IBB’s Histology Laboratory Guidelines

Gaining Access to IBB’s Histology Lab
1. Before gaining access to IBB’s Histology Lab, you must first gain access to the actual building; this can be taken care of by contacting The Front Office.
2. After access to the building is obtained, you must then contact me via email to set up a training consultation to determine what training is needed to obtain the desirable results, the actual date and time that the training will take place, and to fill out a personal identification form for billing and access purposes.
3. Once an official training is set up and completed successfully, you may then gain access to IBB’s Histology Lab

***If you do not have access, but you use someone else’s Buzz Card to enter the lab and do work; please be aware that the holder of the buzz card is subject to be charged for the services completed and may lose access to the Histology Lab.

Training Procedures
If a student needs training, they need to follow the following instructions:
1. Gain access to IBB via the front office.
2. Send an email to set up a date and time to meet and discuss the type of training needed and to fill out a personal identification form; if no appointment is made via email, then no training will be arranged. NO WALK-INS ACCEPTED.
3. Individual will be given a copy of IBB’s HTLab Guidelines, and prior to setting up a date and time for the training, they must sign a form that say that they have read, understand, and will abide by these guidelines.
4. After that has been done, a time and date to perform the actual training will be set up.
5. You’ll receive a document that shows that you have successfully completed training; if you do not successfully complete the training, then you will not gain access to IBB’s Histology Lab.

***You may ONLY use the instrument that you have been properly trained on. Violations will result in charges to your lab if any damages occur or if the machine is left disorganized. Depending on the nature of the violation, you may lose access to IBB’s Histology Lab. Repeated violators WILL LOSE access.

Projects
If a person is interested in using my services for the completion of a project, these are the steps that he/she must take:
1. Send an email to set up a date and time to meet and discuss the project details, the desired results, and to fill out a personal identification form; if no appointment is made via email, then no work will be arranged. NO WALK-INS ACCEPTED.
2. On the personal identification form, the individual should provide a detailed description of the services they want completed
3. Depending on the number of projects that I am currently working on, I will provide you with a perspective turn-around time.
4. While working on your project, I will keep you informed on details of it:
   a. Problems
   b. Progress
   c. Extra techniques
   d. Etc.

5. Your work will be given to you on or before the time frame discussed. If not, a legitimate explanation will be provided.

*** YOU WILL NOT BE GRANTED ACCESS TO THE LAB JUST BECAUSE I AM COMPLETING A PROJECT FOR YOU, UNLESS YOU ARE A P.I. OR PROFESSIONAL STAFF MEMBER WHO HAS SPECIALLY REQUESTED ACCESS.

Supplies and Services
All supplies taken and all services performed in the Histology Lab should be documented on The Supply Log Sheet in Histology Services and Supplies Log Notebook. If you use the supplies in IBB’s Histology Lab to complete a service, you should put the supply back in the proper location. If you take non-purchasable supplies from IBB’s Histology Lab RETURN THEM IMMEDIATELY. If there are any supplies that the Histology Lab is low on or out of, there is a Supply Ordering Spreadsheet on the board to the left of my office door. Fill the sheet out correctly and legibly and the supply will be ordered.

DO NOT LEAVE SUPPLIES, SLIDE BOXES, SLIDE FOLDERS, SPECIMENS, SLIDE RACKS, COVERSIPS, CHEMICALS, GLASSWARE, METALS, OR SMALL EQUIPMENT ON THE COUNTER OR UNDER THE FUME HOODS FOR AN EXTENDED TIME FRAME, UNLESS THAT IS THEIR PRIMARY STORAGE LOCATION.

The way that supplies are purchased will change in the near future, the amount of supplies that you may purchase will also be limited, and the way that services are documented is subject to change as well.

Storage and Cleaning Methods
Due to the lack of space in IBB’s Histology Lab, it is mandatory that you do not leave items that belong to you or your lab in the Histology Lab, unless they are used for the daily function of IBB’s Histology Lab.

