Zygomygota and Chytridiomycota Diversity

Remember to return the plates to their proper place when you are finished!

1. *Gilbertella* – follow the instructions in your lab manual. Observe the plate and make sure you can find the sporangia (all over the plate surface) and the zygospores (at dark junction). Prick out some zygospores and observe under the compound scope. Work quickly and close the lid on the plate when you're done to prevent the cells from drying out.

2. *Pilobolus* plate – observe the plate under a compound scope to find the dark trophocysts from which the sporangia arise. Look towards the outer edge of the growing hyphae to find the young and developing trophocysts.

3. *Pilobolus* dung sample – remove the dung sample from the box and observe the sporangia. Make sure you work QUICKLY because the sporangia will be shot when it is exposed to light.

4. *Pilobolus* black container – remove the black paper covering and observe where the sporangia were shot. Replace the covering when you are finished with observations.

5. *Glomus* – observe the *Glomus* slide/specimen at the demonstration scope. Make sure you can find the arbuscules.

6. *Basidiobolus ranarum* plate – observe the plate (with folds on the agar) under the compound scope. Look in the furrow to find the ballistic sporangia. Adhesive sporangia are rare but see if you can find them.
7. *Basidiobolus ranarum* plate with agar cubes – observe the growing edge of the plate under the compound scope. Find the ballistic sporangia. Adhesive sporangia are rare but see if you can find them. Look on the flat plate surface and find the sporangia that were shot out.
8. *Basidiobolus ranarum* plate (same plate as #6) – slice out some agar, mount in water and find the zygospores. These will be round structures with small projections on one side.

9. *Allomyces* life cycle – We have 4 parts to this life cycle. We will start out with the 2N state and then go the N state. Look at the instructions in the lab manual on how to look at this fungus but we want you to look at these in the following order:
    a. Young thalli (2N) from *Allomyces arbusculus* (#3 in lab manual)
    b. Sporothallus (sometimes called sporophyte) and mitosporangium (2N) from *Allomyces arbusculus* (#1 in manual). Can you see the mitospores (2N zygospores) swimming around? Return the sporothalli when you are done observing them.
    c. Germinating meiosporangia (N) from *Allomyces macrogynus* (#2 in manual). Can you see the meiospores (N) swimming around?
    d. Gametothalli (sometimes called gametophyte) and gametangia (N) from *Allomyces macrogynus* (#4 in manual). They are both on plate and water. Observe both. For the plate, use a cover slip and scrape a little bit of the cells and mount the scraping on a slide in a drop of water. Can you find the gametes being released and fusing?

10. *Spizellomyces* plate – drop a cover slip on the surface of the agar plate and observe the thallus of this chytrid. The round structure in the center is the sporangium.
11. *Spizellomyces* water container – there are pine pollen floating on the surface of the water. Dip a cover slip into the container just to catch the floating pine pollen grains. Place the cover slip onto a slide and observe under the dissecting scope to find thallus(i) growing out of them.