andrei Belousov
Associate Professor
Molecular and Integrative Physiology
KUMC
Sponsored by the School of Medicine Bohan Visiting Professor Program and the J. Hambleton Abrahams Lectureship in Physiology Endowment Fund

“Can Connexins Fill the Gap in Stroke Therapeutics?”
November 27, 2017
A.J. Mellott, Ph.D.
Research Assistant Professor
Plastic Surgery
KUMC
“Orchestrating the Extracellular Environment to Induce Stem Cell Differentiation and Tissues Repair”

December 4, 2017
Kathleen M. Osborn Memorial Lectureship
Jerome F. Strauss, M.D., Ph.D.
Professor
Department of Obstetrics and Gynecology, Division of Reproductive Biology & Research
Virginia Commonwealth University
Richmond, Virginia
Fundied by the Kathleen M. Osborn Memorial Endowment Fund
Hosted by Dr. Leslie Heckert, Marion M. Osborn Professor for Reproductive Sciences, Physiology
KUMC
Dr. Lane Christenson
Associate Professor
Molecular and Integrative Physiology
KUMC
“Preterm Birth: Genes and the Environment”

December 11, 2017
In-Young Choi, Ph.D.
Associate Professor
Director of Magnetic Resonance Science
Hoglund Brain Imaging Center
KUMC
“Magnetic resonance spectroscopy (MRS) of the living brain: What it can tell us”

December 18, 2017
Ashley E. Archer
Graduate Student
Molecular & Integrative Physiology
KUMC
“Heat Shock Proteins in Liver Metabolism”
January 8, 2018  
M.A. Karim Rumi, Ph.D.  
Associate Professor  
Department of Pathology and Laboratory Medicine  
Institute for Reproductive Health and Regenerative Medicine  
KUMC  
“Role of ESR2 in female fertility”

January 22, 2018  
Phil Lee, Ph.D.  
Associate Professor  
Director of Magnetic Resonance Technology  
Hoglund Brain Imaging Center  
KUMC  
“Tissue-type specific measurement of neurochemicals and cerebral blood flow using MRI and MRS”

January 29, 2018  
Blake Ebner  
Graduate Student  
Molecular and Integrative Physiology  
KUMC  
“The Role of Putative Prion-Like Protein, CPEB2, in Translation and Long-Term Memory”

January 29, 2018  
Dissertation Defense, 1:30 p.m. Beller Conference Center  
Ashley Archer  
Graduate Student  
Molecular & Integrative Physiology  
KUMC  
“Heat Shock Protein 72 Regulation of Metabolism”

February 5, 2018  
Leonard Dobens, Ph.D.  
Professor  
School of Biological Sciences  
Division of Molecular Biology and Biochemistry  
University of Missouri- Kansas City  
Hosted by Andrei Belousov, Ph.D.; Associate Professor  
Department of Molecular and Integrative Physiology  
KUMC  
“Complementary screens for new genes mediating the ability of the pseudokinase Tribbles to antagonize insulin signaling”
February 12, 2018
Elin Grundberg, Ph.D.
Robert D. Harding & William F. Bradley, Jr. Endowed Chair in Genomic Research Faculty
Children’s Research Institute, Children’s Mercy Hospital Kansas City
Associate Professor
Department of Pediatrics
University of Missouri- K.C. School of Medicine
Hosted by John Thyfault, Ph.D.; Associate Professor, Molecular and Integrative Physiology, KUMC and Leslie Heckert, Ph.D.; Marion M. Osborn Professor for Reproductive Sciences, Molecular and Integrative Physiology
KUMC

“Capturing functional epigenomes for insight into metabolic disease susceptibility”

February 19, 2018
Zelha Nil
Graduate Student
Molecular and Integrative Physiology
KUMC

“Regulated assembly of a prion-like phosphatase, CG5830, controls its phosphatase activity and embryonic development”

February 26, 2018
Zahraa Alali
Graduate Student
Department of Molecular and Integrative
KUMC

“A novel Role or Ribosomal Protein RPLP1 in Endometriosis Pathophysiology”

March 5, 2018
School of Medicine Bohan Distinguished Lecturer
Paul J. Fadel, Ph.D.
Director, Human Neural Cardiovascular Control Lab
Professor, Department of Kinesiology
Associate Dean for Research, CONHI
University of Texas Arlington
Arlington, TX
Hosted by John Thyfault, Ph.D.; Associate Professor
Department of Molecular and Integrative Physiology
KUKMC
Sponsored by the School of Medicine Bohan Visiting Professor Program and the J. Hambleton Abrahams Lectureship in Physiology Endowment Fund

“Neural Cardiovascular Regulation in Type 2 Diabetes Patients”
March 12, 2018
David Schulz. Ph.D.
Associate Professor
Division of Biological Sciences
University of Missouri- Columbia
Hosted by Andrei Belousov, Ph.D.;
Associate Professor
Department of Molecular and Integrative
Physiology
KUMC

“Plasticity in the nervous system in
response to injury: compensatory and
pathological”

April 2, 2018
Liquin Zhao, Ph.D.
Assistant Professor
Department of Pharmacology &
Toxicology
School of Pharmacy
University of Kansas

“Targeting Glycolysis to Promote Brain
Resilience against Alzheimer’s Disease”

April 9, 2018
Julie Kim, Ph.D.
Susy Y. Hung Associate Professor
Obstetrics and Gynecology
Division of Reproductive Science in Medicine
Robert H. Lurie Comprehensive Cancer Center
Northwestern University, Chicago, IL
Sponsored by the J. Hambleton Abrahams
Lectureship in Physiology Endowment Fund
Hosted by The Physiology Society
Department of Molecular and Integrative Physiology
KUMC

“Redox Dysregulation Promotes
Survival of Uterine Fibroids”

April 16, 2018- Cancelled
Sarah Robbins Ph.D.
Assistant Professor
Department of Philosophy
University of Kansas- Lawrence

“The Philosophy of Neuroscience: How
Optogenetics is revolutionizing the
Study of Memory”
April 23, 2018-Postponed to Fall 2018
School of Medicine Bohan Distinguished Lecturer
Richard A. Cerione, Ph.D.
Goldwin Smith Professor of Pharmacology and Chemical Biology
Departments of Molecular Medicine & Chemistry and Chemical Biology
Cornell University, Ithaca, NY
Hosted by Lane Christenson, Ph.D.
Associate Professor
Department of Molecular and Integrative Physiology
KUMC
Sponsored by the School of Medicine Bohan Visiting Professor Program and the J. Hambleton Abrahams Lectureship in Physiology Endowment Fund

“How Rho GTPases led us to new areas of biology and disease”

May 3, 2018
James L. Voogt Lecture in Neuroendocrinology
Jon D. Levine, M.D., Ph.D.
Professor
Department of Medicine, Oral and Maxillofacial Surgery, and Physiological Nursing Vice Chair Oral Surgery
Scientific Investigator, The Rosalind Russell Medical Research Center for Arthritis
University of California, San Francisco
Sponsored by the Institute for Reproductive Health & Regenerative Medicine, James L. Voogt Lectureship Fund, Department of Molecular and Integrative Physiology, and the Bohan Visiting Professor Program

“Sex, Drugs, and Pain”
May 4, 2018
Exercise is Medicine Conference
“Benefits of Exercise for Aging”

Marcus Bamman, Ph.D.
Professor
Departments of Physiology & Biophysics, Medicine
Nutrition Sciences Director, Center for Exercise Medicine
University of Alabama Birmingham School of Medicine
Hosted by John Thyfault, Ph.D., and Paige Geiger, Ph.D.; Associate Professors
Department of Molecular and Integrative Physiology
KUMC

“Promoting Healthy Aging of Skeletal Muscle through Exercise”

Lara Boyd, P.T., Ph.D.
Canada Research Chair (Tier II)
Neurobiology of Motor Learning Director, Brain Behavior Laboratory
University of British Columbia
Hosted by John Thyfault, Ph.D. and Paige Geiger, Ph.D.; Associate Professors Department of Molecular and Integrative Physiology
KUMC

“High Intensity Exercise Facilitates Motor Learning: A Novel Intervention for Stroke?”

