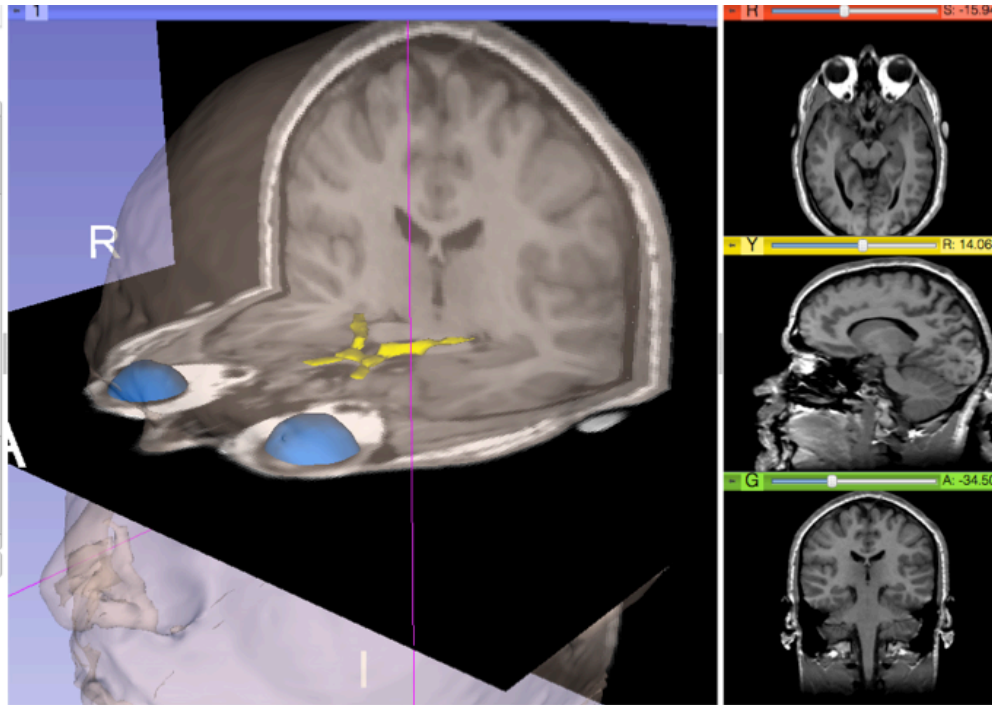


Slicer4 Minute

Sonia Pujol, Ph.D.
Surgical Planning Laboratory
Harvard Medical School

Slicer4 minute tutorial

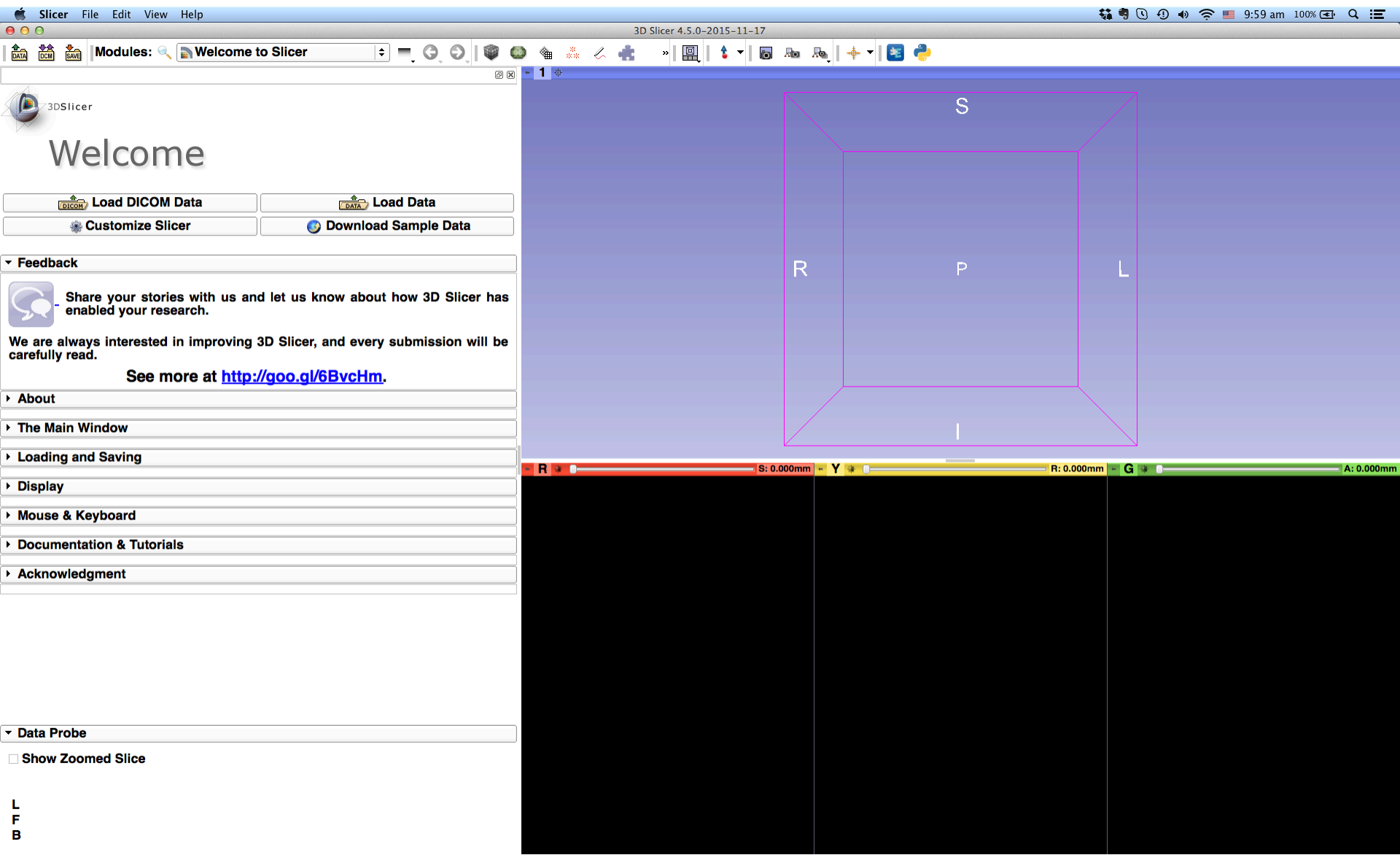


This tutorial is a 4-minute introduction to the 3D visualization capabilities of the Slicer3 software for medical image analysis.

