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# Introduction to Anatomic Pathology Mini-Elective

Spring 2017

Course Dates: April 7, 14, 21, 28  
Fridays, 2:00-4:00 PM or 1:00-5:00 PM

Maximum Students: 4

Class Year: MS1

Course Director: Aatur D. Singhi, MD, PhD  
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## Description:

Anatomic pathology can be described as the use of tissue examination under a microscope to make diagnoses. It is what most pathologists do most of each workday. This mini-elective will show the students how diagnoses are rendered. It should provide an appreciation of the challenges of the specialty and highlight the rewards of a potential career in pathology. Students will emerge from the elective rotation with a basic knowledge of 6-8 diseases, many organ-specific, not covered in the first year curriculum. Likely diseases include leukemia, gastroesophageal reflux disease, Helicobacter pylori gastritis, colon cancer, usual interstitial pneumonia, gastrointestinal stromal tumor, lung cancer, mucoepidermoid carcinoma of parotid, and oral squamous cell carcinoma. Some sessions will include radiographs and the gross pathology before the slides to assist in developing a broader perspective on specific diseases. Transportation will be provided to and from the remote sites of the rotation.

During the course sessions, students will be actively engaged in making observations and interpreting information. Each student will cut and stain at least one frozen section during the first session and perform a fine needle aspiration of a tissue specimen during the third session. Comparable to the way in which residents and clinical year students learn through discussing cases, students, faculty and the course director will discuss cases in real time. Though the process of questioning, students will be encouraged to apply what they know and push ahead to develop deeper insights about the diseases, and hone their critical thinking skills (using the Socratic method). Students taking this elective must be ready for being asked challenging questions in front of the group.

## Course Objectives:

- To prepare medical students to be astute users of biopsy results.
- To help medical students learn how and why it takes as long as it does to get a good diagnosis from a biopsy or cytology specimen.
- To give students an appreciation that every anatomic pathology diagnosis comes with a degree of uncertainty and fallibility, and with a differential diagnosis.
- To provide students with a basic knowledge of key features of at least 8 common and important diseases.
- To teach students some specific features of diseases they encounter in the form of tissue in a microscopic biopsy or cytology.

## Requirements:

- Active participation in the four course sessions.
- Bring a pathology textbook and notebook to each course session, to look up information and record key observations.

## **COURSE OUTLINE: INTRODUCTION TO ANATOMIC PATHOLOGY**

### **Locations:**

UPMC Presbyterian Department of Pathology  
UPMC Shadyside Department of Pathology  
UPMC St. Margaret's Department of Pathology

### **Session 1: April 7, 2017, 2:00-4:00 PM Pancreaticobiliary Pathology and Hematopathology**

Instructors: Aatur Singhi, MD PhD and Miroslav Djokic, MD  
Location: UPMC Presbyterian Department of Pathology

### **Objectives**

Students will gain an understanding of

1. The difficulty of diagnosing pancreatic cancer
2. The challenge posed by the very large number of biopsies in gastrointestinal pathology
3. The appearance of cells in a normal blood smear and a smear with leukemia
4. The appearance of normal bone marrow and of bone marrow with leukemia

### **Format**

During this session, the students will look at microscope slides/powerpoint images of pancreaticobiliary pathology with Dr. Singhi representing different types of tumors and inflammatory lesions. They will look at peripheral blood smears and bone marrow biopsies of a leukemia with Dr. Djokic and he will show they compare with normal. Students will finish the afternoon with some knowledge of how to interpret a blood smear and bone marrow biopsy and with a new rudimentary understanding of at least three additional diseases.

### **Session 2: April 14, 2017, 2:00-4:00 PM Genitourinary Pathology, Sarcoma Pathology, and Cytology**

Instructors: Juan Xing, MD, Anette Duensing, MD, Sara Monaco, MD  
Location: UPMC Shadyside Department of Pathology

### **Objectives**

Students will gain an understanding of

1. The challenge of making a diagnosis of prostate cancer on needle biopsy
2. The ability to make a diagnosis on fine needle aspiration cytology
3. The difficulty of a correct sarcoma diagnosis, yet its importance for successful therapy

### **Format**

In this session, students will examine microscope slides at a multi-headed microscope with Dr. Xing. Students will each perform a fine needle aspiration of a tissue specimen, stain it and look at it at a multi-headed microscope with Dr. Monaco. They will see cytology slides of fine needle aspirations of patients with interesting diseases. In addition, students will learn about several (molecular) diagnostic methods and gain basic knowledge of sarcoma pathology with Dr. Duensing. They will learn why a correct diagnosis is important for successful therapy and will be introduced to the concept of targeted therapies. Students will finish the afternoon with a hands-on understanding of how fine needle aspirations are done and interpreted along with a new understanding of at least three diseases.

