

# University of Delaware

## Comparative Pathology Laboratory

### Description of Services

This document is designed to provide a brief overview of the types of services offered by our laboratory. Please see the accompanying fee schedule for our current service rates.

#### Trimming

Gross specimens received in fixative are individually trimmed by an ASCP-certified histotechnician to size and orientation required for subsequent processing and embedding. Client laboratories also have the option of performing this step prior to submission to reduce preparation fees. The Comparative Pathology Laboratory can provide cassettes and training for proper sample trimming and orientation upon request (see fee schedule).



#### Processing

Trimmed specimens undergo overnight processing in a Leica processor to dehydrate the specimens in preparation for paraffin embedding.



#### Embedding

Processed specimens are manually transferred from cassettes to metal wells and are embedded in paraffin wax at a Leica embedding center by the histotechnician to maintain proper specimen orientation for sectioning. Embedded specimens (“**Blocks**”) are complete at this step.

#### Sectioning

Paraffin blocks are affixed to a Leica microtome and typically cut to 4-6 micron thick sections. These sections are then transferred from a water bath to a microscope slide for later staining and histopathologic analysis. **Unstained slides** are complete at this step.

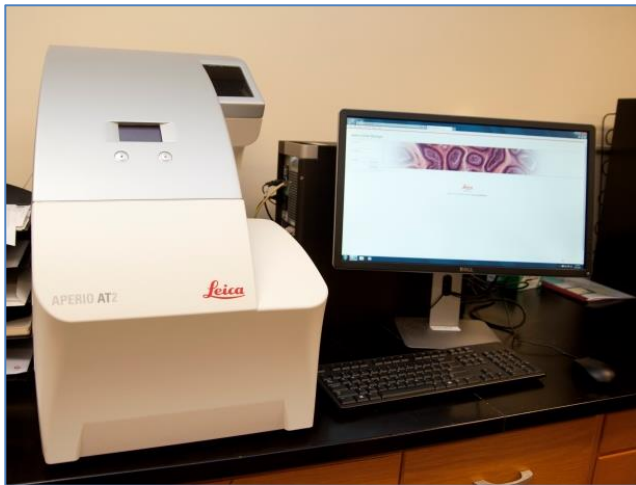
## Staining

Routine histopathologic analysis utilizes Hematoxylin and Eosin (H&E) staining applied by a Leica autostainer. Special stains are applied manually by the histotechnician. Contact the pathologist for availability and cost. **Stained slides** are complete at this step.



## Decalcification

Bone and other mineralized specimens require chemical decalcification prior to processing to allow for sectioning. This additional step in specimen preparation creates a delay in processing of one or more days until the specimen is deemed “soft” enough to section appropriately. This process can also create loss of detail in soft tissues and bone marrow which can interfere with microscopic analysis. Please contact the pathologist if this may be a concern in your study.



## Digital Slide Imaging and Archival Storage

Brightfield or fluorescence scanning of whole prepared glass slides creates permanent virtual slides that can be viewed and analyzed remotely, allowing a personal computer to be used as a high-powered microscope anywhere and anytime an internet connection is available (24/7/365). Slides can be scanned up to a 20x or 40x objective (brightfield) or up to 63x oil (fluorescence). Physical research specimens (tissues, slides and blocks) are returned to the submitting laboratory for storage.

## Histopathologic (Microscopic) and Morphometric Analysis

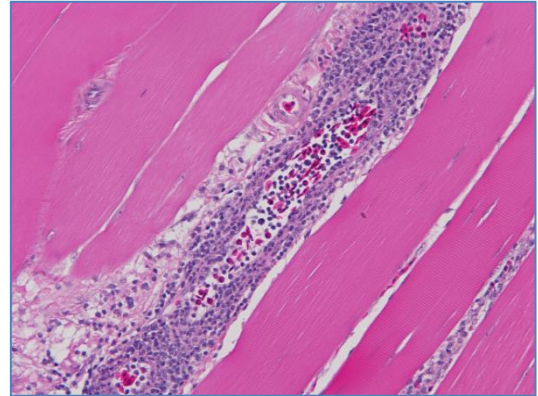
Tissue slides can be analyzed by an ACVP-certified veterinary anatomic pathologist using one of the laboratory’s light microscopes or digital pathology systems. Depending upon the needs of the submitting laboratory, the pathologist can provide:

- description of the lesions observed in the tissues on each slide
- morphologic diagnosis (concise technical description of disease process occurring in the tissue)
- clinical correlation of lesions to signs observed in the animals, to experimental treatments, or to specific disease entities when applicable
- morphometric analysis (size measurements) and counts of tissue structures and cells

Pathology reports can be delivered by mail, electronically, or in person to a laboratory group and typically provide both a written summary and a spreadsheet of pertinent data for each slide depending upon client laboratory preference.

## Digital Photography

High quality unaltered digital images of microscopic features of interest are captured by an ACVP-certified veterinary anatomic pathologist and saved in .tif or .jpg format based upon client laboratory preference and intended use. Client laboratories have the option of receiving images with or without descriptions and annotations prepared by the pathologist.



## Consultation and Training



Laboratories utilizing the CANR Comparative Pathology Service have unique access to one-on-one or small group consultation and training by a registered histotechnician and/or board-certified veterinary anatomic pathologist prior to or during use of our services. Consultation and training topics include, but are not limited to: **gross specimen collection and submission, specimen trimming and embedding, special stain options, and experimental design related to staining and histologic analysis.**

Typically, a brief consultation will be conducted at no charge prior to sample submission to determine individual laboratory needs for services, training, or additional consultation. Sessions can be conducted by email, phone, or in person based upon client preference. Training can be conducted in our laboratory (for trimming and embedding) or in the client's laboratory (for trimming) based upon client preference. Following training, clients may also elect to self-embed tissues using our equipment during normal business hours to reduce the cost of tissue preparation.