MOISE EARNs FULBRIGHT SCHOLAR AWARD

Assistant Professor Alex Moise earned the prestigious Fulbright Scholar Award Program to Brazil. The program, which will be held between April and August 2015, will allow Moise to extend his studies on the role of retinoic acid, a vitamin A metabolite, in embryonic development and to begin a long-term collaboration with José Xavier-Neto, a group leader at the state-of-the-art National Biosciences Laboratory (LNBio), part of the National Center for Research in Energy and Materials (CNPEM) in Campinas, São Paulo, Brazil. The Fulbright Program has been designed to establish open communication and long-term cooperative relationships between countries and academic institutions around the world. Since its inception more than 60 years ago, more than 300,000 grantees including 43 Nobel laureates and 29 heads of state have participated in the Fulbright Program.

BEYOND THE LAB
A NEW SEMINAR SERIES

The establishment of the “Beyond the Lab” seminar series is a new initiative spearheaded by Liqin Zhao in response to the increasing demand for information not traditionally taught in the classroom or lab but critical for success in today’s challenging environment. Specifically, the primary goal of this focused seminar series is to provide a venue for students, postdocs and other research professionals in the department and the school to broaden their exposure and expand their outlook for career advancement. The seminar series features a wide array of topics, including drug development, regulatory science, FDA, translational research and clinical trials, intellectual property and patents, scientific writing, and industry career mentorship. Our inaugural speaker, Frances J R Richmond, PhD, is the Director of the International Center for Regulatory Science, and Professor of Clinical Pharmacy at the University of Southern California, School of Pharmacy.

NOTE FROM THE CHAIR

I hope you enjoy our second edition of the Pharmacology and Toxicology Departmental Newsletter. We tried to include something of interest for all of the alumni, students, faculty and friends of the department. We welcome your contribution to future editions of our “Letters from the Alumni” section and any suggestions for future contents. Please contact me if you are interested in giving a scientific seminar or participating in our new “Beyond the Lab” Seminar Series. Our “Beyond the Lab” program is intended to expose graduate students and postdocs to careers beyond academics. Our hope is that the Newsletter will facilitate connections and reconnections with the department and with other KU alumni and friends.
POST-DOC AND GRADUATE STUDENT AWARDS

AWARD-WINNING PRESENTATION

Emily Carlson won the Graduate Research Competition Presentation Award. Carlson is a fourth-year graduate student in Dr. ShiDu Yan’s lab. Her research focuses on elucidating the role of mitochondria in cancer development and metastasis.

Sarah Woody was chosen to give an oral presentation at the Experimental Biology meeting in San Diego in April 2014. Her talk was entitled “SUMO Modification Alters Pregnane X Receptor Protein-Cofactor Interactions” and was part of the session on “Nuclear Receptors as Therapeutic Targets” chaired by Donald P. McDonnell and David Mangelsdorf.

Postdoctoral researcher Valasani Koteswara Rao, working with ShiDu Shirley Yan, received the 2014 Alzheimer’s Drug Discovery Foundation Outstanding Young Investigator Scholarship at the 8th Annual Drug Discovery for Neurodegeneration Conference in Miami, FL.

Sean Godar won the award for Best presentation at the Annual KU Postdoc Research Day & Career Fair on April 9th. His presentation was entitled “Role of Neurosteroids in Gambling Disorders” and was based on the development of novel neurosteroid-based therapies for gambling disorders.

THE SUPPORT OF OUR DONORS MAKES ALL THE DIFFERENCE

Thank you for supporting the Department of Pharmacology & Toxicology. Private support allows us to provide resources for students, establish research seminars, and continue the excellence you have come to expect from us. Your support, regardless of size, can make a profound impact. Even small amounts given over time can accumulate to create substantial resources for the department.

For a lasting impact on the department, major gifts can establish endowed funds named for you or someone else and provide financial support in perpetuity. Visit us at pharmtox.ku.edu or contact development director, David Ochoa, at dochoa@kuendowment.org or at 785-832-7476 to make a donation.

If you have news to share, contact us at pharmtox@ku.edu

University of Kansas faculty and staff were recently honored for their many years of service to the university.

The Annual Employee Recognition Ceremony held on May 7 honored five members of the Department of Pharmacology and Toxicology, including Sheila Stice for 25 years of service, Stephen Fowler for 20 years of service, Jackob Moskovitz for 10 years of service and Honglian Shi and Alex Moise for five years of service.

Sarah Woody

Sean Godar

Emily Carlson

If you have news to share, contact us at pharmtox@ku.edu

Department of Pharmacology and Toxicology
The KU School of Pharmacy ranks fourth in the nation in research funding from the National Institutes of Health according to the American Association of Colleges of Pharmacy. We have been in the top 6 in NIH funding since FY1995 and in the top five since 2001. According to Dean Audus, “The fact that we remain among the top five programs year after year is a great testament to the quality of faculty researchers we have at the KU School of Pharmacy.”

