

## M4 Four Week Pathology Electives

Dermatopathology: This course requires Med IV standing, permission, and successful completion of one rotation in dermatology and pathology. Please contact

[Erin.McLaughlin@osumc.edu](mailto:Erin.McLaughlin@osumc.edu). **This course is not available in blocks 2, 3, 4, and 9.**

This course requires regular attendance and completion of assigned duties within dermatopathology. Evaluation is conducted by the Director of Dermatopathology and is based upon regular attendance, completion of assigned duties or elected research which may include preparation of a publication or presentation within the Division of Dermatopathology. Students with specific interest in pursuing a pathology residency are encouraged to discuss this early on with the course director.

Forensic Pathology: **This course requires permission. Please contact Erin.McLaughlin@osumc.edu**

**PLEASE NOTE: FCCO only allows one rotator at a time (including Pathology residents). This is a required rotation for pathology residents for their boards but their rotation schedule is not made until May. If you would like to take this rotation, you will have to wait until May to reach out to Erin.McLaughlin@osumc.edu and she can let you know what rotation blocks are available. Unfortunately you cannot schedule this rotation in March when you make your original schedule.**

### Meeting Description

The elective will consist initially of observing postmortem examinations. Once the student feels comfortable it is expected that they will begin to assist the morgue technician in eviscerating bodies and the forensic pathologist in dissecting organs. The student must complete an autopsy skill check sheet. This will ultimately culminate the student in performing at least one autopsy, under the supervision of the forensic pathologist, during the last week of the rotation. The performance of the autopsy will include selecting appropriate tissue representation of each organ. They will attend the daily 8:15 morning conference, in which the current cases are discussed and a decision is made as to the disposition of each case. Following discussion of the day's cases, the forensic pathologist will present any findings from the previous day's cases. Student will be assigned case (s).

The student will spend time in each department (investigation, toxicology, administrative), per provided schedule. The pathologists meet on Monday and Wednesday at 2pm to discuss completed cases. At this conference, the student will be able to see the interaction and discussion of the pathologists about cause and manner of death. The medical student is required to attend this conference. Each month a forensic pathologist will attend the Trauma M & M at The Ohio State University Medical Center, Grant Medical Center and Nationwide Children's Hospital. Additional conferences include Child Fatality Review, Sudden Unexpected Infant Death, and Franklin County Safe Communities. The student will accompany the forensic pathologist to at least one of these conferences. If during the course of the student's elective any of the forensic pathologists are meeting with an attorney to discuss a case or must appear in court, the medical student will be encouraged to accompany the forensic pathologist to the meeting with the attorney or to the forensic pathologist's court appearance. This will give the medical student insight into the types of question which not uncommonly are asked by members of the legal profession. The student will also be encouraged to attend any relevant death scene. During the course of the student's rotation, they will be given a tour of the Columbus Police Department Crime

Laboratory. Often during the course of any month one of the forensic pathologists will be giving a lecture to visiting students from the various colleges and universities in the Columbus area. The medical student will be most welcome to attend these lectures. There will be daily lectures for the student given by the forensic pathologists. To read the maximum educational benefit from the daily lectures, a required reading schedule will be provided. Most of the reading will come from Forensic Pathology by David Dolinak. During the course of the student's rotation he or she will have access to many forensic pathology and forensic related textbooks. The student must also complete a final examination. This examination is open book.

### **Objectives Description**

A Forensic Pathology elective is offered at the Franklin County Coroner's Office in conjunction with the department of Pathology, The Ohio State University, College of Medicine. This experience is designed to expose the student to the practice of forensic medicine and to emphasize the basic principles of medicine and pathology as they are applied to everyday problems within the Coroner's Office. This experience should also provide the student with an insight into the relationship between the medical practitioner and the Coroner or Medical Examiner system, including the respective law enforcement agencies and legal system and their mutual responsibilities.

### **Evaluation Description**

The evaluation of the student will be based on their attendance, participation, and final examination, as well as their level of interest in the above stated meetings, conferences, death scenes and reading of David Dolinak's book of "Forensic Pathology".

### **Prerequisites**

Med IV standing.

