Slicer3 minute tutorial

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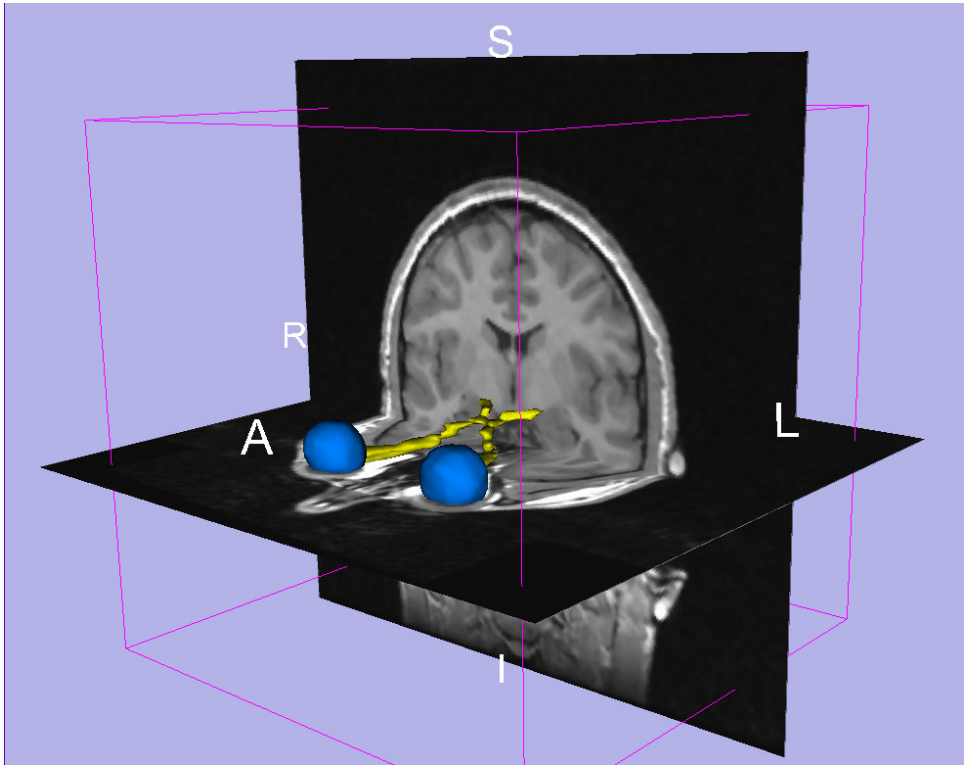
This tutorial is a short introduction to the 3D visualization capabilities of the Slicer3 software for medical image analysis.

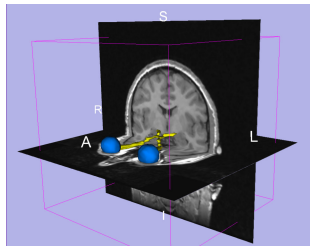


Download the material

Slicer3 is a multi-platform software running on Windows, Linux, and Mac OSX.

- Download and install the Slicer3.4 software
http://www.slicer.org/pages/Special:SlicerDownloads

- Download the training Dataset: Slicer3minute.zip
http://wiki.na-mic.org/Wiki/index.php/Slicer3.4:Training



Disclaimer

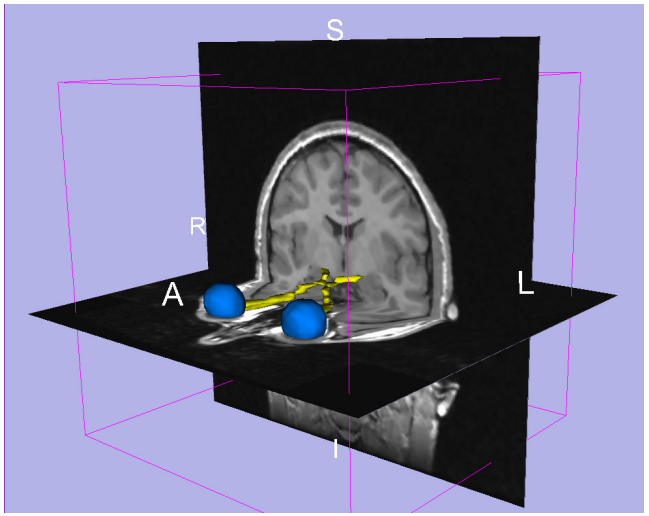
It is the responsibility of the user of 3DSlicer to comply with both the terms of the license and with the applicable laws, regulations and rules.

The Slicer3 software

- An end-user application for image analysis
- An open-source environment for software development
- A software platform that is both easy to use for clinical researchers and easy to extend for programmers

Tutorial Dataset

- The Slicer3minute dataset is composed of an MR scan of the brain and 3D surface reconstructions of anatomical structures.

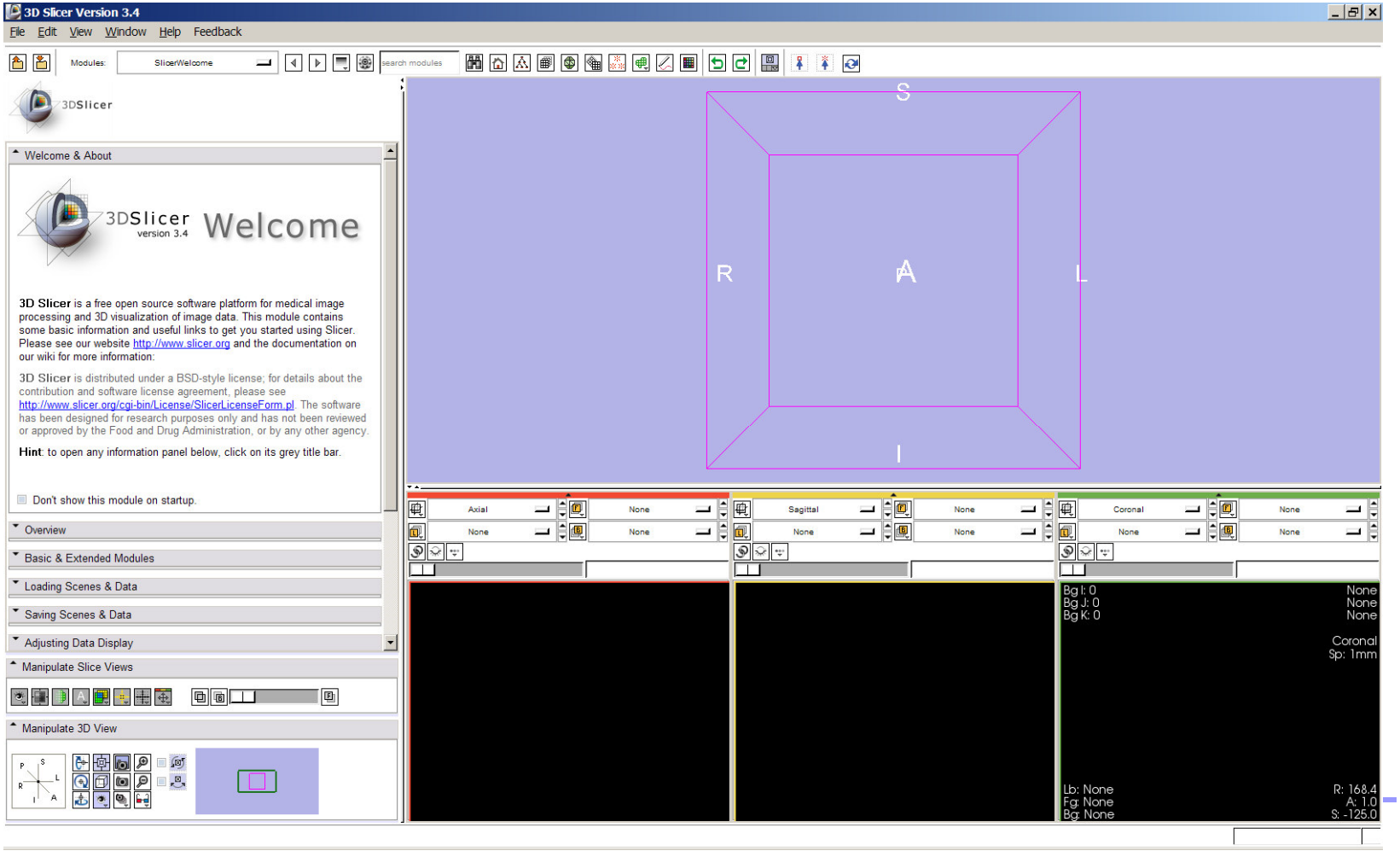


- The data are part of the SPL Brain Atlas developed by Talos et al. The atlas is available on the Slicer3 101 page.

