

# **Interactive 3D Zebrafish Craniofacial Anatomy Atlas**

Free data and software for visualizing the  
anatomy of the developing zebrafish craniofacial  
skeleton

## **3D Viewer Tutorials**

University of Oregon, 2011

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## Getting started

1. Once you have downloaded the viewer.jnlp program it will probably be stored on your desktop. Find the icon and double click on it to open.

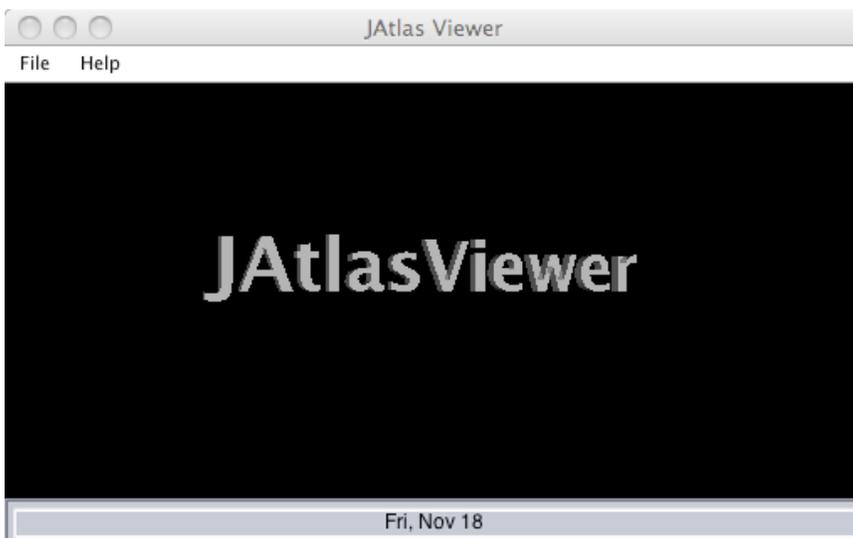


2. This will launch the Java WebStart program, which starts the application. You will notice an icon that looks like this in your tool bar.

