

UC San Diego

SKAGGS SCHOOL OF PHARMACY
AND PHARMACEUTICAL SCIENCES

INTERNATIONAL PHARMACY EDUCATION & RESEARCH
FACULTY PROFILE



Pharmaceutical
Sciences

MISSION

In the effort to contribute to global health, the **Committee on International Pharmacy Education and Research (CIPER)** serves to promote international pharmacy-related educational, outreach and scholarly activities. We are expanding our global reach by offering an extensive array of rotations and training opportunities in pharmacy and pharmaceutical sciences for our international affiliates with students, postdocs and faculty. With over a decade of educational exchange internationally, this program will offer the opportunity for trainees to gain and enhance their skills within our rich academic and research environment that provides doctoral-level training and ranked among the top research-intensive universities in the United States of America.

Anjan Debnath, Jennifer Le (Chair) and Palmer Taylor (Founding Dean)
CIPER Committee Members

RUBEN ABAGYAN

Ph.D.



Professor of Clinical Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences



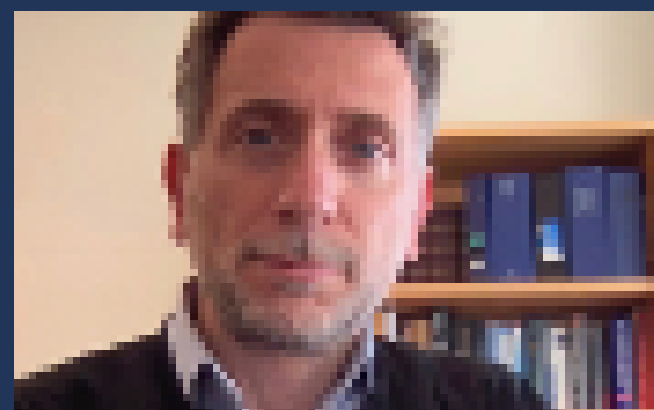
Dr. Abagyan's research focuses on the development of novel technologies for structure based drug discovery and optimization, structural systems biology for target finding and protein modeling. The lab screens specific biomedical targets to discover new drug leads, and validate them experimentally. The applications include cancer, neurodegeneration, parasitic, viral and endocrine diseases. To extend the reach of docking we model alternative functional states and allosteric pockets of the kinases, GPCRs and Nuclear Receptors. We derived comprehensive sets of ligand pockets (the Pocketome) competing for ligands and metabolites in different organisms. These data are used for target identification and multi-target pharmacology profiling. We dock drugs, leads and environmental chemicals to the 'anti-target' models to predict endocrine disruption and other adverse effects. We also identify new promising uses of existing drugs on the basis of the multi-target pharmacology. He trained pharmacy students and pharmaceutical researchers from France, Austria, Germany, Switzerland, Italy, Czechia, Armenia, China, South Korea, Pakistan, Philippines, and India.

Minimum Duration: 1 year

[Faculty Website](#)

CARLO BALLATORE

Ph.D.



Professor
Skaggs School of Pharmacy and Pharmaceutical Sciences



Dr. Ballatore's laboratory is engaged in collaborative, multidisciplinary probe- and drug-discovery programs. They specialize in the design and synthesis of small molecules as research tools or candidate therapeutics for a variety of human diseases. Their work typically involves Structure Activity and Structure Property Relationship (SAR/SPR) studies. These efforts are often directed towards the identification and development of probes suitable for mode of action studies, as well as candidate compounds optimized for pharmacokinetic and pharmacodynamic properties that could enable in vivo proof-of-concept studies or other preclinical evaluations of efficacy and safety.

Minimum Duration: 9 months

[Faculty Website](#) | [LinkedIn](#)

MARK BOUNTHAVONG

Associate Professor of Clinical Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences

Pharm.D., Ph.D.



Dr. Bounthavong's research interests include pharmacoeconomics, program and implementation evaluations, applied econometrics, and evidence-synthesis using Bayesian methods. More recently, Dr. Bounthavong's research has centered around evaluating academic detailing's impact on aligning provider's behavior with evidence-based practice, particularly with the opioid epidemic.