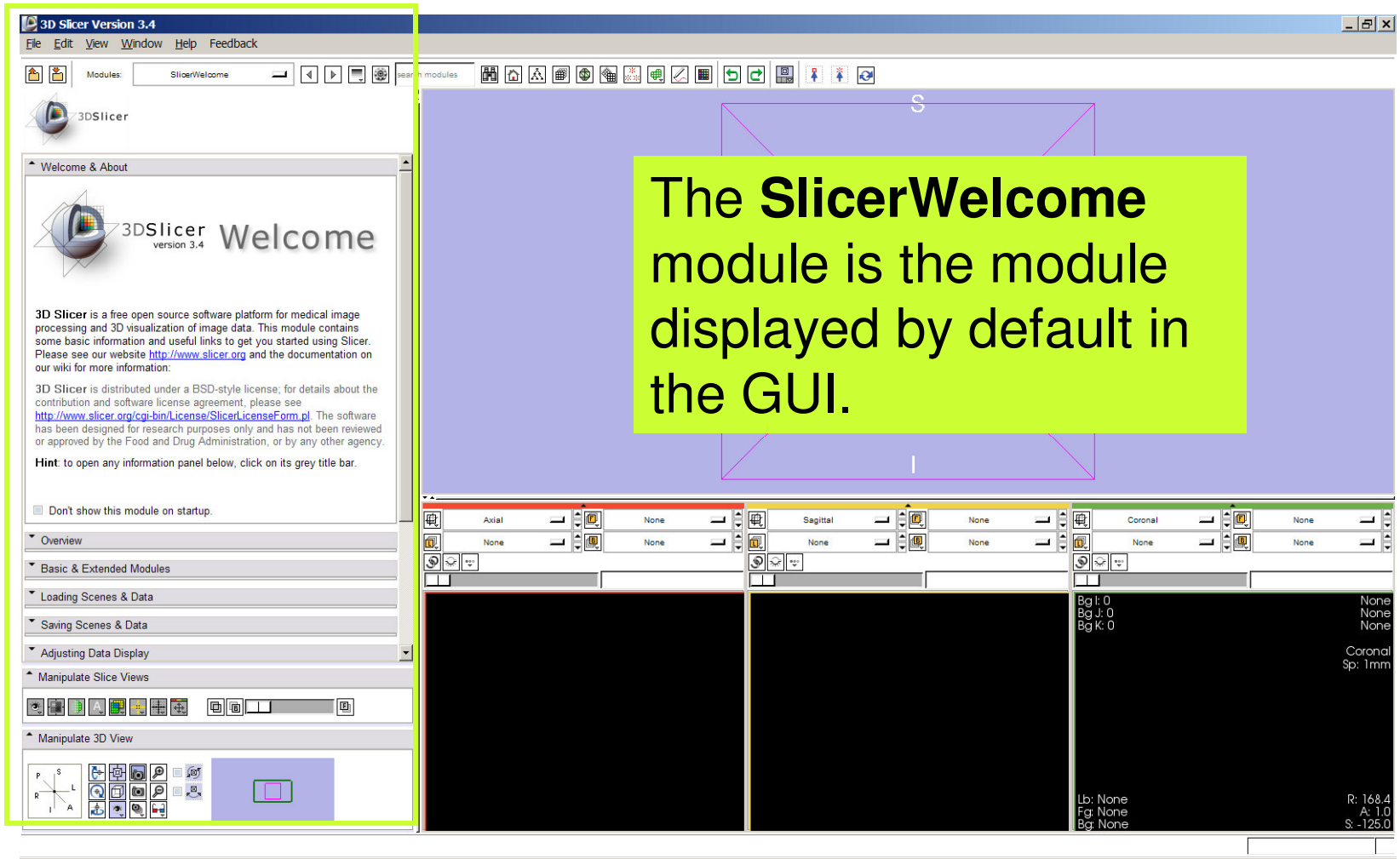
http://www.na-mic.org/Wiki/index.php/Slicer3.2:Training
http://www.spl.harvard.edu/publications/item/view/1265

Start Slicer3

Launch the Slicer3 executable located in the Slicer3.4 directory

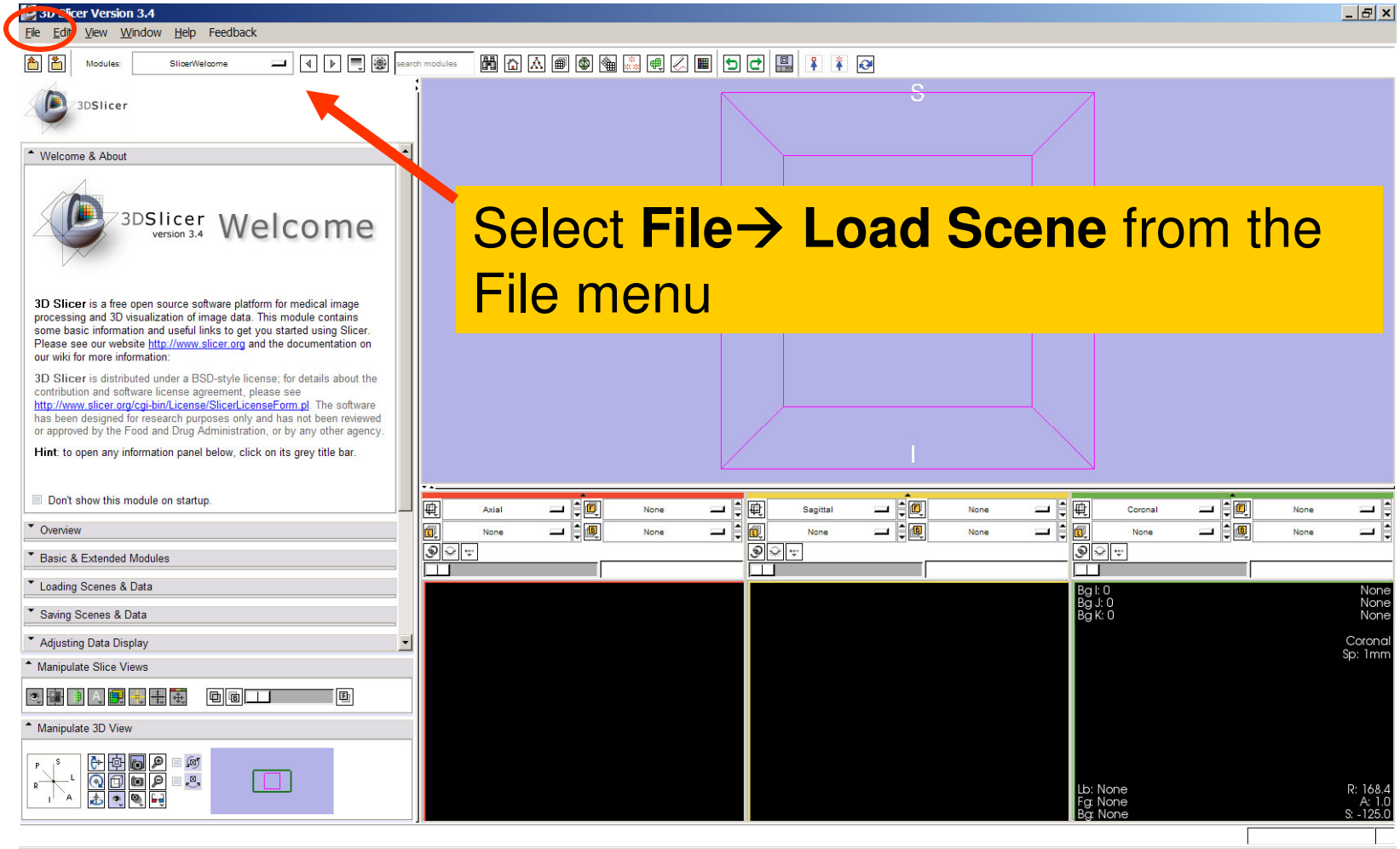


Slicer Welcome

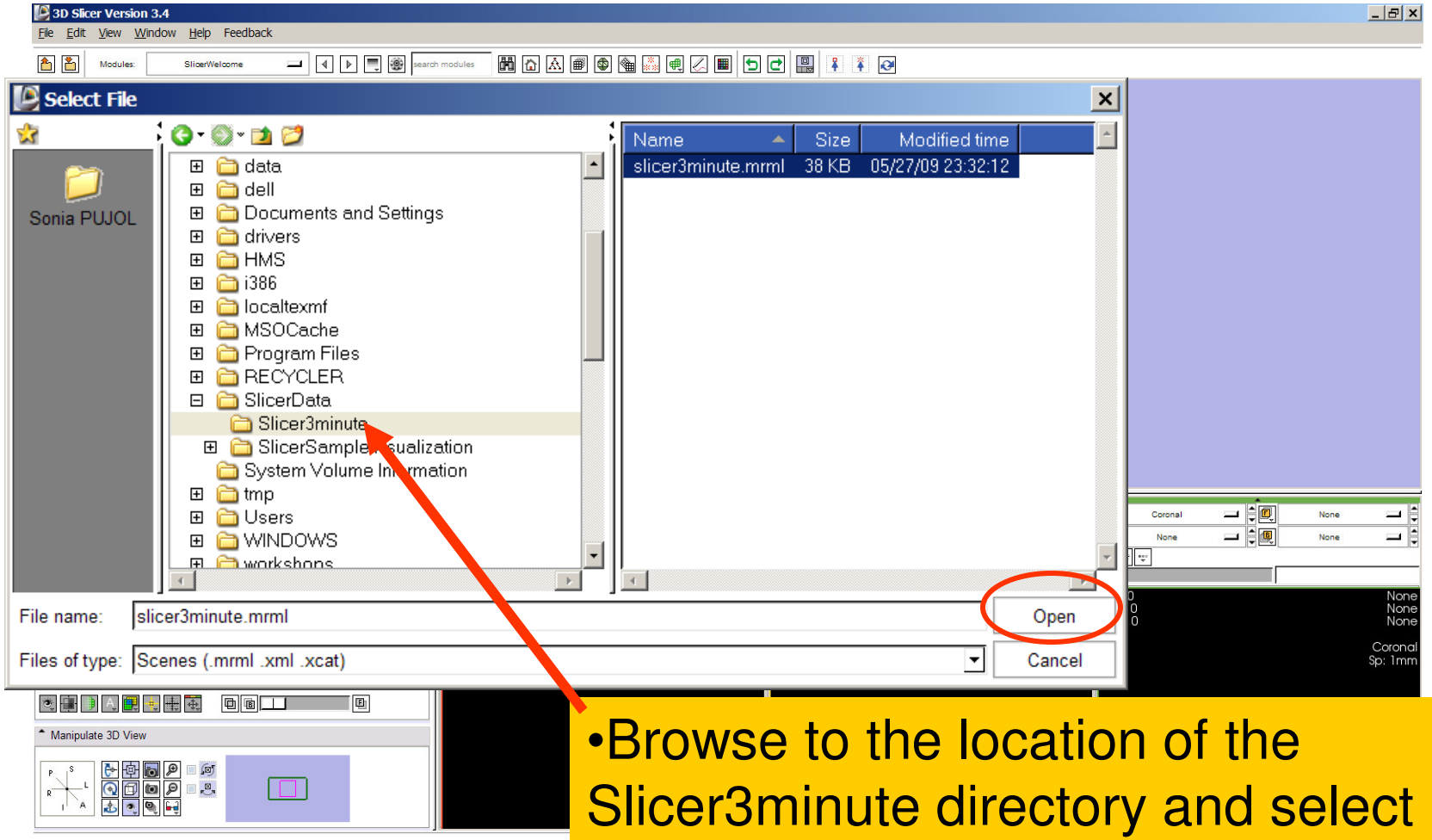


The **SlicerWelcome** module is the module displayed by default in the GUI.