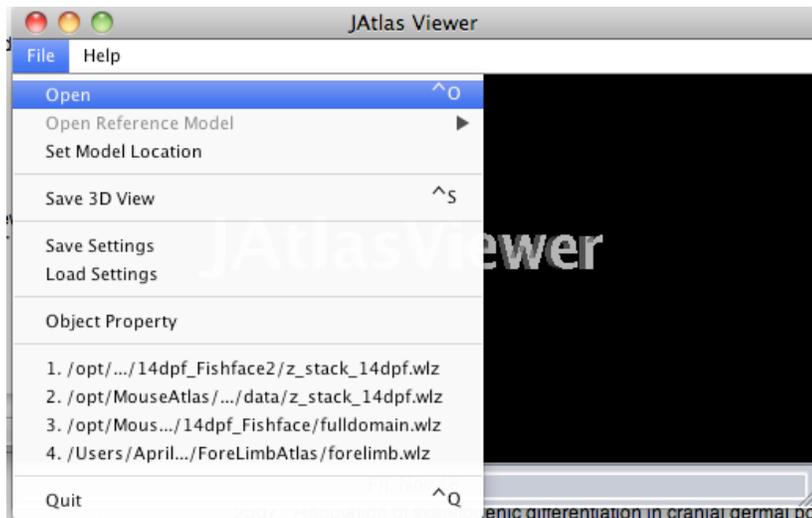


**It may take several seconds** before the JAtlas program starts.

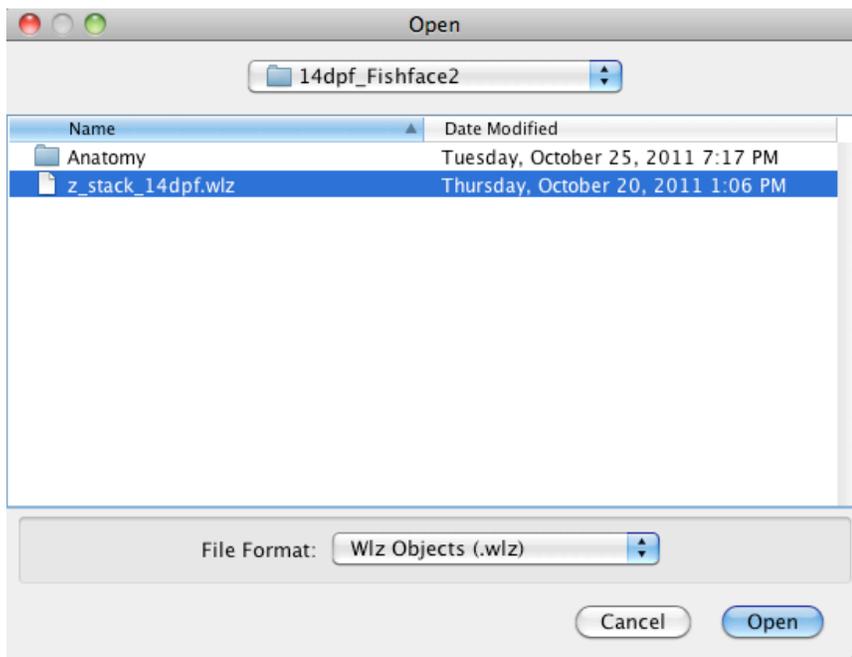
3. The JAtlas Viewer window will then open:



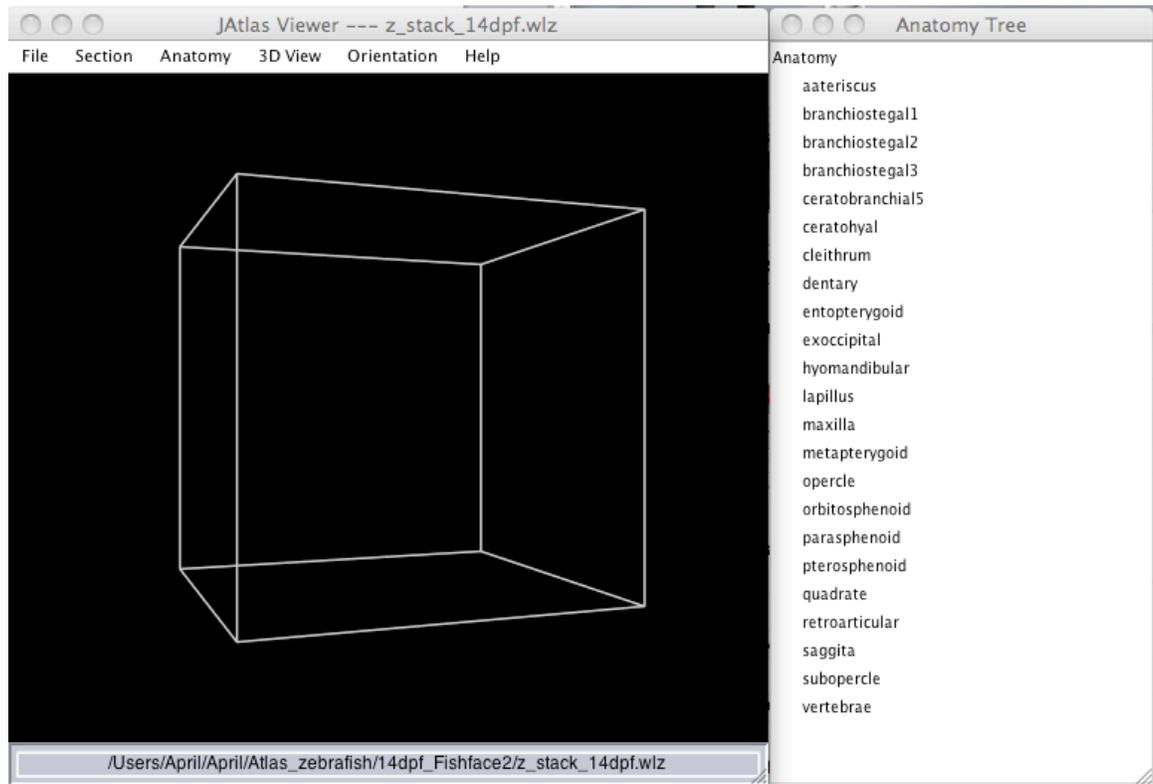
4. Click on File on the Viewer toolbar, then Open to open your dataset. Find the folder you downloaded named “z\_stack\_14dpf.wlz”. **You may need to use the middle button of your mouse to navigate the file hierarchy.**



