



LOMA LINDA UNIVERSITY

School of Pharmacy

**Department of Pharmaceutical
and
Administrative Sciences
Annual Report
2014 - 2015**

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Message from the Department Chair

Dear Colleague,

During this past academic year, the department has worked towards reconsidering the basic and administrative science curriculum of our school. This is part of the school's curriculum revitalization efforts. This has resulted in focused discussions on teaching and learning. Faculty members have planned substantial changes in their course delivery and there are a number of collaborative efforts with our colleagues in the Department of Pharmacy Practice, that will result in increased integration with clinical sciences. Our research program continues to mature, as we added 3 post-doctoral fellows this year. We are continuing our efforts in successfully competing for extramural funding and I am extremely optimistic that we are on the proper trajectory in this area. Our efforts did result in 2 of our faculty receiving funding through LLU sources.

At this point, I would like to express my deepest and most sincere appreciation to the faculty and staff of the department. Each of these individuals are critical to our success.

Sincerely,

Willie Davis, PhD

Mission Statement of the Department of Pharmaceutical and Administrative Sciences

The mission of Loma Linda University School of Pharmacy, Department of Pharmaceutical and Administrative Sciences is to provide the highest quality basic science and pharmacy administrative science educational opportunities to our students. We do this through the constant pursuit of demonstrated excellence in teaching, research and service. We also seek opportunities to, whenever possible, to engage pharmacy students and graduate students in our research endeavors.

Pharmaceutical Science Research Resources

The department has its research space in the Chan Shun Pavilion. This building was constructed as a basic science research building and is located adjacent to the Loma Linda University Medical Center. The department has three laboratories in the building and the cumulative size of these is approximately 3500 square feet.

Chemistry Laboratory

This laboratory contains 2, 6-foot preparative chemistry hoods along with analytic equipment. An enclosed area in this laboratory contains the department's cell culture and microscopy facility. This year, we upgraded our microscopy equipment with the addition of an automated fluorescence microscope. The Chemistry lab is utilized by Dave Weldon, Kristopher Boyle, Rich Maskiewicz, and Vicki Maskiewicz, while the cell culture and microscopy facility is shared space.

Neuropharmacology Laboratory

This laboratory contains two rooms where whole-animal and single cell electrophysiological recordings can be made. The lab also includes space and equipment for immunohistochemistry, microscopy, and other biological analyses. This lab is utilized exclusively by Dr. Wei-Xing Shi.

Molecular Biology Laboratory

This laboratory contains analytical and preparatory equipment including real-time quantitative PCR, ultra-centrifuge, and imaging equipment. This lab is utilized by Danyetta Anderson, Vicki Maskiewicz, and Willie Davis.

There are abundant shared resources on the LLU campus, to which our faculty members have access. These include the Advanced Imaging and Microscopy Core Facility, Flow Cytometry Center, Atomic Absorption, Mass Spectroscopy, and Magnetic Resonance Imaging. Departmental researchers also have access to equipment at Redlands University and the University of California - Riverside.



Kristopher Boyle, PhD
Assistant Professor

Biography

I completed my undergraduate education at Allegheny College in Meadville, PA in 1998 (B.S., Chemistry). After a three-year stint in industry at the DuPont Pharmaceuticals Company, I entered the University of California, Irvine and received a PhD in Organic Chemistry in 2008. I then moved to The Scripps Research Institute for post-doctoral studies where I focused on synthetic and medicinal chemistry. I was privileged to join the Loma Linda University School of Pharmacy in July 2012. My current research interests include studying the fungal metabolite, monocerin, and its analogs, as potential agents to treat multi-drug resistant malaria. My teaching philosophy focuses on challenging the students in the LLUSP program to learn for themselves and to think critically, and to understand how to integrate their Christian faith into their life and profession.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - RXPS 651, Principles of Medicinal Chemistry 1