Slicer4 software & dataset

- Download the Slicer4 software available at <http://download.slicer.org/>
- Download the Slicer4minute dataset available at <http://www.slicer.org/slicerWiki/index.php/Documentation/UserTraining>

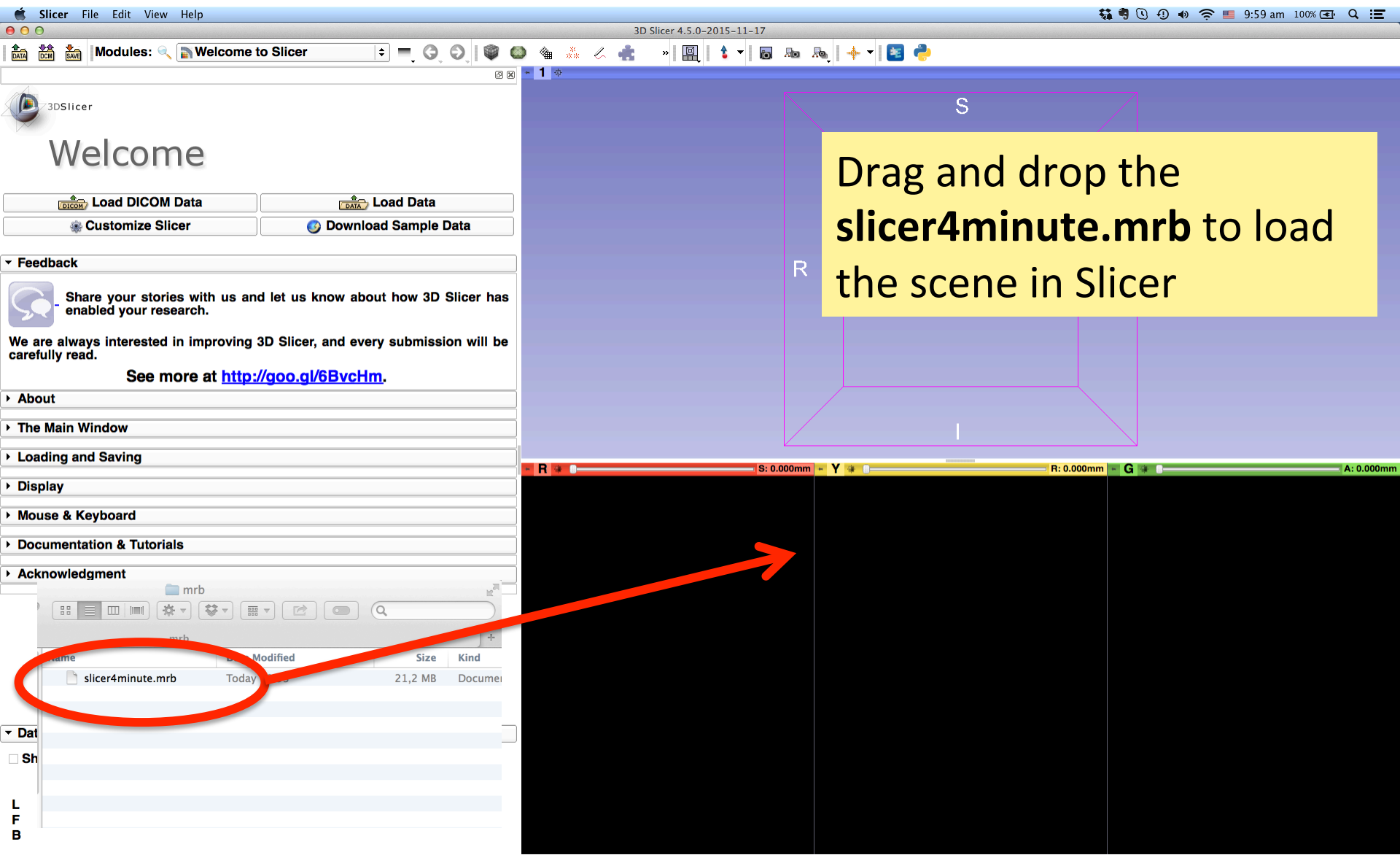
3D Slicer version 4.5



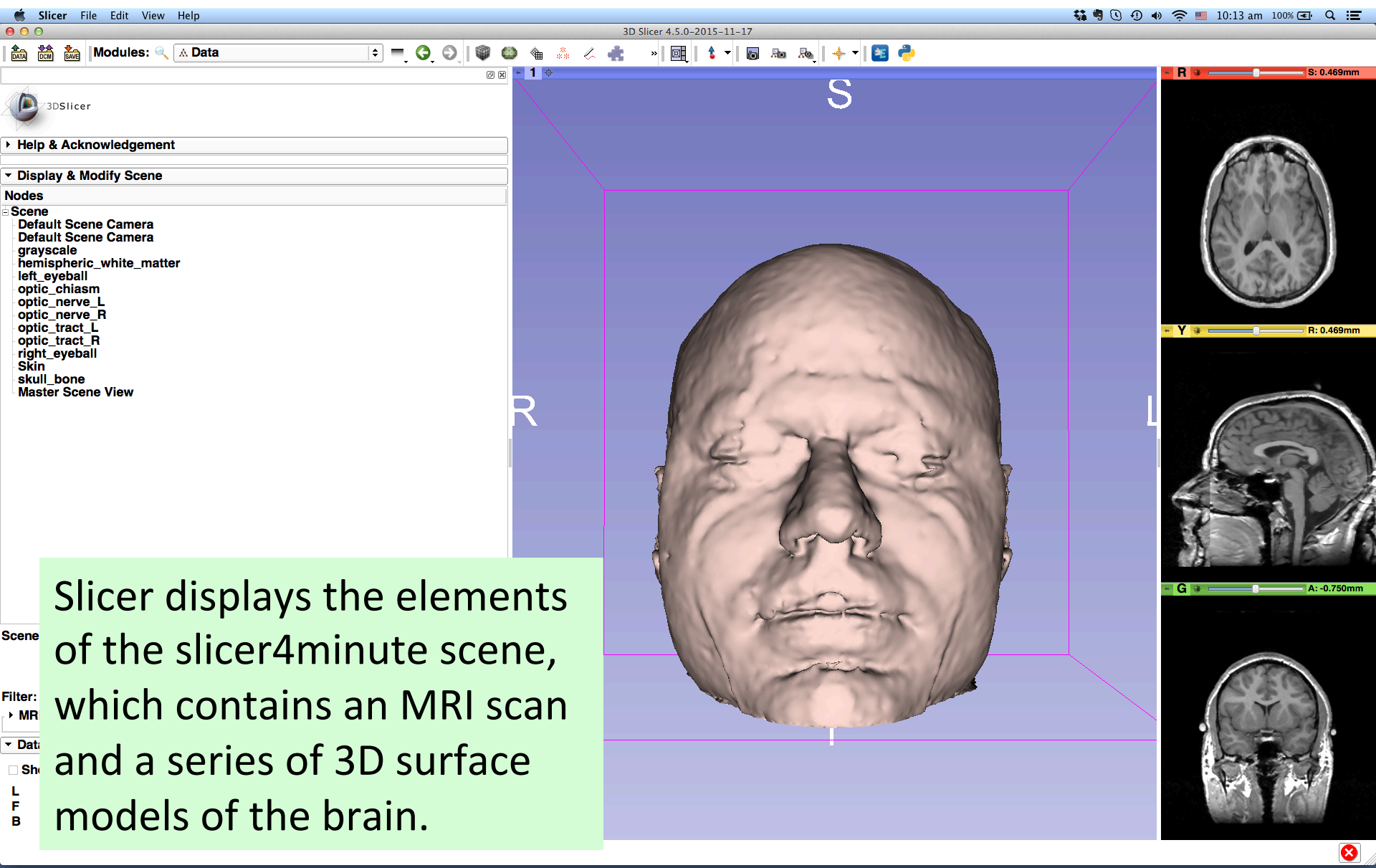
3D Slicer Scene

- A Slicer scene is a MRML (Medical Reality Modeling Language) file which contains a list of elements loaded into Slicer (volumes, models, fiducials, transforms, etc.)
- In the following example, we use a scene 'Slicer4minute.mrml' composed of an MRI scan and 3D models of the head.
- The scene file and datasets have been saved as an '.mrb' (Medical Reality Bundle) file.
- The MRB file format is Slicer's archive file format.