Loading a 3D Scene



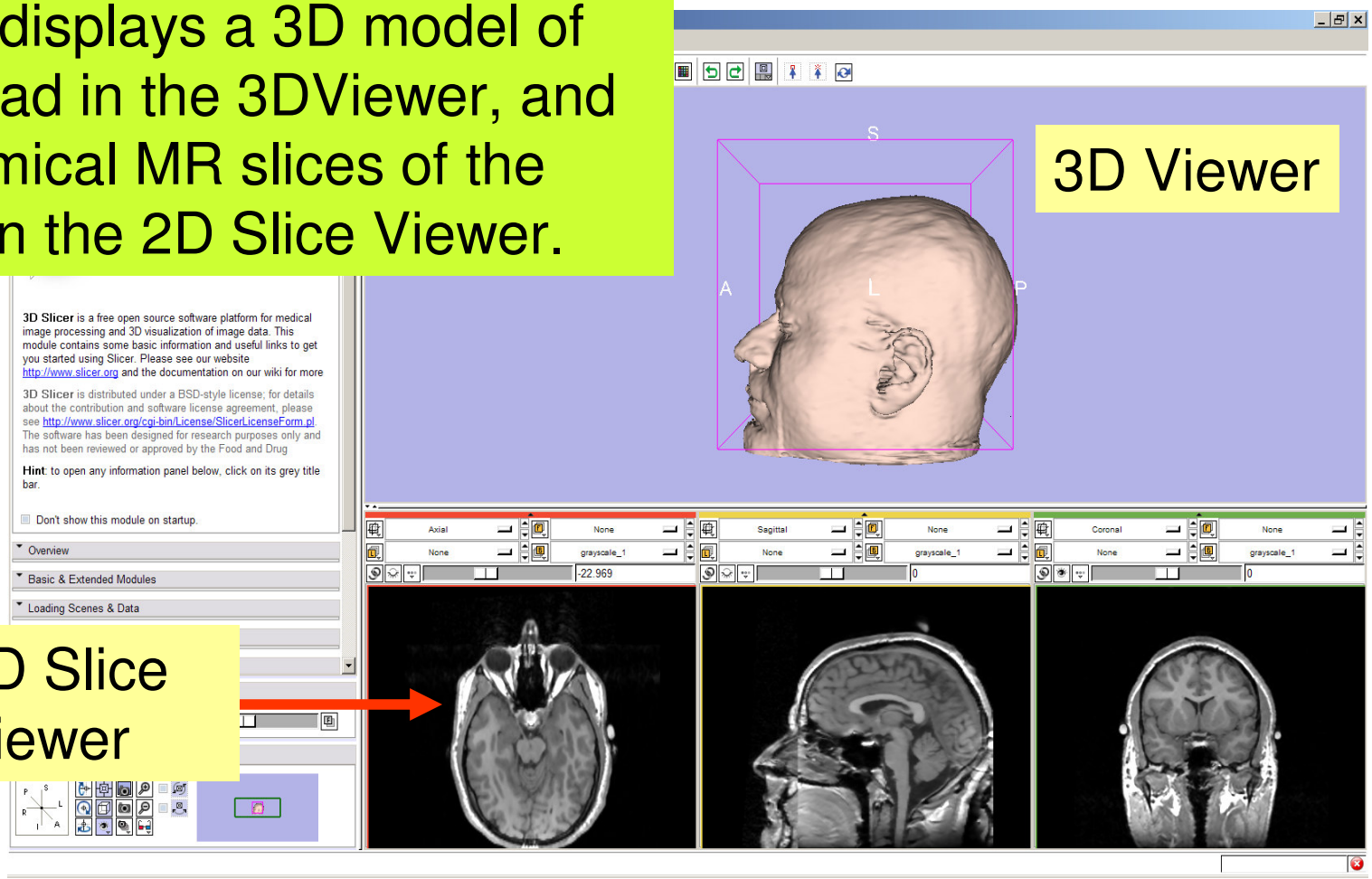
Loading a 3D Scene



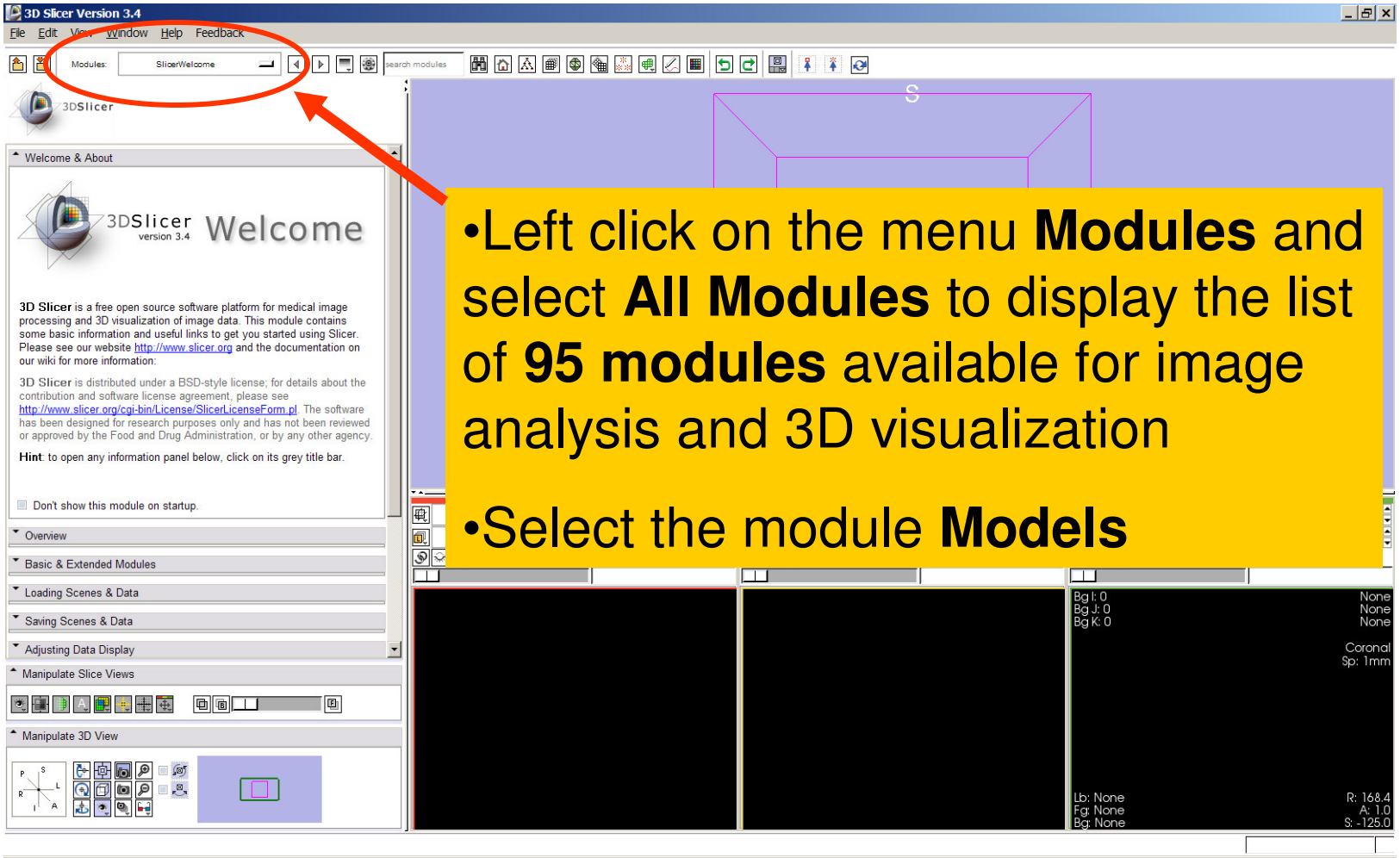
- Browse to the location of the Slicer3minute directory and select the scene file **slicer3minute.mrml**
- Click on **Open** to load the scene

Loading a 3D Scene

Slicer displays a 3D model of the head in the 3DViewer, and anatomical MR slices of the brain in the 2D Slice Viewer.