Service Activities

Member - LLUSP Assessment Committee

LLUSP Faculty Representative - LLU Faculty of Graduate Studies



Willie Davis, PhD
Chair and Associate Professor

Biography

I earned a PhD in Biochemistry from Meharry Medical College and afterwards completed a post-doctoral fellowship in the Laboratory of Gene Regulation, Department of Pathology at the National Cancer Institute in Bethesda, Maryland. I joined the LLUSP faculty in 2004 as an Assistant Professor, and in 2009 was promoted to Associate Professor. I was appointed Acting Chair, Department of Pharmaceutical Sciences in January 2012 and became Chair in June 2012. My laboratory research projects are pharmacogenomics of responsiveness to prescription appetite suppressants in obese individuals. My teaching research interest is in the area of determining predictive metrics of pharmacy student success. My teaching philosophy is that by providing a supportive environment and appropriate motivation, all students have the potential to learn effectively.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Biochemistry 1, RXPS 581

Course Coordinator - Biochemistry 2, RXPS 582

Course Coordinator - Biochemical and Social Aspects of Obesity and Metabolic Syndrome, RXPS 783

2014 - 2015 Publications/Presentations

McLean, L., Watkins C.N., Zylstra D., Campbell P., Amis, L.H., Scott L., Babb CE., Livingston W.J., Rowland L., Darwanto A., **Davis, W.L.**, Senthil M., Sowers, L. and Brantley, E. Aryl hydrocarbon receptor ligand 5F 203 induces oxidative stress triggering DNA damage in human breast cancer cells. Chem Res Toxicol. 2015. 28(5):855-71.

Weldon, DJ, Saulsbury, MD, Goh, J, Rowland, L, Campbell, P, Robinson, L, Miller, C, Christian, J, Amis, L, Taylor, N, Dill, C, **Davis Jr., W**, Evans, SL, Brantley, E. One-pot synthesis of cinnamylideneacetophenones and their in vitro cytotoxicity in breast cancer cells. Bioorganic & Medicinal Chemistry Letters. 2014. Vol 24 (15), 3381-4.

Service Activities

Member - LLU Educational Effectiveness Committee

Member - LLU Faculty of Graduate Studies Admission Review Committee

Co-Chair - LLUSP Continuing Professional Development Committee

Member - LLUSP Executive Committee

Member - LLUSP Accreditation Oversight Committee



**Paul Gavaza, PhD
Associate Professor**

Biography

I received my Master of Science and Doctor of Philosophy (PhD) degrees in Pharmacy Administration from The University of Texas at Austin in 2007 and 2010 respectively. I joined the faculty of the Loma Linda University School of Pharmacy as an Associate Professor in January 2014. Prior, I was an Assistant Professor at Appalachian College of Pharmacy, Oakwood, Virginia. My primary research interests include social, economic and behavioral aspects of pharmacy practice and outcomes research. I coordinate and teach Social Behavioral Pharmacy and Health Systems, Reimbursement and Pharmacoeconomics courses to second and third year pharmacy students respectively.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Health Systems, Reimbursement, and Pharmacoeconomics, RXSA 743

Course Coordinator - Social and Behavioral Aspects of Pharmacy Practice, RXSA 751

2014 - 2015 Publications/Presentations

Nguyen, L and **Gavaza, P**. Evaluating the clinical outcomes associated with a modified prolonged infusion piperacillin-tazobactam protocol: A pilot study. Cogent Medicine (2015) 2: 1069933.

Meng-Jou Wu, Kyu Kim, **Paul Gavaza**, Gloria Cheng, Farnoosh Zough. Effect of statin use on recurrent venous thromboembolism. Presented at the LLUSP Research Day, May 2015, Wong Kerlee Conference center, Loma Linda. CA.

Elizna van Zyl, Huy Le, Patti Radovich, Marena Zakhary, Erin Jhule Pablo, **Paul Gavaza**. The impact of concurrent opioids on alcohol withdrawal syndrome. Presented at the LLUSP Research Day, May 2015, Wong Kerlee Conference center, Loma Linda., CA

Paul Gavaza, Nguyen Ta. An investigation of California pharmacy students' perceptions of their education and training on oral health. Presented at the LLUSP Research Day, May 2015, Wong Kerlee Conference center, Loma Linda, CA.

Service Activities

Member - LLUSP Assessment Committee

Invited reviewer for the Journal of the American Pharmacists Association, American Journal of Pharmaceutical Education, Pharmaceutical Sciences, and Drug Safety.



