



# Professional Enrichment Course

University of Pittsburgh School of Medicine

Office of Medical Education

PEC Registrar – Denise Downs [d downs@pitt.edu](mailto:d downs@pitt.edu) 412-648-8749

## Introduction to Anatomic Pathology

<b>Enrollment Period:</b>	Spring 2023
<b>Course Dates:</b>	January 6, 13, 20 & February 3 Fridays, 3:00-5:00 PM Plus optional lab tour (date TBD)
<b>Student Max:</b>	6
<b>Class Year:</b>	MS1
<b>Course Director:</b>	Aatur D. Singhi, MD, PhD <i>Email: <a href="mailto:singhiad@upmc.edu">singhiad@upmc.edu</a> Office: 412-864-1508</i>
<b>Course Administrator:</b>	Kate Smith <i>Email: <a href="mailto:smithkm13@upmc.edu">smithkm13@upmc.edu</a></i>
<b>Location:</b>	UPMC Presbyterian and Shadyside Hospitals
<b>Registration:</b>	Via Amp Up – You will receive an email with enrollment info
<b>Course Description:</b>	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 professional enrichment course 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, pancreatic cancer, gastrointestinal stromal tumors, and brain cancers. Some sessions will include radiographs and review of the gross pathology to assist in developing a broader perspective on specific diseases. During the course sessions, students will be actively engaged in making observations and interpreting information. 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. Through 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 to answer challenging questions in front of the group.
<b>Objectives:</b>	<ul style="list-style-type: none"> <li>• To prepare medical students to be astute users of biopsy results.</li> <li>• 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.</li> <li>• To give students an appreciation that every anatomic pathology diagnosis comes with a degree of uncertainty and fallibility, and with a differential diagnosis.</li> <li>• To teach students some specific features of diseases they encounter in the form of tissue in a microscopic biopsy or cytology.</li> </ul>
<b>Pre-Requisites:</b>	None
<b>Requirements:</b>	<ul style="list-style-type: none"> <li>• Active participation in the four course sessions</li> <li>• Use of a pathology textbook</li> </ul>

# COURSE OUTLINE

## **Session 1: January 6, 2023 3:00-5:00pm**

### **Pancreaticobiliary Pathology and Neuropathology**

*Instructors: Aatur Singhi, MD, PhD, and Thomas Pearce, MD, PhD*

*Location: UPMC Presbyterian Hospital*

#### **Objectives**

Students will gain an understanding of

1. The challenges of diagnosing pancreatic cancer
2. The utility of precision medicine in the early diagnosis of pancreatic cancer
3. The common diseases seen in neuropathology specimens
4. The growing field of digital pathology and its utility

#### **Format**

In this session, Dr. Singhi will review microscope slides/PowerPoint images of pancreatobiliary pathology, representing different types of tumors and inflammatory lesions. Dr. Singhi will also discuss precision medicine efforts in the early diagnosis of pancreatic cancer that has been adopted by the University of Pittsburgh Medical Center. Students will examine microscope slides at a multi-headed microscope with Dr. Pearce and learn about the common diseases seen in neuropathology specimens. Dr. Pearce will also discuss digital pathology and its utility in quantification of neurodegenerative changes.

## **Session 2: January 13, 2023 3:00-5:00pm**

### **Genitourinary Pathology, Sarcoma Pathology, and Cytology**

*Instructors: Samer Khader, MD, Gabriela Quiroga-Garza, MD, and Ivy John, MD*

*Location: UPMC Shadyside Hospital*

#### **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. Quiroga-Garza. Students will learn how a fine needle aspiration of a tissue specimen is taken, stained and reviewed with Dr. Khader. 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. John. 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: January 20, 2023 3:00-5:00pm**

**Hematopathology & Molecular & Genomic Pathology**

*Instructors: Miroslav Djokic, MD and Abigail Wald, PhD*

*Location: UPMC Hill Building (Oakland) and Clinical Lab Building (Oakland)*

**Objectives**

Students will gain an understanding of

1. Clinical-based molecular testing at the University of Pittsburgh
2. Pan-cancer next-generation sequencing of a variety of neoplasms
3. Disease-specific diagnostic molecular assays developed specifically at the University of Pittsburgh and offered throughout the United States
4. The appearance of cells in a normal blood smear and smear with leukemia
5. The appearance of normal bone marrow and of bone marrow with leukemia

**Format**

In this session, students will review peripheral blood smears and bone marrow biopsies of a leukemia with Dr. Djokic and will compare these findings to corresponding normal specimens. Students will gain knowledge of how to interpret a blood smear and bone marrow biopsy and a new rudimentary understanding of at least three additional diseases. Students will finish the afternoon with a thorough review of clinical-based molecular testing and, in particular, tests offered at the University of Pittsburgh. Dr. Wald will provide a broad overview of precision medicine testing that support a variety of clinical specialties that medical students will encounter in everyday clinical practice. In addition, Dr. Wald will discuss diagnostic tests and algorithms uniquely designed at the University of Pittsburgh and offered to patients not only at the University of Pittsburgh but to patients across the United States.

**Session 4: February 3, 2023 3:00-4:00pm**

**Gastrointestinal Pathology**

*Instructor: Phoenix Bell, MD*

*Location: UPMC Presbyterian Hospital*

**Objectives**

Students will gain an understanding of

1. The common diseases involving the gastrointestinal tract including gastroesophageal reflux, Barrett's esophagus, colon cancer and other entities
2. The emerging ancillary studies performed in gastrointestinal pathology that may affect patient management

**Format**

In this session, Dr. Bell will conduct a thorough review of common diagnostic entities encountered in clinical practice involving the gastrointestinal tract. Dr. Bell will also briefly review commonly ordered ancillary studies used to evaluate gastrointestinal diseases, including cancers.

**Session 5: Date TBD (optional)**

**Pathology Lab Tour**