5. These folders contain the .wlz file and the Anatomy folder. Double click on z\_stack\_14dpf.wlz to load the dataset.

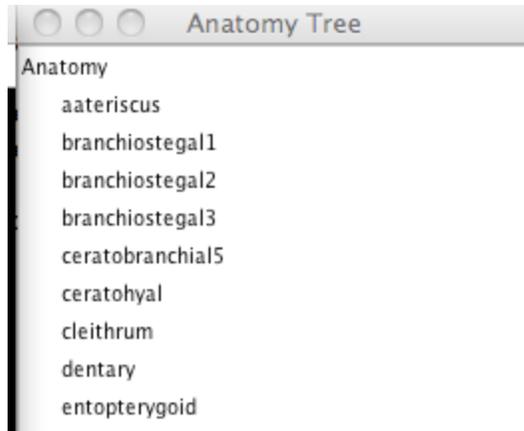


- The program will automatically load the dataset, represented by a bounding box. The Anatomy Tree on the right contains the names of structures.

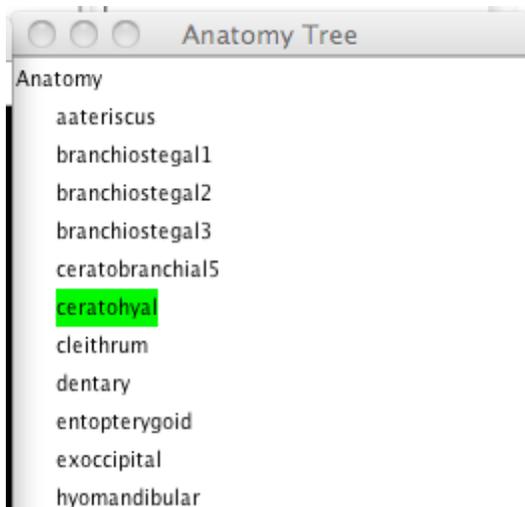


## Displaying individual bones in the 3D window

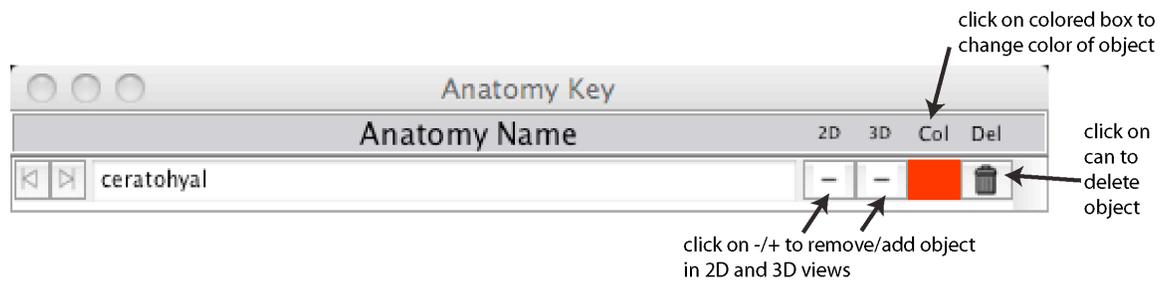
1. In the Anatomy Tree, click once on the bone name.