Minimum Duration: 6 months

Requirement: Completion of project and presentation at scientific meeting, manuscript, GitHub page development

Trainee Level Accepted: PharmD student, PhD student, Master-level student

[Faculty Website](#)

CONOR CAFFREY

Ph.D.



Professor
Skaggs School of Pharmacy and Pharmaceutical Sciences



Drugs and Diagnostics for parasitic diseases of poverty
Parasitic diseases associated with poverty, including the neglected tropical diseases, are overlooked in terms of the number, efficacy and safety of the drugs available for treatment. As part of the Center for Discovery and Innovation in Parasitic Diseases (CDIPD), and with a focus on schistosomiasis, African trypanosomiasis and hookworm disease, three broad themes underpin my team's research: (1) the identification and validation of protein targets for drug development; (2) the pre-clinical and translational development of drugs, including the development and application of associated technologies (high-content and high-throughput screening platforms, Machine Learning, protein expression and animal models of infection); and (3) the development of point-of care (POC) diagnostics. To facilitate our cross-disciplinary research interests, my team collaborates with academia and the pharmaceutical industry worldwide, including with bioinformaticians, medicinal and clinical chemists, structural biologists and automated systems specialists.

Minimum Duration: 6 months

[Faculty Website](#)

EDMUND CAPPARELLI

Professor of Clinical Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences

Pharm.D.



Dr. Capparelli specializes in pharmacometrics - the use of mechanistically based mathematical models to describe the time course of drugs in the body (PK-pharmacokinetic models), the effects that drug concentrations have their targets in the body (PD-pharmacodynamic models); and overall impact of drug effects have on disease and symptoms (DZ- disease models). A major emphasis of Dr. Capparelli's research has been to understand developmental, genetic, environmental and other factors that lead to PK and PD differences in infants, children and adults. His works includes novel approaches to therapies for infectious diseases including mono-clonal antibodies and long-acting formulations. In particular, Dr Capparelli has designed and performed numerous international studies for the prevention and treatment of HIV infection and its complications in infants and children.

Minimum Duration: 1 year

[Faculty Website](#) | [LinkedIn](#)

ANJAN DEBNATH

Ph.D., M.A.S.



Associate Adjunct Professor
Skaggs School of Pharmacy and Pharmaceutical Sciences



Dr. Debnath's research interests in drug discovery are categorized into two broad areas: (1) development of new antimicrobials for parasitic diseases, and (2) molecular mechanism of pathogenesis. His research aligns with the mission of the Center for Discovery and Innovation in Parasitic Diseases (CDIPD) and provides much-needed training in amebiasis, giardiasis primary amebic meningoencephalitis (PAM) and Acanthamoeba keratitis, caused by a host of protozoan pathogens to impact global health.

Minimum Duration: 3 months

Requirement: Completion of project with presentation at national or international meeting

Trainee Level Accepted: BPharm, MPharm, PharmD, PhD, and Faculty

[Faculty Website](#)

EDUARDO FRICOVSKY

Health Sciences Clinical Professor of Pharmacy
Skaggs School of Pharmacy and Pharmaceutical Sciences

Pharm.D.



Dr. Fricovsky's research interest includes diabetic cardiomyopathy and the effects of enzymatic protein glycosylation (O-GlcNAc) in type 2 diabetic mouse hearts and their influence on cardiac function. Also, conducts studies related to the expression of O-GlcNAcase (GCA) an enzyme that removes excessive O-GlcNAc modification and protection against diabetic cardiomyopathy. Furthermore, he examines the role of GCA gene expression and O- GlcNAc levels in non-diabetics and diabetic patients at the UC San Diego Student-Run Free Clinic.

Minimum Duration: 3 months, starting January

[Faculty Website](#)



MICHAEL GILSON

Ph.D., M.D.



Professor
Chair in Computer-Aided Drug Design
Co-Director of UCSD Center for Drug Discovery Innovation
Skaggs School of Pharmacy and Pharmaceutical Sciences

Dr. Gilson's research studies computer simulations of the molecules of life, which are powerful tools in the design of new medications for a wide range of diseases. Dr. Gilson's lab accelerates drug discovery by improving the realism, speed, and accuracy of these fundamental simulations through methods development and software development and sharing. Dr. Gilson is also running BindingDB, an open database of measured protein-small molecule binding data over 2 million data for over 1 million compounds, and they are actively engaged in molecular design and synthesis for drug discovery projects relating to cancer and anesthesia.