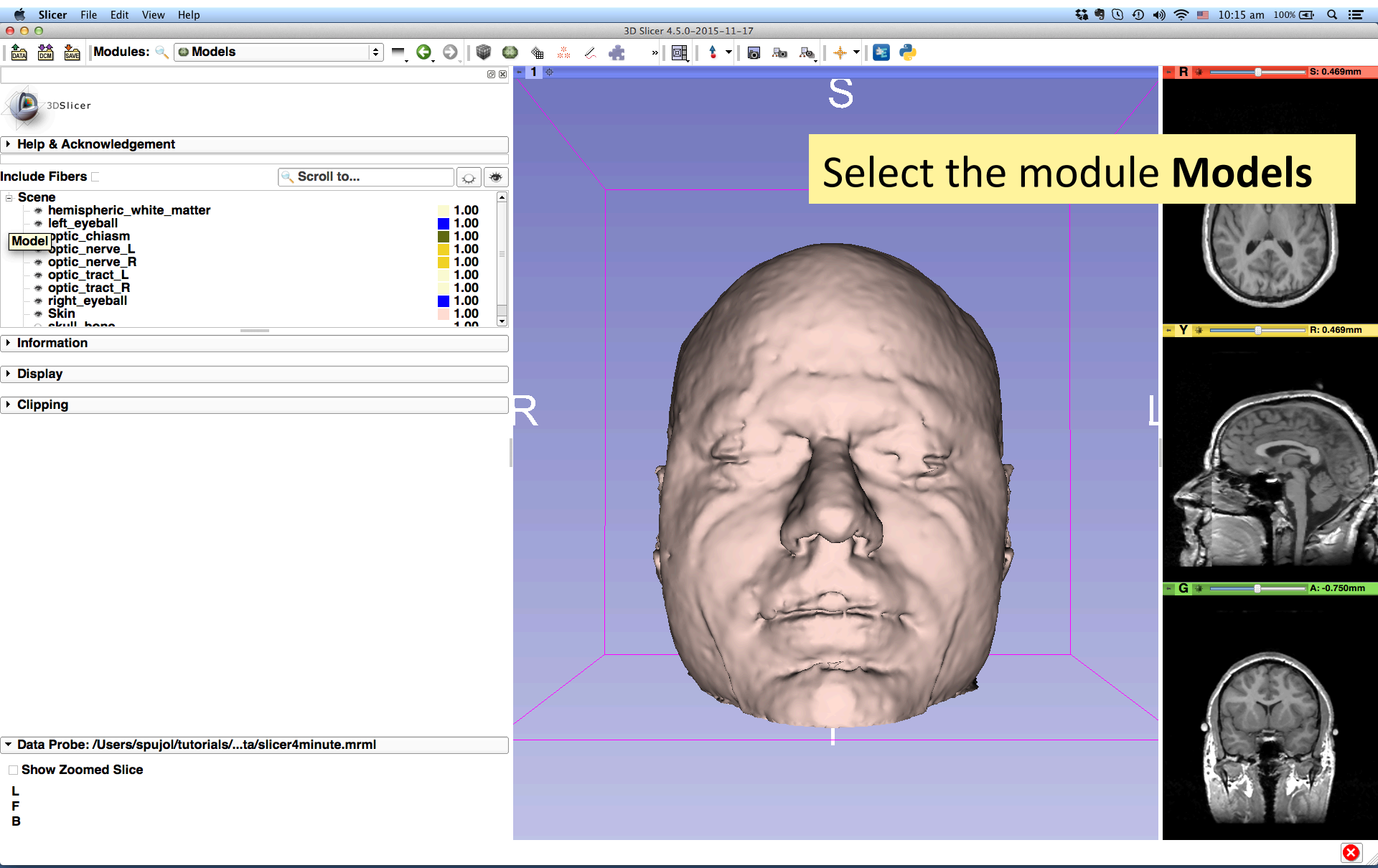
3D Slicer version 4.5



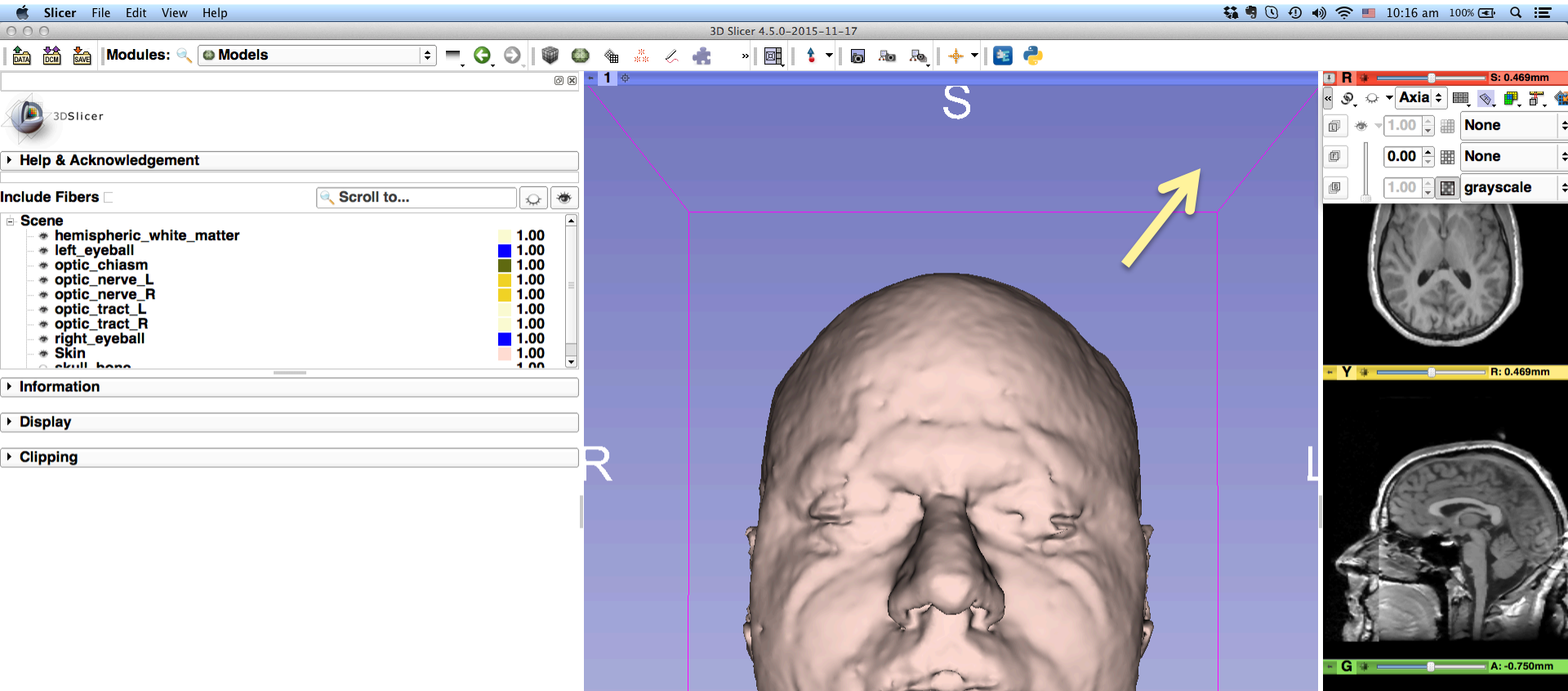
Slicer4minute Scene



3D Visualization



3D Visualization



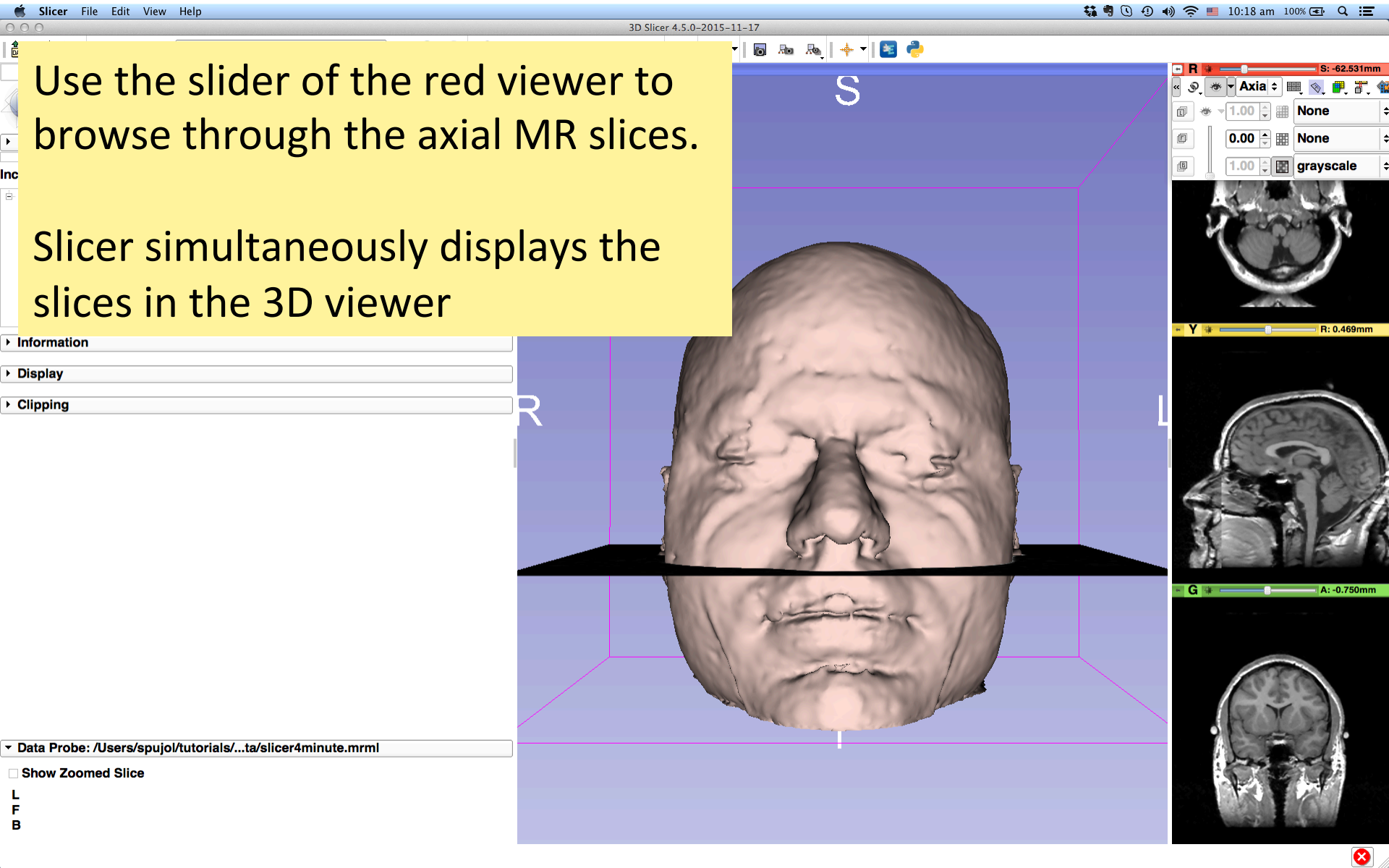
Click on the pin icon on the top left corner