**Hematopathology:** This course requires Med IV standing. **This course is not available in July.** Please contact Erin McLaughlin ([erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu)) in N308 Doan Hall (614-293-8240) 30 days prior to the beginning of this elective to confirm that you are taking this course.

***Objectives:*** This rotation is designed to give the student exposure to core laboratory studies in the area of hematopathology to include blood smears, body fluids, bone marrow aspirate and biopsy specimens and coagulation work ups. Objectives include the following: To understand the role of peripheral blood smear and body fluid review; to familiarize one's self with basic blood smear and bone marrow morphology; to understand general coagulation principles. In addition, there will be an opportunity to attend didactic and problem-solving conferences within the Department of Pathology. Meetings will include observation, reading and study, discussion, and performance of procedures. Evaluation will be based on level of knowledge determined through discussion and level of performance. Students with a specific interest in pursuing a pathology residency are encouraged to discuss this early on with the course director. This is particularly important if reference letters are to be requested from faculty letters.

**Neuropathology:** This course requires permission. Please contact [erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu). Prerequisites: Med IV standing; permission required. **This Course is not offered in June or July.**

*Objectives:* General survey of neuropathology in more depth than is covered in Med II with a major emphasis on classification and pathophysiological mechanisms of neurological disorders. Secondary emphasis will be on clinical-pathological correlations and morphology. Students spending more than one month will study one disease in depth to learn more about specific mechanisms, detailed clinical-anatomical correlations and morphological abnormalities in that type of neurological or neurosurgical disease. Meetings will include self-teaching collections of syllabi and microscopic slides, weekly brain cutting conference, weekly neuro-oncology conference (tumor board), and review of current and teaching slides with residents and neuropathology faculty. Evaluation will be based on active participation in conferences and completion of self-teaching materials, as well as quality of case review with emphasis on literature review and clinical-pathological correlation – accuracy in diagnosis.

Pathologic Anatomy: This course requires Med III or Med IV standing, as well as a completed N95 Respirator Fit test prior to the start of the rotation. **This course is not available in June or July.**

*Objectives:* The objective of this elective is to introduce the student to the gross and microscopic diagnosis of disease and their correlation to the patient's medical history and clinical course. Students work with members of the faculty and residents as an active member of the autopsy team. The student will participate in chart review, gross dissection, discussion with clinical staff, selection of tissue blocks for histologic sections, writing protocol, reading of microscopic slides, and presentation of case summary. In a one month elective, the student will participate in approximately six to ten autopsies. In addition to gross and microscopic diagnosis and review of the natural history of diseases, this elective affords the student an excellent opportunity to review gross anatomy and the pathophysiology of diseases. Students will be encouraged to attend various departmental seminars and specialty conferences. Meetings will include participation in the performance of autopsies, attending tissue pathology conferences, and presenting cases at gross conferences and others. Evaluation will be based on: overall performance during the rotation; attendance at various conferences and autopsies; and developing a 20-30 minute presentation to be given by faculty, residents, and staff dealing with mechanisms of disease associated with one or more of the autopsies seen, or on a topic of the student's choosing after consultation with the director of the service. Students with a specific interest in pursuing a pathology residency are encouraged to discuss this early on with the course director. This is particularly important if reference letters are to be requested from faculty.

Pathology Individual Studies: This course requires permission. Please contact [erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu). To ensure proper credit is given for this elective, please complete the Research/Individual Study form, which is available under Part 3 Links in Vitals.

*Objectives:* Will be outlined by Department Chairman. The purpose of individual Studies in Pathology is to offer Med IV students opportunities to participate in activities related to the practice of laboratory medicine in the specialty pathology. Generally, students will elect one of the courses below for a period of one month each, but may be able to spend up to six months

in pathology. The Department is willing to design special individual studies programs suitable for a student's goal. This may include combining short rotations in Clinical and Anatomic Pathology, including Hematopathology, Transfusion Medicine, Autopsy, Surgical Pathology, Cytology, Neuropathology, and Pediatric Pathology. Interdepartmental programs may also be designed. Students desiring an elective experience in Pathology at another medical school or hospital may do so with written permission of the Chairman of the department. Meetings will include regular attendance and completion of assigned duties within individual laboratories, as well as completion of assignment or assistance in publication preparation. Evaluation will be based on regular attendance, completion of assigned duties or elected research which may include preparation of a publication or presentation of a paper within the Pathology Department. Students with a specific interest in pursuing a pathology residency are encouraged to discuss this early on with the course director. This is particularly important if reference letters are to be requested from faculty.