Minimum Duration: 2 years

[Faculty Website](#) | [LinkedIn](#)



JENNIFER LE

PharmD, MAS, FIDSA, FCCP, FCSHP
Pronouns: She|Her|Hers



Professor of Clinical Pharmacy
Chair Committee on International Pharmacy Education and Research
Director, Experiential Education in Los Angeles-Orange County

Rotation Experience: Pediatric Infectious Diseases and Clinical Pharmacology

Dr. Le's primary research encompasses four domains: (1) antimicrobial stewardship in pediatrics, (2) clinical pharmacy, (3) clinical pharmacology, (4) precision medicine with therapeutic drug monitoring, and (5) safety and effectiveness of medications in resistant infections in pediatrics across the wide age spectrum from infancy (including critically-ill premature neonates) to adolescence. She specializes in clinical pharmacokinetics – the processes by which a drug is absorbed, distributed, metabolized and eliminated by the body – and pediatric clinical pharmacology research. Her rotation offers training and experience in clinical pharmacology within a dry-lab environment. A selection of projects will be provided to trainee to gain experience in clinical pharmacology research.

Minimum Duration: 3 months, starting February

Requirement: Completion of project with presentation at national meeting

Trainee Level Accepted: BPharm, MPharm, PharmD, PhD, and Faculty

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KELLY LEE

Pharm.D., M.A.S., BCPP

Professor of Clinical Pharmacy
Associate Dean for Assessment and Accreditation
Skaggs School of Pharmacy and Pharmaceutical Sciences



Dr. Lee's specialty area is psychiatric pharmacy and she is a Board-Certified Psychiatric Pharmacist. She is currently the Residency Program Director of the PGY2 Psychiatric Pharmacy Residency at UC San Diego Health. Dr. Lee's research program involves the 1) effective utilization of psychotropic medications within diverse patient populations, 2) establishing innovative psychiatric practice models, 3) scholarship of teaching and learning and 4) assessment and prevention of burnout and suicide among healthcare trainees and professionals. She practices in the General Psychiatry clinic at UC San Diego Health and provides medication management on mood and anxiety disorders and adult ADHD. She established the first pharmacist-run outpatient psychiatric clinic at UC San Diego Health and practices under a Collaborative Practice. Dr. Lee's rotation offers training and experience in psychopharmacology and mental health research within a dry-lab environment.

Minimum Duration: 3 months, starting January

[Faculty Website](#) | [LinkedIn](#)

PALMER TAYLOR

Ph.D.



Sandra and Monroe Trout Professor of Pharmacology
Founding and Emeritus Dean
Skaggs School of Pharmacy & Pharmaceutical Sciences

Dr. Taylor's research has employed spectroscopic physical methods, X ray crystallography, sequence and three-dimensional structural determinations to investigate the principles of molecular recognition. As the Founding Dean, he initiated our international exchange for his foresight in global health and humanitarian interest to broaden cultural sensitivity among our faculty and students. As a world-renowned researcher with numerous prestigious accolades, he offers unique training in pharmacology and toxicology research using spectroscopic, crystallographic and solution-based techniques.

Minimum Duration: 3 months

Requirement: Completion of project with presentation at national meeting

Trainee Level Accepted: BPharm, MPharm, PharmD, PhD, and Faculty

[Faculty Website](#)





SHIRLEY TSUNODA

Pharm.D.

Professor of Clinical Pharmacy
Associate Dean for Pharmacy Education
Skaggs School of Pharmacy and Pharmaceutical Sciences



Dr. Tsunoda has several ongoing research projects in: 1) investigating the effect of the microbiome on drug metabolism; 2) analyzing skin swab metabolomics for drug exposure; 3) clinical pharmacology studies with immunosuppressive drugs in transplant patients.

