DOS Histology Core Facilities Statement

The UW Department of Surgery Histology Core (HRC) facility is located on the third floor of the Clinical Science Center (CSC) in room H4/337. We provide histology services to both clinical and basic science researchers across the UW campus. The primary objective of the HRC is to provide high-quality stained tissue sections on microscope slides to support clinical and basic science research at our institution. We encourage investigators to include us early in the process to ensure the best possible histological outcome. This is done by conducting in-depth consultations between the lab and the core so that information can be gathered by both parties. It is important to make sure samples are prepared properly, even before they reach the core. Our goal is to be a helpful resource for you and your project.

The HRC offers a broad range of high-quality histological services available on a fee-for-service basis to all investigators. All our staining is done by hand by a certified histotechnologist. Services include tissue processing, embedding, sectioning, staining, and coverslipping of paraffin or frozen tissue. Our staining selection includes routine H&E's (Hematoxylin-Eosin) and a variety of specialty stains, including Gomori Trichrome, PAS, Oil Red O, Picro Sirius Red, Elastic Van Gieson and more. Please contact us for a complete list of special stains currently available, we have over 200 verified. We are always looking for ways to expand our catalog, therefore new special stains may be available upon request. We utilize a catalog of over 250 antibodies, with over 60 developed IHC protocols. In addition, our services can complement your research in the creation of protocols for new antibodies, including the option of double or triple antibody staining.

Histology Core Equipment:
Leica ASP300 Tissue Processor – purchased in 2014, is used to automatically prepare tissue samples for laboratory testing by fixing, dehydrating, clearing, and infiltrating them with paraffin.
Leica CM1860 Cryostat – purchased in 2014, is used to section frozen specimens with a section thickness range of 1 - 100 µm
Kedee KD-BM II Tissue Embedding Center & KD-BL Cooling Plate – used for embedding tissue samples into paraffin blocks after they have been processed on the tissue processor.
Leica HistoCore Biocut Microtome – purchased in 2019, used to section paraffin samples with a section thickness range of 1 - 60 µm
Epredia Printmate AS – purchased in 2020, thermal cassette label printer

In 2020, we received a Research Cores Revitalization award from the OVCRGE to purchase automated slide and cassette printers. The Epredia Printmate AS prints high quality on tissue cassettes with permanent labels and barcodes. The Epredia Slidemate AS works in conjunction with the Printmate. The Slidemate scans the barcode on a cassette and retrieves the label information. These two pieces of equipment have been vital to our core in reducing labeling errors and speeding up our processing times.

Imaging:
We have two microscopes our trained users can reserve time on.
Nikon E600 Microscope with Fluorescence equipped with an Olympus DP73 camera and connected to a computer with Cellsens software located on WIMR 1 fifth floor, room 5122. This scope is equipped with the following filters:

- V-2E 340-380 excitation with 400nm LP, 435-485 band- DAPI
- B-2E/C 465-495 excitation and 505 LP, 515-555 band for FITC, GFP, AF488
- G-1B 541-551 Excitation and 565 LP and 590 LP - red/orange

Nikon TiS/L100 Inverted Microscope with Fluorescence, equipped with both a DS-Qi2 monochrome camera and a Lumenera Infinity color camera, located in H4/335. This scope is equipped with the following filters:
- DAPI/Hoescht/AF350
- EGFP/FITC/ AF488
- Texas Red/mCherry/ AF594; Cy5

Once a user has been marked as trained, they can reserve time on either scope via our iLabs website.