Susan Gilshrist, M.D.
Associate Professor
Department of Clinical Cancer Prevention and Cardiology
Hosted by John Thyfault, Ph.D. and Paige Geiger, Ph.D., Associate Professors Department of Molecular and Integrative Physiology
KUMC

“Cardiorespiratory fitness to mitigate cardiovascular risk in cancer patients”
May 7, 2018
Eduardo Rosa-Molinar, Ph.D.-Cancelled
Director
Microscopy & Analytical Imaging
Research
Resource Core Laboratory
Professor
Pharmacology and Toxicology; Neuroscience
Graduate Program
University of Kansas- Lawrence

Dissertation Defense. 2:00 p.m. Lied Auditorium
Joshua Curry
Graduate Student
Molecular and Integrative Physiology
KUMC

“Deciphering Synaptic Diversity”

May 11, 2018
Dissertation Defense, 1:30 p.m. Lied Auditorium
Blake Ebner
Graduate Student
Molecular and Integrative Physiology
KUMC

“The Role of Claudin-2 in the Proximal Tubule and Kidney Stone Disease”

May 14, 2018
School of Medicine Bohan
Distinguished Lecturer
Alan Spector, Ph.D.
Distinguished Research Professor
Department of Psychology and Program in Neuroscience
Florida State University, Tallahassee, FL
Hosted by John Thyfault, Ph.D., Associate Professor
Department of Molecular and Integrative Physiology
KUMC
Randolph J. Nudo, Ph.D., Professor & Vice Chair
Research Department of Rehabilitation Medicine and Landon Center of Aging
Sponsored by the School of Medicine Bohan Visiting Professor Program and the J. Hambleton Abrahams Lectureship in Physiology Endowment Fund

“Gastric Bypass: Taste, Palatability, and Food Selection”
May 21, 2018
Voyages Seminar Series
Michael J. Parmely, Ph.D.
Professor and Former Chair
Microbiology, Molecular Genetics and Immunology
KUMC

“Bilbo Baggins, Owens Meany and the Passage of Time”

June 19, 2018
Dissertation Defense, 2:00 p.m. Stowers Institute for Medical Research
Zelha Nil
Graduate Student
Molecular and Integrative Physiology
KUMC

“Regulated Assembly of Prion-Like Phosphate, CG5830, Controls its Phosphate Activity and Embryonic Development in Drosophila Melanogangster”

June 27, 2018
Dissertation Defense, 9:00 a.m. Stowers Institute for Medical Research
Li Chen
Graduate Student
Molecular & Integrative Physiology
KUMC

“Characterization of the Mammalian Methyltransferase Tgs1”
a. Manuscripts Published


Morris JK, Piccolo BD, Shankar K, Thyfault JP, Adams SH. The serum metabolomics signature of Type 2 Diabetes is obscured in Alzheimer’s Disease. AJP Endo and Metab. 2017 [Epub ahead of print].


b. Manuscripts in Press


Nothnick WB, Falcone T, Fazleabas AT, Olsen M, Tawfik OW, Graham A. (2018) Macrophage migration inhibitory factor receptor, CD74, is over-expressed in human and baboon (Papio Anubis) endometriotic lesions and modulates endometriotic epithelial cell survival and interleukin-8


c. Abstracts


Emily Paprocki, D.O., Kelsee Halpin, M.D., Leslie Heckert Ph.D., Jill Jacobson, M.D. “Clinical and Biochemical Findings of Hyperandrogenism in Non-Obese and Obese Transgender Male Youth” Annual Meeting of the Pediatric Endocrine Society. May 5-8, 2018 - Toronto, Canada


Lee CY, Choi IY, Lee P. In vivo validation of OVS-localized navigator for prospective
Paris, France, June 16-21, 2018. - electronic poster presentation

Lee CY, Choi IY, Lee P. Retrospective frequency correction for fluorine (19F) MRS
Paris, France, June 16-21, 2018. - electronic poster presentation

delay and microstructural integrity of the spinal cord in multiple sclerosis. Mult
Scler (2017) 23(S3):1018. – 33rd Congress of the European Committee for
Treatment and Research in Multiple Sclerosis (ECTRIMS) and 7th Joint
ECTRIMS-ACTRIMS meeting, Paris, France, October 25-28, 2017. - poster
presentation

E. Matthew Morris, Alex Von Schulze, Julie Allen, Colin McCoin, John Thyfault.
Impact of Reduced Liver Mitochondrial Function on Intermittent HFD-induced
Adiposity in Young Mice. The Obesity Society Annual Meeting at
ObesityWeekSM 2017; October 29 – November 2, 2017; Washington, DC.

Gladis Sánchez, Jeff P. McDermott and Gustavo Blanco. Ouabain enhances the cystic
phenotype of the kidney in a mouse model of ADPKD. P-Type-ATPase Meeting,
Otsu, Japan, September 2017.

Jeff P. McDermott, Gladis Sánchez and Gustavo Blanco. Mutation of the Na,K-ATPase
α4 isoform ouabain site does not affect sperm fertilizing capacity. American
Society of Andrology. Miami, April 2018.

Jeff P. McDermott, Gladis Sánchez, Liu Lijun and Gustavo Blanco. Na,K-ATPase α4,
but not α1 is essential for sperm function, but its ouabain binding site is not
required for male fertility. P-Type-ATPase Meeting, Otsu, Japan, September
2017.

Laura Kutz, Shreya Mukherji, Pauline Marck, Xiaoyu Cui, Judith Heiny, Gustavo
Blanco, Sandrine pierre, and Zijian Xie. Isoform-Specific Role of Na/K-ATPase
α1 in Skeletal Muscle Growth and Performance. Experimental Biology, Chicago,
IL, April 2017.

Pan, X, Sands, SA, Yue, Y, Zhang, K, LeVine, SM*, and Duan, D*. Vector optimization
dramatically improved the outcome of Krabbe disease gene therapy in the
twitcher mouse model. ASGCT 21st Annual Meeting in Chicago, IL, May 16-19,

Pauline Marck, Xiaoliang Wang, Laura Kutz, Xiaoyu Cui, Gustavo Blanco, Liquand
Cai, Zijian Xie and Sandrine V. Pierre. Cardiac structure and function in mice with
a cardiomyocyte-specific knockout of Na+/K+-ATPase α1-isoform. Experimental
Biology, Chicago, IL, April 2017.

BINDING PROTEIN HuR REGULATES EXTRACELLULAR VESICLE
SECRETION IN COLORECTAL CANCER. DDW 2018.

Effects of long-term forelimb resistance training on neuroprotective proteins in
the brains of aged rats. Poster presented at the 47th Annual Meeting of the
Society for Neuroscience in Washington, D.C.

*Poster presented at the 24th Annual Meeting of the American Society for Neural Therapy and Repair in Clearwater Beach, FL.*


*Poster presented at the 47th Annual Meeting of the Society for Neuroscience in Washington, D.C.*
RESEARCH SUPPORT


NIH: “Kansas IDeA Network of Biomedical Research Excellence” May 15th, 2014 – April 30th, 2019. Annual Direct Costs: $20,000


NIH-R01: “Mitochondrial RNA defense pathways in the oocyte” February 1st, 2018 – January 21st, 2023” Annual Direct Costs: $289,000

S.J. Enna: NIH: “Kansas University Training Program in Neurological and Rehabilitation Sciences (Nudo, P.I., Enna, Co-Director)” May 2014 – April 2019. Annual Direct Costs: $266,000


**P.C. Geiger:** NIH/NIGMS Centers of Biomedical Research Excellence (COBRE): “The HSF1-PGC1a-HSP72 transcriptional axis maintains mitochondrial health and liver metabolism” 2017 – 2019. Annual Direct Costs: $60,000


KINBRE: “Reduced liver metabolism modulates neural development impacting obesity risk” May 1st, 2018 – April 30th, 2018. Annual Direct Costs: $75,000

**W.B. Nothnick:** NIH: “60S acidic ribosomal protein P1 and endometriosis pathogenesis” August 1st, 2017 – May 31st, 2018. Annual Direct Costs $125,000


**J.A. Stanford:** Children’s Merc Hospital: “Preclinical studies of bilirubin encephalopathy” June 1st, 2013 – August 31st, 2019. Annual Direct Costs: $100,000


**J. Thyfault:** NIH: “Stains, Mitochondrial Function, and Aerobic Capacity” July 20th, 2017- July 19th, 2022. Total cost over 5 years: $3,041,884


NIH: “Increased Protein at Breakfast for Weight Management in Overweight Adolescents” October 1st, 2016 – September 31st, 2021


ACTIVITIES OF FACULTY

Andrei B. Belousov, Ph.D., Associate Professor

We are interested in the mechanisms of regulation of neuronal gap junctions (electrical synapses) during development and neuronal injury. We also study the role of neuronal gap junctions in death of neurons in the developing nervous system and in the secondary, glutamate-dependent neuronal death following ischemic stroke, traumatic brain injury and epilepsy. As a result of these studies, a novel model of the mechanisms of glutamate-dependent neuronal death has been proposed, where neuronal gap junctions play a critical role.

