

FORENSIC TOXICOLOGY AT THE UNIVERSITY OF FLORIDA DIAGNOSTIC REFERRAL LABORATORY (elective rotation): Rotation Director: Bruce A. Goldberger, Ph.D., Professor

Revised 6/2009

1. Description of the Rotation: The rotation will acquaint the resident with all aspects of post-mortem forensic toxicology. This includes exposure to analytical techniques and the evaluation and interpretation of data (ACGME competency #2: Medical Knowledge). Emphasis will be placed on providing the resident with the appropriate skills to determine the role of alcohol and drugs in deaths investigated by the Medical Examiner. An extensive file of past cases is available for review by the resident. Also, CAP and ABFT (American Board of Forensic Toxicology) documents are available to the resident so that he/she can become familiar with laboratory inspection and accreditation requirements and processes. Quality control and quality assurance is stressed. As appropriate to the individual case or consultation under review, the ethical, socioeconomic, medicolegal, and cost-containment issues are reviewed and discussed (ACGME competency #4: Communication; #5: Professionalism; #6: Systems-Based Practice). In addition, research design, statistics and critical review of the literature are discussed. By use of the literature, Medline, and textbooks, the resident is trained to become a lifelong learner (ACGME competency #3: Practice-Based Learning).

2. Goals for the Rotation: The resident will become familiar with: specimen receipt; specimen handling including chain-of-custody procedures; pre-analytic and analytic variability; the types of analyses performed in a forensic toxicology laboratory including colorimetry, spectrophotometry, immunoassay, and chromatography (GC and GC-MS); the panel of analytes tested including therapeutic drugs, illicit drugs (drugs of abuse), volatiles, and other toxic substances; the selection of appropriate tests; and the evaluation of toxicological data (ACGME competency #1: Pt. care).

3. Duration of Rotation: Four weeks (preferably prior to Forensic Pathology Rotation).

4. Duties and responsibilities of residents: The resident will review the history and data to assist in the generation of the forensic toxicology report. The resident is responsible for understanding the scientific basis for all of the technologies used in this field of study including: colorimetry, immunoassay, gas chromatography, automated headspace gas chromatography and gas chromatography/mass spectrometry. The resident is to develop an appreciation for and understanding of the medicolegal issues involved in forensic toxicology including chain-of-custody, handling of forensic evidence and courtroom testimony.

5. Teaching staff: Bruce Goldberger, Ph.D., Chris Chronister, Ph.D., and other technical personnel: The Director (Dr. Bruce Goldberger) and Laboratory Manager (Dr. Chris Chronister) of the Forensic Toxicology Laboratory will be responsible for overseeing the resident throughout all aspects of this rotation and will complete the resident's evaluation. Other technical personnel may be involved in the resident's training.

6. i. Resident Supervision: Reports are generated in concert with the attending faculty and signed out by the attending faculty.

ii. Resident Evaluation: Written monthly evaluation.

**Forensic Toxicology Core Curriculum
Bruce A. Goldberger, Ph.D., DABFT
Professor and Director of Toxicology**

Principles of Forensic Toxicology

Chain of Custody Procedures
Autopsy Specimens Routinely Submitted for Analysis
Analytes

- Volatiles
- Therapeutic Drugs
- Drugs of Abuse
- Carboxyhemoglobin

Test Selection and Triage
Evaluation of Toxicological Data
Therapeutic and Toxic Drug Concentrations
Post-Mortem Drug Redistribution
Informational Resources

Analytical Techniques

- Microdiffusion
- Colorimetry
- Spectrophotometry
- Automated Immunoassay
- Isolation of Drugs and Drug Metabolites
 - Solid-Phase Extraction
 - Liquid-Liquid Extraction
- Automated Headspace Gas Chromatography
- Gas Chromatography with Nitrogen Phosphorous Detection
- Gas Chromatography/Mass Spectrometry

Quality Assurance/Quality Control

- Quality Control Procedures
- Proficiency Testing

Laboratory Accreditation

- College of American Pathologists
- American Board of Forensic Toxicologists