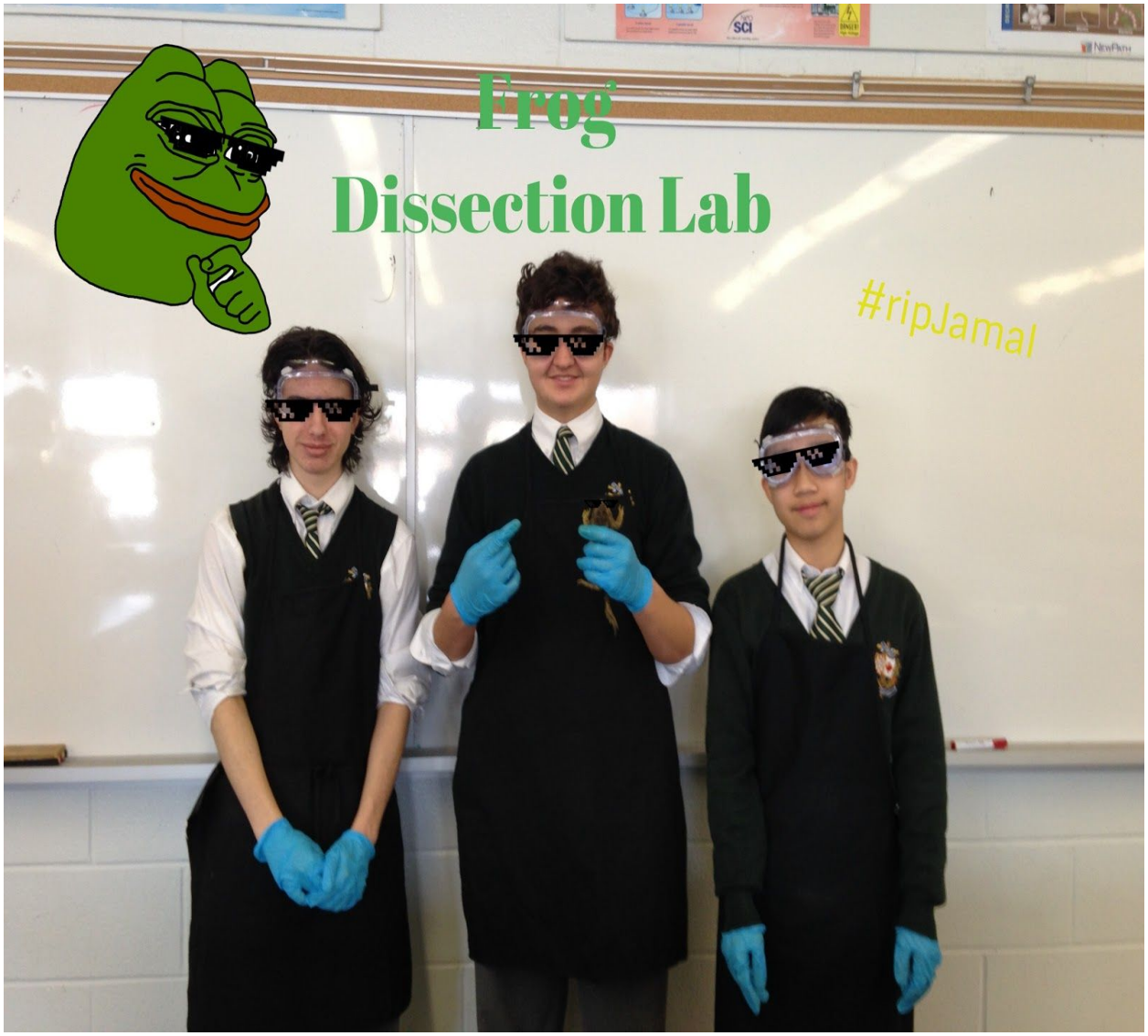


Submitted By: Matteo Buttiglieri
Michael Emslie
Brian Nguyen
Submitted To: Ms. Valinho
Course Code: SNC 2D2-01
Date Submitted: January 16th, 2018

Purpose:
To dissect a frog and must be able to identify the different organs

Materials:
Refer to page 150 of the handout “Frog dissection”

Procedure:
Refer to pages 149-151 of the handout “Frog dissection”

Modifications:

