Introduction to the Back

Learning Objective
After completing this exercise, you will be able to identify the major muscles and structures of the back.

1 **Start by setting the screen view:**
- Select “Classic” from the “Views” drop down menu in the upper-left corner of the screen
- Reset the dissection by clicking the “Reset” button in the upper-right corner of the screen

2 **Rotate the cadaver to a posterior view:**
- Select the “Rotate” tool located in the toolbar below the dissection area
- Rotate to a posterior view by clicking in the dissection area and dragging the mouse to the left or right

Rotate the dissection using the left or right arrow keys while holding the command (Mac) or ctrl (PC), hold down shift to rotate 90° at a time. Alternatively, use the rotation tool below the dissection area.

3 **Set the cross section through the upper back:**
- Drag the reference plane in the dissection area by its blue border to the upper back (the cross sections are numbered in the lower left corner, you should be close to 399)
- Explore the anatomy of the back by moving your mouse over the cross section (structures are identified at the top of the cross section area)

4 **Skin the cadaver to reveal the anatomy below:**
- Select the “Dissect” tool from the toolbar (turns blue when selected)
- Click on the skin to remove it (now you see the fat and other subcutaneous tissue)
- Remove the fat just like the skin

5 **Take a closer look by centering the back in the dissection area:**
- Use the “Zoom” control, located in the toolbar below the dissection area, to enlarge the dissection
- Select the “Move” tool and drag the dissection with your mouse to reposition it
- Dissect the veins of the thorax and posterior head and neck to cleanup the image

6 **Identify the erector spinae muscles:**
- Select the “Index” tab
- Enter “erector” into the search box
- Select the “Erector spinae - Left” from the list
- Click the “Add & Highlight” button (the cross sections are in standard radiologic orientation so the left erector spinae are on the right side)
- On the left side, dissect the middle and inferior parts of the Trapezius muscle
- Under the trapezius, dissect the rhomboid major muscle

What muscles make up the erector spinae? (*Remember the mnemonic L Love Spines!*)
1. __________________ 2. __________________ 3. __________________

7 **Isolate the spinal nerves by simplifying the dissection:**
- Click the “Clear” button in the upper-right corner of the screen to clear the dissection area
- Select the “Systems” tab
- Select the “Skeletal system” and click the “Add” button
- Select the “Tissues” tab
- Expand “Nervous (Peripheral Nervous System)” using the icon to the left of it
- Select the Lumbar nerve [L1] and click “Add and Highlight”
- Use the “Move” tool and “Zoom” control to position L1 in the middle of the dissection area
Follow the lumbar nerve as it exits the spinal column:
- Drag the transverse plane down to where the L1 nerve exits the spinal column on the right side
- Zoom in on the cross section of the spine using the “Zoom” control
- Follow the nerve inferiorly by holding down the command (Mac) or ctrl (PC) key while pressing the down arrow key to move 1mm at a time through the cross sections
  (Notice how close the nerve passes to the intervertebral disk as it exits the spine. This is the basis for the nerve pathology associated a herniated disk)

Move the cross section 1mm at a time by holding the command (Mac) or ctrl (PC) key while pressing the up or down arrow keys

Follow the L1 nerve downward, what muscles does the nerve pass between?
1. 
2. 
3. 

Visualize a more advanced anatomical concept, the triangle of auscultation:
- Click the “Reset” button in the upper-right corner of the screen to reset the dissection
- Zoom out and center the upper back in the view
- Dissect the skin, fat and veins of the thorax to cleanup the dissection
- Select the “Highlight” tool from the toolbar
- Click on the inferior part of the trapezius muscle on the left side to highlight
- Highlight the left latissimus dorsi muscle
- Highlight the tendon and muscle of the rhomboid muscle as well (on the left)
  (These muscles form the border of the triangle of auscultation)

Highlight structures or de-highlight a structure with the highlight tool

Examine the contents of the triangle of auscultation:
- Place the cross section through the middle of the triangle of auscultation (cross section 434)
  (The triangle of auscultation is the point through the back with the thinnest muscular layer between the skin and the lungs, making an excellent place to listen to breath sounds)

Which muscles make up the floor of the triangle of auscultation?
1. 
2. 

Which structures separate the floor of the triangle from the lungs?
1. 
2. 

Add, remove and highlight groups of structures with the Systems, Regions and Tissues tabs

Follow the lumbar nerve as it exits the spinal column:
- Drag the transverse plane down to where the L1 nerve exits the spinal column on the right side
- Zoom in on the cross section of the spine using the “Zoom” control
- Follow the nerve inferiorly by holding down the command (Mac) or ctrl (PC) key while pressing the down arrow key to move 1mm at a time through the cross sections
  (Notice how close the nerve passes to the intervertebral disk as it exits the spine. This is the basis for the nerve pathology associated a herniated disk)