DEPARTMENT OF UROLOGY
COLLEGE OF MEDICINE

FOR APPLICATION YEAR: 2026

PROJECT TITLE: Understanding Catheter-Associated Urinary Tract Infections to Improve Patient Safety

Mohamed Kamel, MD, FACS
Professor of Urology
College of Medicine
231 Albert Sabin Way ML0589
Cincinnati, OH 45267
kamelme@ucmail.uc.edu
Phone: 5133105064
Fax: 513-558-3575

Kelli Williams, MD, MPH, FIDSA
Associate Professor of Medicine
Division of Infectious Diseases
University of Cincinnati College of Medicine
Associate Medical Director Infection Prevention and Control, UC Health
mccaulki@ucmail.uc.edu
+1 513 558 4704

Project Description

Area of Research:
Hospital-acquired infections represent a critical patient safety challenge with significant clinical and financial consequences. This project focuses on catheter-associated urinary tract infections (CAUTIs), one of the most common healthcare-associated infections. Through descriptive epidemiological analysis of local CAUTI cases, this research aims to identify patient populations at highest risk and inform targeted prevention strategies at UC Health.
Research Tasks:
The student will analyze comprehensive CAUTI surveillance data collected by the UC Health Infection Prevention team over the past three years. Specific tasks include: (1) organizing and cleaning drill-down worksheet data containing patient demographics, clinical characteristics, and infection details; (2) conducting statistical analysis to identify patterns across variables including patient age, gender, race, underlying comorbidities, catheter dwell times prior to infection, causative organisms, and treatment approaches; (3) creating data visualizations (tables, charts, graphs) to communicate findings effectively; (4) performing literature review on CAUTI risk factors and prevention strategies; and (5) preparing a final research presentation and potential manuscript for publication or conference presentation.
Training Provided:
Students will receive comprehensive mentorship from faculty in Urology and Infectious Diseases. Training will include: clinical research methodology, healthcare quality improvement principles, data management and statistical analysis using Excel and potentially REDCap, medical literature review and

critical appraisal, scientific writing, and presentation skills. Students will participate in weekly research meetings and gain exposure to infection prevention rounds and clinical urology practice.

Requirements:

Ideal candidates should have completed introductory biology, health sciences, or biomedical engineering coursework, demonstrate strong attention to detail, possess basic computer skills (Excel, Word), and show genuine interest in healthcare quality improvement, clinical research, or medical device-related infections. No prior research experience required- enthusiasm and commitment to learning are most important.