Pathology Laboratory Medicine: This course requires permission. Please contact [erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu). This course combines two weeks of Hematopathology with two weeks of Pathology Transfusion Medicine.

Pathology Transfusion Medicine: This course requires Med III or Med IV standing. **This elective is not available in July and August.** Contact Erin McLaughlin ([erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu)) in the Pathology Education Office, N308 Don Hall (614-293-8240) 15 days prior to the beginning of the elective to confirm that you are taking the course.

*Objectives:* Understand the indications and complications of therapeutic apheresis procedures. Describe the use and evaluation of appropriate blood component therapy. Explain the principles and procedures of testing techniques. Course Director and resident discuss course objectives with student on the first day of the rotation. Student integrates with the resident in all aspects of the rotation. Meetings will include observation, reading and study, discussion, and performance of procedures. Evaluation will be based on level of knowledge determined through discussion and study and level of performance. Students with a specific interest in pursuing a pathology residency are encouraged to discuss this early on with the course director. This is particularly important if reference letters are to be requested from faculty.

Pediatric Anatomic Pathology: Director of Elective: Archana Shenoy, MD, Staff Pathologist, Anatomic Pathology, Nationwide Children's Hospital

Associate Director of Elective: Miriam Conces, MD, Director of Surgical Pathology

Elective Coordinator: Joyce Taggart, Education Coordinator, Pathology and Laboratory Medicine, [joyce.taggart@nationwidechildrens.org](mailto:joyce.taggart@nationwidechildrens.org); 614-722-5318

This elective is designed to introduce medical students to diagnostic anatomic pathology in a children's hospital setting. The Department of Pathology and Laboratory Medicine at Nationwide Children's Hospital offers a unique opportunity for students to understand and participate in the operations of an anatomic pathology laboratory and experience its roles in diagnostics and clinical care. Anatomic pathology at Nationwide Children's includes

subspecialized pediatric pathology practice encompassing surgical pathology, gastrointestinal and liver pathology, heart and lung pathology, renal pathology, neuropathology, autopsy pathology and perinatal pathology. This elective will provide students considering a career in pathology with an in-depth understanding of the specialty and its scope. Students considering pediatric and adult medical or surgical specialties would also benefit from this elective because it will provide working knowledge of the pathology laboratory and its role in patient care. Students with interest in academic writing (such as a case report) are encouraged to approach course directors early in the rotation (i.e., week 1) for possible opportunities.

Students will be supervised by at least one pathology faculty member during the entire elective and possibly, by a post-graduate trainee. The faculty member will provide verbal and written feedback to the student.

1. Week 1 (Pediatric Surgical Pathology):

Pediatric Surgical Pathology: Students will learn about techniques in pathology that facilitate tissue diagnosis of biopsies and surgical resections. There will be opportunities to actively participate in specimen triage and processing (gross description), frozen section evaluation and microscopic examination.

2. Week 2 (GI/Liver and Autopsy Pathology):

Gastrointestinal and Liver Pathology: Students will participate in endoscopic biopsy and liver needle core biopsy diagnosis and learn about common indications as well as common diagnostic conditions such as eosinophilic esophagitis, inflammatory bowel disease, helicobacter pylori gastritis etc.

Autopsy: Microscopic slides from an example case will be made available for independent review and discussion with faculty on service. Students will learn about the process of post-mortem examination and have a chance to assist if there is one scheduled during the rotation. Active participation in the performance of a post mortem examination is optional.

3. Week 3 (Subspecialty elective rotations):

-Hematopathology, Neuropathology, Heart and Lung or Renal Pathology: Students will participate in tissue diagnosis on respective services and attend clinical patient care conferences associated with the subspecialty.

4. Week 4 (Elective):

-Clinical experience: Students may elect to repeat any of the clinical experiences from Weeks 1 – 3 or choose a new subspecialty (from the list offered during week 3)

OR

-Research/Academic writing: Students who have identified an academic writing opportunity during week 1 will use this designated time to complete the first draft on a manuscript.