of the red slice to display the slice viewer menu.

Click on the eye icon to display the axial slice in the 3D Viewer

3D Visualization

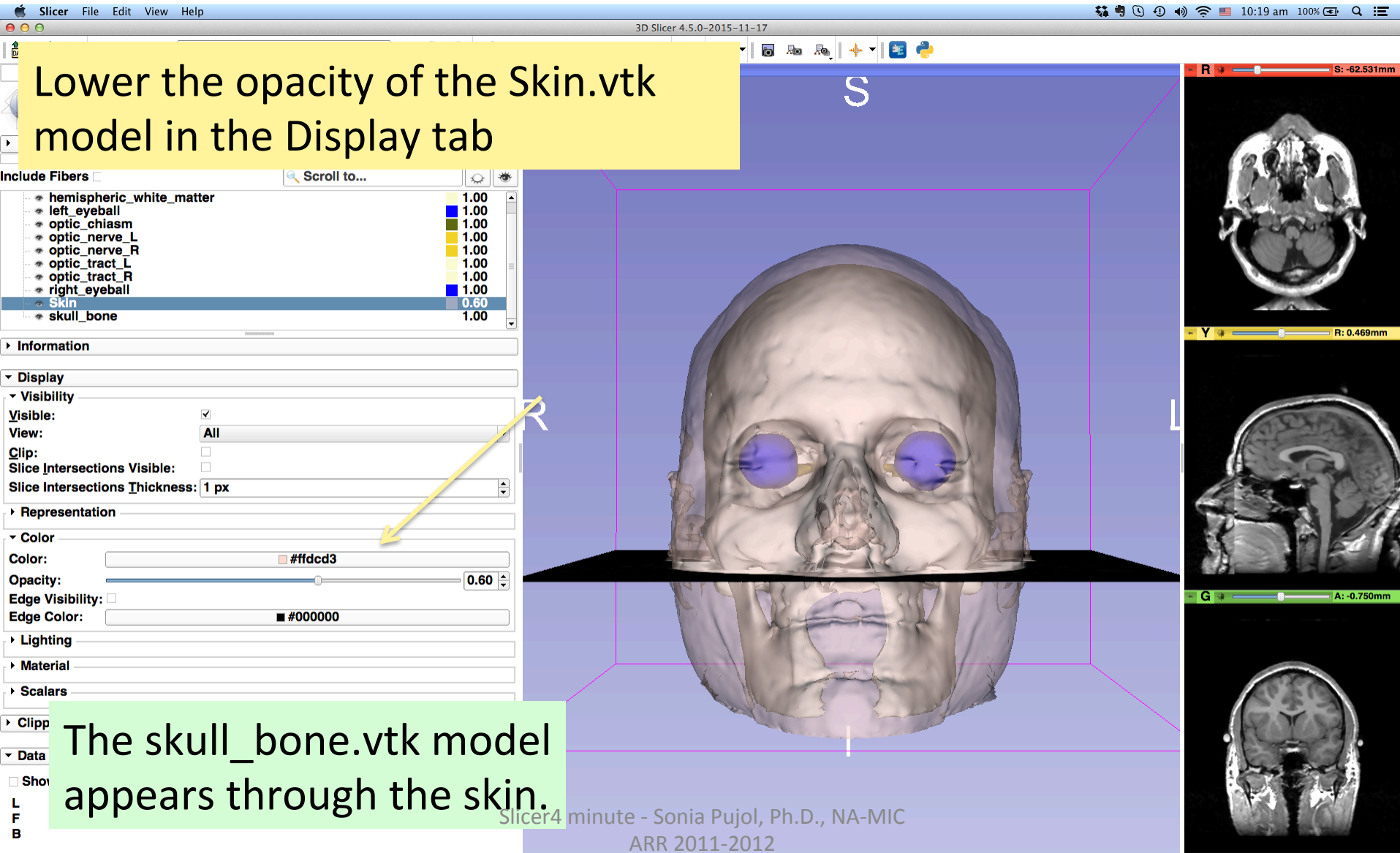
Use the slider of the red viewer to browse through the axial MR slices.