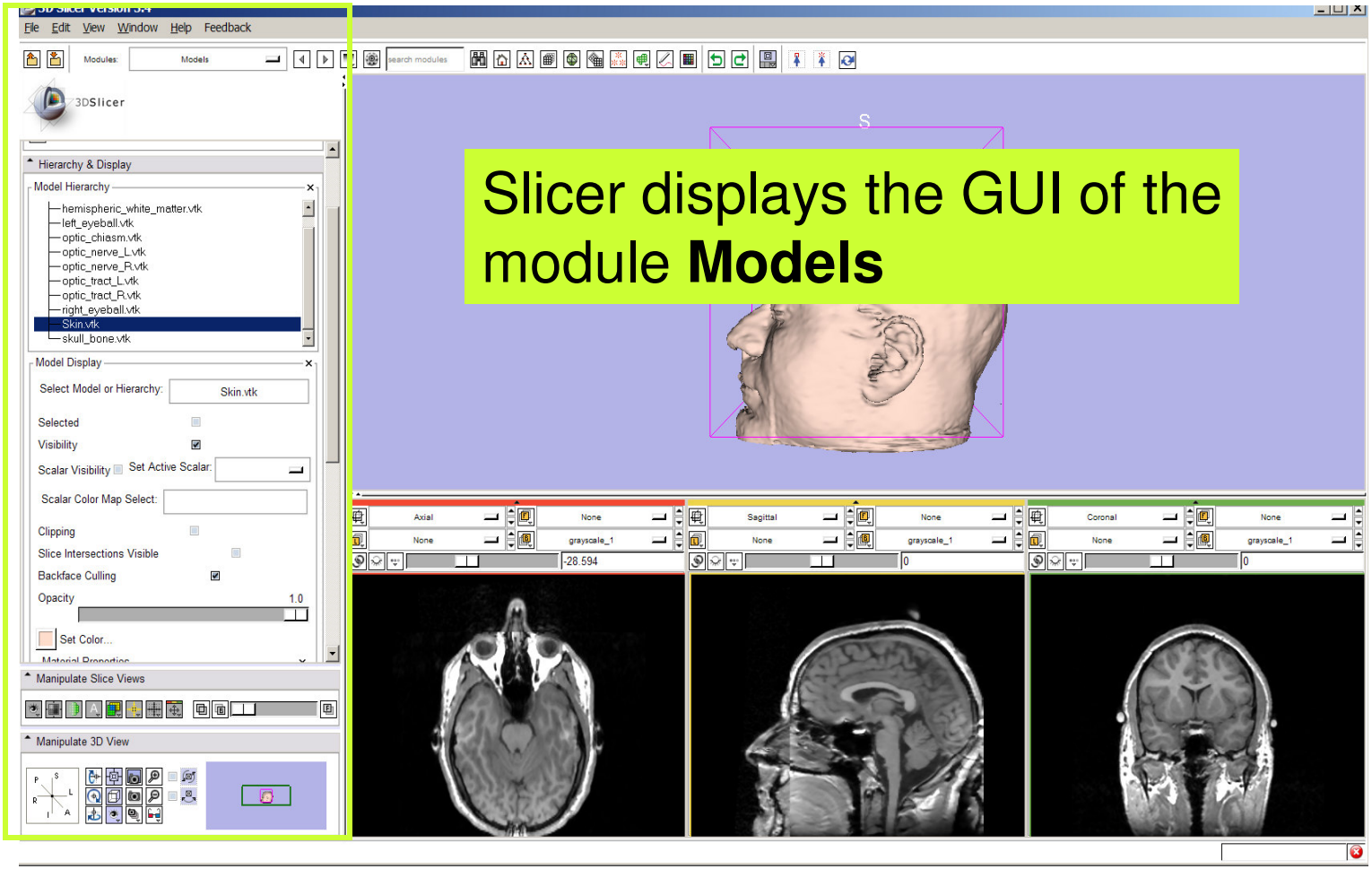


Loading a 3D Scene



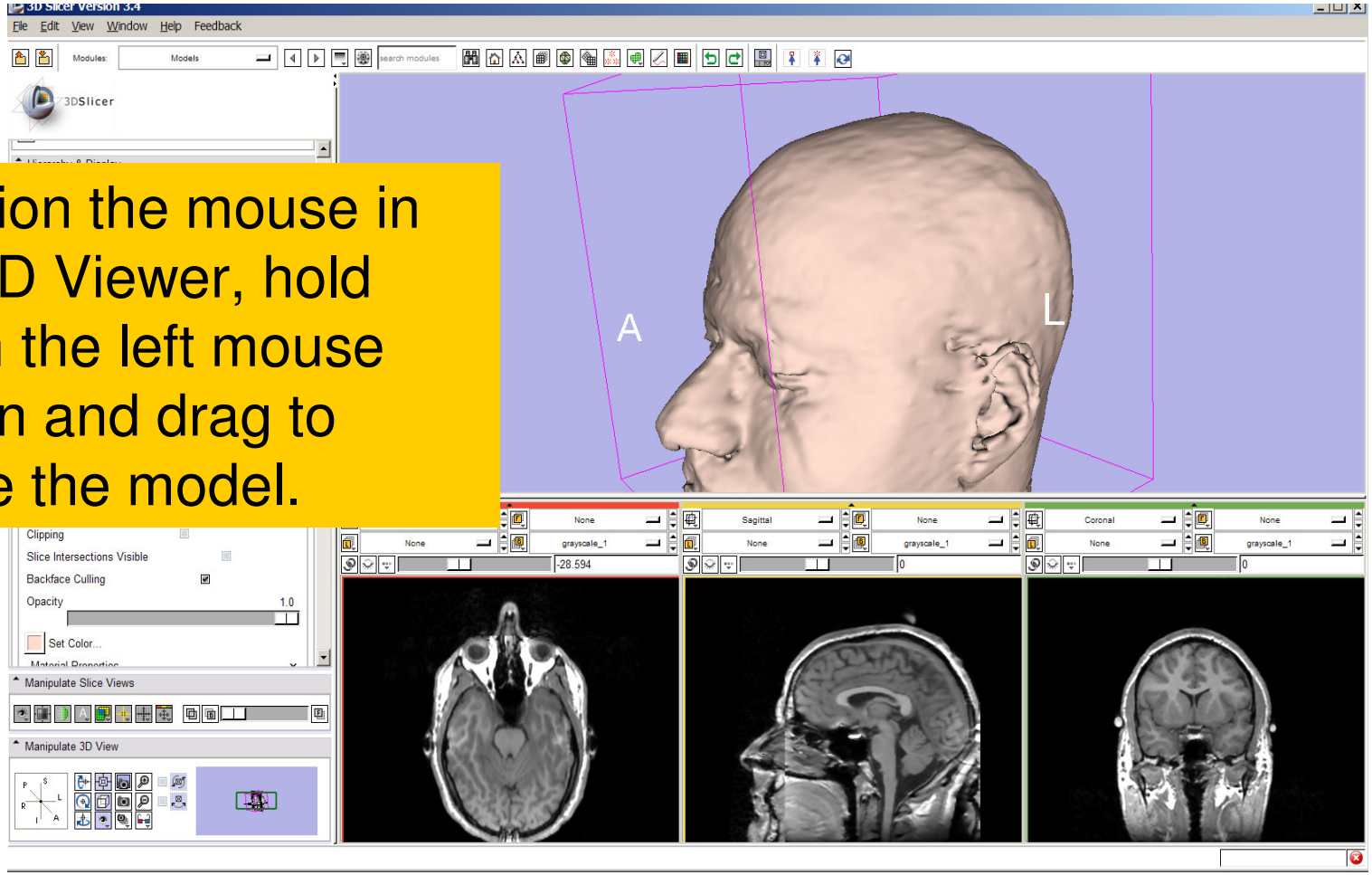
- Left click on the menu **Modules** and select **All Modules** to display the list of **95 modules** available for image analysis and 3D visualization
- Select the module **Models**

Loading a 3D Scene



3D Visualization

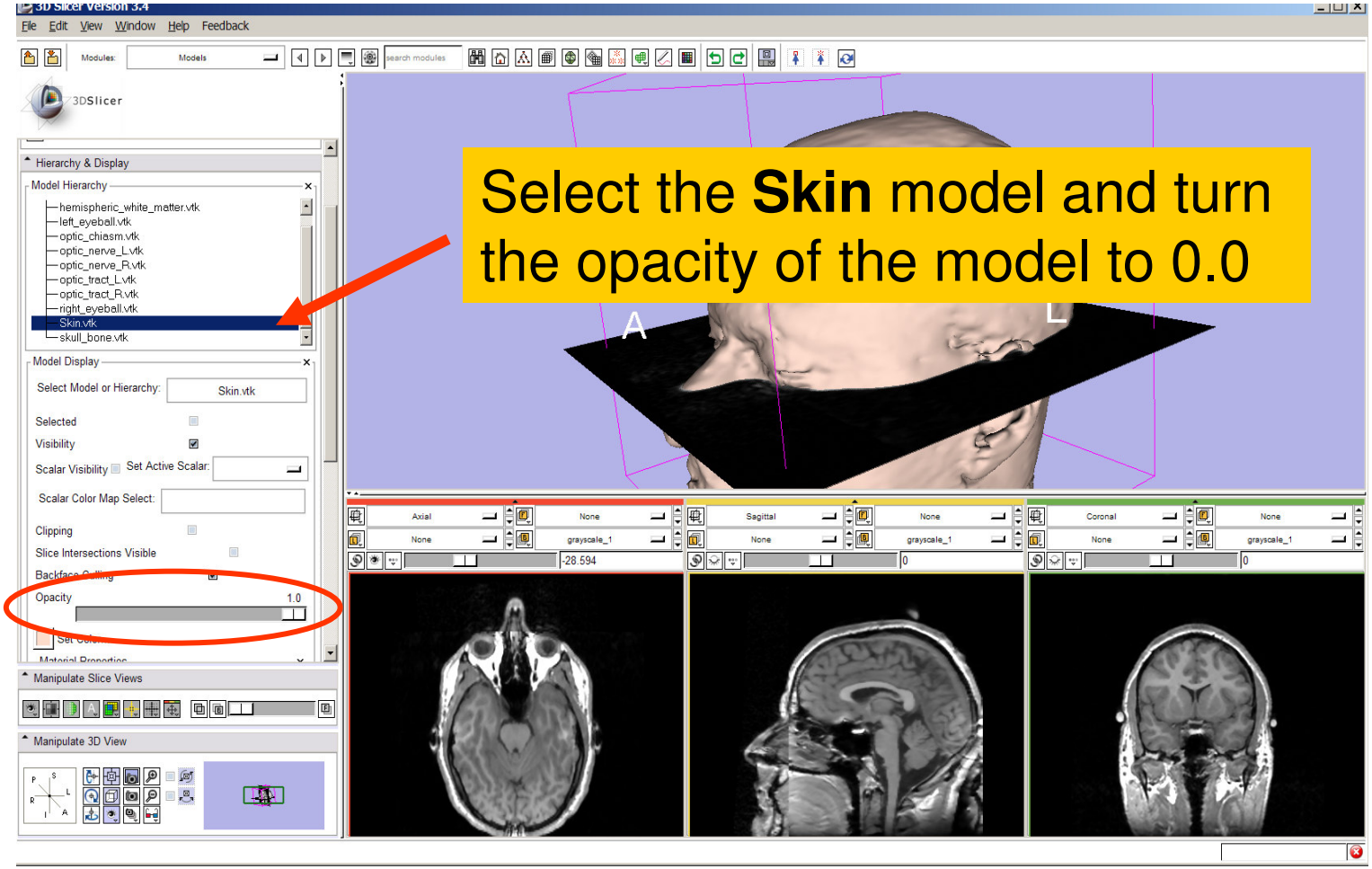
Position the mouse in the 3D Viewer, hold down the left mouse button and drag to rotate the model.