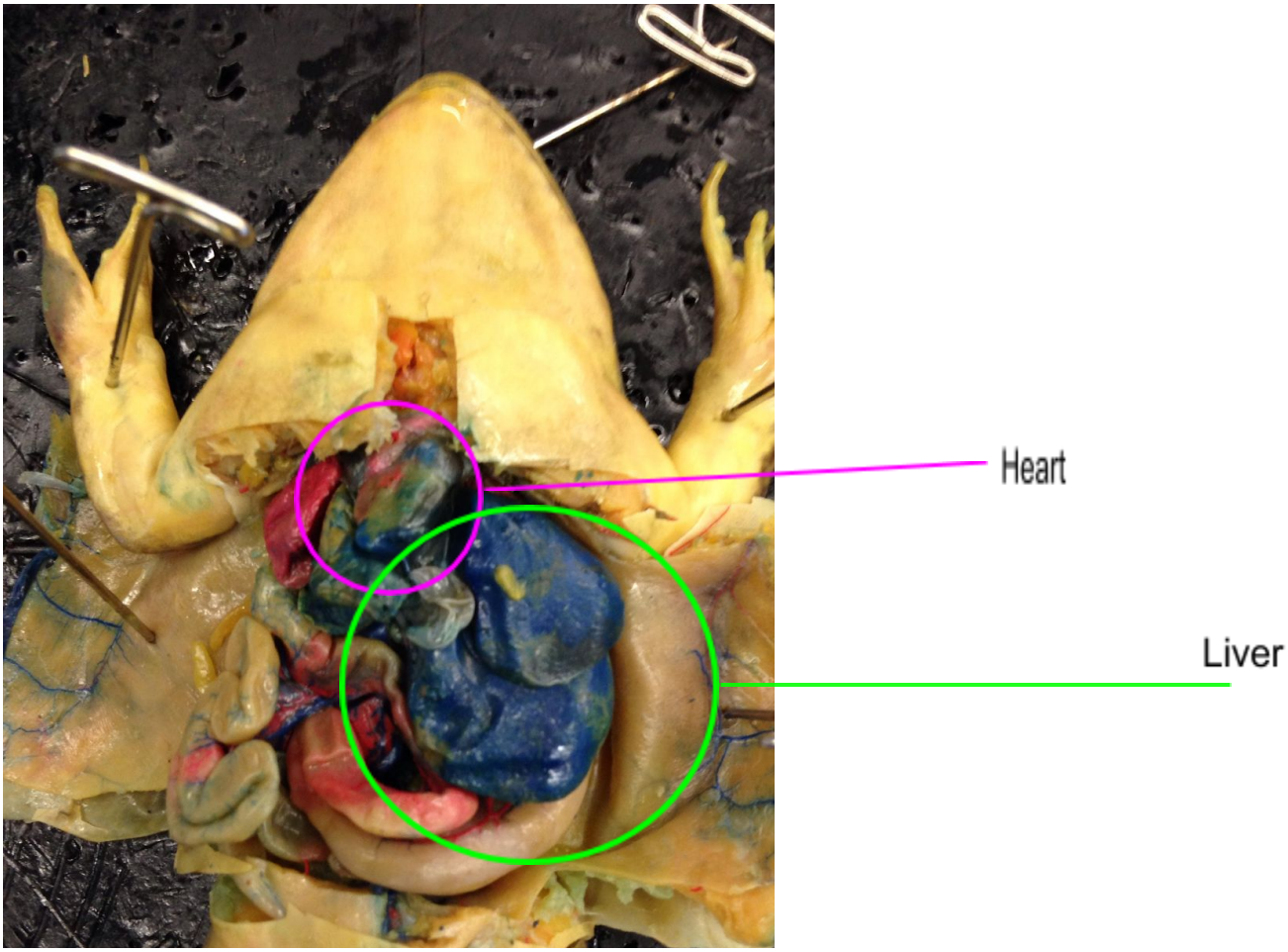
- Take pictures of the identifiable organs instead of drawing picture

Lab considerations:

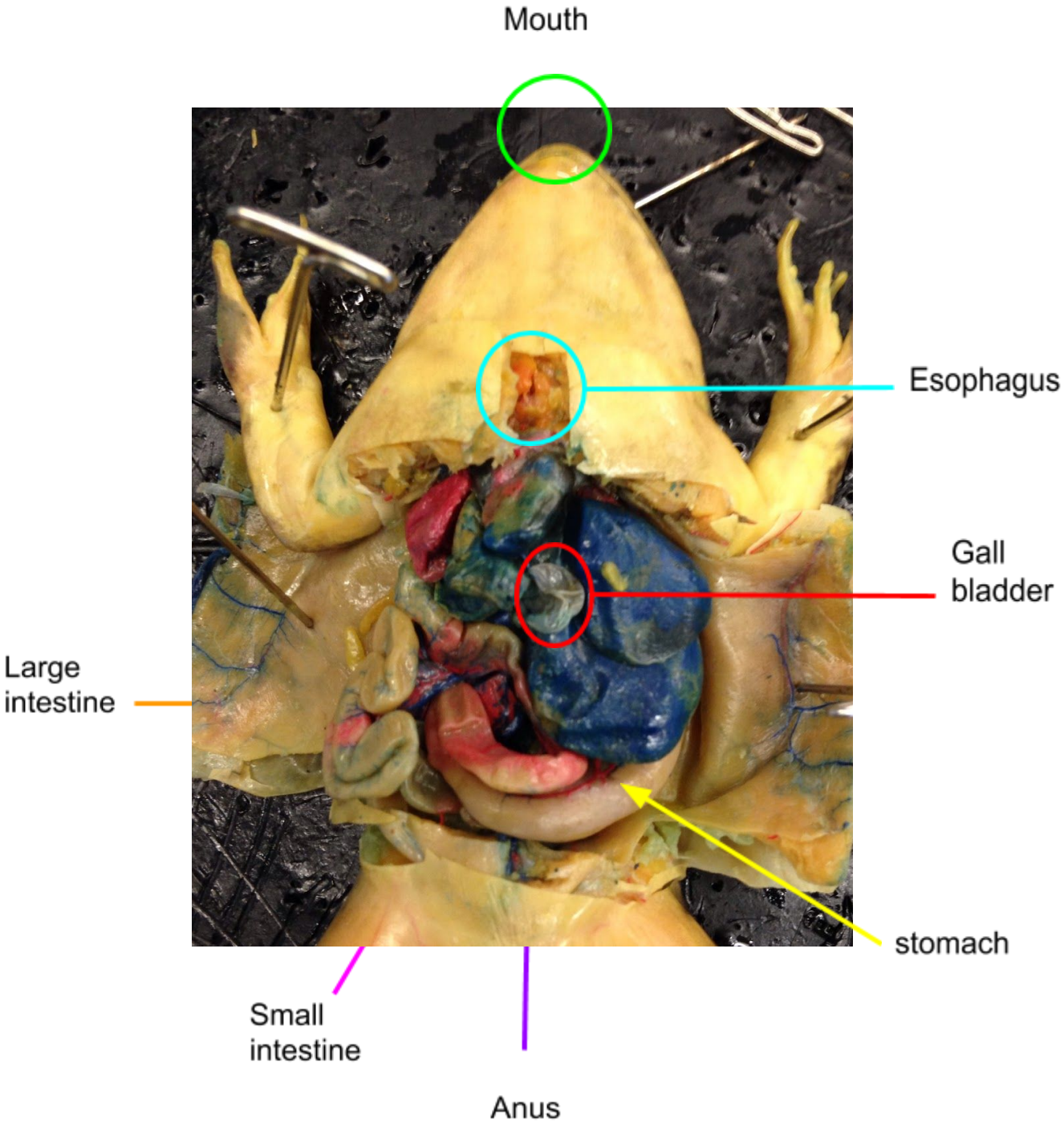
- Give the frog a name
- Respect the frog

Observations:

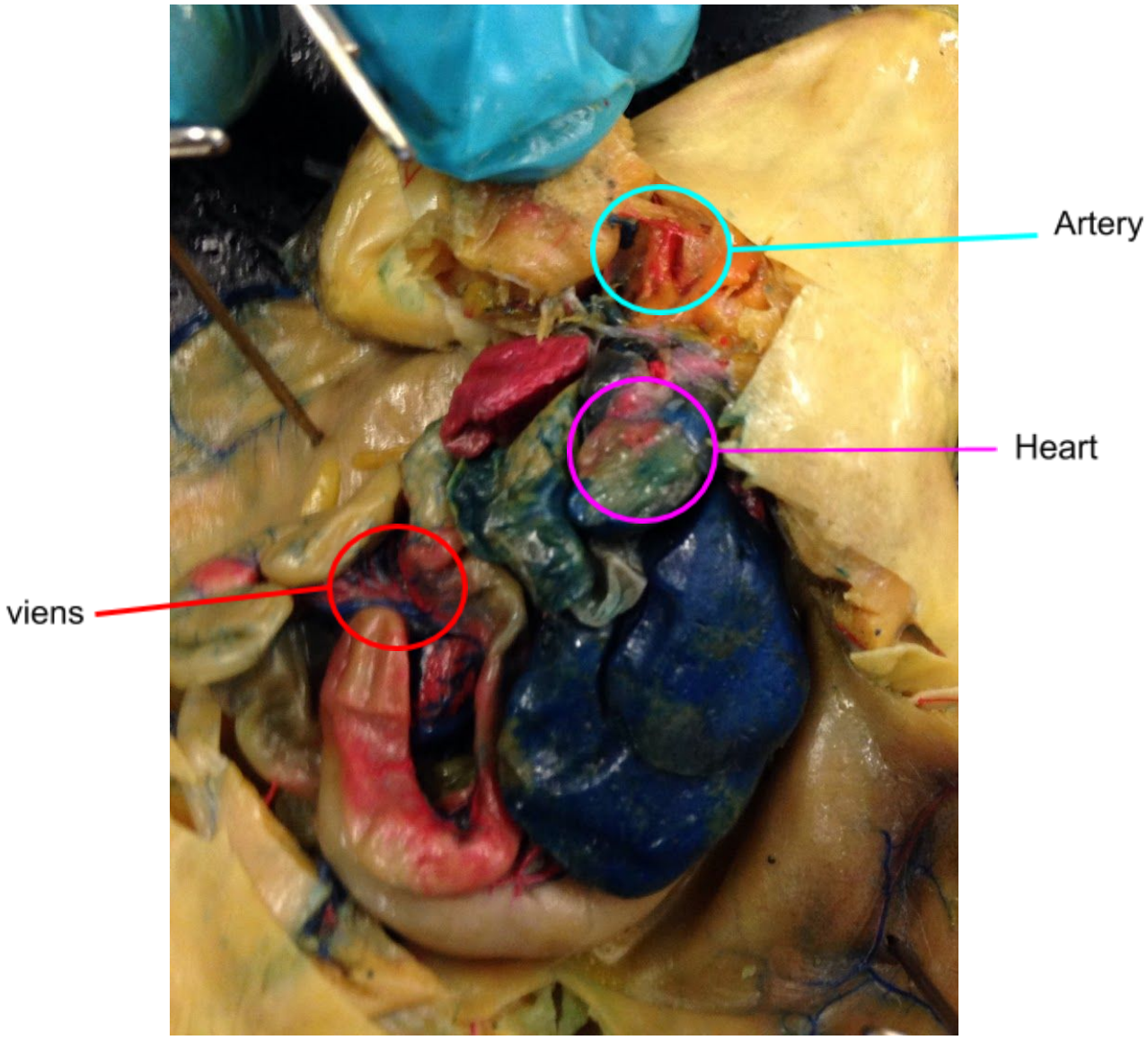
Procedure #7



Procedure #8


Mouth
Esophagus
Gall bladder
Large intestine
stomach
Small intestine
Anus

Procedure #10



1.What is the connection between the circulatory blood vessels and the digestive organs. Describe your observations in your notebook?

Using a magnifying glass our grouped observed the connection between the circulatory blood vessels and the digestive organs. The blood vessels were dyed blue and this allowed us to see the connection between the two organs systems clearer. After observing the digestive system and circulatory we conclude that the two systems rely on each other to perform their functions. When the frog digests is done digesting its food there has to be a way for the processed energy to go where it needs to. That is when the circulatory system comes into action. The blood vessels carry the processed energy into the bloodstream and gets distributed where energy is needed to be consumed. Without one or the other the organism wouldn’t be able to survive.

Procedure #11

1.Use a magnifying glass to look at the stomach's muscular walls. Describe what the surface looks like.

The muscular walls of a frog looks similar to a humans and functions almost exactly the same ways as a humans would. It has many layers to it just like a human stomach but much smaller. The stomach of a frog has smooth muscle tissue and connective tissue. We saw blood vessels inside the frog's stomach and around it. When touching the organ it felt very smooth.