Slicer simultaneously displays the slices in the 3D viewer



3D Visualization

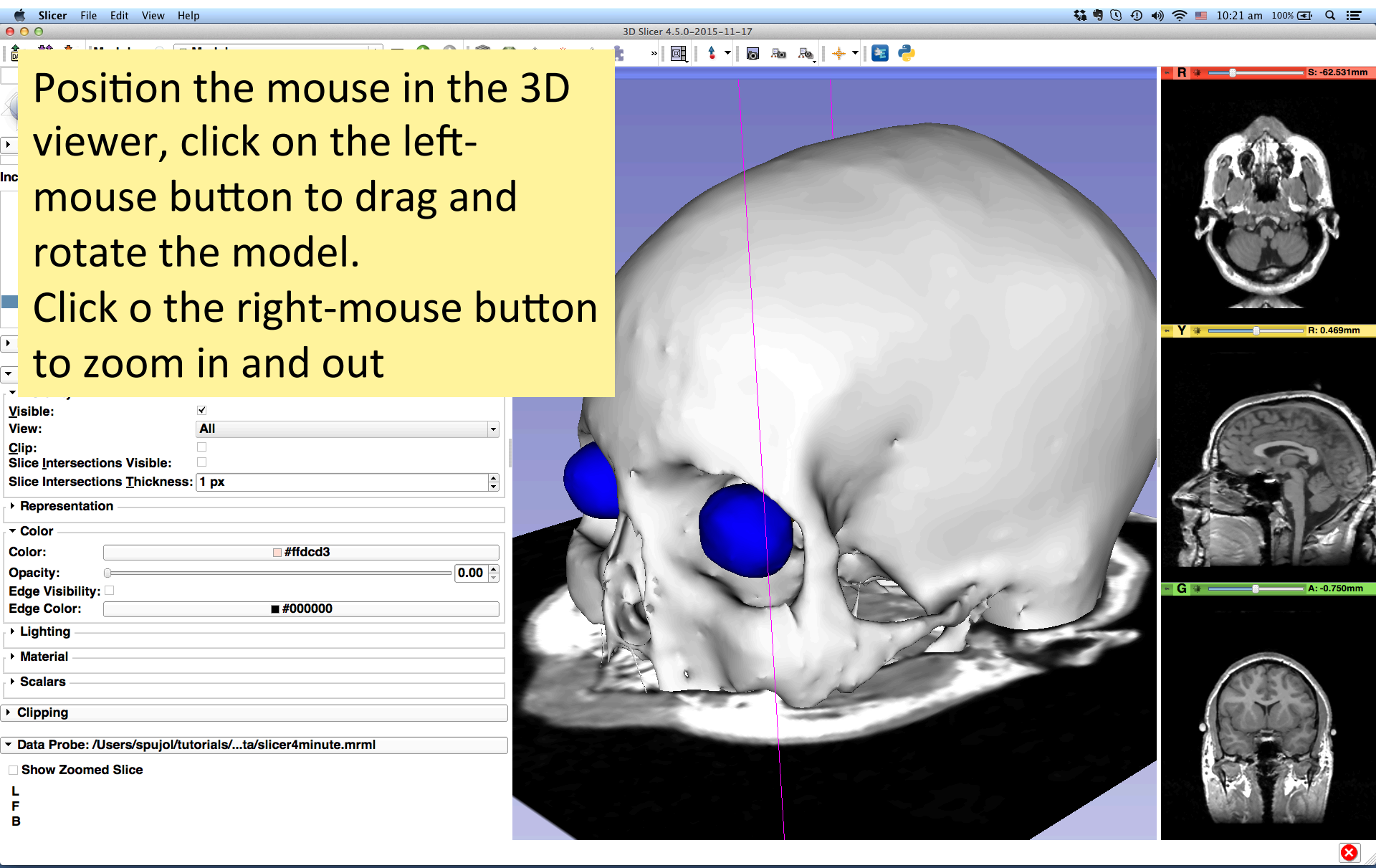
Lower the opacity of the Skin.vtk model in the Display tab



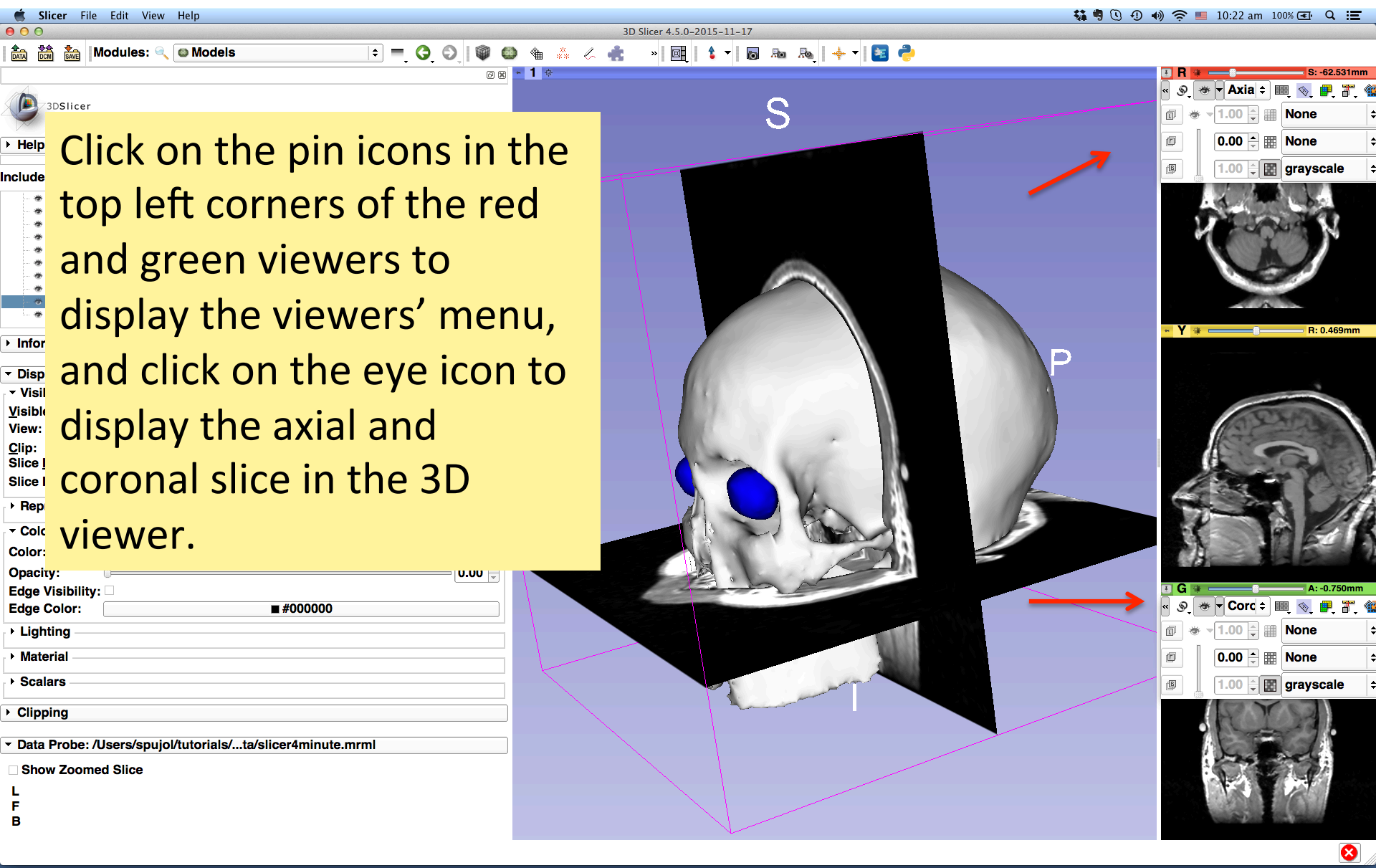
3D Visualization

Position the mouse in the 3D viewer, click on the left-mouse button to drag and rotate the model.