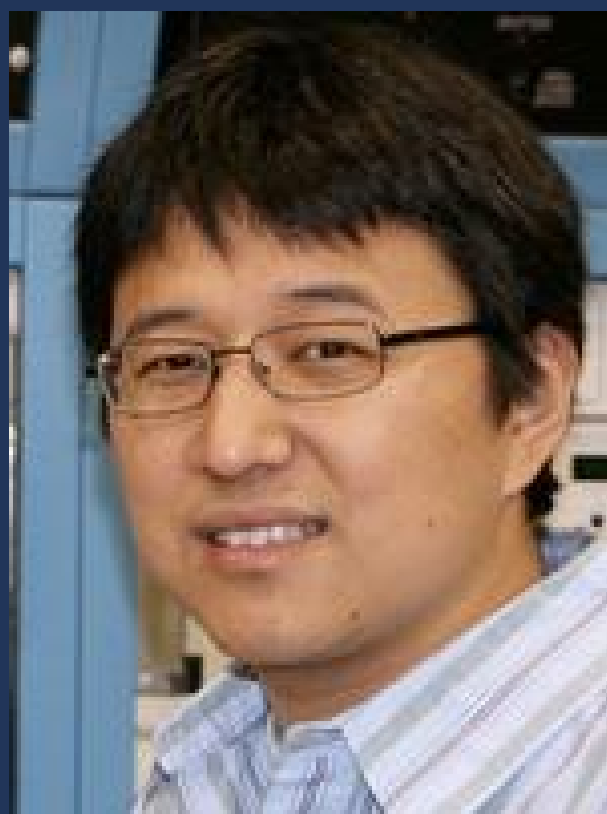
Dr. Tsunoda's research focuses on using metabolomics to investigate factors influencing the variability of drug metabolism and pharmacokinetics. Her group is interested in the intersection of drugs and the gut microbiome – pharmacomicrobiomics. She is one of the Principal Investigators of the UCSD Center of Excellence in Therapeutics for MPRINT (Maternal and Pediatric Precision in Therapeutics) Hub where she is investigating the impact of antibiotic exposure through breastfeeding on the infant microbiome, metabolome, and development.

Minimum Duration: 1 year, starting July

[Faculty Website](#) | [LinkedIn](#)

DONG WANG

Ph.D.



Professor
Skaggs School of Pharmacy and Pharmaceutical Sciences



Dr. Wang's research focuses on understanding transcription and epigenetic regulation, chromatin dynamics, DNA damage repair, as well as developing novel anticancer drugs.

Dr. Wang's group takes a multidisciplinary approach, combining structural biology, chemical biology, biochemistry, computational biology, and genetic methods, to study key protein complexes involved in these fundamental processes and pathways. Understanding how cell process these DNA lesions will help us to understand the mechanisms of drug action and resistance and pave the way for rational improvement of novel anticancer drugs.

Minimum Duration: 2 years, starting February

[Faculty Website](#) | [LinkedIn](#)



KARSTEN ZENGLER

Professor
Pediatrics, Bioengineering, and Engineering

Ph.D.



Karsten Zengler is a Professor in the Departments of Pediatrics and Bioengineering and the Program in Materials Science and Engineering at UC San Diego. He has more than 30 years of experience in the fields of microbiology and systems biology. After receiving his Ph.D. at the Max Planck Institute for Marine Microbiology (Bremen, Germany), he worked for seven years in the biotechnology industry where he led a team of scientists to pioneer the high-throughput cultivation for the isolation and recovery of previously unculturable microorganisms. His work has focused on understanding the interactions of microorganisms with their environment and host organisms. He spearheaded the field of community systems biology where he combined his knowledge in microbial physiology and molecular biology with computational biology to discover new physiological capabilities, regulatory effects, and novel multidimensional interspecies interactions. His lab has been on the forefront of developing new approaches to determine and to quantify the role of the microbiome in health and disease. This interdisciplinary approach allows for a deeper understanding of microbial interactions and the targeted manipulation of the microbiome. Dr. Zengler has authored more than 150 publications and patents and is the co-founder of several companies. He serves on the advisory board of different companies and institutions.

[Faculty Website](#)

MINIMUM REQUIREMENTS

English proficiency, VISA as required by law, and travel/boarding costs are the responsibility of the trainee. Administrative fees for some experiences (ranging from \$500 to \$2000) and other laboratory-based fees may be required to offset costs related to training. An interview may be requested by faculty to ensure that trainee meets rotation-specific requirements.

Specific inquiries can be directed to ciper@health.ucsd.edu.
More information about our school can be obtained at:

UC San Diego

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