**Elvin Hernandez, MPH, DrPH
Associate Professor**

Biography

I earned a Master of Public Health degree at Drexel University School of Public Health and a Doctor of Public Health from the Loma Linda University School of Public Health. I joined the faculty of the Loma Linda University School of Pharmacy in 2005. My research interest is to explore patient-clinician communication factors that may be associated with medication adherence in diverse, racial and ethnic populations with an emphasis on lowering health disparities in ethnic and minority populations in Southern California. I have expertise in community health and promotion, health education, health behavior, biostatistics/epidemiology, and research methodology. I have also been a certified health educator since 2001, and is currently credentialed as Master Certified Health Education Specialist (MCHES). The goal in my teaching is for students to leave my courses with a positive impression on the content and self-confidence in performing and discussing the techniques in the future. Furthermore, I strive for a respectful atmosphere in which students are comfortable in asking questions and engaging in discussions, particularly when the abstract nature of biostatistical and epidemiological interpretation is required for various presentations and discussion. I firmly believe that providing this nurturing environment will eliminate an intimidating atmosphere in the classroom which may often lead to student disengagement in the learning process.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Public Health and Lifestyles, RXSA 545

Course Coordinator - Epidemiology and Biostatistics, RXSA 640

Course Coordinator - Clinical Research Methodology, RXSA 757

2014 - 2015 Publications/Presentations

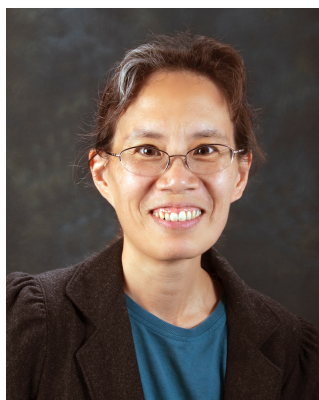
SF Wong, M Bounthavong, C Nguyen, K Bechtoldt, **E Hernandez**. (2014). Implementation and preliminary outcomes of a comprehensive oral chemotherapy management clinic. *American Journal of Health Systems Pharmacy*, 71:960-965.

Service Activities

Member - LLUSP Admissions Committee

Chair - LLUSP Promotion and Tenure Committee

Member - LLUSP Accreditation Oversight Committee



**Kathryn Knecht, PhD
Associate Professor**

Biography

I earned a PhD in Toxicology from the University of North Carolina and joined the faculty of the Loma Linda University School of Pharmacy in 2004. My teaching and research interests focus on the use of dietary supplements, particularly in ethnic populations, and the assessment of student learning. My teaching philosophy is determined by my belief that students need to explain and apply knowledge, and that this higher-level learning occurs more often outside of the traditional classroom setting.

Courses Taught in the 2014 - 2015 Academic Year

Instructor - Pharmacist Guided Self-Care 2, RXPC 572

Course Coordinator - Dietary Supplements, RXPC 710

Course Coordinator - Clinical Toxicology, RXPS 718

2014 - 2015 Publications/Presentations

Alismail, A., Lopez, D., Marin, T., Wild, K., **Knecht, K.** Interprofessional Lab (IPL): Loma Linda University's inclusive interprofessional education experience. *Respiratory Care* 59 (10): OF46, 2014.

LaPointe, C., Luong, A., Yim, D., Tran, H., **Knecht, KT.** Herbal usage and beliefs in a Vietnamese population. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Anaheim, CA, December 4-11, 2014.

Service Activities

Chair - LLUSP Assessment Committee

Chair - LLU Co-curricular Assessment Sub-Committee

Faculty Director - CKC-Music

Member - LLUSP Accreditation Oversight Committee

Member - LLUSP Curriculum Committee

Member - LLU Educational Effectiveness Committee

Member - LLU Assessment Committee

Member - LLU ICP



Richard Maskiewicz, PhD
Associate Professor

Biography

I earned a PhD in bioorganic chemistry from The University of California, Santa Barbara. I joined the faculty of the Loma Linda University School of Pharmacy in 2006, and I currently serve as the course coordinator and primary instructor in our physical pharmacy and dosage form evaluation courses. My research interests include the development of novel processes for sustained/controlled drug delivery, and investigation of properties of high entropy fluids. My teaching philosophy is for the most part pragmatic, guided by end of course student opinions, and realizing that “fine tuning” of lecture material is a never ending process. My teaching philosophy further entails assessment of student competence in lecture topics, on a real-time basis through lecture-embedded quizzes, and in adjusting course presentation, as necessary, to each particular year’s incoming class of students.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Pharmaceutics 2, RXPS 512