• If you bring samples down for paraffin processing in your own personal container, on the next day, you should come down, clean the container, and take the container back to your lab. When using containers that are owned by IBB’s Histology Lab, you are still responsible for cleaning and placing the containers back in the proper location.
• Any container that is used in staining, fixation, decalcification, measuring and mixing solutions, etc. should be cleaned immediately after use. DO NOT PLACE THESE ITEMS IN THE SINK FOR CLEANING, REGARDLESS OF WHAT IS IN THE SINK. CLEAN UP ANY ITEM THAT YOU MESS UP.
• If your slides are not drying or about to be stained, then they should not be in the Histology Lab. Do not store slides under the fume hood, in slide boxes/folders on the shelves, or in the refrigerator/freezer over a one week period. Anything that exceeds this time frame will be discarded and IBB’s Histology Lab will not be held responsible.
• All paraffin specimens, once they have been embedded, should be placed in the specimen storage area located over the microtomes. If your lab does not have a box, then you must take the specimens to you lab for storage. If your lab’s box if full, it is your lab’s responsibility to discard of old specimens to make room for new samples. If the task is not done, you must remove samples from the lab until your lab’s storage area is cleaned. DO NOT LEAVE SPECIMENS ON THE COLD PLATE OF THE EMBEDDING CENTER, IN THE DRAWERS, IN PLASTIC CONTAINERS ON THE COUNTER, ETC. THEY SHOULD ONLY BE IN THE PROPER STORAGE AREA OVER THE MICROTOMES.

• Do not leave lab notebooks, buzz cards, freezing containers, personal protocols, mail, other publications, packages, articles of clothing, personal belongings, boxes, etc. in IBB’s Histology Lab. After one week, these times will either be discarded or turned into the lost and found.

**Equipment and Special Services** - IT IS MANDATORY TO RESERVE ALL LISTED MACHINES PRIOR TO USE, IF YOU HAVE NO RESERVATION YOU CAN NOT USE THE MACHINE AT ALL

**Autostainer:**

• Prior to use make sure all tops are removed to run the necessary program selected.

• Replace container lids after each process is complete. NEVER LEAVE STAINING REAGENTS UNCOVERED. IF YOU DO, YOU WILL BE CHARGED FOR THE LOSS OF THE REAGENTS.

• All staining racks should be placed under the fume hood for drying. Once the drying process is completed, place staining racks back in their proper location. DO NOT REMOVE THESE RACKS FROM IBB’s HISTOLOGY LAB.

• If your slides end in xylene, remove the whole container from the Autostainer and place it under the fume hood. NEVER REMOVE THE RACK FROM THE XYLENE CONTAINER PRIOR TO PLACING THE CONTAINER UNDER THE FUME HOOD. Remove the staining rack with the slides from the xylene under the fume hood. ALWAYS WEAR NITRILE GLOVES WHEN WORKING WITH XYLENE.

• If someone’s slides have completed a program and they are hindering your progress to complete staining, deparaffinization, dehydration, or counterstaining, simply place slides in a container filled with the reagent in which the slides ended. Make sure the container is stored under the fume hood:
  o Deparaffinized slides should be placed in a container of water under the fume hood
  o H&E stained, dehydrated, or hematoxylin counterstained slides should be placed in a container of xylene under the fume hood.

• ALWAYS clean the area you are working in.

• ALWAYS document how many slides stained, dehydrated, deparaffinized, or counterstained on The Autostainer Log Sheet in the Histology Services and Supplies Log Notebook.

**Coverslipping:**

• All coverslipping supplies are located in the first draw directly under the Autostainer, and after use under the fume hood, they should be placed back in this location. DO NOT LEAVE MOUNTING MEDIUM, COVERSILPS, or COVERSILPING FORCEPS UNDER THE FUME HOOD.
• Tightly close the lid of ALL EMBEDDING MEDIUMS. If you leave them open, then they are subject to dry out, and you will be charged for it.
• If you use any paper towels during your coverslipping process, you may leave them under the fume hood until they dry. After the paper towels have dried, discard of them in the trash can.