Committee Activities:
KUMC
- Physiology Department Representative, KUMC Faculty Council
- Information Resource Committee, KUMC Member
Community
- Student Research Forum, KUMC Judge
- Resident, Postdoc, and Fellow Research Forum, KUMC Judge
Student Committee Service
- Member, Ph.D. dissertation committee, Page Hayley

Community
- Greater Kansas City Chapter of the SFN, Member

Editorial and Grant Reviews:
- Ad Hoc Reviewer, Cellular and Molecular Neurobiology
- Ad Hoc Reviewer, Frontiers in Molecular Neuroscience
- Ad Hoc Reviewer, Neuroscience Letters
- Ad Hoc Reviewer, Journal of Neuroscience Research
- Ad Hoc Reviewer, Pharmacology and Therapeutics
- Ad Hoc Reviewer, Neuropsychopharmacology
- Ad Hoc Reviewer, OncoTargetAd hoc Reviewer, Frontiers in Cellular Neuroscience
- Ad hoc Reviewer, NTRC study section, NIH
- Grant Reviewer, KUMC, Research Institute Clinical Pilot Grants
- Reviewer, Abstracts for the International Stroke Conference, American Heart Association
- Lied Basic Science Grants, KUMC
- Reviewer, Mallinckrodt Foundation, KUMC

Teaching Activities:
- PHSL 842 – Comprehensive Human Physiology
  9 – 2 hour lectures
- IGPBS – Cellular Structure
  2 – 2 hour lectures
  1 – 2 hour seminar
Dr. Belousov (continued)

B2.021- Altered mental status in an elderly patient
    1 – 1 hour lecture
B5.072- CBCL: Malabsorption syndrome
    1 – 1 hour lecture

CBCL
    8 – 2 hour lectures

Research Personnel:
    Janna V. Belousova, M.S., Senior Research Associate
Our laboratory studies the role of ion-transport proteins of the plasma membrane in cell function, with a particular emphasis on the Na,K-ATPase. The Na,K-ATPase or Na pump is an enzyme of the cell plasma membrane, that uses ATP to transport cytoplasmic Na⁺ out of the cell in exchange for extracellular K⁺. Structurally, Na,K-ATPase is composed of a catalytic α and an associated β subunit. In mammals, different molecular variants or isoforms of the α (α₁, α₂, α₃ and α₄) and a β (β₁, β₂ and β₃) polypeptide are expressed in a tissue and cell dependent manner. Our work has shown that different isoforms of the Na,K-ATPase have enzymatic properties that are unique and that they are not biologically redundant. While the ubiquitously expressed Na,K-ATPase α₁ and β₁ functions as the housekeeping Na,K-ATPase in the cell, the other isoforms mediate tissue-specific roles. We have identified α₄ as a catalytically active isoform of the Na,K-ATPase, which is only expressed in testis male germ cells and is abundant in the sperm flagellum. Using pharmacological tools and genetic approaches in transgenic mice, we have established that Na,K-ATPase α₄ is essential for sperm motility and male fertility. We are currently continuing experiments to understand the mechanisms of action and regulation of α₄, with the idea of using it as a biomarker for male fertility and a target for male contraception.

In addition, we are studying the role of the Na,K-ATPase in autosomal dominant polycystic kidney disease (ADPKD). ADPKD is characterized by the progressive enlargement of fluid filled cysts in the kidneys that compromise the function of the organ. We have found that the hormone ouabain, acting via the Na,K-ATPase α₁ stimulates renal cyst formation and progression in ADPKD. We continue experiments to understand the role and mechanisms of action of ouabain in ADPKD, with the idea of finding approaches to slow ADPKD cystogenesis.
Dr. Blanco (continued)

Member, Thesis Committee, Shreya Mukherji, Pharmacology, Ph.D., Marshall University
Member, Thesis Committee, Minqi Huang, Pharmacology, Ph.D., Marshall University

KUMC
Director, K-INBRE Developmental Research Core (DRPP Core)
Member, Wescoe Society, serving as a mentor for medical students
Member, M.D./Ph.D. Admission Committee Program, helping to interview and select students
Member, Committee for the University Biotechnology Sequencing Facility
Member, Committee member for the organization of the Greenwald Symposium
Member, Wescoe Academic Society
Member, Review Committee for Pilot Grant Program of the Liver Disease COBRE
Member, KUMC Strategic Planning Committee
Member, K-INBRE Incentive and Awards Committee

Editorial and Grant Reviews:
Grant Review, K-INBRE research grants
Grant Review, Lied Basic Science Pilot Grants, KUMC
Reviewer, American Journal of Physiology – Metabolism and Endocrinology Section
Reviewer, Journal of Assisted Reproduction and Genetics
Reviewer, Frontiers in Reproduction
Ad Hoc Reviewer, Journal Assisted Reproduction and Genetics
Ad Hoc Reviewer, American Journal of Physiology
Ad Hoc Reviewer, Biology of Reproduction

Invited Presentations:
September 2017 – G. Blanco. Na,K-ATPase α4, but not α1 is essential for sperm function, but its ouabain binding site is not required for male fertility. The 15th International Conference on Na,K-ATPase and Related Transport ATPases, Otsu, Japan
Dr. Blanco (continued)

November 2017 – G. Blanco. “Na,K-ATPase α4: the ion transporter that propels sperm and drives sperm fertility”, Northwestern University, Chicago IL
April 2018 – K-INBRE External Advisory Committee. KUMC
May 2018 – G. Blanco. Thesis defense evaluation for Hang Nielse “Mutational studies of the mechanisms of ion binding and PKA regulation of the Na⁺,K⁺-pump”, Aarhus University, Aarhus, Denmark

Seminars Presented:
November 2017 – G. Blanco. “Na,K-ATPase α4: the ion transporter that propels sperm and drives sperm fertility”, Northwestern University, Chicago IL

Academic Honors:
Students Voice Award for Excellence in Teaching

Teaching Activities:
CORE 825 – Renal Physiology
18 – 1hour sessions
Integration and Consolidation – Renal Insufficiency
1 – 2 hour session
Remediation Course- Renal Physiology
2 – 3 hour sessions
Step Prep Course- Renal Physiology
1 – 1 hour session
CBCL- Renal Failure, Diabetes insipidus, Renal arterial stenosis
1 – 1 hour session
Nephrology Fellow Boards– Clinical Renal Physiology
4 – 1 hour sessions
Medical Curriculum
7 – 2 hour sessions
Prematriculation Hemorrhagic shock, myocardial infarction
2 – 2 hour sessions
IGPBS, Membrane biology and transport
3 – 6 hour sessions
Frontiers of Reproduction
2 – 16 hour sessions
Human Physiology
3 – 2 hour sessions
Dr. Blanco (continued)

Physiology of Disease
3 – 2 hour sessions

Research personnel:
Gladis Sanchez M.D., Research Associate
Jeff McDermott, Senior Research Associate
Marco Tulio Correa Pessoa, visiting Ph.D. student
Abdouli Njai, undergraduate student
My research interests include uterine fibroid pathogenesis, fertility and contraception. Uterine fibroids are the most common tumors of the female reproductive tract and are the leading indication for hysterectomies in the US. Sadly, there is no approved drug to treat uterine fibroids chronically. Our laboratory is trying to understand the regulation and function of GPR10, a G protein-coupled receptor, aberrantly expressed in uterine fibroids. We have generated transgenic mice overexpressing GPR10 in the myometrium in order to understand its role in the pathogenesis of fibroids. Transgenic-hGPR10 mice develop uterine fibroids that are phenotypically identical to the human disease. We plan to use this preclinical model for the development of small molecule modulators of GPR10 as treatment for fibroids. In addition, we have identified the molecular machinery that regulates aberrant expression of GPR10 in uterine fibroids. We recently developed a conditional knockout model for Rest, the transcriptional repressor of GPR10. Rest cKO mice develop uterine fibroid phenotype. We have also identified PRICKLE1 as the upstream regulator of REST stability and function in the uterus. Our laboratory is trying to validate the role of environmental estrogens in the suppression of Prickle1 gene and REST protein expression using rodent models.

Our laboratory is also interested in molecules that regulate sperm function and male fertility. We have an ongoing project to identify small molecule inhibitors of CDK2 that specifically inhibit meiosis, as potential contraceptive drugs. We are also studying the functional regulation of the sperm specific sodium-proton exchanger (sNHE) in expression systems that utilize chimeric channels.

Committee Activities:

Departmental
- Member, Finance Committee
- Member, GSAC
- Coordinator, Physiology Seminar Series
- Member, Faculty Search Committee

Student Service Committee
- Member, Thesis Committee, Zahraa Alali, Physiology, Ph.D.
- Member, Thesis Committee, Younshim Park, Physiology, Ph.D.
- Member, Thesis Committee, Wei-Ting Hung, Physiology, Ph.D.
- Member, Thesis Committee, Saieed Safder, Microbiology, Ph.D.
- Member, Thesis Committee, Ashley Ward, Physiology, Ph.D.
- Member, Thesis Committee, Brittany Jack, Anatomy and Cell Biology, Ph.D.