**New Faculty Grant Awards**

**Alex Moise** recently earned an ROI from NIH as a co-principal investigator with Maureen Kane of the University of Maryland School of Pharmacy and with co-investigator Paul Trainor from the Stowers Institute for Medical Research and KUMC. The five-year grant is titled “Molecular determinants of retinoid metabolism in embryonic tissues.”

**Marco Bortolato** has had a very successful year obtaining grant funding from internal sources and external foundations and government agencies. He received a three-year grant through the KU Research Investment Council entitled, “Developing a research consortium on aggression and drug abuse” along with co-investigators Erik Lundquist, Paula Fite, Merlin Butler, and Ann Manzardo. Bortolato also earned a pilot grant via the NIH funded KU COBRE entitled, “Transcriptomic analysis of disease pathways in animal models of Tourette syndrome”.

**Bortolato** received a grant from the Tourette Syndrome Association titled “Role of 5-alpha-reductase 2 and androgens in Tourette Syndrome”. The objective of this study is to characterize the association of genotype variants of SRD5A2 and alterations in androgen profiles in Tourette syndrome. In another funded project, Bortolato is a co-PI on a major award from the Government of Italy – Ministry of Health entitled “Modulation of the startle response in REM Sleep Behavior Disorder.” Additionally, he received a 3% on an RO1 proposal submitted to NIH entitled “Deciphering gene-environment interactions in pathological reactive aggression” with co-investigators Cara Wellman, Marcelo Coba and Nancy Muma.

**Jeff Staudinger, Nancy Muma** and **Yoshiaki Azuma** were awarded a three-year KU Research Investment Council grant entitled “Consortium Targeting SUMO for the Treatment of Inflammatory-related Diseases”.

**Rick Dobrowsky** was awarded a pilot/feasibility grant from the Diabetes Complications Consortium NIH/NIDDK, entitled “Coupling Pharmacogenetics and RNA-Seq to Identify Hsp70-dependent Gene Networks”.

**Shirley ShiDu Yan** was awarded a grant from the Alzheimer’s Association entitled “Axonal on mitochondrial transport and signaling” and a grant from the NIH KUMC-Alzheimer’s Disease Center titled, “Targeting Aβ-ABAD interaction as a potential therapeutic strategy for Alzheimer’s disease”.

**Liqin Zhao** received an award from the NIH funded KUMC Alzheimer’s Disease Center entitled “Sex and sex hormones, clusterin (APOJ), and brain metabolism”.

---

## Master of Science Program Emphasizes Research

The new Master of Science in Pharmacology and Toxicology program emphasizes students’ research skills in molecular and neuropharmacology and toxicology. In addition to the didactic component of our training, we view hands-on training in laboratory research critical to the master’s thesis experience. Candidates with a bachelor’s degree in chemistry, biology, pharmacology, toxicology, or other related disciplines can apply. Students accepted into the School of Pharmacy P&TX master’s program are not eligible for institutional financial aid and not permitted to be paid for working in a lab while enrolled in research or thesis units. The MS program includes 30 hours of didactic coursework and thesis supervision. Each Master’s degree student is required to submit and defend a thesis resulting from research of sufficient originality and quality for publication in peer reviewed scientific journals. The research is conducted under the supervision and guidance from the student’s advisor, with input from the thesis committee as needed. It is expected that students will complete the requirements and graduate in two years. Top graduates, if interested, may transfer into a Ph.D. program in Pharmacology and Toxicology offered in the department.
DISTINGUISHED VISITORS

October 16, 2013: **Irina G. Gazaryan**, Ph.D., Director, Drug Discovery; Assistant Professor of Neurology and Neuroscience, Weill Cornell Medical College presented a seminar entitled “Triggering of Antioxidant Program without Electrophilic Stress.”

September 18, 2013: **Paul L. Prather**, Ph.D., Professor, Department of Pharmacology & Toxicology, College of Medicine, Slot 611, University of Arkansas for Medical Sciences spoke regarding “Synthetic cannabinoids in K2/Spice: Not just “safe” alternative forms of marijuana.”

February 26, 2014: **Maureen Kane**, Ph.D., Assistant Professor of Pharmaceutical Sciences, University of Maryland School of Pharmacy; Co-Director: Mass Spectrometry Center at the University of Maryland presented a seminar entitled “Use of targeted metabolomics to probe retinoid metabolism.”

March 12, 2014: **Liang-Jun Yan**, Ph.D., Associate Professor, Department of Pharmaceutical Sciences, UNT System College of Pharmacy, University of North Texas Health Science Center spoke regarding “Blue native gel analysis of mitochondrial proteins: Two enzymes for two deadly diseases.”

BEYOND THE LAB SEMINAR SERIES SPEAKERS

April 17, 2014: **Frances J Richmond**, PhD, Director International Center for Regulatory Science, and Professor of Clinical Pharmacy at the University of Southern California, School of Pharmacy, “Positioning Regulatory “Science” in the Academy: Past, Present and Future.”