### **Session 3: April 21, 2017, 2:00-4:00 PM Head and Neck Pathology and Gastrointestinal Pathology**

Instructors: Raja Seethala, MD, and Jon Davison, MD  
Location: UPMC Presbyterian Department of Pathology

### **Objectives**

Students will gain an understanding of

1. How frozen section specimens are processed and diagnoses made
2. The important role of frozen section diagnosis of margins of resection

### **Format**

The session will include cutting and staining a frozen section of a tissue specimen and interpreting it at a multi-headed microscope; each student will do at least one with Dr. Seethala. The students will also examine microscope slides of gastrointestinal pathology with Dr. Davison. If a suitably educational surgical specimen comes to the laboratory, the students will be able to see that. Students will finish the afternoon with a hands-on understanding of the process of doing a frozen section, an appreciation of the role of frozen sections, and a new rudimentary understanding of at least two diseases.

### **Session 4: April 28, 2017, 1:00-5:00 PM\*\***

#### **Community Hospital Pathology**

Instructors: Jagjit Singh, MD, Katherine Doeden, MD, Smiljana Istvanic, MD, Anjana Vijayvargiya, MD  
Location: UPMC St. Margaret's Department of Pathology

### **Objectives**

Students will gain an understanding of

1. The variety of tissue types submitted for diagnosis in community hospital pathology
2. The workflow of a busy laboratory and time pressure under which pathologists make diagnoses.

### **Format**

The students will be engaged in observing specimen processing and examining microscope slides projected from a double-headed microscopes with the staff pathologists, including slides of biopsies, cytology specimens and surgical resections. Since the community hospital has a full range of specimens, diseases they have not seen in the previous three sessions will be selected for presentation. Students will finish the afternoon with a new rudimentary understanding of at least two additional diseases.

### **References:**

The recommended textbook to bring to each session is Robbins Pathologic Basis of Disease, Eighth Edition.

Other recommended non-medical reading:

Blink: The Power of Thinking Without Thinking, Malcolm Gladwell

The Final Diagnosis, Arthur Hailey

### **Course Evaluation:**

Each student will be asked to complete an evaluation of the course at its conclusion.

**\*\*WARNING: Transportation to and from the remote sites is required and the need to prepare students before each session means that the students who take this elective have to come to pathology at 1 PM and get back as late as 5 PM, so the time commitment is from 1 PM to 5 PM rather than 2 PM to 4 PM. See attached directions to St. Margaret.**



# UPMC St. Margaret

*A hospital of University of Pittsburgh Medical Center*

815 Freeport Road  
Pittsburgh, PA 15215  
412-784-4000

### **From the North and New Kensington**

Proceed southbound on Route 28. Take Exit 8 (Fox Chapel Road). Turn right onto Fox Chapel Road. At the second traffic light turn right onto Freeport Road and follow to UPMC St. Margaret, 815 Freeport Road.

### **From Pittsburgh**

Take the Fort Duquesne Bridge to Interstate 279 North. Take Exit 7C to Route 28 North. Take Exit 7 (Delafield Avenue). Turn left onto Delafield Avenue and make next left onto St. Margaret Drive.

### **From the East**

Take the Pennsylvania Turnpike to Exit 48 (Allegheny Valley), to Route 28 South. Take Exit 8 (Fox Chapel Road). Turn right onto Fox Chapel Road. At the second traffic light turn right onto Freeport Road and follow to UPMC St. Margaret, 815 Freeport Road.

### **From Butler**

Take Route 8 South to Route 28 North. Follow Route 28 North to Exit 7 (Delafield Avenue). Turn left onto Delafield Avenue and left again onto St. Margaret Drive.