3D Visualization

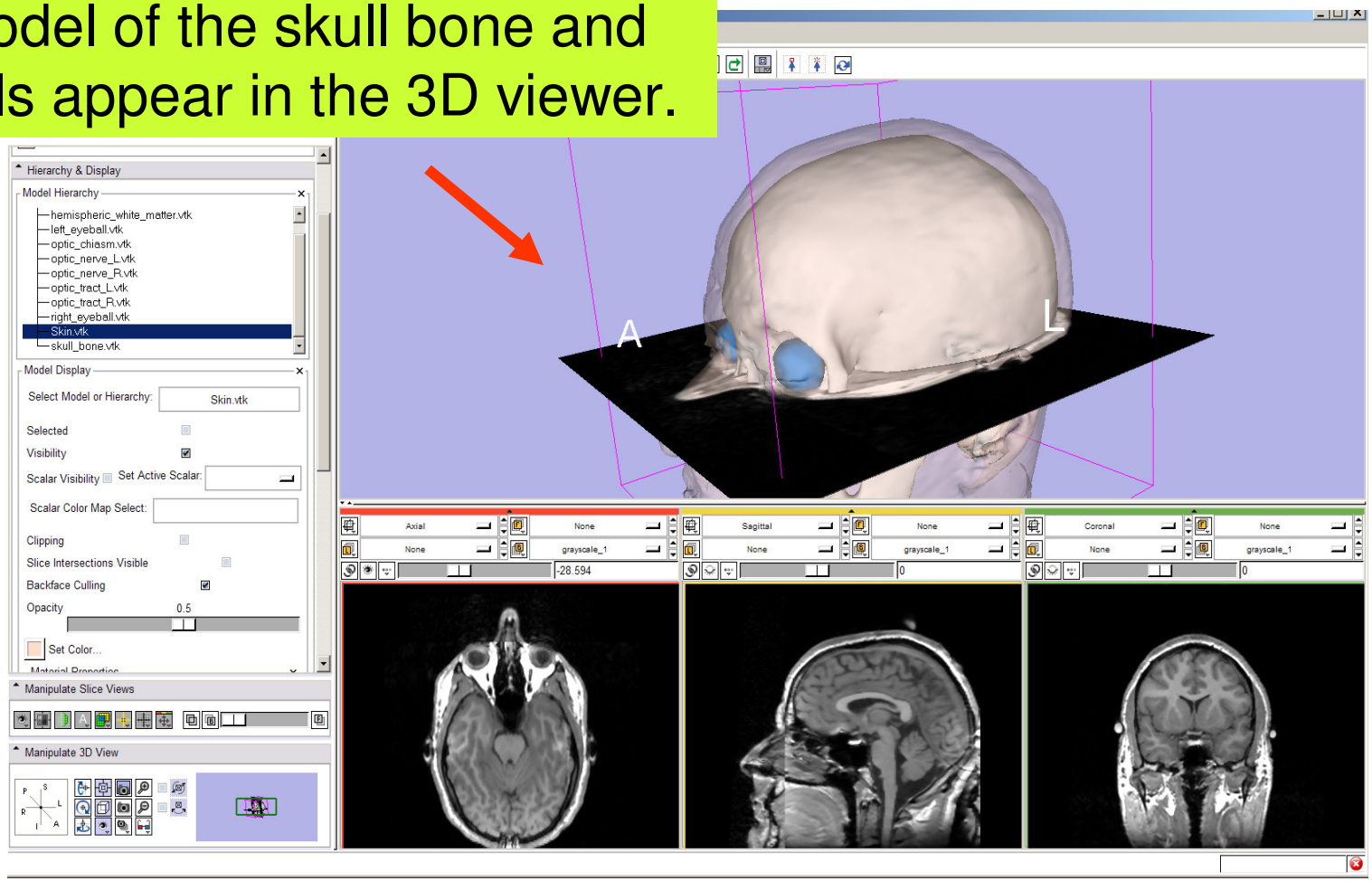
Click on the ***Slice Visibility***  icon to display the axial slice in the 3D Viewer

3D Visualization

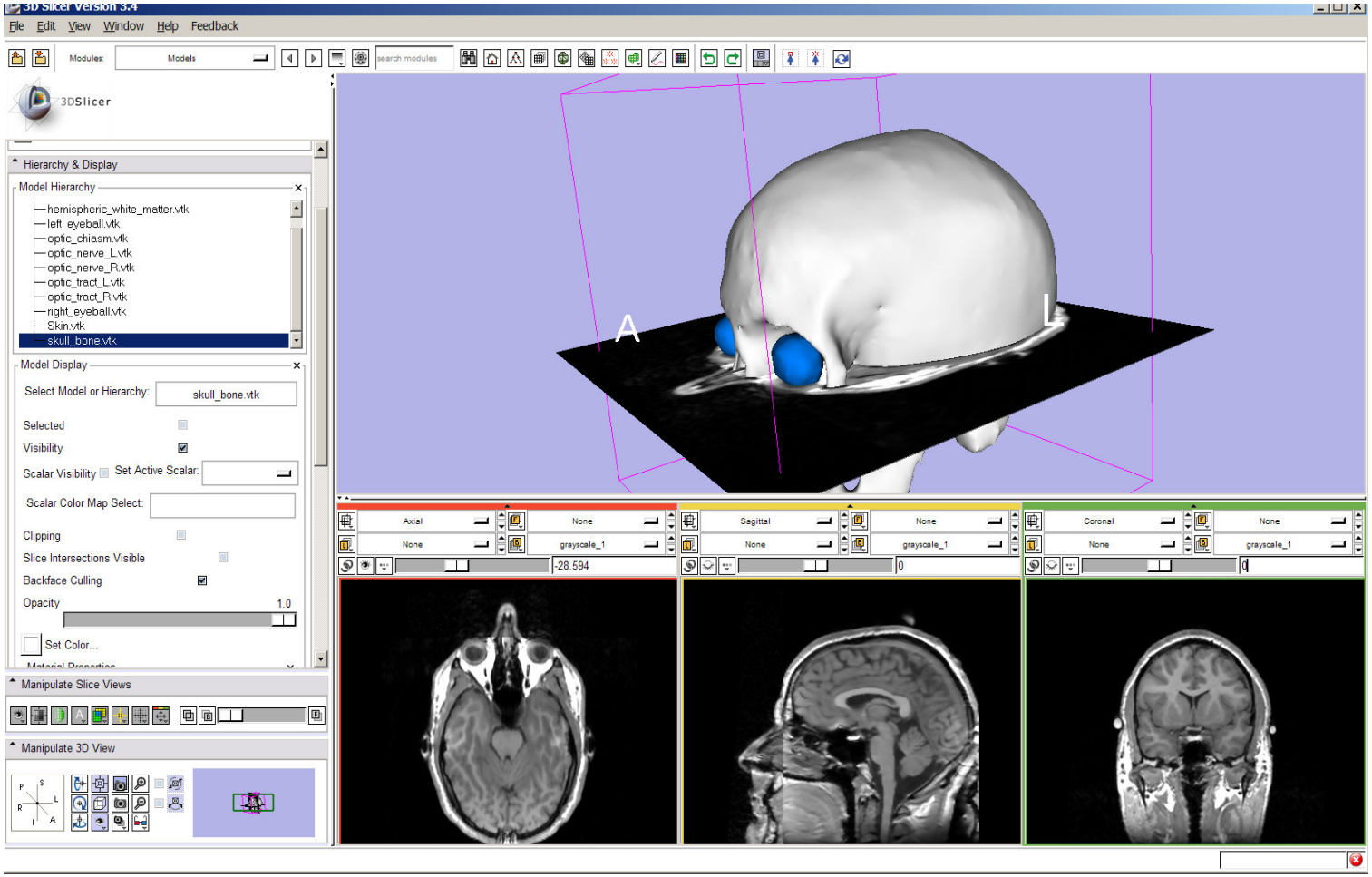


3D Visualization

The model of the skull bone and eyeballs appear in the 3D viewer.