KUMC
- Member, Faculty Council
- Member, D3ET (Drug Discovery, Delivery and Experimental Therapeutics), IAM
- Member, IGPBS Admissions Committee
- Community Chair, SSR Awards Committee
Dr. Chennathukuzhi (continued)

Editorial and Grant Reviews:
  Ad Hoc Reviewer, Integrative and Clinical Endocrinology and Reproduction (ICER) study section (ad hoc)
  Ad Hoc Reviewer, CMIR Study section 6/21/2017
  Ad Hoc Reviewer, Biology of Reproduction, PLOS One, Human Reproduction
  Member, Endocrine and Reproductive Biology Special Emphasis Panel/Scientific Review Group 2017/10 ZRG1 EMNR-V (02) M
  Member, Special Emphasis Panel/Scientific Review Group ZHD1 DSR-L (50)
  Member, Special Emphasis Panel/Scientific Review Group 2018/01 ZHD1 DSR-L (50)

Seminars Presented:
  November 6th, 2017 – “The loss of REST in uterine fibroids” Wichita State University

Teaching Activities:
  PHSL 834 – Reproductive Physiology  
    Course Director  
    3 – 2 hour sessions
  IGPBS Genetic Switches-Gene Expression  
    3 – 2 hour sessions
  PHSL 842 – Comprehensive Human Physiology  
    2 – 2 hour sessions
  PHSL 843 – Physiology of Disease  
    2 – 2 hour sessions
  CBCL- Small Group Facilitation  
    7 – 2 hour group sessions

Research personnel:
  Faezeh Koohestani, Ph.D. (Postdoctoral Fellow): The Role of REST in the pathogenesis of uterine fibroids – Accepted a science and marketing manager position at GenScript.
  Michelle McWilliams (Graduate Student): Estrogenic regulation of PRICKLE1 and its effect on REST in uterine fibroids – Submitted the graduate thesis, defended and graduated with Ph.D. in Physiology during the year – Accepted the position of Research Scientist at Charles River, Reno, NV
  Mina Farahbakhsh (M.D./Ph.D. Graduate Student): Role of ADAM12 and other REST target genes in uterine fibroids – Submitted the graduate thesis, defended and graduated with Ph.D. in Physiology during the year. Currently back in clinical rotations at KUMed.
  Ashley Cloud (IGPBS Rotation Student): Spring 2017, Current Graduate Student
  Sornakala Ganeshkumar (Research Assistant)
  Kavya Shivashankar Undergraduate Student, Columbia, NY – Joined recently in the M.D. program of Thomas Jefferson University, Philadelphia, PA
Dr. Chennathukuzhi (continued)

Abril Lara (Gear UP Summer Intern, June – Aug 2017)
Ganesh Aruna (Summer Intern June – Aug 2017) Currently undergraduate student at Vanderbilt
India Barnett (Gear UP Summer Intern, June – Aug 2018)
Lane K. Christenson, Ph.D., Associate Professor

Fertility, infertility and ovarian cancer are major health concerns for women. Research in my laboratory focuses on understanding the terminal events involved in follicular development and ovulation. The studies have direct implications in development of a fertile healthy oocyte, contraception and disease conditions such as polycystic ovarian syndrome and ovarian cancer. Current studies focus on understanding the role extracellular vesicles (exosomes and microvesicles) play in ovarian function (oocyte maturation, granulosa cell function) and in ovarian cancer. The laboratory is also examining how post-transcriptional regulatory processes such as RNA editing impacts oocyte developmental competence. These studies use the latest state of the art technologies, including next-gen-sequencing, nanoparticle analysis in addition to standard molecular and biochemical techniques. The laboratory also uses a comparative approach using human, bovine and murine cells and animal studies in both cows and mice to gain further insights into the reproductive biology of the ovary.

Committee Activities:

Departmental
   Member, Greenwald Symposium Planning Committee
   Early Development Theme Leader, KIDDRC
   Member, Departmental Finance Committee
   Member, Departmental Faculty Search Committee

Student Service Committee
   Chair, Advisory and Dissertation Committee, Rikki Nelson, Physiology, Ph.D.
   Member, Advisory and Dissertation Committee, Zahraa Alali, Physiology, Ph.D.
   Member, Advisory and Dissertation Committee, Jonathon Keck, Immunology, Ph.D. University of Texas San Antonio
   Member, Advisory and Dissertation Committee, Greg Burns, Ph.D., University of Missouri
   Member, Advisory and Dissertation Committee, Jianzheng Wu, Physiology, Ph.D.
   Member, Advisory and Dissertation Committee, Hope Waisner, Microbiology, Ph.D.

KUMC
   Member, Freezer Monitor Committee, SOM
   Member, Genomics Core, KINBRE
   Member, Human Stem Cell Research Oversight Committee

National
   Director on SSR Board, Society for Study of Reproduction Program Committee
Dr. Christenson (continued)

Editorial and Grant Reviews:
- Reviewer, National Institute of Health- Reproduction, Andrology and Gynecology Study Section 2015 – 19 – Permanent member
- Ad Hoc Reviewer, Grant, Welcome Trust/DBT India Alliance Fellowship
- Ad Hoc Reviewer, Grant, United States/ Israel Binational Science Foundation
- Grant Reviewer, Member, NIH- P50 Special Review Panel
- Editorial Board Member, Journal of Assisted Reproduction and Genetics
- Reviewer Editorial Board of Reproductive Endocrinology, Frontier in Endocrinology

Office/ Advisory Groups:
- Director on SSR Board (Nationally Elected), Society for Study of Reproduction

Invited Presentations:
- May 18, 2018 – Annual Michigan Alliance for Reproductive Technologies and Sciences – RNA editing in Oocyte and Ovarian Function. Grand Rapids, MI

Teaching Activities:
- Frontiers in Reproduction at Marine Biology Laboratory- Tole of RNA editing in ovarian function
  - 1 – 2 hour session
- MI CBCL
  - 6 – 2 hour sessions
- IGPBS
  - 3 – 2 hour sessions
- PHYS 842
  - 1 – 2 hour session

Meetings Attended:
- October 3, 2017 – American Society for Gravitational and Space Research, Seattle, WA

Research personnel:
- Pavla Brachova – (NRSA- Completed) Post-Doctoral Fellow
- Xiaoman Hong – Senior Research Associate
- Jake Cushing – Research Technician
- Rikki Nelson – Ph.D. Student
- Lauren Stubbs – Undergraduate Volunteer
- Tyler Elmendorf – Undergraduate KINBRE Summer Scholar
Salvatore J. Enna, Ph.D., Professor, Associate Dean for Research and Graduate Education

Neurotransmitters and neurotransmitter receptors, with particular emphasis on the structure, function and pharmacology of GABA receptors.

Meetings Attended:
August 6 – 8, 2017 – Nebraska INBRE Conference, Nebraska City, Nebraska
September 27 – 29, 2017 – ICMAN Natural Products Conference, Aberdeen, United Kingdom
October 28 – 29, 2017 – International Union of Basic and Clinical Pharmacology (IUPHAR) Executive Committee Meeting, Rimini, Italy
October 25 – 28, 2017 – Italian Society of Pharmacology Congress, Rimini, Italy
November 1 – 3, 2017 – PhRMA Foundation Grant Review Meeting, Washington, D.C.,
December 3 – 7, 2017 – American College of Neuropsychopharmacology Meeting, Palm Springs, California
March 7 – 10, 2018 – Neurotherapeutics Discovery and Development for Academic Scientist Course, Rockville Maryland
April 21 – 25, 2018 – Experimental Biology, American Society for Pharmacology and Experimental Therapeutics Annual Meeting, San Diego, California
May 15 – 20, 2018 – Pharmacology Futures and NC-IUPHAR Committee Meetings, Edinburgh, United Kingdom

Committee Activities:
Departmental
Chair, Departmental Appointments, Promotions, and Tenure Committee
KUMC
Internal Advisory Committee (Co-Chair), Kansas University Training Program in Neurological and Rehabilitation Sciences
Member, Executive Research Committee
Member, Faculty Activity Collaborative Tool (FACT) Committee
Member, Medical School Extended Dean’s Committee

National
Chair, Nebraska-INBRE External Advisory Committee
Member, PhRMA Foundation Pharmacology Advisory Panel
Member, British Pharmacological Society International Advisory Group
Member, GABA-B Nomenclature Database Committee
Member, UMKC School of Pharmacy Research Advisory Council
Dr. Enna (continued)

International
President, International Union of Basic and Clinical Pharmacology
(IUPHAR)
Member, International Union of Basic and Clinical Pharmacology
(IUPHAR) Executive Committee

Editorials and Grant Reviews:
PhRMA Foundation Pharmacology/Toxicology Grant Review Committee
Editorial Advisory Board, CNS Drug Review
Editorial Advisory Board, Current Opinion in Pharmacology
Editorial Advisory Board, Chinese Medicine
Editorial Advisory Board, Pharmacology International

Editorial Boards of Scientific Journals:
Editor-in-Chief, Biochemical Pharmacology
Executive Editor-in-Chief, Pharmacology & Therapeutics
Co-Editor, xPharm
Co-Editor-in-Chief, Current Protocols in Pharmacology
Series Editor, Advances in Pharmacology
Guest Editor, Biological and Pharmaceutical Bulletin
Section Head, Neuropharmacology and Psychopharmacology, Faculty of 1000
Pharmacology Section Editor, Reference Module in Biomedical Sciences

