Dean’s Summer PharmD Research Fellowship

**Stipend: $4500 over 3 months**

The list of participating faculty and application guidelines are enclosed in this packet. For more information contact Graduate Affairs Office at PHARgrad@usc.edu.

**Application Requirements:**

*The students should have:*

- Strong desire to pursue a PhD in one of the disciplines offered by the USC School of Pharmacy graduate program ([https://pharmgradprograms.usc.edu/](https://pharmgradprograms.usc.edu/)) after completion of their undergraduate or PharmD studies.
  - Pharmaceutical and Translational Sciences PhD Tracks:
    - Pharmaceutical Sciences
    - Molecular Pharmacology and Toxicology
    - Clinical and Experimental Therapeutics
  - Health Economics PhD Tracks:
    - Microeconomics
    - Pharmaceutical Economics and Policy
- Strong academic background (GPA of 3.5 or higher)
- Working knowledge of research skills and concepts learned through college courses.
- Full-time availability for work over the summer (June until mid-August)

**Application deadline: April 15, 2016**
Dean’s Summer PharmD Research Fellowship

Application Guidelines:

1. Select a faculty member from the attached list with whom you would like to work.
2. Contact this faculty member to arrange an interview.
3. Discuss the research with the faculty member and formulate a project. Jointly prepare a description of the project and goals for the summer (maximum, one page single spaced).
4. Fill out the cover sheet (ENCLOSED).
5. Submit the following:
   (1) Project description
   (2) Cover sheet
   (3) Letter from the prospective faculty sponsor, demonstrating willingness to sponsor your application
   (4) Transcripts from all undergraduate programs attended
   (5) Supplemental materials describing previous research or other material you feel the committee would find useful in evaluation of your application.
   (6) Email completed application as a single PDF document to the Graduate Affairs Office at PHARgrad@usc.edu.

Application deadline is April 15, 2016. Applicants will be notified whether they are awarded the fellowship by late April/early May, 2016. Earliest start date is June 1, 2016.

Awardees will be required to give an oral presentation of their summer research at the conclusion of the summer, before the final payment is disbursed, so that the Committee can evaluate the success of the program.
Cover Sheet
Dean’s Summer PharmD Research Fellowship

Applicant Name: ______________________________

USC ID Number: ______________________________

Local Home Address: ______________________________

E-mail address: ______________________________

Faculty Sponsor: ______________________________

Title of Project: ______________________________

Undergraduate Level: ______________________________

Undergraduate Major: ____________ Minor: ____________

Overall GPA: ____________ Science GPA: ____________

Units Completed: ____________ Science Units: ____________

PharmD Level: ____________ PharmD Overall GPA: ______
Participating Faculty Research Interests

For Faculty Profiles and Contact Information, visit: http://pharmacyschool.usc.edu/faculty/

Drug Design and Discovery

Ivan S. Haworth, Associate Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., Liverpool, 1989. Areas of research: The interface of chemistry, biology and the computational sciences, with the goal of accurate predictions of molecular structure and intermolecular association.

Jianming Xie, Assistant Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., Scripps Research Institute, 2006. Areas of research: Protein chemistry, cellular engineering, T cell immunology, and immunotherapy. We develop and apply novel protein modification methods for understanding T cell activation and designing therapeutic proteins against cancer and HIV.

Yong (Tiger) Zhang, Assistant Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., Albert Einstein College of Medicine, 2011. Areas of research: antibody engineering; monoclonal antibodies for targeted drug delivery and immunotherapy; post-translational modifications; small-molecule drug design and discovery.

Drug Transport and Delivery

Julio A. Camarero, Associate Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., University of Barcelona, Spain, 1996. Areas of research: Use of synthetic protein chemistry-driven technologies for studying biological processes involved in bacterial pathogenicity and Chem-Biosensing. Development of new bioorganic approaches using protein splicing and synthetic protein chemistry for studying biological processes involved in bacterial pathogenicity and how they can be modulated or inhibited by Cys-knotted microproteins.

J. Andrew MacKay, Assistant Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., UC Berkeley/San Francisco 2005. Areas of research: Engineering a new generation of polypeptide-based drug carriers that change physical properties in response to disease microenvironments. Cancer and ocular diseases are our primary focus.

