

Clinical Chemistry Fellowship

Educational Goals

The principal goal of the program is to provide the trainee with the skills required for the practice of clinical chemistry in an academic or community hospital and to successfully complete the board examination in clinical chemistry administered by the American Board of Clinical Chemistry (ABCC). Mechanisms for achieving these goals include:

- Participation with pathology residents and faculty in daily sign-out of electrophoretic, maternal serum screening, and body fluid crystal reports. Trainee is trained by faculty to serve as the principal trainer of pathology residents in the use of a densitometer to prepare and provide preliminary interpretation of serum, urine, and lipoprotein electrophoretic patterns, as well as the interpretation of immunofixation electrophoresis (IFE), cerebrospinal fluid (CSF) oligoclonal bands (o-bands), and local immunoglobulin synthesis in central nervous system (CNS).
- Coordinating with a faculty member and Interventional Radiologists on patients undergoing bilateral inferior petrosal sinus sampling (IPSS), adrenal vein sampling (AVS), or selective sampling for parathormone (PTH). Training includes the interpretation and clinical significance of the results of each of these procedures.
- Participation in, at the discretion of the trainee's Research and Faculty Advisor on an as needed basis, other special projects/tasks (mini-focus studies), not defined herein, with direct teaching value and benefit to the trainee.
- Mentoring by members of the clinical chemistry faculty (Note: Based on the match between the trainee's research interest and that of a faculty member, the trainee will be assigned to a particular faculty member who will be his/her Clinical Chemistry Research and Faculty Advisor).
- Participation in a research project under the direction of his/her Clinical Chemistry Research and Faculty Advisor (Note: The trainee will be expected, with significant assistance, direction, and guidance provided by his/her Research Advisor, to design, carryout, and publish the findings from original research on a topic of interest in clinical chemistry).
- Attendance at *weekly* clinical chemistry lectures provided by faculty on the topics:
 - Analytical and Biological Variation
 - Renal Function Tests and Urinalysis
 - Liver Enzymes and Function Tests
 - Serum and Fluid Proteins
 - Inborn Errors of Metabolism
 - Obstetrical Chemistry
 - Analytical Techniques 1 & 2
 - Toxicology and Therapeutic Drug Monitoring
 - Endocrine Disorders – I (Pituitary/Adrenal)
 - Electrolytes and Mg²⁺ Testing
 - Lipids and Cardiac Biomarkers
 - Endocrine Disorders – II (Thyroid/Gonads)
 - Bone Metabolism
 - Tumor Markers

- Attendance at and participation in weekly Clinical Pathology Rounds, a forum for pathology residents/fellows to research and present case studies related to specific subspecialty areas of clinical pathology, including clinical chemistry.
- Attendance at weekly Internal Medicine Grand Rounds, a forum for members of the Department of Internal Medicine, clinicians and scientists, at UTSWMC to present a mini-review of a clinical medicine topic related to their area of expertise and specialization.
- Attendance at the monthly Clinical Chemistry Grand Rounds Lecture Series, a forum for presentations by experts (local and national) on topics directly related to clinical chemistry.
- Attendance at the annual Laboratory Management Course for Pathology Residents.
- Attendance at the annual review of the Resident In-Service Examination (RISE). This review will prepare the Fellow for some of the material included on the board examination in clinical chemistry administered by the American Board of Clinical Chemistry (ABCC).
- Attendance at, funding permitted, the annual meeting of the American Association for Clinical Chemistry (AACC) and at local meetings of other professional scientific organizations (e.g., Texas Section, AACC, Clinical Ligand Assay Society (CLAS), etc.
- Trainees should understand the principle of the clinical chemistry tests/procedures that they are exposed to, their interpretation, and their clinical significance. To provide a well-rounded clinical training experience, trainees are encourage to investigate abnormal laboratory results, interpret their significance in light of the patient's history, physical, and results of other laboratory and or diagnostic procedures/tests, and discuss these findings with their Faculty Advisor and/or other members of the Clinical Chemistry Faculty.
- Upon completion of the program, the Clinical Chemistry Fellow should:
 - Be familiar with the principal indication for clinician ordering, the principle, and interpretation of a wide variety of clinical chemistry tests and procedures.
 - Be able to assist clinicians in the appropriate use and interpretation of clinical laboratory tests for a wide variety of diseases.
 - Understand the pathophysiology of common biochemical disorders
 - Know the rationale, procedure, and interpretation of results for the inferior petrosal sinus sampling, adrenal vein sampling, and selective sampling for PTH procedures.
 - Be familiar with the requirements of the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88) as they pertain to clinical chemistry laboratories.
 - Know the principles and methods used for evaluating and validating the analytical and clinical performance characteristics of clinical chemistry tests, including basic statistical techniques.
 - Be familiar with modern concepts of effective management, administrative, and leadership strategies.
 - Understand the principles and methods for establishing a clinical chemistry quality control/quality assurance (QC/QA) program.