Invited Presentations:
October 26th, 2017 – Plenary Lecture “In Vivo Veritas, In Vitro Dolo, Italian
Pharmacology Society Meeting, Remini, Italy
March 7th, 2018 – NIH Neurotherapeutics Drug Discovery Course Lecture:
Alternative Approaches to Drug Discovery, Rockville, Maryland

Teaching Activities:
Faculty Advisor Orr Society Mentor for:
Lauren Arney
  2 – 1 hour group sessions
Ojas Patel
  2 – 1 hour group sessions
Other Student Contact
T32 Lecture- Manuscript Preparation
  1 – 2 hour group sessions
Medical Education
CBCL – Alzheimer’s Disease
  1 – 2 hour group sessions
CBCL – Aplastic Anemia/ Transplant
  1 – 2 hour group session
CBCL – Renal Artery Stenosis
Enna (continued)

1 – 2 hour group session
CBCL – Pulmonary Infection
1 – 2 hour group session
CBCL – Cholecystitis/Cholelithiasis
1 – 2 hour group session
CBCL – Viral Hepatitis
1 – 2 hour group session
CBCL – Diabetes Insipidus
1 – 2 hour group session
CBCL – Diabetes and the Pancreas
1 – 2 hour group session
Med. School year 2 – Small Group Discussion-CNS Drugs
2 – 2 hour group sessions
Med. School year 2 – Small Group Discussion- Toxicology & Chemotherapy
2 – 2 hour group sessions

Graduate
Advanced Neuroscience
3 – 2 hour sessions
KU School of Pharmacy Graduate Student Lecture on Manuscript Preparation
1 – 2 hour session
KUMC Psychiatry Residents Lecture- Neurochemistry, Neurotransmitters and Psychiatric Illness
1 – 2 hour session

Research Personnel:
Ms. Lynn LeCount, Managing Editor, Biochemical Pharmacology; Pharmacology & Therapeutics; Pharmacology International, and Advances in Pharmacology
Ms. Jennifer McNichols, Editorial Coordinator, Biochemical Pharmacology; Pharmacology & Therapeutics, Pharmacology International
Paige C. Geiger, Ph.D., Associate Professor

My research focus is on the cellular mechanisms leading to the development of insulin resistance and type 2 diabetes. My laboratory examines insulin signaling pathways and the regulation of glucose uptake and mitochondrial function in skeletal muscle in response to obesity-inducing high fat diets as well as exercise training and heat treatment. Our research to date has contributed to an understanding of the role of heat shock proteins in metabolic disease with implications for future treatment of diabetes and neurodegenerative diseases.

Meetings Attended:
April 2018 – Experimental Biology, San Diego, CA
May 2018 – KUMC Exercise is Medicine, Kansas City, KS (co-organizer)

Committee Activities:
Departmental
Member, Graduate Student Affairs Committee

KUMC
Chair – Elect, School of Medicine Research Committee
Co – Organizer and Faculty Advisor, Exercise is Medicine Symposium
Member, Executive Committee WIMS
Faculty Advisor, American Medical Women's Association
Member, Cray Diabetes Center Advisory Board
Member, Student Union Corporation Board
Member, BRTP review committee

Student Committee Service:
Member, Dissertation Committee, Olivia Eller-Smith, Anatomy, Ph.D.
Member, Dissertation Committee, Daniel Elliot, Anatomy, M.D./Ph.D.
Mentor – Joshua Miller
Mentor – Vendita Garimella

Administrative
Facility Co – Director, Metabolic and Obesity Research Phenotyping Facility (MORPh)

Community, Regional, and National Activities
Exercise Physiology Councilor and Secretary – Treasurer, APS
Environmental and Exercise Physiology (EEP) Steering Committee

Editorials and Grant Reviews:
Editorial Reviewer, American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
Ad Hoc Reviewer, American Journal of Physiology
Ad Hoc Reviewer, Journal of Applied Physiology
Ad Hoc Reviewer, Journal of Physiology

Teaching Activities:
B4 – Respiration and Circulation
3 – 3 hour sessions
Dr. Geiger (continued)

B5 – CBCL Large Group
   1 – 1 hour session
CBCL
   7 – 2 hour sessions
PHSL 842 – Human Physiology
   11 – 2 hour sessions
PHSL 836 – Physiology of Disease
   12 – 2 hour sessions

Research Personnel:
   Alex Von Schulze, Graduate Student, Self-Fellow
   Fengyan Deng, Ph.D., Research Assistant
**Sumedha Gunewardena, Ph.D.**, Research Assistant Professor

*Research Interest: Bioinformatics and computational genomics: modeling protein-DNA interactions, biological sequence analysis, microarray data analysis, biological pathways and network analysis, development of computational tools and databases.*

Publications:


Leslie L. Heckert, Ph.D., Marion M. Osborn Professor for Reproductive Sciences

Through collaboration with Dr. Jill Jacobson at Children’s Mercy Hospital (CMH) I continued research on hormonal and genetic variations in transgender individuals and patients with disorders of sex development. To assist these efforts, I spent a 6-month sabbatical learning genetic variant analysis at the CMH Center for Pediatric Genomic Medicine. This provided new skills in human sequence analysis and the integration of various data sources to help identify relevant variants in mitochondrial disease. I continue to collaborate with Isabelle Thiffalt and Warren Cheung at the Genome Center on evaluation of patients with mitochondrial disorders.

Meetings Attended:

Committee Activities:
Departmental
Member, Department Finance Committee
Member, Promotions & Tenure Committee
Member, Faculty Recruitment Committee

KUMC
Member, Institutional Biosafety Committee
Member, Transgenic and Gene Targeting Core Oversight Committee
Member, IGPBS Curriculum Committee- November
Member, IGPBS Advisory Board, November
Member, Institutional Biosafety Committee

Community, Regional and National Activities
Executive Committee, North American Testis Workshop
Chair, Program Committee, North American Testis Workshop

Editorial and Grant Reviews:
Ad Hoc Reviewer, Molecular and Cellular Endocrinology
Ad Hoc reviewer, Biology of Reproduction
Ad Hoc reviewer, FASEB
Editorial Board Member, Endocrinology

Teaching Activities:
CBCL
3 – 2 hour group sessions

CBCL
5 – 2 hour group sessions

PHSL 842 – Comprehensive Human Physiology
5 – 1 hour sessions

Physiology of Disease
1 – 1.5 hour session
As the Technical Director of the Transgenic and Gene-Targeting Institutional Facility, my role is largely defined by service. I am responsible for providing services in the generation of gene-modified mice, sperm and embryo cryopreservation, assisted reproductive technologies, and embryonic stem cell propagation and targeting. We provide these services for investigators at KU Med and KU-Lawrence, as well as the entire Kansas City metro area. In addition, I am interested in exploring and implementing new technologies that allow creation of unique mouse research models.

Invited Presentations:
- October 15 – 18, 2017 – American Association for Laboratory Animal Science National Meeting as a representative for the International Society for Transgenic Technologies, Austin, Texas

Seminars:
- October 15, 2018 – Genome Editing of the Mouse and Pluripotent Stem Cell Models, Genome Editing Workshop, KUMC, Kansas City, KS

Meetings Attended:
- October 15 – 18, 2017 – American Association for Laboratory Animal Science National Meeting, Austin, Texas
- October 1 – 4, 2017 – Transgenic Technology Meeting, Salt Lake City, Utah

Committee Activities:
- KUMC
  - Member, Institutional Animal Care and Use Committee
  - Member, Institutional BioSafety Committee
- National
  - Representative, American Association for Laboratory Animal Science on behalf of the International Society for Transgenic Technologies

Research personnel:
- Illya Bronshteyn, M.S., Research Associate
- Julia Draper, M.S., Research Associate
Phil Lee, Ph.D., Associate Professor

The major focus of my research is to characterize structural, functional, physiological and metabolic changes linked to aging, disease activity and progression using advanced in vivo magnetic resonance techniques. Another important focus of my research is to develop novel in vivo magnetic resonance imaging techniques to offer new possibilities for monitoring the disease status and the impact of treatments through new quantitative, non-invasive biomarkers. My own research and collaboration have yielded 11 publications during this fiscal year.