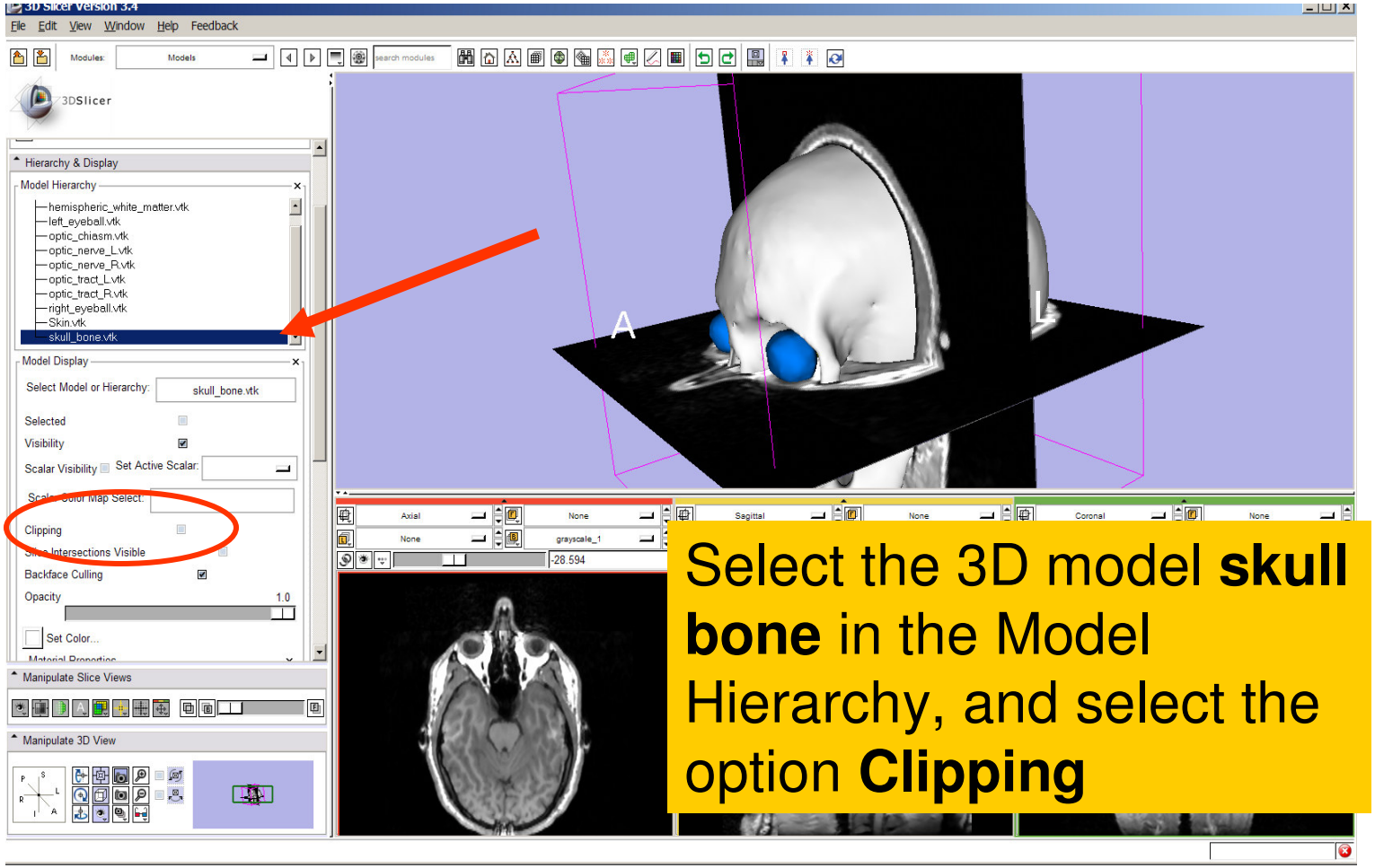
3D Visualization



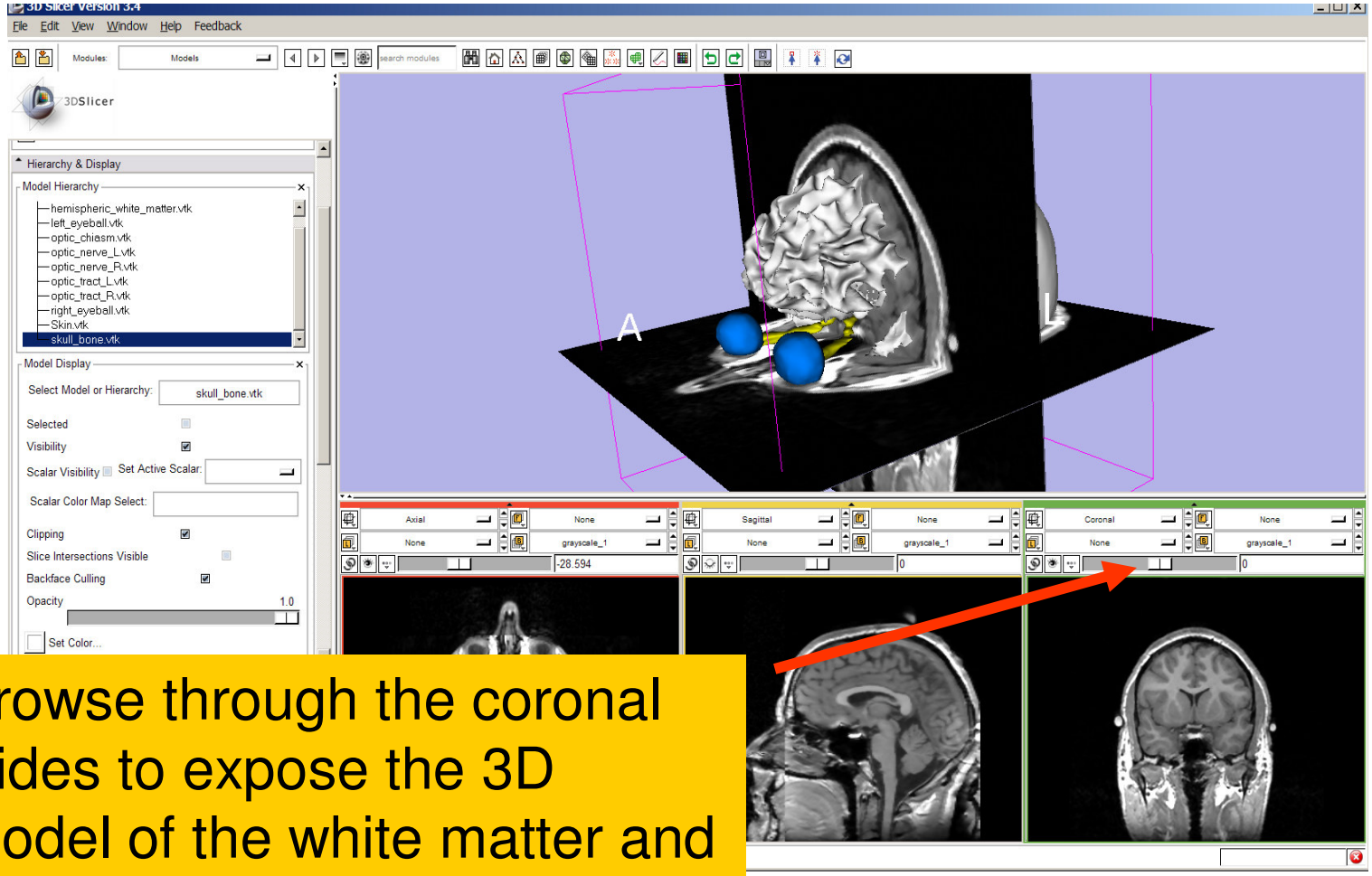
3D Visualization

Click on the ***Slice Visibility***  icon to display the coronal slice in the 3D Viewer

3D Visualization

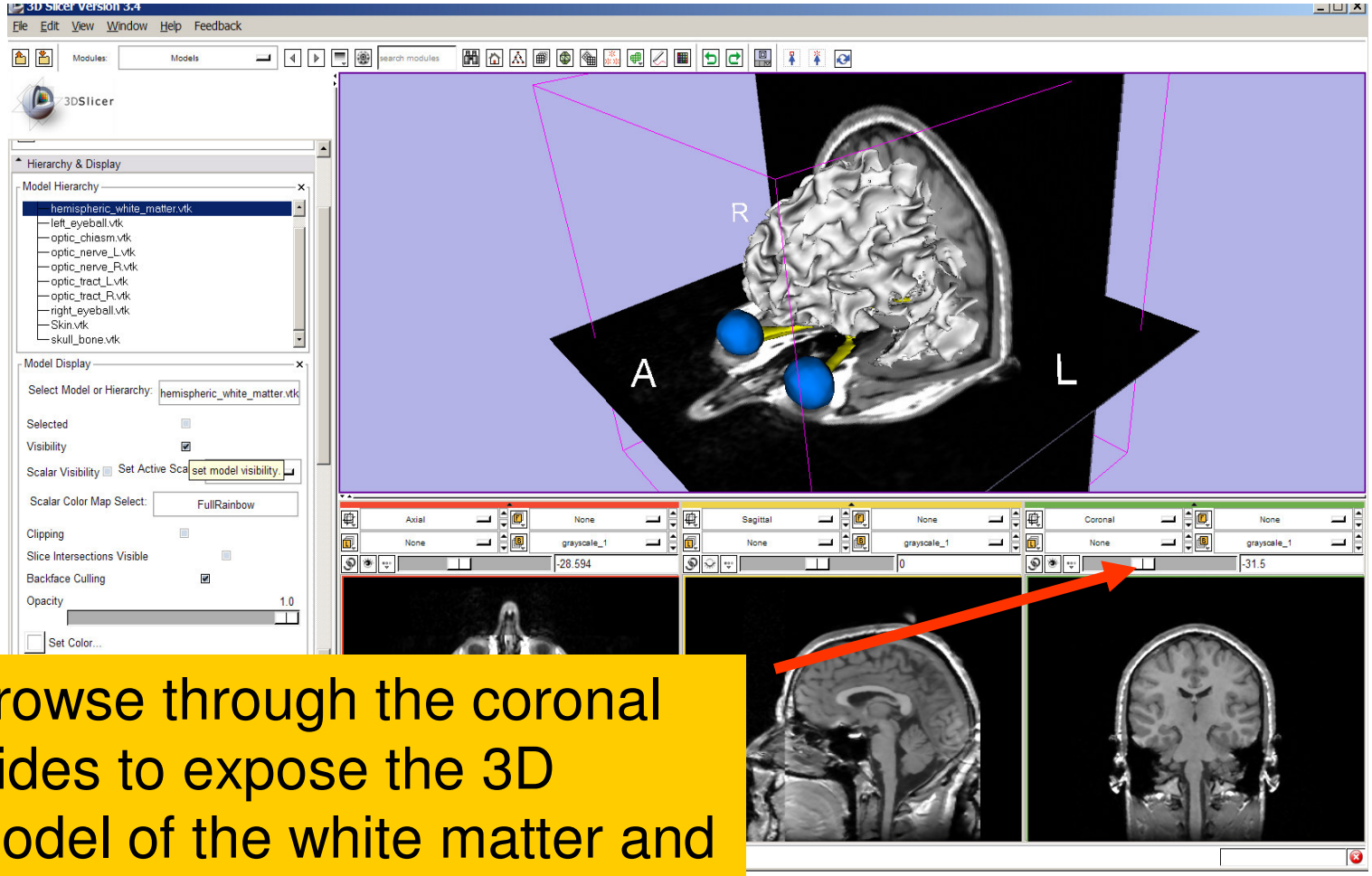


3D Visualization



Browse through the coronal slides to expose the 3D model of the white matter and left and right optic nerves.