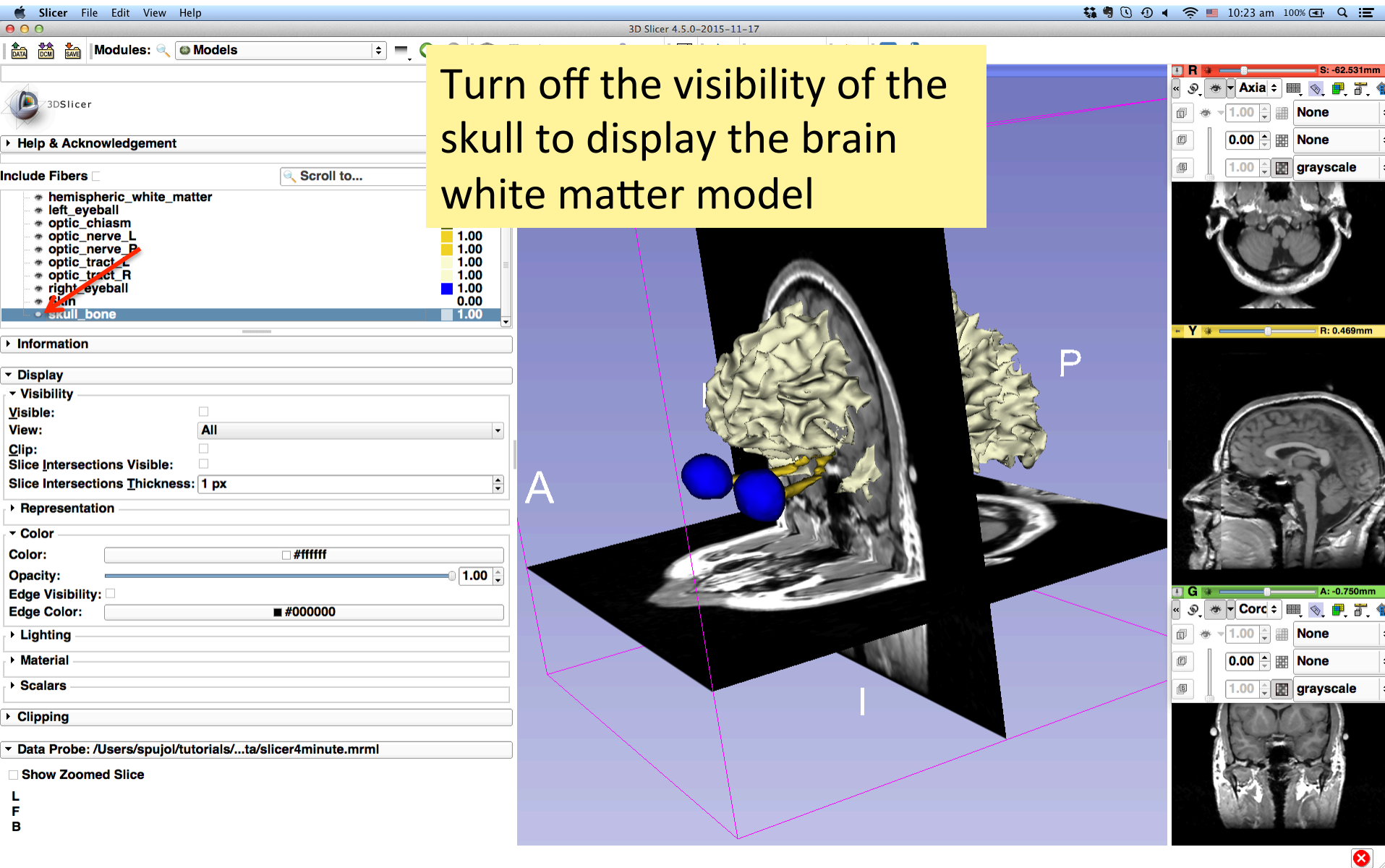
Click o the right-mouse button to zoom in and out