Invited Presentations:
- September 8 – 11, 2017 – Workshop oral presentation, Prospective correction for motion-induced frequency drifts in MR Spectroscopy using OVS-localized navigator, ISMRM Workshop on Motion Correction in MRI and MRS, Cape Town, South Africa
- March 31, 2017 – Keynote speaker presentation, Compartment-based spatial localization in quantitative MRI and MRS, International Congress on Magnetic Resonance Imaging (ICMRI) & Annual Scientific Meetings of KSMRM, Seoul, S. Korea

Seminars Presented:
- January 22, 2018 – Tissue-type specific measurement of neurochemical and cerebral blood flow using MRI and MRS, Seminars in Physiology, KUMC, Kansas City, KS

Meetings Attended:
- October 25- 28, 2017 – The 33rd Congress of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) and 7th Joint ECTRIMS-ACTRIMS meeting, Paris, France

Committee Activities:
University
- Advanced Technology Development Committee of the Hoglund Brain Imaging Center (HBIC)
- HBIC Executive Committee
- HBIC Project Review Committee
- HBIC Staffing Committee
- Faculty judge for 2017 Resident, Postdoc & Fellow Research Day at KUMC

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Dr. Lee (continued)

International
  Conference Organizing Committee of the International Conference on Brain Energy Metabolism (ICBEM)
Service on Student Committees
  Thesis Committee, M.S. Bioengineering, Sean Ellis
  Thesis Committee, Ph.D. Otolaryng, Andrea Freemyer

Editorials and Grant Reviews:
  Ad Hoc Reviewer, Journal of Magnetic Resonance Imaging
  Ad Hoc Reviewer, Magnetic Resonance Materials in Physics, Biology and Medicine
  Ad Hoc Reviewer, Neurochemical Research
  Ad Hoc Reviewer, NMR in Biomedicine
  Ad Hoc Reviewer, Brain Imaging and Behavior
  Ad Hoc Reviewer, Neurotoxicity Research
  Ad Hoc Reviewer, NMR in Biomedicine
  Conference proceedings of International Society for Magnetic Resonance in Medicine
  Conference proceedings of American Society for Nutrition
  Editorial Board member, Neurochemical Research

Teaching Activities:
  BIOE 899 – Independent Investigation
    12 – 1 – 2 hour sessions

Other Activities:
  Consultant of magnetic resonance imaging program of Center for Brain, Biology and Behavior at University of Nebraska
  Consultant of the Imaging Center at University of Missouri at Columbia

Research Personnel:
  Chu-Yu Lee, Postdoc at Hoglund Brain Imaging Center
  Peter Adany, Senior Research Scientist at Hoglund Brain Imaging Center
  Sean Ellis, Graduate student of Bioengineering program, KU-L
  Mariad Thatcher, Research Associate at Hoglund Brain Imaging Center
Steven M. LeVine, Ph.D., Professor

We study two demyelinating diseases of the central nervous system, multiple sclerosis and Krabbe’s disease. We examine pathogenic mechanisms and test experimental interventions in animal models of these diseases. The goal of our studies is to improve treatment options for patients afflicted with these conditions.

Committee Activities:
  Departmental
    Member, Graduate Student Advisory Committee
    Member, Departmental Promotions and Tenure Committee
      KUMC
    Member, Safety Committee for the Smith East Building
      Community
    Member, Neurodegenerative Subcommittee for the KCALSI Regional Strategic Assessment

Editorials and Grant Reviews:
  Ad Hoc Reviewer, Immunological
  Ad Hoc Reviewer, Neural Regeneration Research
  Ad Hoc Reviewer, Orphanet Journal of Rare Diseases
  Ad Hoc Reviewer, Neuroscience Letters
  Grant Reviewer, KUMC Research Institute Internal Clinical Pilot Research Grant
  Grant Reviewer, Lied Basic Science Grant Programs
  Grant Reviewer, Austrian Science Fund- Hertha Firnberg

Teaching Activities:
  PHSL 842 – Human Physiology
    4 – 1 hour sessions
  PHSL 842 – Comprehensive Human Physiology
    1 – 1 hour session
  PHSL 843- Physiology of Disease
    2 – 1.5 hour sessions
    *mentored students for lecture preparation and attended/graded seven additional student presentations
  CORE 840 – Neuropathy Labs(co-taught)
    4 – 2 hour sessions
  Gastrointestinal- Renal- GI Physiology I, II, III, IV
    4 – 1 hour sessions
  Gastrointestinal- Renal- Constipation(assisted)
    1 – 1 hour session
Dr. Levine (continued)

Research Personnel:
- Rebecca Heidker, Ph.D. – Volunteer Research Assistant, working on paper together
- Yi Feng, Ph.D. – part-time Postdoctoral Fellow in my lab
- Mingcai Zhang Ph.D. – part-time Postdoctoral Fellow in my lab
- Theodore Budden, part-time Research Technician in my lab

Other Activities:
- Multiple Sclerosis Research Group at KUMC – Member
- CBL on Constipation for the Gastrointestinal – Renal block – Lead Author
E. Matthew Morris, Ph.D., Research Assistant Professor

Dr. Matt Morris investigates the role of peripheral energy metabolism in the development of obesity, type 2 diabetes, and cardiovascular disease. His work centers on how the function of the primary energy producing cellular bodies, mitochondria, can impact tissue function and ultimately systemic health. The current focus is how liver mitochondrial function can, through neural pathways to the brain, influence high fat diet-induced weight gain via changes in food intake and storage of dietary fat.

Meetings Attended:
November 30 – October 3, 2017 – Obesity Week, Washington DC

Committees:
Service on Student Committees
Member, Ph.D. Molecular and Integrative Physiology, Alex Von Schulze

Editorial and Grant Reviews:
Ad Hoc Reviewer, Lied Basic Science Grant Program
Ad Hoc Reviewer, Vidi Grant, Innovational Research Incentives Scheme of the Domain Science – Netherlands Organization for Scientific Research
Ad Hoc Reviewer, Journal of Applied Physiology
Ad Hoc Reviewer, Experimental Physiology
Ad Hoc Reviewer, Applied Physiology, Nutrition, and Metabolism
Ad Hoc Reviewer, Diabetes Care
Ad Hoc Reviewer, Physiology & Behavior
Ad Hoc Reviewer, Journal of Physiology

Teaching Activities:
CBCL – M1
7 – 3 hour lectures
PHSL 843 – Physiology of Disease
1 – 3 hour lecture
PHSL 836 – Advanced Neuroscience
1 – 3 hour lecture
Warren B. Nothnick, Ph.D., H.C.L.D., Professor and Vice-Chair

Research in the Nothnick laboratory focuses on deciphering the role of microRNAs (miRNAs) in the pathophysiology of endometriosis and the potential of targeting these miRNAs and/or their target transcripts as potential therapies for endometriosis treatment. Emphasis is placed upon dissecting these miRNA-mediated pathways utilizing both in vitro and in vivo models. Secondary interests focus on the regulation and function of microRNAs in the decidualization process and endometrial infertility associated with endometriosis and progesterone resistance.

Committee Activities:

Departmental
Vice-Chairman, Department of Molecular and Integrative Physiology, University of Kansas Medical Center, January 1, 2017 – present
Chairman, Department of Molecular & Integrative Physiology, University of Kansas Medical Center, Finance Committee, 2014 – Present.
Chairman, Faculty Search Committee, Reproductive Biology Position

Student Committee Service:
Chair/Mentor, Zahraa Alali, Physiology, Ph.D.
Member, Ashley Cloud, Physiology, Ph.D.
Member, Sachith Polpitivia Arachchige, Microbiology, Ph.D.
Oral Composition Member, Cameron Fox, Physiology, M.D./ Ph.D.
Oral Composition Member, JZ Wu, Physiology, Ph.D.

KUMC:
Director, Center for Reproductive Health Sciences
Member, Diverse Faculty Recruitment Committee, School of Medicine
Member, Executive Committee of the School of Medicine Faculty Council
Chairman, Appointment, Promotion and Tenure Committee, School of Medicine
Judge, Poster Presentation Competition, The 14th Annual Gilbert S. Greenwald Symposium on Reproduction

Other Activities:
Poster Judge, 65th Annual Meeting for the Society for Reproductive Investigation, March 7th – 10th, 2018, Denver, CO

Seminars Presented:
September 26th, 2017 – “New insights into the pathophysiology of endometriosis: The role of miR-451a.” University of Colorado School of Medicine, Department of Obstetrics and Gynecology, Denver, CO.
November 1st, 2017 – “miR-451a as a central mediator in the pathogenesis of endometriosis.” University of Georgia College of Pharmacy, Pharmaceutical and Biomedical Sciences, Athens, GA.