Course Coordinator - Pharmaceutics 3, RXPS 513

Service Activities

Chair - LLUSP Curriculum Committee

Member - NIH NIAID Review Panel

Member - LLU GRASP Review Panel

Member - LLUSP Accreditation Oversight Committee

Member - LLU Research Services Committee

Member - LLU Intellectual Property Committee



Victoria Maskiewicz, PhD
Associate Professor

Biography

I obtained my BS degree in pharmacy from the University of Rhode Island School of Pharmacy, and subsequently obtained a PhD in Pharmaceutical Chemistry from the University of California San Francisco. In addition, I am a registered patent agent with the United States Patent and Trademark Office. Prior to coming to LLU, I served as a consultant in intellectual property, emphasizing biotechnology and pharmaceutical patents. I also have extensive pharmaceutical industry experience, specializing in transdermal delivery of small molecules, and injectable and implantable drug delivery systems for recombinant proteins and peptides. My current research projects include the development of a novel microcomposite drug delivery system for the treatment of osteomyelitis, stabilization of reactive molecules in drug delivery matrices, and the pharmacokinetics of piperacillin/tazobactam in obese patients. I teach pharmaceutics and pharmacokinetics. In both of the disciplines I teach, pharmaceutics and pharmacokinetics, the goal of my lectures is to acquaint students with a physical description of systems, in many cases by using the quantitative language of mathematics. I use problem sets extensively in teaching, often to present new material. This can often be a very time-consuming way for the student to learn, but I have been pleased to hear from many of them that they consider it time well spent. I firmly believe that my task as a teacher is to maintain high academic standards and then offer students the assistance they need to achieve them.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Pharmacokinetics, RXPS 610

Instructor - Clinical Pharmacokinetics, RXPC 760

Instructor - Pharmaceutics 2, RXPS 512

2014 - 2015 Publications/Presentations

US Patent Application 2015/0093443 – “Microcomposites for treatment of bone”, V.K Maskiewicz, G. Botimer, S. Inceoglu

Service Activities

Chair - LLUSP Promotion and Tenure Committee

Member - LLUSP Admissions Committee



Jim Pinder, JD, MBA
Assistant Professor

Biography

I have taught pharmacy law at Loma Linda University School of Pharmacy since 2009. In 2014 I launched an elective course, advanced pharmacy law. My scholarship can be best summarized as pharmacy law education for students, pharmacists, and technicians. For all three groups, I provide law update presentations at professional meetings. I am also co-authoring a case law textbook with Dr. Fred Weissman from University of Southern California that will help students understand civil liability pharmacists face in practice today. I am also director of academic affairs for the Loma Linda University School of Pharmacy. Having an opportunity to interact with the best and brightest students is a privilege. Knowing that students who just a few years ago sat in Pharmacy Law have now graduated and are extending the healing ministry of Jesus Christ is a reminder that being a pharmacist is more than filling prescriptions. Students must be prepared to protect their licenses, protect their patients, and to do so in a manner that causes the patient to realize their pharmacist has gone the extra mile to help them.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Pharmacy Law, RXSA, 547

Course Coordinator - Advanced Pharmacy Law

2014 - 2015 Publications/Presentations

Pinder, J. (2014). Pharmacy Law Updates 2014. *California Journal of Health-System Pharmacy*, (November/December 2014, Volume 26 No. 6).

Pinder, J. (2014). Tricky Tramadol and the 120-Day Rule. *California Journal of Health-System Pharmacy*, (November/December 2014, Volume 26 No. 6).