Cryostats:
• Prior to use, if there are any blades, shavings, etc. left in the machine let me know, so that the necessary action can be taken for the previous user.
• ONLY USE PLUS SLIDES
• ALWAYS wear gloves. This machine is BIOHAZARDOUS.
• When cutting human skin, cleaning the anti-roll plate, or simply cleaning remains in the cryostat ALWAYS use 100% ALCOHOL.
• After use, specimen holders should be washed in warm soapy water and placed on the top of the cryostat to dry. DO NOT PLACE SPECIMEN HOLDERS THAT HAVE WATER OR MELTED OCT ON THEM IN THE CRYOSTAT.
• If you drop blades, cotton-tipped applicators, or shavings behind the removable tray in the cryostat you should remove them and discard of them properly.
• NEVER put slides and blades in biohazard bags, biohazard bins or the trash can. These items should ALWAYS be placed in a sharps container.
• DO NOT LEAVE SPECIMENS IN THE CRYOSTAT UNDER ANY CONDITION
• DO NOT LEAVE MULTIPLE BOTTLES OF OCT ON THE CRYOSTAT
• DO NOT LEAVE MULTIPLE BOXES OF SLIDES ON THE CRYOSTAT
• DO NOT LEAVE MULTIPLE PACKAGES OF COTTON-TIPPED APPLICATORS ON THE CRYOSTAT
• All items used during cryosectioning are considered biohazards and should be disposed of properly.
  - Blades, slides and any other glassware or sharps should be placed in a sharps container.
  - Shavings, gloves, sleeves, cotton-tipped applicators, specimen molds, specimens not subject to be reused, etc. should be discarded in a small biohazard bag and placed in the small biohazard bin or discarded of in the large biohazard bin.
• ALWAYS clean the cryostat after use
• ALWAYS document how many slides you cut on The Cryostat Log Sheet in the Histology Services and Supplies Log Notebook

Microtomes:
• Prior to use, if there are any blades, excess paraffin or resin, water in the water bath, or ice baths left on or around the machine let me know, so that the necessary action can be taken for the previous user.
• Only use drying racks, slide boxes, or folders to store slides immediately after cutting them. DO NOT USE STAINING RACKS OF ANY KIND TO STORE SLIDES FOR DRYING AFTER SECTIONING.
• After use, discard of blade in a sharps container or in the slot under the package of blades designated for used blades. If a package of blades is empty, place the entire package in a sharps container.
• When sectioning is complete, place specimens in the proper storage area or take them back to your lab for storage, discard the paraffin shavings on and around the machine in
the regular trash, place forceps and brushes back in their proper location, and remove
the water from the water bath and clean it.

- ALWAYS clean the microtome after use
- ALWAYS document how many slides you cut on The Microtome Log Sheet in the
  Histology Services and Supplies Log Notebook

Manual Staining:
- ALWAYS put down anti-leak paper located by the right fume hood on the counter prior
to staining, unless you’re performing your staining under the fume hood.
- Use the proper sized container for the amount of slides that you are staining to prevent
wasting staining materials.
- If a staining solution that is needed for completion of your staining protocol is out, there is
  a recipe for each reagent on every protocol – simply make more.
- Make sure that any staining reagent freshly made is labeled and dated properly.
- After staining, wash the staining racks and dishes used in staining procedure and place
  them on the drying rack located over the sink.
- Throw away all anti-leak paper used. If staining is done under the fume hood, allow
  paper to dry prior to disposing of it.
- If you use equipment such as the pressure cooker, UV lamp, timers, incubation chambers,
etc., clean them and place them back in their proper location. DO NOT LEAVE ANY
  ITEMS ON THE COUNTER TOP.
- Discard of all used staining solutions in the proper waste container. If you don’t see a
  waste container, create one. Make sure that the container is properly labeled.
- ALWAYS clean any area that is used during staining after staining is complete
- ALWAYS document how many slides you stain on The Other Services Log Sheet in the
  Histology Services and Supplies Log Notebook

Manual Embedding:
- ALWAYS wear the proper safety apparel and always use the proper precautions for any
type of manual embedding technique.
- ALWAYS clean any area that is used during embedding process after embedding or
  whenever an embedding step is completed
- ALWAYS document how many specimens you embed on The Other Services Log Sheet in
  the Histology Services and Supplies Log Notebook
- Frozen Block Embed
  - All specimens used for frozen block embedding are considered A BIOHAZARD
  - After your specimen is frozen, if you do not plan on cutting the sample within
    a 5-day period or if you have a large amount of samples, do not store them in
    IBB’s Histology Lab Freezer. Take the specimen back to your lab for storage.
  - Clean all supplies used and put them back in their proper location
    - Liquid Nitrogen Method
      - DO NOT USE THIS METHOD IN MY LAB UNDER ANY CONDITION
      - Samples will be destroyed 90% of the time
    - Isopentane/Liquid Nitrogen Method
      - Make sure that you’re wearing the proper safety glasses and gloves
      - Use polypropylene containers only
• Allow the liquid nitrogen and isopentane to evaporate from the containers that they are in, and clean the containers after use.
• ALWAYS perform this embedding technique under the fume hood

