

# *Anatomic Pathology*

## Embark on an Adventure

The Division of Anatomic Pathology's mission is to provide the highest quality pathology services in clinical practice, research, and education while striving to broaden our understanding of human disease. Our pathologists are well-respected for their expertise, and the volume of cases sent to them is reflective of this reputation. When we say the patient comes first, we are talking about patients not only from the Midwest, but also from virtually anywhere around the globe. The division includes a number of laboratory areas providing many potential career paths. Diversity of laboratory functions, career paths, and personnel creates an interesting mix. The cohesiveness created through extraordinary teamwork unifies this diverse division, making it an exciting and rewarding place to work.

### **Rochester Methodist and Saint Marys Hospital Frozen Section Laboratories**

Mayo has long been known for pioneering the Frozen Section technique, which allows for rapid microscopic analysis of tissue removed from patients. The work in these laboratories allows for rapid accurate diagnoses and therapeutic decisions regarding intraoperative and postoperative patient management.

### **Histology Laboratory**

This laboratory processes surgical tissue specimens using automated and manual techniques. The tissues are processed, embedded in paraffin wax, cut on microtomes, and stained. This process enables the pathologist to make a diagnosis using a microscope.

### **Renal Pathology Laboratory**

The Renal Pathology Laboratory is one of the largest, busiest, and fastest growing laboratories of its kind in the country. It employs techniques including light microscopy, immunofluorescence, and electron microscopy.

### **Cytopathology Laboratory**

This laboratory is best known for its highest volume test, the Pap test. The Pap smear is thought to be the most successful cancer-screening tool ever developed, reducing deaths from cervical cancer by about 70%, thus saving tens of thousands of lives. The cytology lab also does testing on specimens from virtually any body site. Each year over 120,000 specimens are processed and microscopically analyzed by our highly skilled clinical laboratory technologists, cytotechnologists and pathologists. The lab provides the latest in proven technology including liquid based ThinPrep® GYN cytology, endoscopic (EUS) ultrasound guided fine needle aspirations (FNAs), digital image analysis (DIA) and fluorescence in situ hybridization (FISH) techniques. Our staff is actively involved in the education of cytotechnology students through the Mayo School of Health Sciences.

### **Image Morphometry Laboratory**

An extension of the Cytopathology Laboratory, the Image Morphometry Laboratory performs DNA ploidy analysis and tumor proliferation analyses by specialized cytotechnologists.

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### **Autopsy Laboratory**

Our recently built state-of-the-art Autopsy Laboratory employs pathology assistants and pathology technicians who assist the pathologists in documenting clinical findings at the time of death. In about 25% of autopsies, major unexpected diseases are found.

### **Immunostains Laboratory**

The immunostains laboratory supports the Division of Anatomic Pathology and its pathologists by performing immunohistochemical staining procedures on thin slices of human tissue and tumors. Testing involves automated methods which use antigen-antibody binding along with chromogenic chemistry. Results yield colorful tissue preparations mounted on microscope slides that demonstrate the presence of specific tissue entities which contribute to pathological diagnoses.

### **In Situ Hybridization Laboratory**

This laboratory supports the Division of Anatomic Pathology and its pathologists by performing in situ hybridization staining procedures on thin slices of human tissue and tumors. Testing is performed with manual methods which use complimentary nucleic acid probe hybridization followed by chromogenic chemistry. Results yield colorful tissue preparations mounted on microscope slides that specifically demonstrate the presence of various genes and infectious disease organisms in tissues. The laboratory is staffed primarily days, offers evening positions, and employs approximately five testing techs which work in a moderately paced and detailed testing environment.

### **Molecular Anatomic Pathology Laboratory**

This laboratory is designed as a molecular biology testing laboratory that meets the specific needs for analyzing nucleic acids derived from histological specimens including fixed paraffin embedded and frozen tissue. The laboratory performs manual and automated RNA and DNA analysis of patient samples using various PCR methods and sequencing that assist in the diagnosis of various tumors and infectious organisms.