Anatomical Views

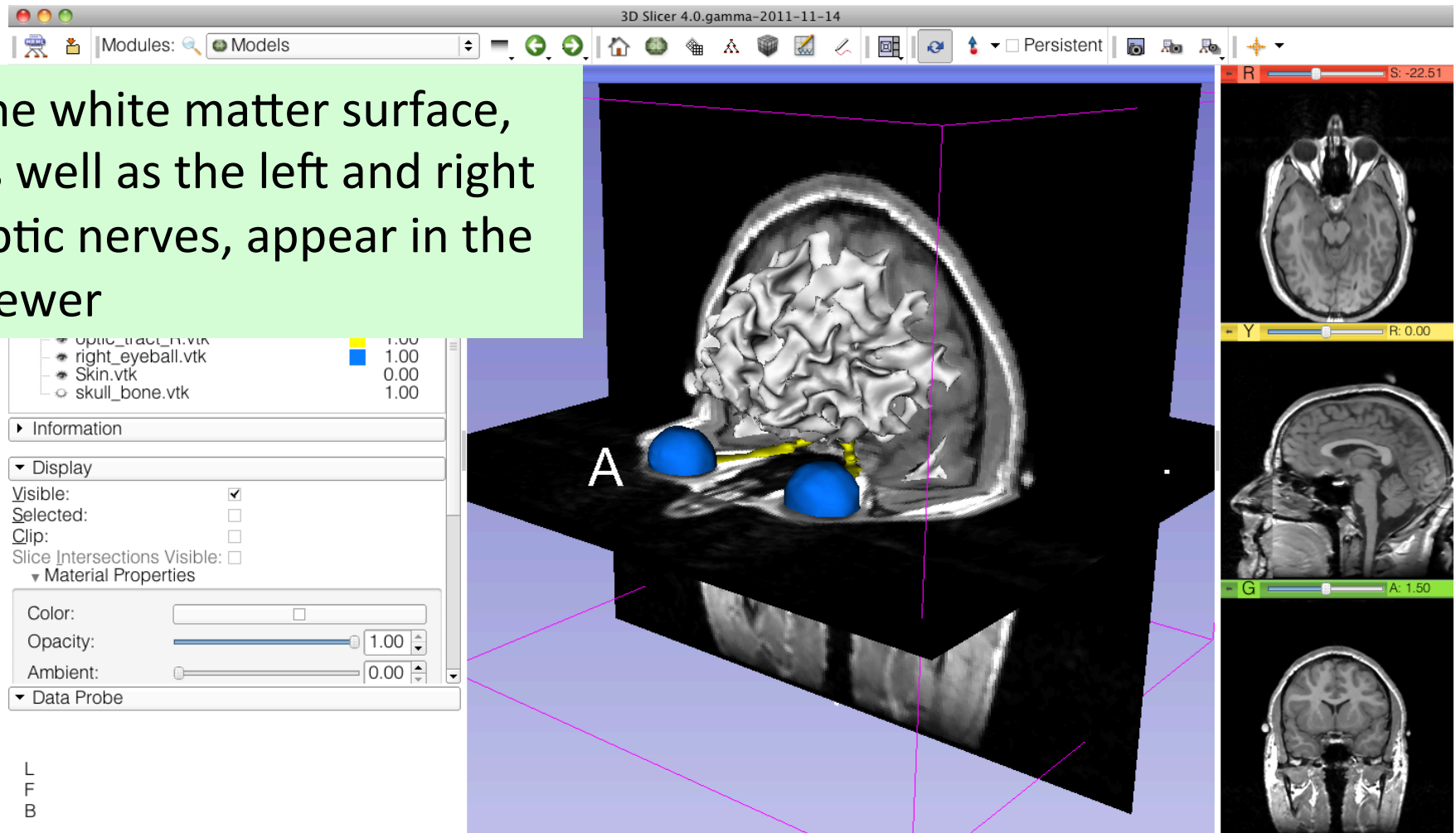


3D Visualization

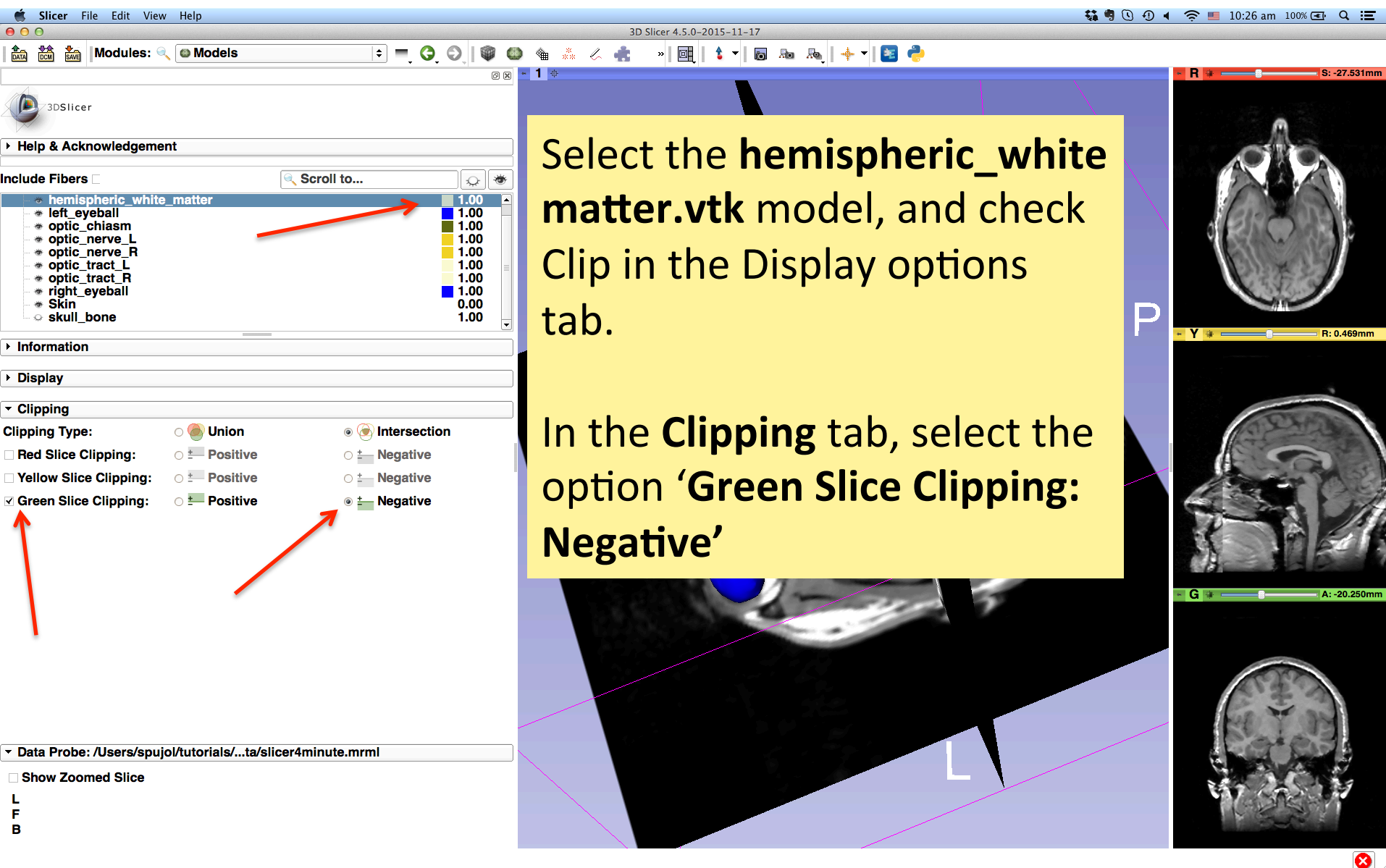


3D Visualization

The white matter surface, as well as the left and right optic nerves, appear in the viewer



3D Visualization



Select the **hemispheric_white_matter.vtk** model, and check **Clip** in the **Display** options tab.

In the **Clipping** tab, select the option '**Green Slice Clipping: Negative**'

3D Slicer 4.5.0-2015-11-17

Modules: Models

3DSlicer

Help & Acknowledgement

Include Fibers ☐ Scroll to...

hemispheric_white_matter 1.00

left_eye_ball 1.00

optic_chiasm 1.00

optic_nerve_L 1.00

optic_nerve_R 1.00

optic_tract_L 1.00

optic_tract_R 1.00

right_eye_ball 1.00

Skin 0.00

skull_bone 1.00

Information

Display

Clipping

Clipping Type: ☐ Union ☒ Intersection

☐ Red Slice Clipping: ☐ Positive ☐ Negative

☐ Yellow Slice Clipping: ☐ Positive ☐ Negative

☒ Green Slice Clipping: ☐ Positive ☒ Negative

Data Probe: /Users/spujol/tutorials/...ta/slicer4minute.mrml

Show Zoomed Slice

L
F
B

P
Y
R: -27.531mm
G
A: -20.250mm

Use the coronal slider (green) to expose the optic chiasm.

Use the coronal slider (green) to expose the optic chiasm.

3D Slicer 4.5.0-2015-11-17

Modules: Models

3DSlicer

Help & Acknowledgement

Include Fibers ☐ Scroll to...

- hemispheric_white_matter 1.00
- left_eyeball 1.00
- optic_chiasm 1.00
- optic_nerve_L 1.00
- optic_nerve_R 1.00
- optic_tract_L 1.00
- optic_tract_R 1.00
- right_eyeball 1.00
- Skin 0.60**
- skull_bone 1.00