**Dry Ice Method**
• Make sure that you’re wearing the proper safety glasses and gloves
• Discard dry ice accordingly. DO NOT PUT DRY ICE IN THE SINK or LEAVE UNDER THE FUME HOOD. There is not enough storage space.
• If the container used to transport the dry ice does not belong to IBB’s Histology Lab, take it back to the location where it was originally removed from. If the container is left under the fume hood, it will be thrown away.
• ALWAYS perform this embedding technique under the fume hood

**Cryostat Freezing Method**
• This method is the worst freezing method.
• If you chose to use this method, do not leave samples in the cryostat unless you are cutting them immediately.
• Take all of the biohazard safety precautions explained under the cryostat guidelines

**Resin Block Embed**
  o ALWAYS perform this embedding technique under the fume hood in a well ventilated area
  o Wear the proper safety attire when using this method – nitrile gloves, mask, goggles, etc.
  o Mix solutions used in this technique very well or the resin will not set properly
  o Only use measuring instruments, plastic containers, and glassware that are designated and labeled for resin embedding
  o Dispose of waste in the proper waste container under the left fume hood.
    Never close the cap of the waste disposal containers too tightly.

**Processor:**
• The processor can only be operated by individuals who are designated to operate it. If you do not know the current code to unlock the processor, you are not designated to operate the machine. The people who are currently allowed to operate this machine are the ONLY INDIVIDUALS who will be allowed to do so – NO EXCEPTIONS.
• Paraffin processing will ONLY be completed on Mondays and Thursdays, regardless of the situation. There will be no more paraffin processing on Tuesdays, Wednesdays, or over the weekend – NO EXCEPTIONS.
• Paraffin processing usually ends by first scheduled embedding time
• Tuesdays and Wednesdays are designated to special processing – LOG NUMBER OF SPECIMENS PROCESSED ON THE TISSUE LOG SHEET (TAB #6) IN THE HISTOLOGY SERVICES AND SUPPLIES NOTEBOOK
• In my absence, the only people that may use the processor are those who are designated to do so; however, the schedule still applies.

• ALWAYS log the samples you want embedded on The Weekly Embedding Schedule Log Sheet located on the refrigerator. IF YOU DO NOT FILL OUT THIS INFORMATION CORRECTLY, YOUR SAMPLES WILL NOT BE PROCESSED – REGARDLESS IF THEY’RE LABELED IN THE REFRIGERATOR OR NOT

• If you wish to have your specimens processed, make sure that you place them in labeled cassettes and then into a plastic container of 70% alcohol or 10% NBF formalin. Make sure the container is labeled properly with your name and the name of the storage solution which should be 70% alcohol or 10% NBF formalin.

• Processing is always completed overnight.

• NEVER ATTEMPT TO CHANGE THE REAGENTS ON THE PROCESSOR

Embedding Center:

• Specimen Storage Tank
  o Contains heated paraffin
  o Specimens are stored here after processing and prior to embedding
  o Specimens should be embedded the same day that they are placed in the specimen storage tank, or the next day for students who use special embedding techniques for infiltration purposes.
  o Specimens that are left in this area for more than 2 days will be discarded, so make arrangements to have your specimens embedded or removed. IF YOU DO NOT COME TO EMBED YOUR SPECIMENS I WILL NOT EMBED THEM FOR YOU, UNLESS I’VE AGREED TO DO SO.
  o DO NOT LEAVE EMBEDDING MOLDS, FORCEPS, EMPTY CASSETTES OR CASSETTE TOPS IN THIS AREA

• Cold Plate
  o Specimens are placed here to solidify into paraffin blocks
  o After your paraffin block is completely set, remove them from this area. Place them in the proper storage area designated to your lab or take them back to your lab for storage. DO NOT PLACE THEM IN THE DRAWS OR ON THE COUNTERTOPS. ANY BLOCKS LEFT IN THIS AREA OR IMPROPERLY STORED WILL BE THROWN AWAY.
  o DO NOT LEAVE FORCEPS, EMBEDDING MOLDS, EMPTY CASSETTES OR CASSETTE TOPS IN THIS AREA
  o Throw any empty cassette or cassette top in the trash.
  o Mold should be placed on the top of the embedding center until water content evaporates. Once that has occurred, return mold to its proper storage location on the embedding center.
  o Turn the cold plate off after use

• Forceps
  o After use of forceps during embedding, simply place them back in their designated area on the embedding center.
  o DO NOT LEAVE THEM ON THE COLD PLATE, IN THE MOLD STORAGE AREA, OR IN THE SPECIMEN STORAGE TANK

• Molds
Prior to embedding, all molds should be located in the mold storage area on the embedding center.