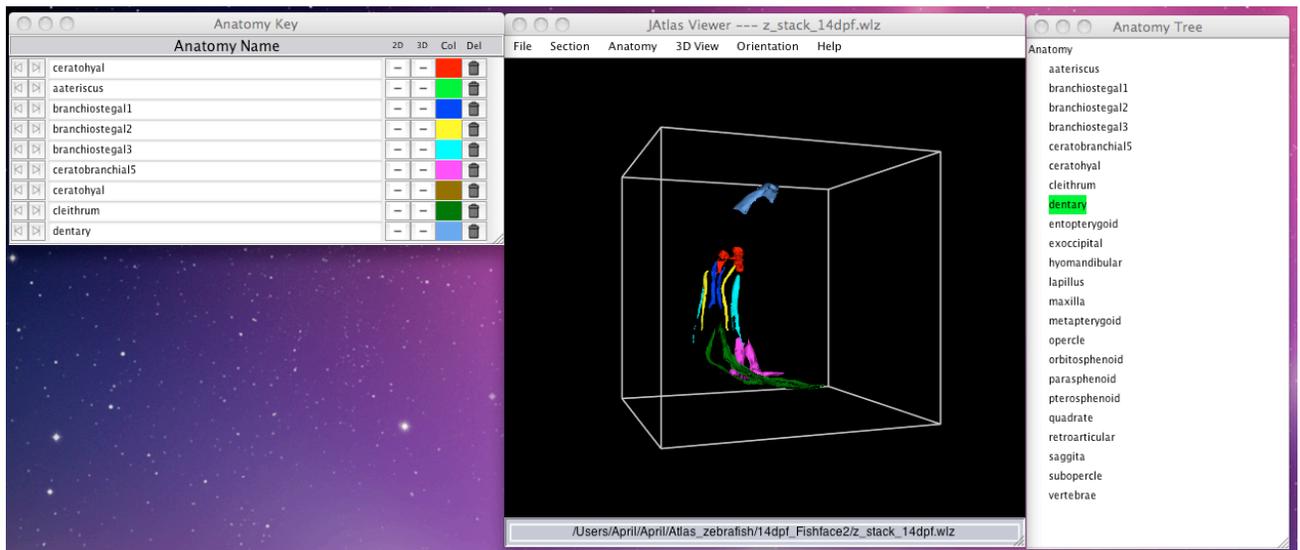
2. Click on the name of the bone to see the object appear in the 3D model. Depending on the size of the object, and the speed of your computer, this may take a few seconds.



3. The Anatomy Key will appear on the screen showing the name and structural hierarchy of the bone in the craniofacial skeleton. Using this menu, you can:
  - switch object on/off in 2D and 3D views
  - change object colour
  - delete the object from the viewer



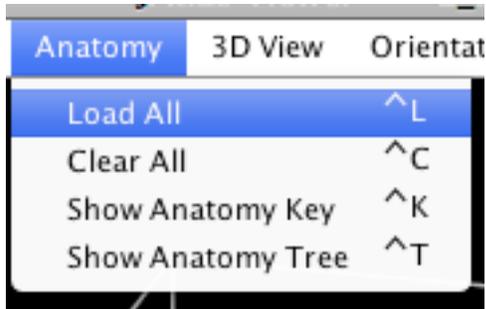
4. Now try opening some more objects in the Anatomy tree. You will see 3D structures appear in the Viewer window, and the names and colour codes for the structures listed in the Anatomy Key.



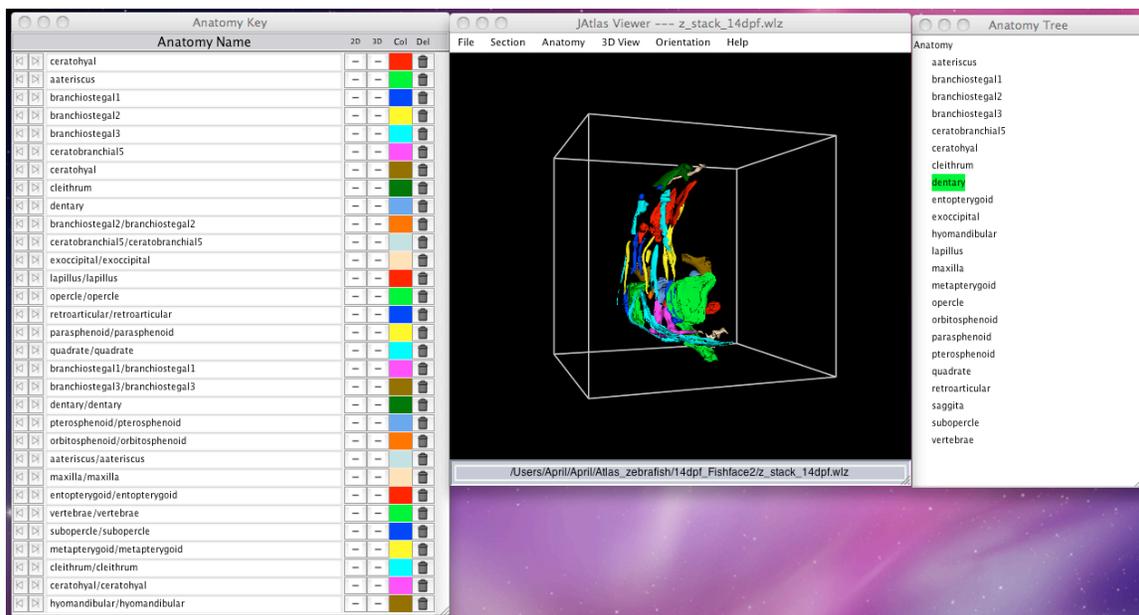
5. You can remove the bounding box by clicking on “3D View” and “Show Bounding Box”.