2. Describe how the small and large intestine compare in size and shape.

The small and large intestine of a frog look and feel very different from each other, they both have unique properties that differentiate them. By looking at the small and large intestine you can clearly see the small intestine is narrower but longer in than the large intestine. The large intestine is shorter and has a thicker build than the small intestine.

3.Observe how the frog's heart is different from a human heart. Describe these differences.

The human heart and a frog's heart has the same function to pump blood throughout the organism. But the anatomy of the two are very different. A frog's heart only has one ventricle while a human has two. Humans have two vessels leading into the heart the vena cavas, frog's only have one vessel leading into the heart. Also a human heart is more complex than frog's heart because of the amount of blood vessels in a human heart. Lastly a frog's heart has two arteries leading from the heart while humans have a single Aorta. These are the differences between a human and frog's heart.

Discussion:

1.Identify two of each of the following that you observed during the dissection.
a)Tissue: smooth muscle tissue, connective tissue
b)Organs: heart, liver
c)Organ systems: digestive system, circulatory system

2a) Frogs eat insects. Create a flowchart that shows the path of an insect as it moves through a frogs digestive system.

Tongue-mouth-esophagus- stomach-small intestine-large intestine-anus

b) Write a brief paragraph explaining how the organs of the digestive system work together to digest the insect.

When a insect gets caught by a frog it gets swallowed into the mouth. Then it goes down the Esophagus and ends up in the stomach. The insect is broken down by the stomach acids and proceeds to the small intestine. Digestive enzymes from the pancreas and gallbladder are then added to aid digestion. Most digestion occurs in the small intestine and the nutrients are absorbed by the circulatory system. Any liquids are absorbed by the large intestine and excreted by the anus.

3a) Based on your observations, how do the frogs circulatory and digestive systems connect?

Based on our observations the frog's circulatory and digestive system are connected by veins and connective tissue.

b) Explain why the interaction of the digestive and circulatory systems is necessary for the frog's survival

The interaction between the digestive and circulatory system is necessary for a frogs survival because the digestive system breaks down the food into nutrients and is then absorbed into the bloodstream which is then spread throughout the body hence why the veins connect both systems.

4) Some people refuse to dissect a real animal. They believe that students can use software to study animal organ systems without cutting up the animals. Other people think that dissecting real animals is useful for students to better understand how organ systems work in animals. What do you think?

Dissecting a real animal is very controversial because many people believe that it can be substituted with software to study animals without cutting them up. We believe otherwise, dissecting a animal cannot be substituted for anything else because it is a hands on learning experience that is beneficial for the student. It is vastly different from a lecture or textbook learning experience because it gets students close to the real thing. Students get to see and touch the various organs in an animal. This allows students to have a better understanding of the anatomy of the organism they are dissecting. Virtual simulations cannot create the experience of a real dissection because it cannot showcase the abnormalities of the specimen, it would seem too perfect and unnatural. This is why our group believes the experience of a real life dissection can not be substituted with a virtual one.

Inquiry:

Describe the connection between the nervous, muscular and respiratory systems of the frog.

The connection between the nervous, muscular, and respiratory systems of the frog are very interconnected. They are connected in terms of that they help frogs survive by working together to keep the animals alive. For example: the nervous system tells the appropriate muscles in the muscular system to perform a specific task to hunt prey. The respiratory system then has to provide the air for the frog to hunt. After that the brain regulates the speed at which food moves through the digestive tract. Another example: the nervous system would also sense danger if an oncoming predator is in the area and would tell the muscles to move, thus stimulating an escape attempt from the frog. The respiratory system then needs to supply the frog with air and monitor respiratory rate during the escape to have the oxygen it needs to avoid the predator. As you can see, the nervous, muscular, and respiratory system all work together to keep frogs alive in the wilderness, where issues such as predators and food are prevalent. They ensure that the frog always has a chance at survival, and can live a long life in the marshes, bogs, and swamps that they inhabit. Without the relationship between these three systems, the frog would most certainly die.

Conclusion:

We were able to properly dissect the frog and we were able to identify the different organ and organ systems that were required. Organs such as the gall bladder, heart, and stomach. Three possible sources of error are; accidently cutting organs while opening up the frog, accidentally cutting an organ while dissecting the frog, and miss identifying an organ. It was pretty cool getting to look at a frog's organs inside it's body. We also believe that it is better to dissect a frog rather than use software as it is a hands-on learning experience that is unique and cannot be replicated with software. It really gives us students a better understanding of how organ systems work.