Curtis T. Okamoto, Associate Professor of Pharmaceutical Sciences; Ph.D., UC Berkeley, 1989. Areas of research: Characterization of the molecular mechanisms by which the polarized sorting of membrane proteins is regulated in epithelial cells. This is the primary, basic process by which epithelial cell polarity, and hence epithelial cell function, is established and maintained.

Drug Action and Mechanism

Enrique Cadenas, Professor Pharmacology and Pharmaceutical Sciences and of Biochemistry and Molecular Biology and Associate Dean of Research; Ph.D., Buenos Aires, 1977. Areas of research: the molecular mechanisms inherent in brain aging and Alzheimer's disease under an umbrella that characterizes and evaluates quantitatively the decline in energy metabolism associated with brain aging and age-related neurodegenerative diseases by addressing the coordinated regulation of signaling and transcriptional pathways and mitochondrial function.

Molecular and Genetic Basis of Disease and Therapy

Jean C. Shih, University Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., California, Riverside, 1968. Areas of research: Develop novel targets and tumor-specific therapeutics and diagnostic tools for cancers, especially brain and prostate cancer and lymphoma.

Bangyan Stiles, Associate Professor of Pharmacology and Pharmaceutical Sciences; Ph.D., University of Texas, 1998. Areas of research: The role of lipid phosphatase PTEN and its signaling pathway in cancer and diabetes. PTEN plays a role in tumor development, tissue regeneration as well as glucose and lipid metabolism. We have developed several animal models that carry deletion of Pten to study tissue regeneration as well as the link between energy metabolism and tumorigenesis.
Clinical/Translational Research

Houda Alachkar, Assistant Professor of Clinical Pharmacy, Pharm.D., Ohio State University, 2012 and Pharm.D., Ohio Northern University, 2011. Areas of research: Application of genomic information to the identification and functional characterization of cancer targets, and in the preclinical and clinical developments of potential targeted therapeutic approaches with particular interest in acute myeloid leukemia.

Paul Beringer, Associate Professor of Clinical Pharmacy, Pharm.D., University of Southern California, 1990, Pharmacy Practice Residency, UC San Francisco, 1991, Specialty Residency Pharmacokinetics, UC San Francisco, 1992. Area of research focus: Cystic fibrosis, a genetic disorder which results in defective chloride transport within the apical membrane of epithelial cells throughout the body. Our group conducts clinical/translational research on novel antibacterial and anti-inflammatory therapies designed to improve lung function and quality of life in patients with CF.

Daryl L. Davies, Associate Professor of Clinical Pharmacy; Associate Director of Education for the Masters in Management of Drug Discovery. Ph.D., University of Southern California, 1996. Most recently, Dr. Davies has taken the lead role in the development and management of the School of Pharmacy's first undergraduate minor to be taught on the University Park Campus -- Minor in Science and Management of Biomedical Therapeutics. As part of this effort, he is one of the undergraduate faculty advisers for the School of Pharmacy TAP program. Areas of research: Development of novel treatments for alcohol use disorder (AUD) and identification of molecular targets of alcohol action in the CNS. Other areas of investigation include the development of pharmaceuticals and nutraceuticals for treatment of neurodegenerative diseases such as Alzheimer’s disease.

Stan Louie, Associate Professor of Clinical Pharmacy and Pharmacology and Pharmaceutical Sciences, Pharm.D. UC San Francisco (UCSF), 1987, Pharmacy Practice Residency. Pacific Presbyterian Medical Center 1988. Areas of research: Drug development for diseases such as cancer, viral infection, and inflammatory conditions. We have lead compounds in pre-clinical or clinical evaluation for cancer and age-related macular degeneration. In addition, we have developed a light activated nanocage carrier to deliver various cargoes for the treatment of tissue injury or cancers.

Emi Minejima, Assistant Professor of Clinical Pharmacy, Pharm.D., UC San Diego, 2009; Pharmacy Practice Residency, Huntington Hospital 2010; USC-Huntington Hospital 2011; Infectious Diseases Specialty Residency 2012. Areas of research: antimicrobial stewardship; epidemiology and clinical outcomes of infections in medically underserved population, including infections due to resistant pathogens (ESBL gram negative organisms, MRSA); evaluating dosing strategies of antimicrobials that are therapeutically monitored.