## Displaying all bones in the 3D window

1. To display all structures of the craniofacial skeleton at once, on the tab click on Anatomy then Load All.



2. All structures will appear as colour coded objects in the viewer, linked to the Anatomy Key.



## Rotating, magnifying, and translating the 3D model

### If you have a 3-button mouse:

1. Left button controls the rotation:
2. Move the mouse to the viewer window. Press the mouse and move to right. The model will rotate to right around the vertical axis. Move the mouse to the left to rotate the model left around the vertical axis. Move the mouse to the top or bottom of the window to move the model on the horizontal axis.
3. Middle button controls the zoom:
4. Press the middle button and move to the top to zoom in. Move to the bottom to zoom out.
5. Right button controls the translation:
6. Pressing the right button the model will follow the movement of the mouse.

### If you have a 2-button mouse:

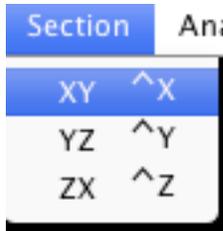
- Left button controls rotation.
- Left button + Alt Key controls zoom.
- Right button controls translation.

### If you have a 1-button mouse:

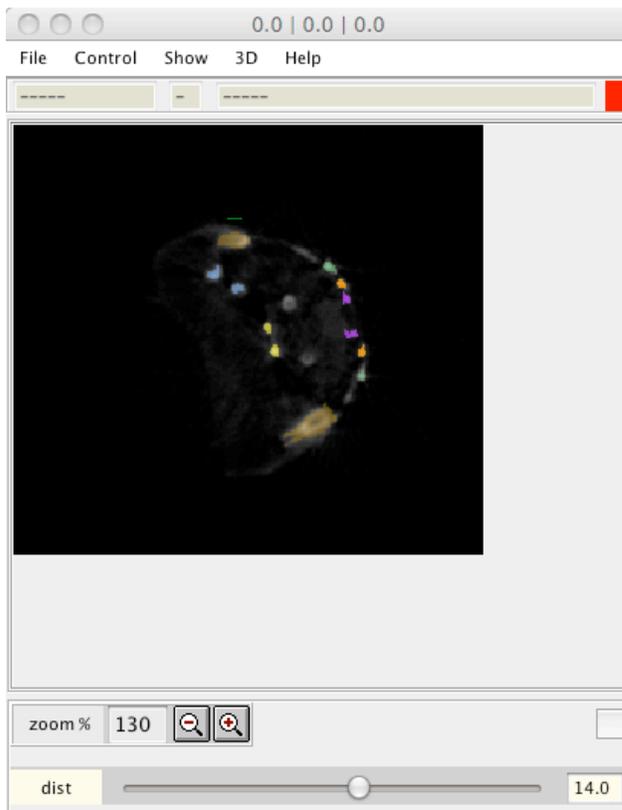
- Button only controls rotation.
- Button + Alt Key controls zoom.
- Button + Windows Key controls translation.

## Opening a 2D section view

1. Click on View Section on the viewer toolbar. Select XY, YZ, or ZX. View Section menu on Viewer toolbar.

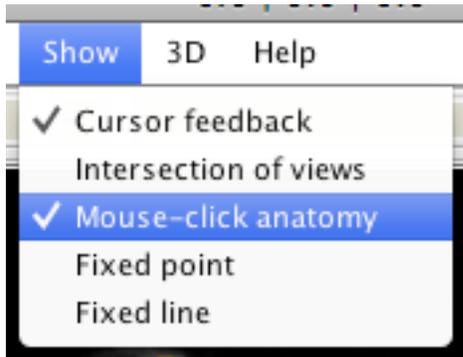


2. A 2D section window will appear. If structures have been switched on in the Anatomy Tree, they will appear color-coded in the section view.