Dear Friends,

Although I have yet to meet many of you, it is my great pleasure to write this letter. I joined Dr. Jeff Staudinger’s lab in the fall of 2001, when he had just started his career as an assistant professor in the department. In our first meeting, he blew me away with his cutting-edge research in nuclear hormone receptors. He then asked me “What do you expect from me?” To which I responded, “I want to learn how to do research at the molecular level.” Then I asked him: “What do you expect from me?” He simply replied, “Show up.” So I did. I followed his advice and showed up every day, and he’d teach me something new, step by step. By the end of my first year, he had transformed me into an expert in molecular biology.

When I finished my graduate school, I had published seven high-quality papers including five first-author ones under his guidance. Because of my success in Dr. Staudinger’s lab, I was immediately offered a postdoc position in the lab led by Drs. Steven Kliewer and David Mangelsdorf, two world-renowned scientists in the fields of nuclear hormone receptors and endocrine FGFs.

With the expertise in molecular biology I learned in Dr. Staudinger’s lab, I solved the molecular basis for the transcriptional regulation of Fgf21 during fasting by the nuclear hormone receptor PPARalpha and helped study the physiological relevance for the regulation. This work was published in Cell Metabolism (2007) and Proceedings of the National Academy of Sciences of the United States of America (2009). More recently, my work has revealed that the single-transmembrane protein betaKlotho is essential for the metabolic actions of FGF21. This work was published in an issue of Cell Metabolism in 2012. My work also contributed to the findings that the hypothalamus is the direct target for FGF21 in regulating growth and reproduction. This work was published in two papers in Nature Medicine last year. Furthermore, my work demonstrated that the hypothalamus is required for the thermogenic actions of FGF21. This work has been accepted for publication by Cell Metabolism.

At the end of my postdoc, I looked extensively for an independent academic position as I truly enjoyed the academic environment. I hope to get a chance to visit KU and talk to you guys in person some day. Best of luck to you with your endeavors in science!

Xunshan Ding

RECENT GRADUATES

Shefali S. Rouen, Ph.D. has a new position as a Senior Consultant, with Beckloff Associates - Scientific and Regulatory Consulting Cardinal Health Specialty Solutions in Overland Park, Kansas.

Derek Oien is now a Research Associate at the KUMC Cancer Center with Dr. Roy Jensen.
Dear Friends and Colleagues,
After the completion of my training in Jeff Staudinger’s lab in 2009, I moved on to a postdoctoral fellowship at the National Institute of Environmental Health Sciences (NIEHS) located in Research Triangle Park, North Carolina. My work at the NIEHS focused on the role of transcription factor Gli-similar 3 (Glis3) in maintenance of endocrine functions and identified its potential as a therapeutic target for the treatment of diabetes and hypothyroidism. During this time I completed an internship in regulatory affairs at the Duke Translational Medicine Institute and enjoyed being involved in various science outreach projects with local middle and high school students. After the completion of my postdoc I worked briefly as a contract toxicologist at a small pharmaceutical company focused on the development of oral antiviral drugs. I’m currently a product safety scientist in the toxicology and health sciences group at Syngenta and am focused on the management and evaluation of safety data for genetically modified crop and chemical crop protection products.

My experiences at KU laid a solid foundation for me to build on as a postdoc and as a scientist in the pharmaceutical and agriscience industries. The technical and scientific training I received in the lab and from the Pharmacology and Toxicology department faculty was excellent. Through the seminar series, preliminary exams, and other experiences, I developed strong and essential oral and written science communication skills. The Self Graduate Fellowship and Development program also provided financial support and the opportunity for me to develop leadership skills. I have fond memories of my time at KU and these days, my husband Dave and I are spending our free time chasing our toddler son up and down the beaches of North Carolina.

My regards,
Kristin Lichti-Kaiser

---

CONGRATULATIONS, GRADUATES

On June 18th 2013, Jade Franklin defended her dissertation, entitled “Cannabinoid Regulation of Serotonin 2A (5-HT2A) Receptors.” Gonzalo Carrasco was Jade’s dissertation supervisor. Jade is now a post-doctoral fellow with Dr. Santosh D’Mello at the University of Texas at Dallas.

In December 2013, Carrie McAllister graduated from the Neuroscience Ph.D. program. Nancy Muma was her dissertation mentor. Carrie has taken a post-doctoral position with Dr. Kathleen Cunningham at the University of Texas Medical Branch at Galveston.

Yomna Badawi successfully defended her dissertation on April 21, 2014, under the mentorship of Dr. Honglian Shi.

Chang Liu defended her Master’s thesis entitled “Pregnane x Receptor SUMOylation and De-SUMOylation,” under the guidance of Dr. Jeff Staudinger on April 21, 2014.

Pan Pan successfully defended her dissertation on April 18, 2014 under the mentorship of Rick Dobrowsky. After graduation, she will work with Dr. Li-Shu Wang in the Division of Hematology and Oncology at the Medical College of Wisconsin. Dr. Wang’s research focuses on cancer chemoprevention.

Ziyun Zhang successfully defended her dissertation on July 1, 2014, under the mentorship of Honglian Shi.


