INTRO TO LAB ROTATION

Faculty:
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- Sherri Flax, MD
- Neil Harris, MD
- Judy Johnson, PhD
- Ken Rand, MD
- William Winter, MD

1. Rotation description
   a. The Intro to Lab Rotation provides a comprehensive overview to the testing procedures utilized in clinical chemistry, hematology and microbiology. Laboratory management is also reviewed.

2. Goals and objectives
   a. **Patient care:**
      - Interpret laboratory test results within the clinical context.
      - Develop a diagnosis or differential diagnosis, based on laboratory results and clinical information.
   b. **Medical knowledge:**
      - Understand fundamental analytical principles and processes used in clinical laboratory testing.
      - Understand the practical and theoretical basis for laboratory test selection and interpretation.
   c. **Practice-based learning and improvement:**
      - Develop the ability to find, evaluate and assimilate evidence from scientific studies into the practice of laboratory medicine.
      - Apply statistical and study design principles in evaluation of evidence.
   d. **Interpersonal and communication skills:**
      - Become familiar with the faculty and staff in the clinical labs.
      - Begin to understand how to provide effective clinical consultations to other physicians and hospital staff.
      - Demonstrate the ability to work with others as part of a health care team.
   e. **Professionalism:**
      - Demonstrate respect, compassion and integrity.
      - Learn and understanding of ethical and privacy issues affecting the clinical laboratory.
      - Demonstrate a commitment to excellence and ongoing professional development.
f. **Systems-based practice:**
   - Understand the role of the laboratory in the health care system and the importance of reliable, cost-effective and timely laboratory results in clinical decision-making.
   - Understand CLIA, CAP and JCAHO requirements for clinical laboratories.

3. **Duties and responsibilities**

   **a. Bench rotations**

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   b. **Wet lab with Dr. Harris**
   c. **Conferences (see curriculum below)**
   d. **Talk on topic developed in conjunction with faculty; discuss possible ideas at the start of the rotation.**

4. **Didactic curriculum (two to three hours per day)**

   **a. Microbiology**
   - Intro
   - Gram-positive bacteria
   - Gram-negative bacteria (parts one and two)

*Revised: 8/12/2016*
• Blood cultures
• Antimicrobial susceptibility testing
• Unusual bacteria
• Vector-borne organisms
• Virology (parts one and two)
• Mycology (parts one and two)
• Parasitology
• Mycobacteria

b. Clinical chemistry
• Intro
• Sodium, water and potassium
• Immunoassays
• Acid-base problems, including anion gap
• Plasma proteins, including monoclonal immunoglobulin disorders
• Spectrophotometry, including oximetry and electrochemistry
• Electrophoresis, chromatography and mass spectroscopy
• Therapeutic drug monitoring and toxicology
• Pituitary and thyroid disorders
• Liver: Enzymes, bilirubin, urobilinogen
• Calcium and bone metabolism
• Adrenal disorders
• Gonadal function

c. Hematology
• Examining the peripheral smear, automated hematology, including RBC indices
• Disorders of hemoglobin

d. Laboratory management
• Basic management: Licensure and accreditation
• Implementing a new method (validation)
• Lab statistics and quality control
• Choosing a new method: Sensitivity, specificity, receiver operating characteristic (ROC) curves, predictive value

e. Informatics (see separate curriculum)
• Intro to IT
• PIER Essentials 1

Revised: 8/12/2016