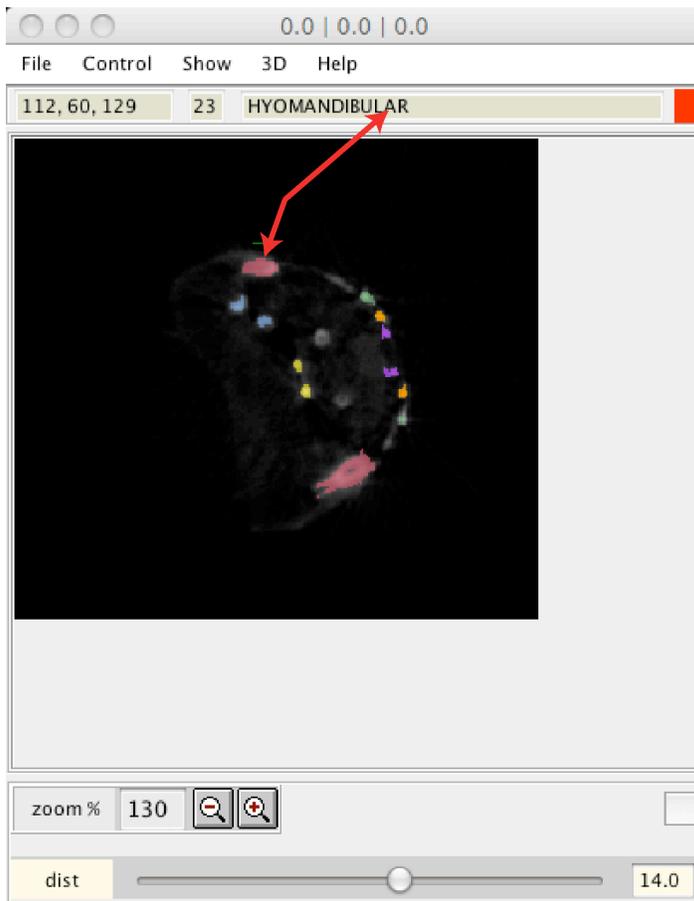


3. **Pan through the stack** by using the slider at the bottom of the window.

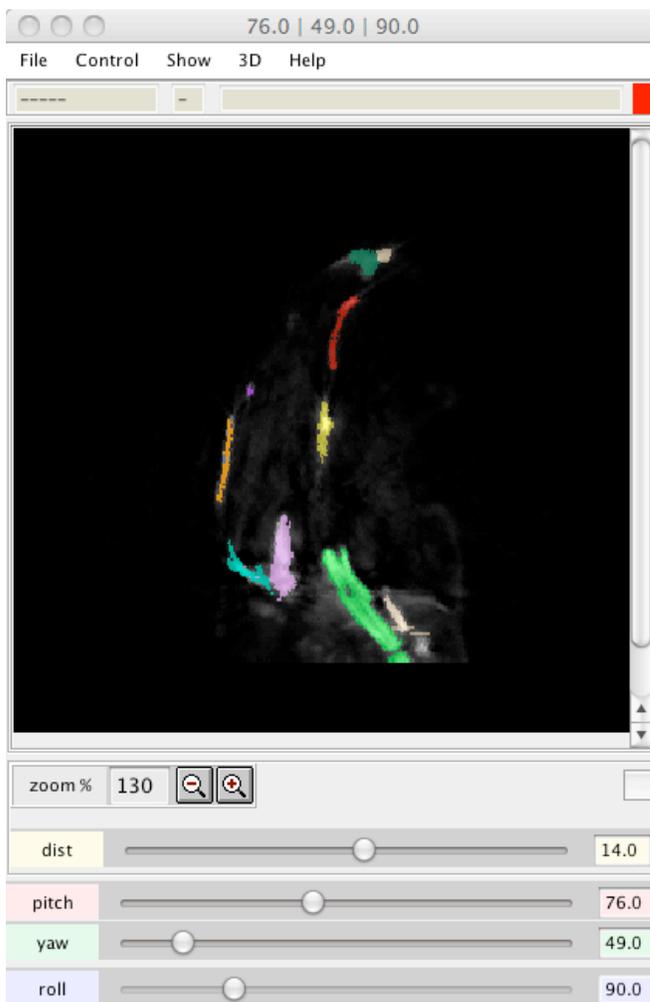
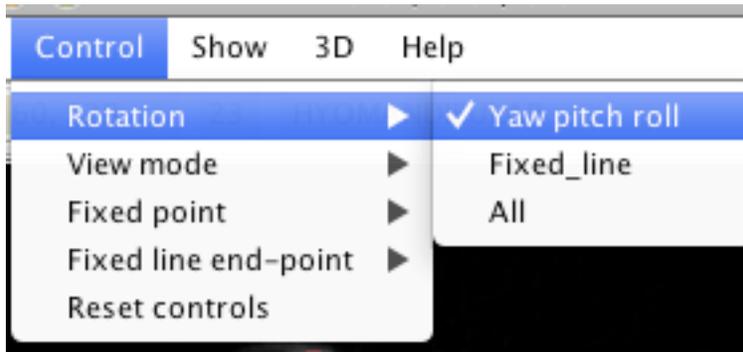
4. **Identify the names of structures in 2D:** click on Show in the 2D section toolbar, then on Mouse-click anatomy.