After embedding, all molds should be placed on top of the embedding center to allow all water content to evaporate.

After all water content has evaporated, the molds should be placed back in the mold storage area.

**Cassettes**
- The bottom of the cassette is used for embedding. The top portion of the cassette should be discarded.
- Any cassettes used during processing should be documented on the Supply Log Sheet in the Histology Services and Supplies Log Notebook.

**Refrigerator/Freezer:**
- The refrigerator/freezer is not used for user's personal storage area. They are used to house the histology supplies that must be kept under those conditions.
- Do not store frozen sections or slides, slide boxes/folders, specimens that may be used in paraffin processing over a 5-day period, personal IHC solutions/kits/devices, etc. in this area or THEY WILL BE THROWN AWAY.
- Do not put food or drinks in this area. IT'S A BIOHAZARD.

**Fume Hoods:**
- Most chemicals should be used under the fume hood.
- Make sure that you used the proper safety equipment when working under the fume hood.
- If you spill a solution in the fume hood, you should replace the anti-leak paper under the fume hood and discard of the soiled anti-leak paper after it is completely dry.
- Any instrument that is used for coverslipping, staining, mixing reagents, slide labeling, etc. should not be left under the fume hood. They should be cleaned and returned to their proper storage location.
- If you fail to clean up the area you mess up under the fume hood, you may lose access to IBB's Histology Lab.

**Countertops:**
- Whether staining, completing antigen retrieval, embedding, labeling slides, preparing samples for cutting, etc. whatever you put on the countertop that does not belong there should be removed, cleaned, returned back to their proper storage place, or disposed of properly.
- If you spill something on the countertop, make sure you clean the spill immediately.
- Do not leave personal staining protocols, supplies, containers, etc. on the countertops or they will be thrown away.

***ALL EQUIPMENT THAT CAN BE RESERVED MAY ONLY BE RESERVED FOR A MAX OF 4HRS***

THE HISTOLOGY LAB IS A BRILLIANT RESOURCE
FOR GEORGIA TECH'S RESEARCH DEPARTMENTS & COLLABORATORS
LET'S MAINTAIN THAT IMAGE TOGETHER

IF THERE ARE ANY QUESTIONS OR CONCERNS DON'T HESITATE TO CONTACT ME VIA EMAIL
AQUA.ASBERRY@GATECH.EDU
IBB’s History Lab Users Agreement Page

IBB’s History Lab User:

I have read and will abide by IBB’s History Laboratory Guidelines. I understand that any violation of these responsibilities may result in the revocation of access privileges, disciplinary action and/or legal action if deemed appropriate. By signing below I agree to the following:

1. I understand and will obey the process of gaining access to IBB’s History Lab, the process of getting histological training on the machines located in IBB’s History Lab, and the process of getting a project completed by IBB’s History Lab Coordinator.
2. I understand and will record every service that I use or any supply that I take from the lab on the appropriate log sheet in the IBB History Services and Supplies Notebook.
3. I will not use IBB’s History Lab or its equipment for my personal prolonged storage space.
4. I understand and will obey all of the guidelines written in the Supplies and Services, Storage and Cleaning Methods, and Equipment and Special Services sections of this document.
5. I will clean the any area that I mess up and place all instruments and non-purchasable supplies back in their proper storage location.
6. I understand that I may lose access and my right to use IBB’s History Lab if I violate any of these guidelines.

_______________________________  __________________________  _____/____/_______
Signature                     Print Name                        Date

***All violators will be given a verbal warning first, then a written warning, and the third warning will result in losing BuzzCard access to the History Lab. Your P.I. will be notified of each warning and will be given an explanation for the loss of access to IBB’s History Laboratory.