Tien Ng, Associate Professor of Clinical Pharmacy, Pharm.D. Wayne State University 1998, Cardiovascular Pharmacotherapy Fellowship, University of Utah 2000. Areas of research: Heart failure pathophysiology and therapeutics – acute heart failure therapeutics, cardiorenal syndrome, biomarkers, prospective clinical trials, retrospective observational cohort studies.

Susie Park, Assistant Professor of Clinical Pharmacy, Pharm.D. BCPP, University of Southern California 2000, Psychiatric Pharmacy Practice Residency University of Southern California 2001. Areas of research: Evaluating sleep-wake disorders in hepatitis C virus infected individuals; managing insomnia and depression in chronic hepatitis C virus infection.

Kathy Rodgers, Associate Professor, Ph.D. University of California, Riverside, 1984, Post-doctoral training: University of California, Riverside, 1984-1986. Areas of research: Evaluation of the ability of angiotensin peptides to regenerate injured tissue and product development. Basic research is being conducted to evaluate the mechanisms by which active components of this system modify progenitor function leading to accelerated healing in a number of disease models. This research has led to preclinical development and clinical trials in the areas of diabetes, dermal injury, bone marrow reconstitution, multiple sclerosis and muscular dystrophy.

Irving Steinberg, Associate Professor of Clinical Pharmacy and Pediatrics, Director, Division of Pediatric Pharmacotherapy, LAC+USC Medical Center. Pharm.D. and Residency, University of Minnesota, 1984; ASHP Endowed Fellowship in Infectious Disease and Pharmacokinetics, 1985, University of Minnesota. Areas of research: External validation of published pediatric population pharmacokinetic models; institutional model construction and covariate testing of antimicrobials and antiepileptic agents. Augmented renal clearance and acute kidney injury in pediatric critical care.

Annie Wong-Beringer, Professor of Clinical Pharmacy, Pharm.D. University of Southern California 1990, Pharmacy Practice Residency and Fellowship in Infectious Diseases, UC San Francisco 1992. Areas of research: Clinical and molecular epidemiology, host immune response and outcomes of infection caused by antibiotic resistant bacteria (MRSA, Pseudomonas, CRE), mechanisms of resistance and virulence, and host immunophenotype and immunogenetics. Projects involve in vitro cellular models, animal models, and human subjects.
Pharmaceutical and Health Economics

Jason N. Doctor, Associate Professor of Pharmaceutical and Health Economics; Ph.D., University of California, San Diego (UCSD). Areas of research: decision-making in health and medicine, outcomes measurement and medical decision making under risk, behavioral economic models of choice.

Dana P. Goldman, Leonard D. Schaeffer Director’s Chair, USC Schaeffer Center for Health Policy & Economics; Professor of Public Policy, Pharmacy and Economics; Ph.D., Stanford University. Areas of research: health economics and policy.

Joel W. Hay, Professor of Pharmaceutical and Health Economics; Ph.D., Yale University, 1980. Areas of research: Pharmaceutical policy and pricing; insurance design, Medicare, chronic disease management, smoking cessation, and cost-effectiveness analysis.

Geoffrey Joyce, Associate Professor and Chair, Department of Pharmaceutical and Health Economics, Director of Health Policy at the Leonard D. Schaeffer Center, and Research Associate at the National Bureau of Economic Research; Ph.D., City University of New York, 1995. Areas of research: lifetime costs of chronic disease, smoking cessation, the cost-effectiveness of highly active antiretroviral therapy for HIV-infected patients, and differences in medical care utilization and costs under alternative financing arrangements and treatment settings.

Darius N. Lakdawalla, Quintiles Chair in Pharmaceutical Development and Regulatory Innovation; Professor of Pharmaceutical and Health Economics; Ph.D., University of Chicago. Areas of research: economics of risks to health, medical innovation, and the organization of health care markets.

Jeffrey S. McCombs, Associate Professor of Pharmaceutical and Health Economics and Director of Graduate Studies; Ph.D., University of California, San Diego (UCSD). Areas of research: Comparative effectiveness analyses, large database analyses, pharmaceutical care, competitive pricing systems, mental illness, hepatitis C, HIV.