Weekly Structure

1. Mon – Fri: Clinical Experience (30 –35 hours), the student will work with one faculty member per week who will supervise the student and provide feedback

2. Independent review of teaching slides at microscope 5 cases/day, 25 cases/week (5 hours)

3. Patient care conferences\*:

a. Daily consensus conference at 1 PM (30 min – 1 hour/day), mandatory attendance during rotation

b. Pediatric Tumor board, every Thursday at 4.30 PM (1 hour), mandatory attendance during rotation

Other Conferences

<b>Conference</b>	<b>Occurrence</b>	<b>Time</b>	<b>Location</b>	<b>Attendance expectation</b>
Sarcoma Conference	Every 2 <sup>nd</sup> /4 <sup>th</sup> Thurs	7:30 AM	D1835	Optional
GI Conference	Every 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> Wednesday	12:00 PM	C0965	Mandatory on Week 2, Optional on other weeks
M & M Conference	Every Wednesday	8:30am	D1835	Optional
Multidisciplinary Neuro-Onc Conference	Every Friday	7:30am	D1835	Mandatory if Neuropathology is chosen on Weeks 3 or 4, optional on other weeks
Neuromuscular	Every Thursday	10:00am	J0305	Mandatory if Neuropathology is chosen on Weeks 3 or 4, optional on other weeks
Epilepsy surgery	Every Monday	4:00pm	D1835	Mandatory if Neuropathology is chosen on Weeks 3 or 4, optional on other weeks
Brain cutting	Every Thursday	9:00 am	Autopsy suite	Mandatory if Neuropathology is chosen on Weeks 3 or 4, optional on other weeks
Neuropathology for neurologists	Various Tuesdays, 2 each month	7:15am	LLFOB, J0305	Mandatory if Neuropathology is chosen on Weeks 3 or 4,

Conference	Occurrence	Time	Location	Attendance expectation
				optional on other weeks
Renal Pathology Conference	Every 4 <sup>th</sup> Friday	9:00 am	C0965	Mandatory if Renal pathology is chosen on Weeks 3 or 4, optional on other weeks
Congenital heart disease gross specimen review	Various Thursdays, 1-2 each month	2:00 pm	Autopsy suite	Mandatory (1 session during rotation)
Autopsy Conference	Various Fridays, 1 each month	12:00 pm	C0965	Mandatory on Week 2, optional on other weeks
Radiology-Pathology Correlation Conference	Every 2nd Tuesday	12:00 pm	Virtual	Mandatory

\*All conferences are conducted virtually to ensure adequate COVID-19 precautions are exercised.

#### Learning Objectives:

- Primary Objective
  - o The student will demonstrate working knowledge of processing and reporting of tissue specimens procured during biopsies, surgical resections or post-mortem examination.
  - o Demonstrate ability to explain how anatomic pathology contributes to patient care.
- Secondary Objectives
  - o Demonstrate working knowledge of anatomic pathology laboratory operations including turn-around time expectations for specimen testing and reporting.

#### Teaching and Learning Methods:

1. Book: Stocker and Dehner's Pediatric Pathology, Publication Year: 2015, Edition: 4th Ed. Authors/Editor: Husain, Aliya N.; Stocker, J. Thomas; Dehner, Louis P. Publisher: Lippincott Williams & Wilkins (LWW)
2. Instruction from faculty, residents and fellows during discussion of day to day cases and lectures scheduled during the rotation
3. Patient care conferences
4. Slide study set of common diagnoses in pediatric surgical pathology
5. Case of the week archives (available in the fellow office)

#### Assessments

Learning Objective	TLM	Assessment Method
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<p>Working knowledge of processing and reporting of tissue specimens procured during biopsies, surgical resections or post-mortem examination.</p>	<p>Participation in gross and microscopic workup and diagnostic review of cases with teaching faculty and trainees</p>	<ol style="list-style-type: none"> <li>1. Direct observation and discussion of either gross and/or microscopic findings on a minimum of one case with an assigned faculty member</li> <li>2. Presentation of a minimum of one case during daily consensus conference during the course of the elective OR 20 minute presentation on a case/topic of choice encountered during the rotation</li> <li>3. At the beginning of the rotation, students will be given five slides to review with diagnoses withheld. During the elective, they will review these slides and discuss their diagnostic approach with one of the rotation directors</li> </ol>
<p>Demonstrate ability to explain how anatomic pathology contributes to patient care.</p>	<p>Participation in patient care conferences, and diagnostic review of cases with teaching faculty and trainees</p>	<ol style="list-style-type: none"> <li>1. Direct observation and discussion of either gross and/or microscopic findings on a minimum of one case with an assigned faculty member</li> <li>2. Presentation of a minimum of one case during daily consensus conference during the course of the elective OR 20 minute presentation on a case/topic of choice</li> </ol>

