



Pharmaceutical Sciences Contract R&D Services

The South College School of Pharmacy offers cost-effective, responsive, and high-quality pharmaceutical research and development consulting and support services.

Technical Capabilities:

- Compounding Pharmacy analytical services: Potency, Dissolution, Stability Testing
- Formulation development: bench scale, simple formulations
- HPLC – Assay development and pharmaceutical testing (active ingredient/impurities and degradants)
- Pharmaceutical Stability and Dissolution Testing
- *In vitro* skin/membrane permeability
- Real-time, Quantitative PCR
- *In vitro* drug discovery screening
- Cell/Tissue Culture
- Immunoassay
- Western Blot
- Lyophilization

Major equipment:

- HPLC System with UV Detection
- Dissolution Tester (USP 1 & 2)
- Microplate Reader
- Electrophoresis
- Real-Time, Quantitative PCR system
- Fluorescence Microscopy
- High-speed, Refrigerated Centrifuge
- Refrigerated Microcentrifuge
- Automated Membrane/skin Permeation System
- Ultrapure water system
- UV/VIS Spectrophotometer
- -80°C Freezer
- Laminar Flow Hoods
- Biological Safety Cabinet
- CO₂ Incubator
- Rotary Evaporator
- Lyophilizer
- Gako auto/hand ungator
- EXAKT ointment mill

Contact:

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Consulting Faculty

Jacob R. Dunbar, B.S., M.S., Ph.D., Chair, Department of Pharmaceutical Sciences – **LEAD CONTACT**

In addition to his experience in academic research, Dr. Dunbar has over 20 years' experience in pharmaceutical development with a sustained track record of success in executive decision making, oversight and direction of operations, policy and process; technical innovation; and strategic planning & implementation in a regulated, science-driven organization. He has broad, in-depth leadership experience, particularly in key aspects of preclinical drug development including pharmaceutical product development, pharmaceutical analysis and bioanalysis, DMPK and associated regulatory and compliance requirements (cGMP/GLP), technology transfer, and technical support of pharmaceutical manufacturing.

Eytan Klausner, B.Pharm., Ph.D., Associate Professor of Pharmaceutical Sciences

Dr. Eytan Klausner has almost 20 years of professional pharmacy experience in practice and research. His preclinical and clinical research included the design and characterization of novel gastro-retentive dosage forms with the resulting patent leading to the formation of Intec Pharma, a publicly traded biopharmaceutical company with a focus on gastric retention technology. Dr. Klausner's current line of investigation is in the area of plasmid delivery of genes to the cornea.

Karen Mark, Ph.D., M.T. (ASCP), Associate Professor of Pharmaceutical Sciences

Dr. Mark's research is in characterization of the impact of chronic inflammation on the blood-brain barrier and resulting neurological complications. Dr. Mark has significant experience and expertise in biotechnology tools including western blot, immunoassay development, cell and tissue culture, and PCR.

Kalpana Paudel, B.Pharm., M.S., Ph.D., Associate Professor of Pharmaceutical Sciences

Dr. Paudel's expertise lies in pharmacokinetics and drug delivery where her focus is development and evaluation of applications for transdermal and nasal drug delivery.

Maha Abdalla, Pharm.D, Ph.D., Assistant Professor of Pharmaceutical Sciences

Dr. Abdalla's research focuses on understanding the molecular mechanisms governing pulmonary and cardiac fibrosis and identifying therapeutic strategies to manage idiopathic pulmonary fibrosis and associated complications, particularly heart failure. Dr. Abdalla has expertise in multiple analytical techniques including western blot, immunoassay development, cell and tissue culture, and real time PCR.

Dr. Jianjun Chen, B.Pharm., M.Pharm., Ph.D., Assistant Professor of Pharmaceutical Sciences

Dr. Chen's research is centered in medicinal chemistry and bioanalytical chemistry. He has significant expertise in drug design and synthesis. He is a specialist in analytical instrumentation such as HPLC, LC-MS, LC-MS/MS, and NMR, with expertise in development and validation of qualitative and quantitative analytical/bioanalytical methods supporting DMPK studies and pharmaceutical stability. Results of his research include more than 10 US and global patents on novel lead pharmaceutical compounds synthesized in his lab.

Jwala Renukuntla, B.Pharm., Ph.D., Assistant Professor of Pharmaceutical Sciences

Dr. Renukuntla's research is focused on the design and characterization of novel drug delivery systems for the treatment of ocular diseases. Dr. Renukuntla's research involves the design of sustained release nanoparticles containing stereoisomeric dipeptide prodrugs of acyclovir for treating herpes simplex corneal keratitis and establishing the expression of folate transporters on rabbit and human cornea with anticipated extension of the technology to the design of novel drug delivery system for curing pancreatic and colon cancer.

Dr. Erica Rowe, A.S., B.S., Ph.D., Assistant Professor of Pharmaceutical Sciences

Through Dr. Rowe's research in modulators of protein folding, she has experience in immune-staining, fluorescence microscopy, flow cytometry, electron microscopy, and protein folding kinetics.