Meetings Attended:
Dr. Nothnick (continued)

Editorial and Grant Reviews
Ad Hoc Reviewer, *Biology of Reproduction*
Ad Hoc Reviewer, *Reproductive Sciences*
Ad Hoc Reviewer, *Human Reproduction*
Ad Hoc Reviewer, *Scientific Reports*
Ad Hoc Reviewer, 2018/10 ZRG1 OBT-R (80) Academic Research Enhancement Award (AREA) study section, Washington, DC, June 13, 2018 (Teleconference)
Ad hoc Reviewer, Oregon National Primate Research Center Pilot Research Program, April 2018
Abstract Review Committee, American Society for Reproductive Medicine, Endometriosis special Interest Group 74th Annual Meeting of the American Society for Reproductive Medicine, 2018, Denver, CO
Abstract Review Committee, 65th Annual Meeting for the Society for Reproductive Investigation, March 7th – 10th, 2018, San Diego, CA
Abstract Review Committee, American Society for Reproductive Medicine, Endometriosis Special Interest Group 73rd Annual Meeting of the American Society for Reproductive Medicine, 2017, San Antonio, TX
Study Section Chairperson, 2018/10 ZRG OBT-T (80) The Role of Stem/Progenitor Cells in The Pathogenesis and treatment of Gynecologic Disorders, SEP, Bethesda, MD, June 18, 2018
Overseas External Assessor, National Health and Medical Research Council (NHMRC Australian Government) Grant Review. 2017

Teaching Activities:
PHSL 842 – Comprehensive Human Physiology
  2 – hour sessions
PHSL 843 – Physiology of Disease
  1 – 1.5 hour session
GSMC 854 – Cell Communication
  3 – 2 hour lectures
CBCL Moderator PGY1
  7 – 14 hour sessions

Research Personnel:
Amanda Graham, Research Associate
Zahraa Alili, Pre – Doctoral Student
Ayushi Vashisht, Pre – Doctoral Student
**Peter G. Smith, Ph.D.,** John H. Wineinger, M.D. Professor, Senior Associate Dean for Research

My research interests include: i) Mechanisms of peripheral nervous system plasticity leading to sensory nerve sprouting in increased mechanical sensitivity; ii) Role of the peripheral sensory nervous system in abnormal sensitivity in Rett syndrome and related Autism Spectrum Disorders; iii) Repair of the damaged nervous system using stem cell-derived neuronal precursors; iv) Creation and characterization of cellular and organismal models of genetic neurodevelopmental disorders.

Meetings Attended:
November 19 – 21, 2017: Intellectual and Developmental Disability Research Centers Directors’ meeting. St. Louis, MO.

Committee Activities:
University Committees
KUMC
- Senior Associate Dean for Research
- Chair, Research Advisory Council
- Chair, Research Institute Research Committee
- Director, Frontiers Pilots Collaborative Research Projects programs, CTSA
- Chair, KUMC Genomics Core Advisory Committee
- Member, Mass Spectroscopy Advisory Board
- Affiliate Member, KU Cancer Center
- Member, Alzheimer’s Disease Center Internal Advisory Board, and Executive Committee

Editorial and Grant Reviews:
- Ad Hoc Reviewer, *Nutritional Neuroscience*
- Ad Hoc Reviewer, *Journal of Investigative Dermatology*
- Associate editor, Autonomic Neuroscience: Basic and Clinical
- Chair, SPACE/ETTN-B(56) review panel for Stimulating Peripheral Activity to Relieve Conditions, Bethesda MD, July 19th, 2017
- Chair, NCCIH Center of Excellence for Research on Complementary and Integrative Health (P01) WebEx-based Review Meeting, March 23rd, 2018

Teaching Activities:
- Advanced Neuroscience
  - 2 – 2 hour sessions
- CBCL, M1
  - 7 – 2 hour sessions
- M1: R&C – Autonomic Neuroscience; cardiovascular control
  - 2 – 1 hour sessions
Research Personnel:

- Anuradha Chakrabarty, Ph.D. Senior Scientist
- Sarah Tague, Ph.D. Senior Scientist
- Aritra Bhattacherjee Ph.D. Post-doctoral fellow
- Zhaohui Liao, M.D., Research Associate
- Dora Krizsan-Agbas Ph.D., Senior Scientist
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 isometric strength training on neuromuscular denervation in aged rats, in rats that differ in inherent aerobic capacity, and in the SOD1-G93A rat model of ALS. Our most recent studies involve determining the survival and phenotype of stem cells transplanted in the brains of jaundiced vs non-jaundiced Gunn rats.

Meetings Attended:
April 26 – 29, 2017 – 25th Annual Meeting of the American Society for Neural Therapy and Repair, Clearwater Beach, FL

Invited Presentations:
September 11th, 2017 – My Rat Can Lick Your Rat! Developing Translatable Exercise Interventions for Neuromuscular Function. Keynote presentation for the 9th Annual Fall Retreat of the Neurological and Rehabilitation Sciences Training Program. University of Kansas Medical Center, Kansas City, KS
April 26th, 2018 – Effects of Traumatic Brain Injury on Measures of Limb and Tongue Function in Rats. 25th Annual Meeting of the American Society for Neural Therapy and Repair/15th Annual Meeting of the International Society for Neural Therapy and Repair, Clearwater Beach, FL

Committee Activities:
Departmental
Member, Physiology Finance Committee
Member, Physiology Graduate Student Affairs Committee
Student Committee Service
Member, Lauren McLean, KCU, College of Biosciences II-year Research track program
Member, Mercy Adewale, KCU, College of Biosciences II-year Research track program
Member, Page Haley, Physiology, Ph.D.
Member, Consuelo Perez Sanchez, Physiology, Ph.D.
KUMC
Member, Rodent Behavior Advisory Committee
Member, KUMC Neuroscience Graduate Program Advisory Committee
Member, KIDDRC Core B Advisory Committee
Member, Society for Neuroscience Kansas City Chapter Executive Committee
Co-President, Society for Neuroscience Kansas City Chapter
Member, KUMC Faculty Council
Dr. Stanford (continued)

Member, KUMC IGPBS Admissions Committee (Neuroscience representative)
Program Director, KUMC Biomedical Research Training Program
Campus Coordinator, K-INBRE Program Director and KUMC Community

National:
Member, Teachers and Students for Community Oriented Research Education Advisory Board
Chair and awards committee, National IDeA Symposium for Biomedical Research Excellence
Member, Steering Committee, National IDeA Symposium for Biomedical Research Excellence
Member, College & Careers Advisory Board,
Member, Diploma+ Program, Kansas City Public Schools
Member, Councilor and Scientific Program Committee
Member, American Society for Neural Therapy and Repair

Editorial and Grant Reviews:
Member, NIH CSR Motor Function Speech and Rehabilitation (MFSR) Study Section
Ad Hoc Reviewer, Movement Disorders
Ad Hoc Reviewer, Journal of Applied Physiology
Ad Hoc Reviewer, Brain Research Bulletin
Ad Hoc Reviewer, Neurobiology of Disease
Ad Hoc Reviewer, Journal of Cerebral Blood Flow and Metabolism
Ad Hoc Reviewer, Behavioral Brain Research
Ad Hoc Reviewer, Neurochemistry International
Ad Hoc Reviewer, Redox Biology
Ad Hoc Reviewer, Neurobiology of Learning and Memory

Teaching Activities:
PHSL 846 – Advanced Neuroscience
   Course Director
   9 – 2 hour sessions
PHSL 843 – Physiology of Disease
   2 – 1.5 hour sessions
Brain and Behavior
   4 – 4 hour group sessions
Dr. Stanford (continued)

Research personnel:
   Kimberly Stanford, M.A. – Research Associate: Resistance training and neuromuscular junctions in aging and ALS
   Jane Yang, Ph.D. – Postdoc: Preclinical Studies of Kernicterus
   Sean Riordan, Ph.D. – Postdoc: Preclinical Studies of Kernicterus
   Emma Renwick – High School Student: Neural Effects of Resistance Exercise in Aged Rats
   Emily Fey – High School Student: Neural Effects of Resistance Exercise in Aged Rats
Joseph S. Tash, Ph.D, Professor

My research interests, funded by NIH, focus on the discovery and development of reversible non-hormonal male contraceptives. In addition, my NASA funded research is focused on elucidating the impact of long term space flight on reproductive health in males and females. In January of 2017, I decided to enter the Phased Retirement Program for a period of one year. I retired on January 14, 2018 and became Emeritus Professor on January 15, 2018.

Meetings Attended:
- NICHD CRB U54/U01 Steering Committee meeting, Bethesda, MD, October 15 - 17, 2017
- NASA Equipment Verification Test at Bioserve in Boulder, CO, October 17 – 22, 2017
- 32nd Annual Meeting of the American Society for Gravitational and Space Research. Seattle, WA; October 25 – 29, 2017

Committee Activities:
- Departmental Member, Department Promotion and Tenure Committee.

Research personnel:
- Lesya Holets, Ph.D., Senior Scientist, Cell-cycle regulatory kinases as targets for male contraceptive drug development, H2-Gamendazole analogues as reversible non-hormonal male contraceptive agents
- Eric Yarns, Research Assistant, Space flight-altered motility activation and fertility-dependent responses in sperm from sea urchin and rodents, Female reproductive health: Space flight induced ovarian & estrogen signaling dysfunction, adaptation, and recovery
John P. Thyfault, Ph.D., FACSM, Associate Professor

1. Links between fatty liver, hepatic mitochondrial dysfunction, and low aerobic fitness and the role that hepatic PGC-1a may be playing in this process
2. Role of hepatic mitochondrial function to impact systemic metabolism and regulation of energy intake and physical activity
3. Role of physical activity and inactivity to modulate insulin action and glycemic control
4. Impact of statins to negatively impact the ability of exercise training to improve skeletal muscle mitochondrial content and aerobic fitness

Committee Activities:

   Departmental
   Search Committee, Reproduction Biologist Faculty Position

   Student Committee Service
   Member, Ian Huck, Pharmacology, Toxicology, Therapeutics, IGBPS
   Member, Michael Cooper, Anatomy, IGBPS
   Member, Ashley Ward, Physiology, IGBPS
   Member, Shaima Alothman, Physical Therapy, Ph.D.
   Member, Yuan Li, Pharmacology, Toxicology, Therapeutics, Ph.D.
   Member, Scott Koppel, Neuroscience, Ph.D.
   Member, Pao Yen Wu, Anatomy & Cell Biology
   Member, Olivia Eller-Smith, Neuroscience, Ph.D.
   Member, Shaolei Xiong, Stowers, Ph.D.