Service Activities

Member - LLUSP Executive Committee

Member - LLUSP Academic Standing Committee

Rotary Club of Redlands, Calif. Board of Trustees



**Wei-Xing Shi, PhD
Professor**

Biography

I earned a Ph.D. in neuropharmacology from Yale University School of Medicine. After a postdoctoral fellowship at Columbia University in New York, I returned to Yale, first as an Assistant Professor and then Associate Professor. I joined the faculty of the Loma Linda University School of Pharmacy in 2007. My research interests are in the neurobiology and pharmacology of dopamine-related brain disorders including schizophrenia, Parkinson's disease, and drug addiction. In collaboration with colleagues in the School of Medicine, we have recently begun to study also neurodegenerative disorders including multiple sclerosis, Alzheimer's disease, and ischemia-induced brain injury. My research involves the use of a wide range of techniques including in vivo and in vitro electrophysiological recording, optogenetics, behavioral observation, and immunohistochemistry. I also coordinate and teach in the Physiology I and Introduction to Neuropsychopharmacology courses. I consider it a great honor to teach our students at LLUSP, and believe that teachers can have an important impact on not only students' learning outcome, but also their future career decision and development. I am committed to providing the best possible education for my students, and strive to ensure that my lectures are up-to-date, coherent, and logically presented. I think that one of my greatest strengths is my enthusiasm and passion for the subjects that I teach. I believe that I, as a teacher, bear the responsibility to persuade students that the knowledge we are studying is interesting and relevant. I have found that students learn more effectively when they can make connections with their past knowledge and real-world experiences.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Physiology 1, RXPS 524

Course Coordinator - Introduction to Neuropsychopharmacology, RXPS 784

2014 - 2015 Publications/Presentations

Wang H, Hong LJ, Huang JY, Jiang Q, Tao RR, Tan C, Lu NN, Wang CK, Ahmed MM, Lu YM, Liu ZR, **Shi WX**, Lai EY, Wilcox CS, Han F (2015) P2RX7 sensitizes Mac-1/ICAM-1-dependent leukocyte-endothelial adhesion and promotes neurovascular injury during septic encephalopathy. Cell Res. 2015 Jun;25(6):674-90.

Karain B, Xu D, Bellone JA, Hartman RE, **Shi WX** (2015) Rat globus pallidus neurons: functional classification and effects of dopamine depletion. Synapse. 2015 Jan;69(1):41-51.

I dela Peña, RGevorkiana, and **WX Shi** (2015) Psychostimulants affect dopamine transmission through both dopamine transporter-dependent and independent mechanisms. Eur J Pharmacology. 2015 (764), 562-70.

2014 - 2015 Grant Funding

Co-PI: **LLU GRASP**, iPSCs as Stem Cell Therapy for Neonatal Brain Ischemia. \$75,000

Service Activities

Member-LLUSP Promotion and Tenure Committee

Member-LLU Rank and Tenure Committee

Member-LLU FGS Graduate Council

Member - LLUSP Continuing Professional Development Committee



Dave Weldon, PhD
Associate Professor

Biography

I earned a PhD in Medicinal Chemistry from The University of Mississippi in 2008 and joined the faculty of the Loma Linda University School of Pharmacy in the same year. I teach in the medicinal chemistry series that is offered to second year pharmacy students. My research interests lie in the synthesis and manipulation of natural products to improve the drug-like properties of the compounds for pharmaceutical evaluation and developing new methodologies of synthesis. Currently, I am pursuing a natural product that has been shown to have moderate activity against pre-B ALL, the most common form of childhood leukemia. My teaching philosophy is rooted in my belief that students need to be challenged so that they can consolidate material from various disciplines and formulate a framework in which they can understand the treatment of disease from a pharmacological perspective. In my courses, I not only teach the pharmacology and medicinal chemistry of therapeutics, but I incorporate clinical application of material learned in the classroom, along with the extensive use of discussion boards, to integrate material between courses.

Courses Taught in the 2014 - 2015 Academic Year

Course Coordinator - Principles of Medicinal Chemistry 2, RXPS 652

Course Coordinator - Principles of Medicinal Chemistry 3, RXPS 653

2014 - 2015 Publications/Presentations

Weldon, DJ, Saulsbury, MD, Goh, J, Rowland, L, Campbell, P, Robinson, L, Miller, C, Christian, J, Amis, L, Taylor, N, Dill, C, Davis Jr., W, Evans, SL, Brantley, E. One-pot synthesis of cinnamylideneacetophenones and their in vitro cytotoxicity in breast cancer cells. *Bioorganic & Medicinal Chemistry Letters*. 2014. Vol 24 (15), 3381-4.

Service Activities

Member - LLUSP Accreditation Oversight Committee

Member - LLUSP Curriculum Committee

Faculty Advisor - LLUSP Rho Chi Chapter

Part-Time Faculty and Faculty With Secondary Appointments in the Department

Several individuals hold either part-time or secondary appointments to our department. They are listed below.