Click on a bone in the 2D window, and the name and structural hierarchy will appear in the box at the top of the window. (Click again on another region, and the name will change.)

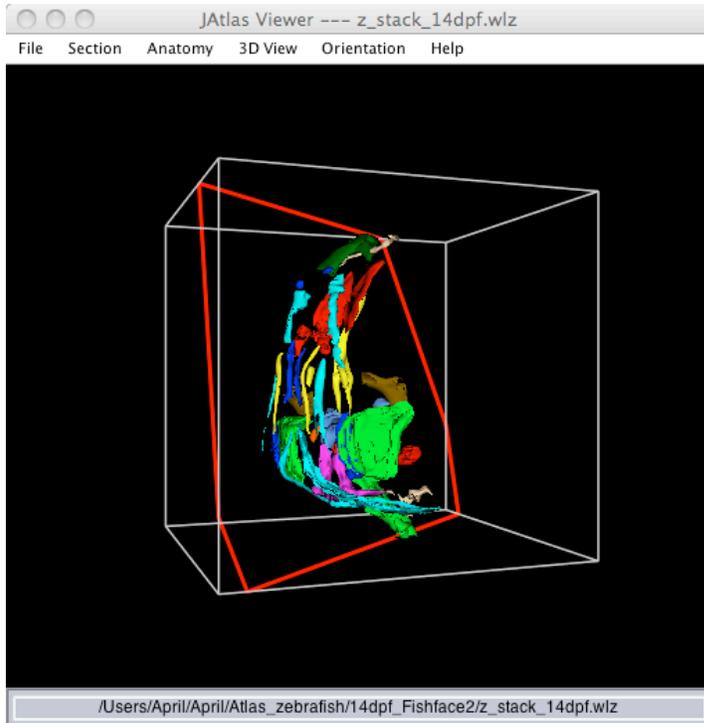


5. **Change the plane of section:** click on Control on the 2D viewer toolbar, then Rotation, and select yaw pitch roll.



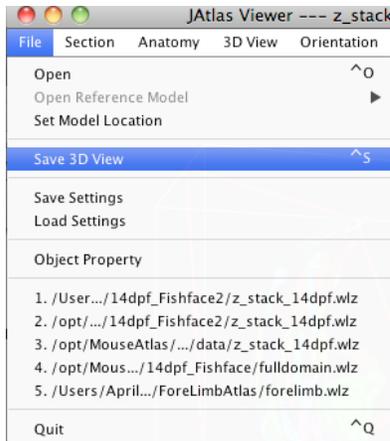
Slider bars will appear at the bottom of the window. Move slider bars to change the angle of the section.

6. **View 2D section plane in 3D model:** click on Show on the 2D viewer toolbar, then Intersection of views. A line will appear in the 3D viewer showing the 2D section view.

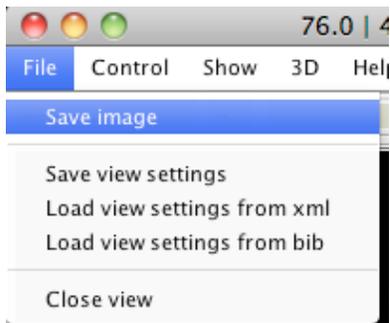


## Capturing images

1. Click on File on the 3D viewer toolbar, then Save 3D View.



2. Click on File on the 2D viewer toolbar, then Save image.



3. Save image in selected destination folder.