**Surgical Pathology:** This course requires Med IV standing. **This course is not available in July.** Contact Erin McLaughlin ([erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu)) in the Pathology Education Office, N308 Doan Hall (614-293-8240) 30 days prior to the beginning of this elective to indicate that you are taking this course.



*Objectives:* Practical, hands-on understanding of gross and microscopic pathology. Course director and resident discuss course objectives with student on the first day of the rotation. Student integrates with the residents in all aspects of the rotation. Meetings will include observing gross and microscopic diagnosis of surgical specimens along with residents, sign-out daily with senior staff, attend regular conferences, and presenting cases and/or topics when appropriate. Student will keep a day by day log of his/her activities. The form will be available to the student on day one and should be returned to the education office at the end of the rotation. Individuals will be evaluated by senior staff based on willingness to engage in the diagnostic process, background of basic science knowledge, evidence of reading, and attendance to conferences and presentations when appropriate. Students with a specific interest in pathology residency are encouraged to discuss this early on with the course director. This is particularly important if reference letters are to be requested from faculty.

Urologic Pathology: This course requires permission. Please contact [erin.mclaughlin@osumc.edu](mailto:erin.mclaughlin@osumc.edu). Contact Dr. Debra Zynger and Erin McLaughlin AT LEAST 30 DAYS PRIOR TO THE BEGINNING OF THE ELECTIVE to request taking this elective. Students are accepted for the rotation from May through April. There is a maximum of 1 student per month. The student may only miss 2 days to pass the rotation. Approval for absences must be requested from Dr. Zynger 1 month prior to the beginning of the rotation.

*Objectives:* This is a 1 month experience in urologic pathology designed for medical students pursuing residency in urology or pathology or for those with interest in oncology. The student will become proficient in diagnosing common neoplastic and non-neoplastic urologic conditions. The student will also gain an understanding of intraoperative frozen section consultation and gross examination of urologic specimens. During the rotation, medical students will preview and write up urologic surgical pathology cases and sign out these cases with the urologic pathologist. Attendance of interdisciplinary sessions with members of Urology, Oncology, Radiology, Radiation Oncology and Pathology including Urologic Oncology Tumor Board, Uropathology Case Conference and Uropathology lectures is required. Students with an interest in research will have an opportunity to participate in urologic pathology research projects during the month. The student will be evaluated based upon attendance at sign out and conferences, number of cases previewed, and improvement in diagnostic ability.

## **Uro-Oncologic Pathology Research**

### **Meeting Description**

CONTACT Dr. Debra Zynger and Courtney Saby AT LEAST 30 DAYS PRIOR TO THE BEGINNING OF THIS ELECTIVE to request approval for this elective and to discuss research project topics.

### **Objectives Description**

This is a 1 month experience in pathology research in the field of urologic oncology with availability in all months of the year. There is a maximum of 1 student per month. The elective is designed for medical students with an interest in urology, pathology or oncology. The student will conduct an independent research project investigating tumors of the genitourinary tract. The project must be chosen prior to the beginning of the elective, and some work such as case selection may also need to be done prior to the elective. During the rotation, the student will conduct relevant literature searches, compile and analyze data, and write up the findings in manuscript format. Attendance of appropriate interdisciplinary sessions with members of Urology, Oncology, Radiology, Radiation Oncology and Pathology including Urologic Oncology Tumor Board, Uropathology Case Conference and Uropathology lectures is required. The student may only miss 2 days to pass the rotation. Approval for absences must be requested from Dr. Zynger 1 month prior to the beginning of the rotation.

### **Evaluation Description**

The student will be evaluated based upon the completed research paper and attendance at required conferences.