   KUMC
   Scientific Director – Children’s Mercy Healthy Lifestyle and Nutrition Center – (KUMC/CMH joint funded center)

   Community
   Committee, Kansas City VA IACUC
   Planning Committee, Obesity Society meeting
   Co-Director, Integrative Physiology Track 2017 – 2018

Invited Presentations:

   September 27, 2017 – Fitness impacts susceptibility for metabolic disease. The Charles River World Congress Meeting. Boston, MA

Meetings Attended:

   November 1 – 4 – The Obesity Society Meeting, Washington DC

Editorial and Grant Reviews:

   Member, NIH Integrative Physiology of Obesity and Diabetes (IPOD) study section
   Ad Hoc Reviewer, Diabetes
   Ad Hoc Reviewer, AJP Endocrinology and Metabolism
   Ad Hoc Reviewer, Diabetologia
Dr. Thyfault (continued)

Ad Hoc Reviewer, *Journal of Clinical Endocrinology & Metabolism*
Ad Hoc Reviewer, *JCI*
Ad Hoc Reviewer, *Experimental Physiology*
Ad Hoc Reviewer, *Journal of Applied Physiology*
Ad Hoc Reviewer, *Medicine in Sciences and Sports and Exercise*
Ad Hoc Reviewer, *Physiology Behavior*
Associate Editor, *Experimental Physiology*
Associate Editor, *Physiological Genomics*
Associate Editor, *Journal of Applied Physiology*

Seminars Presented:
November 15, 2017 – Hepatic fitness and susceptibility for metabolic disease,
University of Buffalo, Department of Nutrition and Exercises, Buffalo, NY
November 17, 2017 – Movement = Medicine: The critical role of physical activity
for treatment of type 2 diabetes. Second Annual Kansas City Regional
Diabetes Summit.
February 7, 2018 – Hepatic fitness and susceptibility for obesity and metabolic
dysfunction. UMKC School of Dentistry, Kansas City, MO
April 10, 2018 – Hepatic fitness and susceptibility for metabolic disease.
University of Pennsylvania Diabetes and Obesity Research Center,
Philadelphia, PA

Courses Taught:
Medical School Lecture- Exercise and Diabetes
1 – 1 hour session
CBCL
2 – 3 hour sessions
CBCL
2 – 3 hour sessions
IGPBS Cell Biology Course – Integrative Metabolism
3 – 3 hour sessions
PHSL 843 Physiology of Disease – Diabetes
1 – 3 hour session

Research Personnel:
Julie Allen – Lab Manager
Dr. E. Matthew Morris – Research Assistant Professor: Role of hepatic
mitochondrial function to impact weight gain
Dr. Colin McCoin – Post-Doctoral Fellow: Statins and mitochondrial function
Adrianna Maurer, IGPBS Ph.D. Student: Bile acids and fitness
Alex Von Schulze, IGPBS Ph.D. Student: Hepatic mitochondrial function, eat shock proteins,
and mitophagy
Kelly Fuller, Graduate Student: Statins and mitochondrial function
Ning Wang, Ph.D., Assistant Professor

Spermatogenesis is a classic stem cell dependent process essential for male reproduction. Undifferentiated spermatogonia with spermatogonial stem cells (SSCs or male germline stem cells, GSCs) at the foundation of the differentiation hierarchy undergo both self-renewal and differentiation to support lifelong production of sperm. We employ molecular, cellular, genetic, and transplantation approaches to investigate the mechanism regulating SSCs maintenance and meiotic differentiation. In addition to the basic science importance, our studies will aid the development of SSC transplantation therapy to improve and rescue fertility in clinical settings.

Joined the department on May 1, 2018.

Research Personnel:
  Bailey Bye, Research Assistant
  Xiaoyu Zhang, Ph.D., Postdoctoral Fellow
Research in my laboratory has focused on estrogen signaling and its control of reproduction and metabolism. Use rat models in which estrogen receptor alpha or beta has been mutated. These receptors have differential and at times opposing functions. We have found that loss of estrogen signaling leads to female infertility, hyperplasia of the male prostate and alterations in metabolism including hepatic function.

Meetings Attended:
- August 29th, 2017 – Mechanisms of Liver Injury and Diseases COBRE Pilot Grants Symposium, KUMC
- October 19 – 20, 2017 – 14th Annual Gilbert S. Greenwald Symposium on Reproduction, Kansas City, KS
- April 3 – 5, 2018 – “Plagiarism: The identification, processing, prevention and cultural context on plagiarism” Indianapolis, IN

Committee Activities:
- Departmental
  - Director, Graduate Student Advisory Committee
- Student Committee Service
  - Member, Ashley Ward, Physiology, Ph.D.
  - Member, Zelha Nil, Physiology, Ph.D.
  - Member; Chair- Comprehensive Exam, Jianzheng Wu, Physiology, Ph.D.
  - Member, Bhaswati Bhattacharya, Pathology, Ph.D.
  - Member, Eric Young, Cancer Biology, M.D./Ph.D.
  - Member, Li Chen, Physiology, Ph.D.
  - Member, Elizabeth Thoenen, Physiology, Ph.D.
  - Chair- Comprehensive Exam, Cameron Fox, Physiology, Ph.D.
- KUMC
  - Officer, KUMC Research Integrity
  - Member, KUMC Graduate Council
  - Member, IGPBS Advisory Board
  - Member, KUMC Responsible Conduct of Research program advisory committee
  - Member, Frontiers Training Center Advisory Committee (FTCAC)
    - Part of the Frontiers Clinical and Translational Science Award

Invited Presentations:

Editorial and Grant Reviews:
- Reviewer, Journal of Assisted Reproduction and Genetics
Dr. Wolfe (continued)

Teaching Activities:

   CORE 805 – Molecular & Cellular Medicine
          1 – 1 hour session
   Reproduction, Development & Sexuality (course director)
   CBCL
          7 – 2 hour group sessions
   GSMC 856 – Introduction to Research Ethics (course director)
          12 – 1 hour sessions
   PHSL 842 – Comprehensive Human Physiology (co-director)
          10 – 1 hour sessions
   PHSL 832 – Physiology of Disease
          1 – 1.5 hour session
   PHSL – 843 (Mentored 2 students presenting lectures)
          4 – 1 hour group sessions

Research personnel:

   Subhra Gosh, Research Technician
   Khyati Dalal, Research Assistant
   Dr. Vincentaben Khristi, Research Assistant
   Dr. Praveen Chakravarthi, Post-doctoral fellow
   Andres Calva Lopez- 3rd year Medical Student from University of Navarra
John G. Wood, Ph.D., Professor, Director of Educational Programs

Currently our major goal is to examine mechanisms responsible for the microvascular inflammatory response following cutaneous thermal injury. These experiments are in collaboration with Drs. James Howard and Rob Winfield in the Dept. of Surgery. Intravital microscopy is used to quantitate microvascular alterations in mesenteric post-capillary venules.

Committee Activities:
Student Committee Service
- Member, Thesis Committee, Blake Ebner, Physiology, M.D./Ph.D.
- Member, Thesis Committee, Lug i Duan, Pharmacology, Ph.D.
- Member, Thesis Committee, Afreen Sayed, Surgery, Ph.D.

KUMC
- Member, Chancellor’s Distinguished Teaching Award Selection Committee
- Member, Delp Academic Society
- Member, Institutional Animal Care and Use Committee
- Member, Phase I Committee
- Member, Student Liaison

Departmental
- Member, Surgery Research Committee
- Member, Surgery Residency Applicant Interviews
- Member, Surgery Resident Education Committee

Invited Presentations:
- October 2017 – Cutaneous burn – Induced microvascular inflammation in rat mesenteric venules carbon monoxide is attenuated by upregulation of heme oxygenase, American College of Surgery, San Diego, CA (Jonathan Warren, M.D. Surgery Resident)

Teaching Activities:
Medical Education
- Step Preparation Board Review – CV Review
  1 – 1.5 hours session
- Pre-Matriculation – CV
  11 – 1 hour sessions
- Pre-Matriculation
- Respiration and Circulation – CV
  13 – 1 hour sessions
- Cardiopulmonary simulation sessions
  5 – 1 hour sessions
- Integration and Consolidation – CV
  3 – 1 hour sessions
- CBCL Facilitator
  12 – 2 hour sessions
Dr. Wood (continued)

Graduate
Physiology Graduate Course
    7 – 1 – 2 hour sessions

Research Personnel:
    Naomi Holloway, Research Assistant
    Jonathan Warren, M.D., Resident in Dept. of Surgery