

Instructor's Memo: Introduction to Lab, and Microscopes

This week in lab you will be meeting with students in the lab and providing safety information, and microscope checkout information.

Background Information to go over with students (If you did not cover it last week):

- Introduction to Lab and Lab Safety
Please be sure to go through the lab safety document posted on Canvas. Students should have printed out the last page to sign and submit to you in lab at your first meeting. **There are extra copies of the signature page in the prep room (until they run out).** Be sure to familiarize yourself with the location of the safety equipment in lab so you can point out each item to students. Please remind them of the important COVID safety protocols in place this semester (please note this might change once semester starts)
 - Students should wipe down their benches with disinfectant after every lab – no exceptions
 - Students should quickly wipe all models and materials with a paper towel sprayed lightly with disinfectant.

A brief run through of the lab syllabus is necessary for students. Highlight the important attendance and exam attendance policies.

The lab manual is available on Canvas digitally and as a printed book in the bookstore (for a very small fee somewhere around \$10-12) and a color atlas for \$20. Please encourage students to purchase both the printed book and the color atlas. Students do not need to print out a copy each week in addition to purchasing the manual. If they would like to do the lab work completely digitally, they must bring their own write on device – phones do not work well so please don't let them try to do the lab on their phone.

Note: Students are encouraged to bring a pair of their lab gloves to class this week as Methylene blue will stain if they get any on themselves.

- **Microscopes Care:** We have relatively new microscopes. Please stress proper usage and care of these expensive pieces of lab equipment. There is a sign out sheet they must sign on the door of the microscope cubby which lets you and them know which microscope they are using for the semester. They will use the same microscope each time they come into lab. This will hold students accountable as if you see a microscope was put away incorrectly, we know exactly which student last used the microscope.

There is also one camera per lab table for these microscopes. The cameras are stored in the prep room for safety and can be set-up by our lab manager. The camera connects to the ipads so students can take images and annotate on those images. They can then e-mail them to themselves for later use. More information will be coming about this – let's not worry about it on the first lab unless you are really into technology and want to give it a try in your class.

Microscope LAB

Reviewing correct microscopy techniques this week is key. Please make sure you circulate around and check student's work. Students can help one another through these activities, but they will need to work individually to ensure they know how to use the microscope – this information will be tested on. There is a tray set-up for each bench along with a supply list for each tray.

Activity 1: Parts of a microscope – Student can work in pairs to label the microscope. You will need to check their labels and initial their workbook. Students must sign out the microscope (on the door of the microscope cubby) for the semester. They should use the same microscope each time they come into lab.

Materials: microscope (one per student),

Material for trays (1 tray per group): terminology labels in binder with sticky tack

Activity 2: Depth of Field – Students should work individually and they should follow the proper drawing procedure (laid out in the lab PowerPoint). You might need to remind students that each string slide has a different order of colors for

this activity so they should not be comparing their answers to their lab partners. You will need to sign this activity.

Materials: Microscope (one per student),

Material for trays (1 tray per group): thread slide (4), dropper bottle of isopropyl alcohol, lens paper

Activity 4: Field Diameter and Review of Cells – Student should work individually on this experiment. They are **not** calculating the field diameter but instead understanding how it changes with magnification. First, they will label the images in their lab book for the motor end plate and answer questions about the field diameter. Next, they see look at the image of the peripheral nerve in their lab manual and use it to locate a nerve cell ultimately at high power and draw it. Next, they will observe their own cheek cells. To do this they should wear gloves. They will lightly scrape the inside of their cheek to get the cells and place them on a drop of solution on a clean slide. Please review with them how to put a coverslip on a wet mount. Sometimes students have trouble finding the cells. Please consider projecting an image of the cells on the instructor's scope to help them out. The toothpick should be placed in the red biohazard bag under the hood and the slide placed in the bleach container by the sink.

Material for trays (1 tray per group): peripheral nerve in cross section slide (4), dropper bottle of isopropyl alcohol, lens paper, box of toothpicks, dropper bottle of methylene blue, box of microscope slides, box of coverslips

Materials: Microscope, container of bleach for used microscope slides placed by the sink.

Clean-up/Restocking:

Please make sure that you check the cleanliness of the trays before each lab group leaves. All of the listed supplies should be placed neatly back in the tray. Don't let them get away with just tossing material in the tray. Double check that the microscopes were put away properly - you should have signed the lab workbook for this in activity 4. If you hold students accountable to being neat in these early weeks, it will become automatic for them and you will have fewer problems in the later weeks. Students should spray and wipe down their tables.

The instructions for clean-up for students is posted in the PPT and copied below here:

- Be sure you answered all questions in the lab
- Clean your lab station, put the material away neatly in the trays
- Placed prepared slides back in the slide box neatly
- Place toothpicks in the biohazard bin under the fume hood
- Please place all cheek cell wet mount slides in the bleach tray
- Put the microscope away correctly
- Wipe down your table with disinfectant
- Make sure all labels are placed back in the correct spots on the terminology sheets
- Don't forget to submit the post-lab and to take the terminology quiz before next week as well as complete the online metrics module