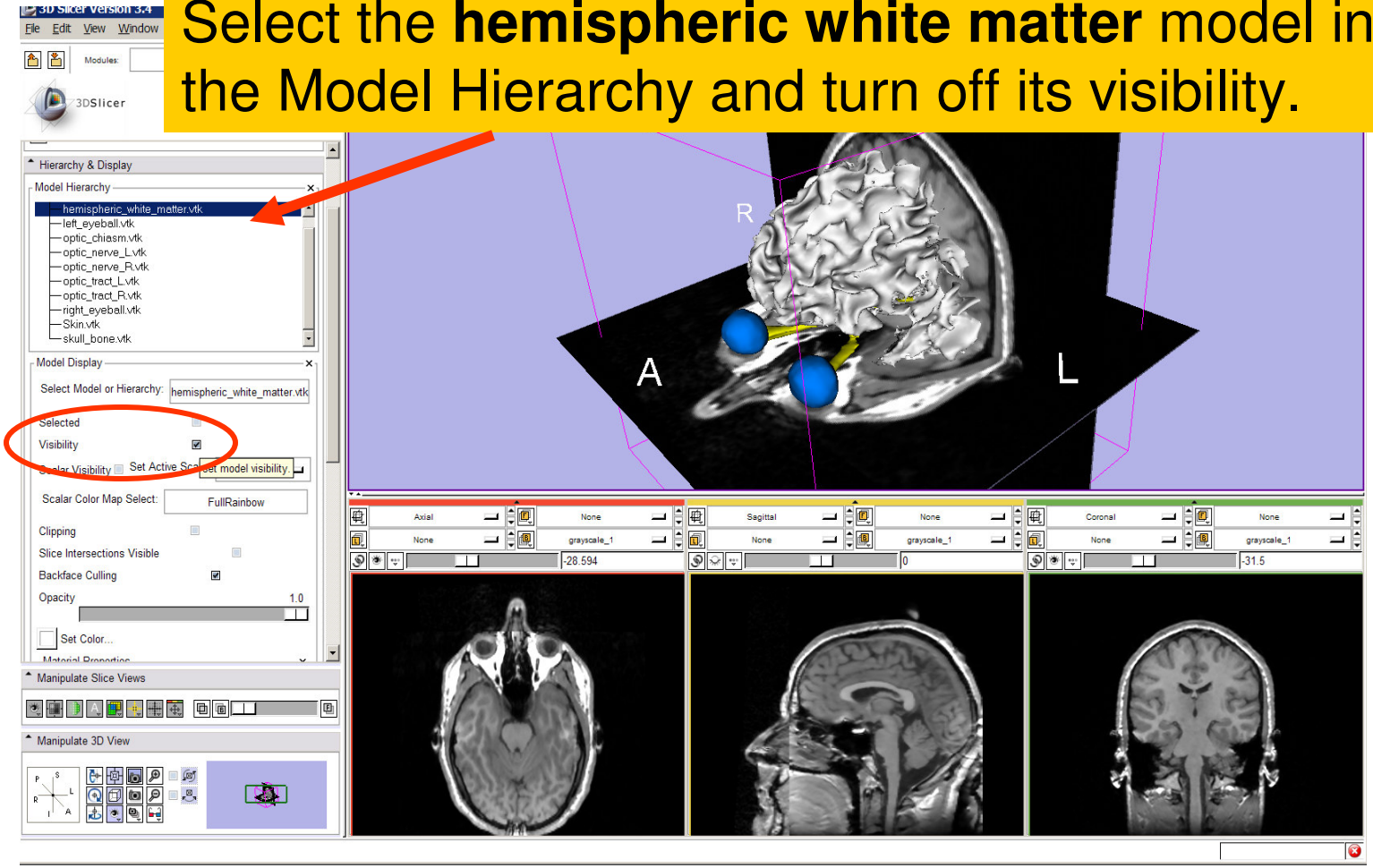
3D Visualization



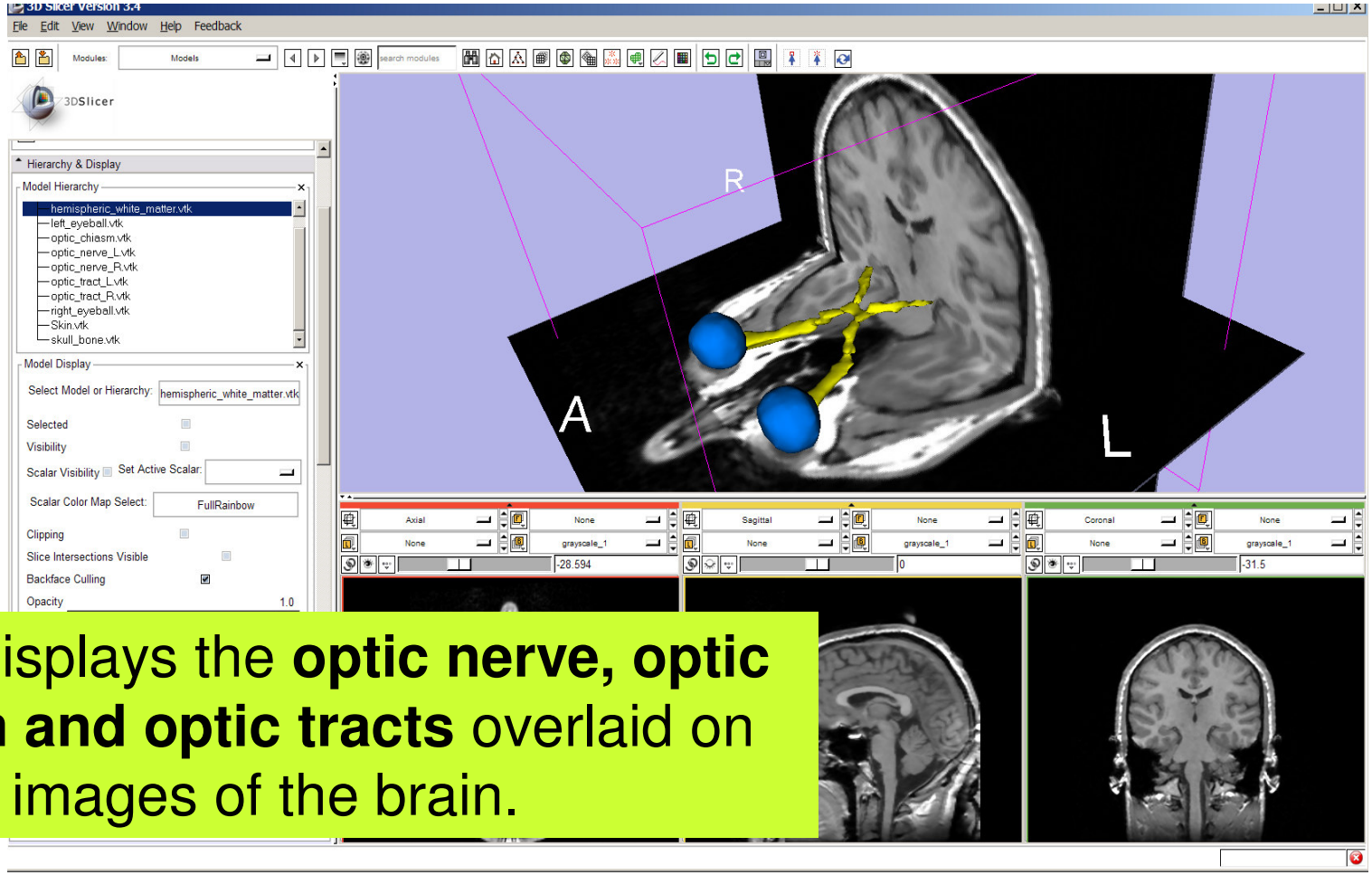
Browse through the coronal slides to expose the 3D model of the white matter and left and right optic nerves.

3D Visualization

Select the **hemispheric white matter** model in the Model Hierarchy and turn off its visibility.