Samuel Achilefu, PhD

Director of Optical Radiology Lab
Professor of Radiology
Washington University School of Medicine



Eileen Brantley, PhD

Assistant Professor, Department of Basic Sciences
Division of Pharmacology
Loma Linda University School of Medicine



Christopher Perry, PhD

Assistant Professor, Department of Basic Sciences
Division of Biochemistry
Loma Linda University School of Medicine

Part-Time Faculty and Faculty With Secondary Appointments in the Department



Richard Sun, PhD

Assistant Professor, Basic Sciences
Division of Physiology
Loma Linda University School of Medicine



Robert Teel, PhD

Professor, Pharmaceutical and Administrative Sciences
Loma Linda University School of Medicine



Sean Wilson, PhD

Assistant Professor, Basic Sciences
Division of Pharmacology
Loma Linda University of School of Medicine

2014 - 2015 Seminar Speakers

Dale Boger, PhD - Richard and Alice Cramer Professor of Chemistry Department of Chemistry and the Skaggs Institute for Chemical Biology Chairman, Department of Chemistry, The Scripps Research Institute, **“Total Synthesis of Vancomycin”**

Benoit Chassaing, PhD - Postdoctoral Fellow, Institute for Biomedical Sciences, Georgia State University, **“Genetic-Environment-Microbiota interplay in intestinal inflammation”**

Sean Davies, PhD - Assistant Professor of Pharmacology, Vanderbilt University School of Medicine, **“Therapeutically modified gut bacteria for the treatment of metabolic diseases”**

Jean-Pyo Lee, PhD - Assistant Professor, Department of Neurology, Tulane University, **“Bystander effect fuels human induced pluripotent stem cell-derived neural stem cells to quickly attenuate early stage neurological deficits after stroke ”**

Carrie Van Breton, ScD - Assistant Professor of Preventive Medicine, University of Southern California, **“A role for epigenetics in children’s environmental health?”**

Department Research Projects Funded Through Dean's Office LLU School of Pharmacy

Lab	Project Title	Collaborator	Amount Requested
Boyle	Exploring Moncerin - structure and antimalarial activity	US Army	\$5000.00
Boyle	Combination of radiotherapy and chemotherapy against cancer	Marcelo Vasquez - LLUSM	\$10000.00
Boyle	Targeting the tumor suppressor gene cytoglobin using Phortress	Eileen Brantley - LLUSM	\$10400.00
Davis	Indian Springs Biotech Student Engagement	ISHS - SBUSD	\$3300.00
Davis	Pro-inflammatory Monocytes as Predictors of DMARD Therapeutic Effectiveness in Rheumatoid Arthritis	Nasim Daoud - LLUSM	\$10000.00
Davis	Immune Cell Function in Obesity	Warren Peters - LLUSM	\$11400.00
Davis	Protein Stability	Rich Maskiewicz - LLUSP	\$5000.00
Knecht	Experiences of a Spanish-speaking, Latino population with community pharmacists	Paul Gavaza - LLUSP	\$480.00
Knecht	Childhood Lead Poisoning Prevention Program Proposal For MPH Field Practicum	Natasha Plantak - LLUSPH	\$1200.00
Maskiewicz, V	Pharmacokinetics and pharmacodynamics of high-dose piperacillin/tazobactam in obese patients	Steve Forland and John Veillette - LLUH/LLUSP Ingrid K. Blomquist - LLUSM David Bland - LLUH	\$11500.00
Maskiewicz, V	Novel microcomposites for treatment of osteomyelitis following arthroplasty	Gary Botimer and Serkan Inceoglu - LLUSM	\$15000.00
Shi	Chemogenetic approach to study functions of the prefrontal cortex		\$15000.00
Shi	Neurobiology of Attention-deficit hyperactivity disorder (ADHD)	Richard Sun - LLUSM	\$15000.00
Weldon	Synthesis of HuaCat I/II Derivatives		\$3600.00
Total			\$116880.00

Department Goals 2015 - 2016

1. **Improve** the scholarly output by developing collaborative projects that leverage the skills of department members.
2. **Increase** the number of fruitful research collaborations between members of the department with clinical and basic science research faculty in other LLU schools and elsewhere.
3. **Mature** a sustainable culture of scholarly teaching within the department.
4. **Lead** the discussion, planning, and implementation of a renovated PharmD curriculum.