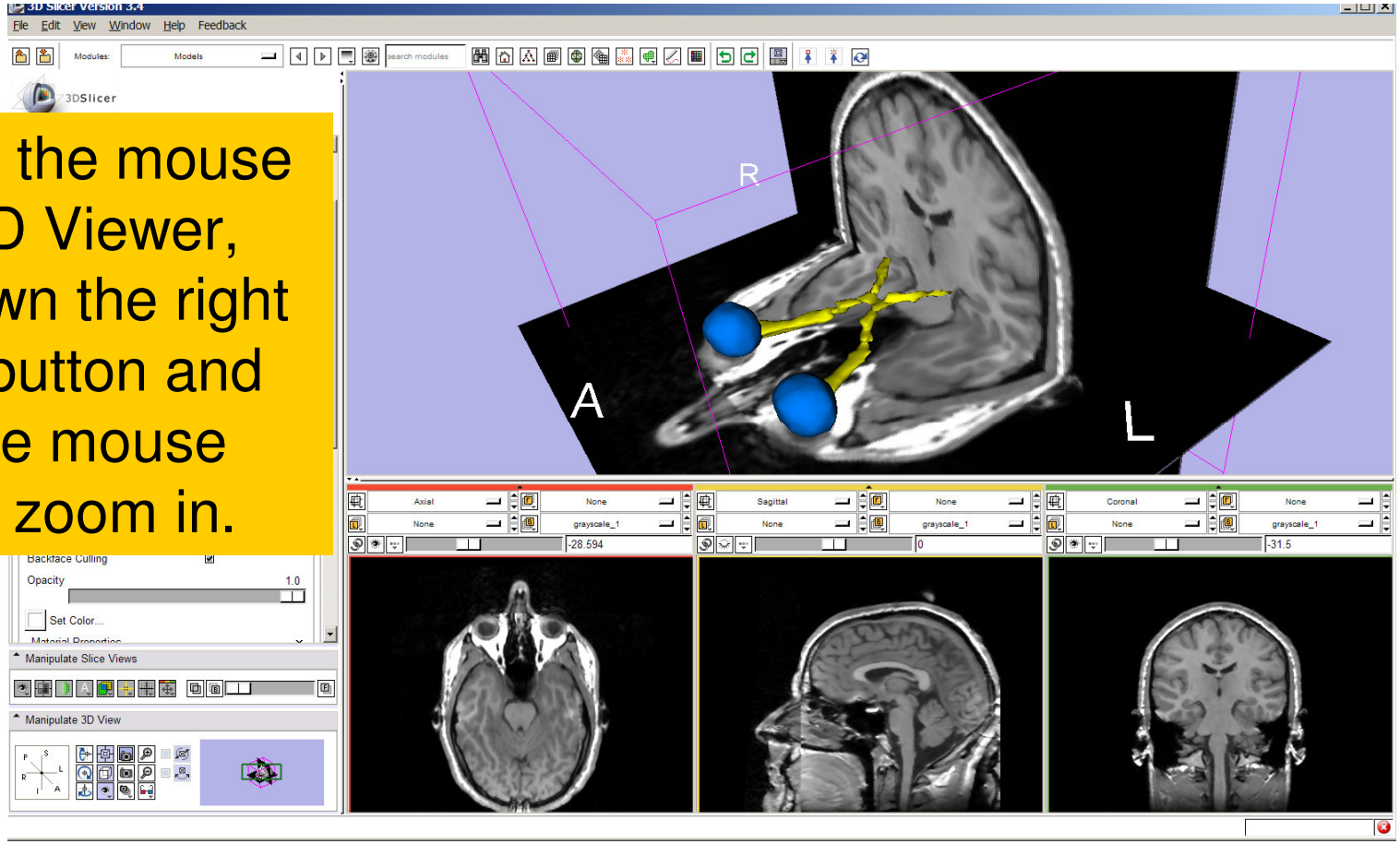
3D Visualization



Slicer displays the **optic nerve, optic chiasm and optic tracts** overlaid on the MR images of the brain.

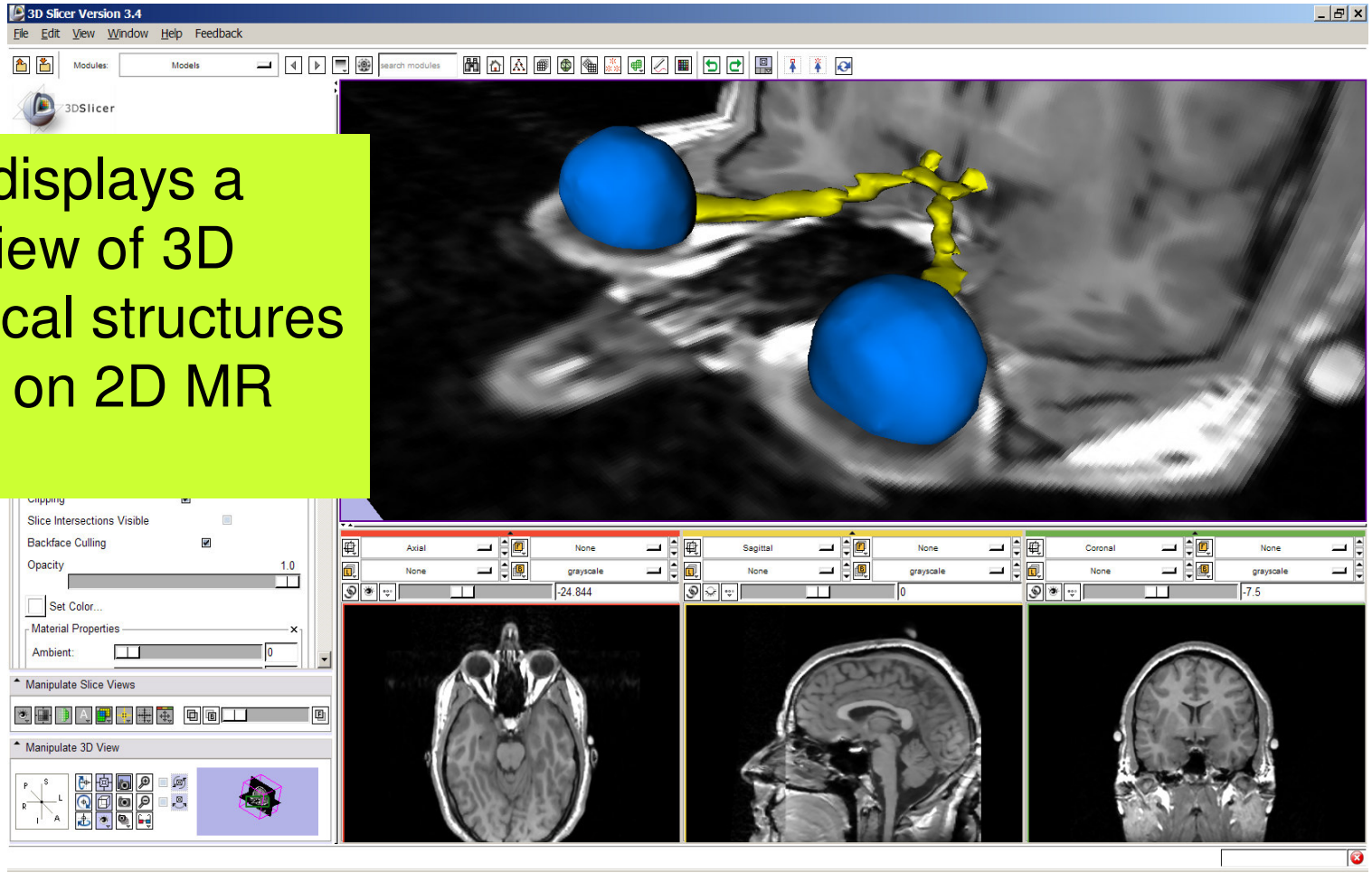
3D Visualization

Position the mouse in the 3D Viewer, hold down the right mouse button and move the mouse down to zoom in.



3D Visualization

Slicer3 displays a closer view of 3D anatomical structures overlaid on 2D MR slices



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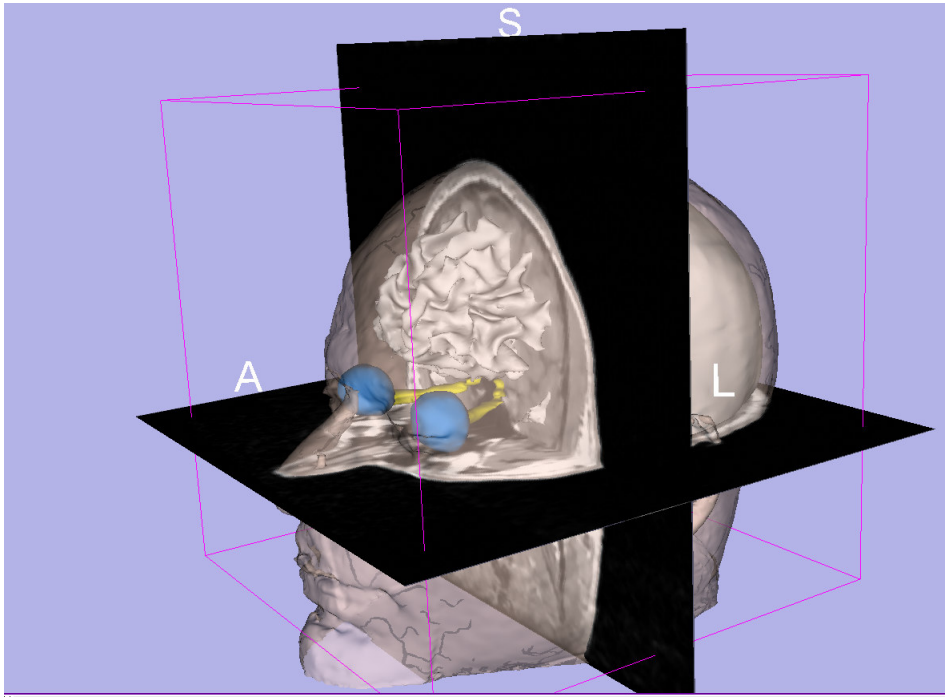
- Slicer is an open-source software for image analysis and 3D visualization
- The core functionalities and 95 available modules represent more than 3.2 million lines of code
- Slicer3 is a multi-institution effort to share the latest advances in image analysis with the scientific and clinical community.



www.slicer.org

Acknowledgments

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