Information

Display

Visibility

Visible: ☒

View: All

Clip: ☐

Slice Intersections Visible: ☐

Slice Intersections Thickness: 1 px

Representation

Color

Color: #ffdc3

Opacity: 0.60

Edge Visibility: ☐

Edge Color: #000000

Lighting

3D only

Conventional

Conventional Widescreen

Conventional Quantitative

Four-Up

Four-Up Quantitative

Dual 3D

Triple 3D

One-Up Quantitative

Red slice only

Yellow slice only

Green slice only

Tabbed 3D

Tabbed slice

Compare

Compare Widescreen

Compare Grid

Three over three

Three Over Three Quantitative

Four over four

Two over Two

Side by side

Four by three slice

Four by two slice

Three by three slice

R S: -27.531mm

Y R: 0.469mm

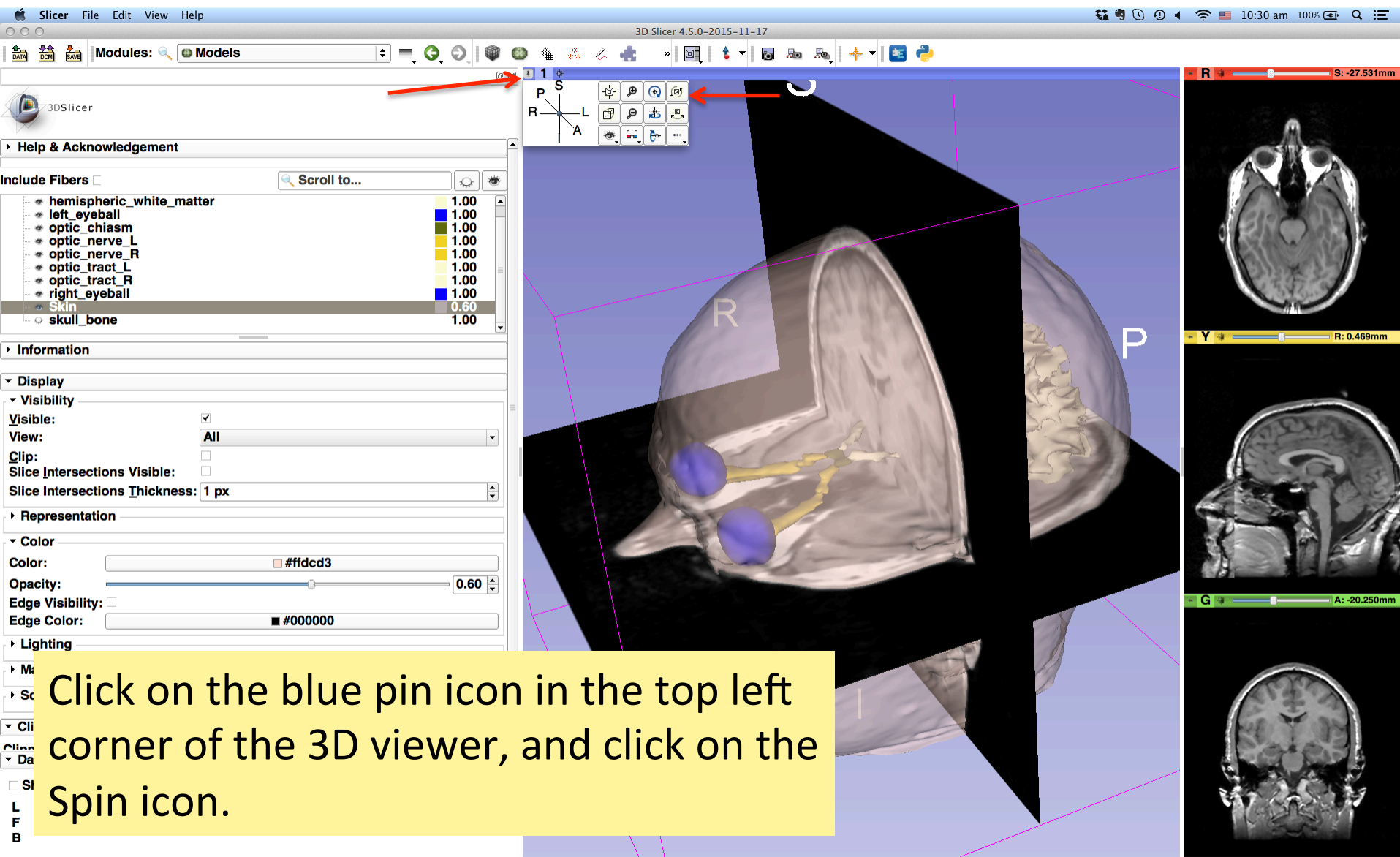
G A: -20.250mm

Increase the opacity of the skin model, and select the viewing mode '3D only'

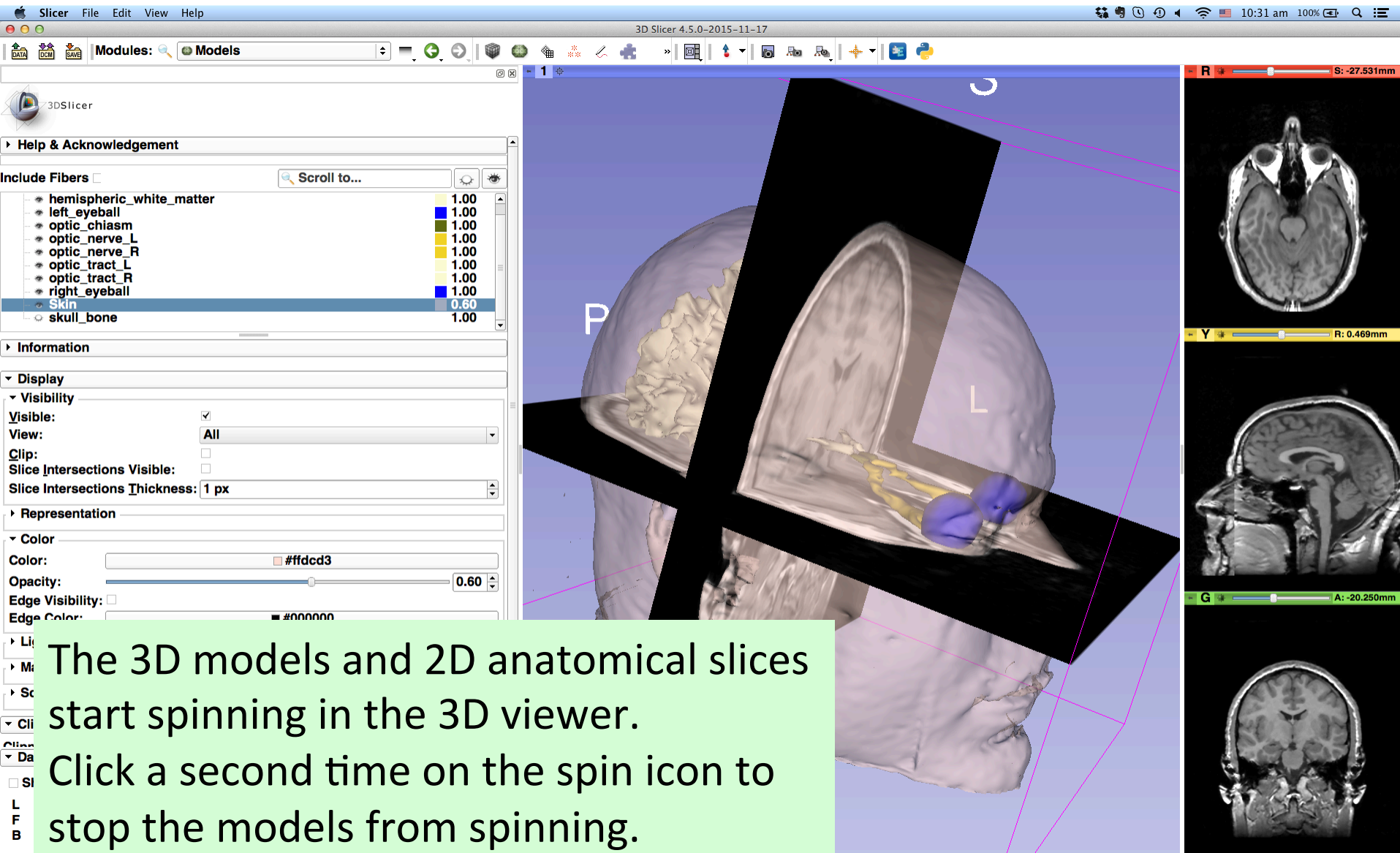
Increase the opacity of the skin model, and select the viewing mode '3D only'

☐ **Show Zoomed Slice**L
F
B

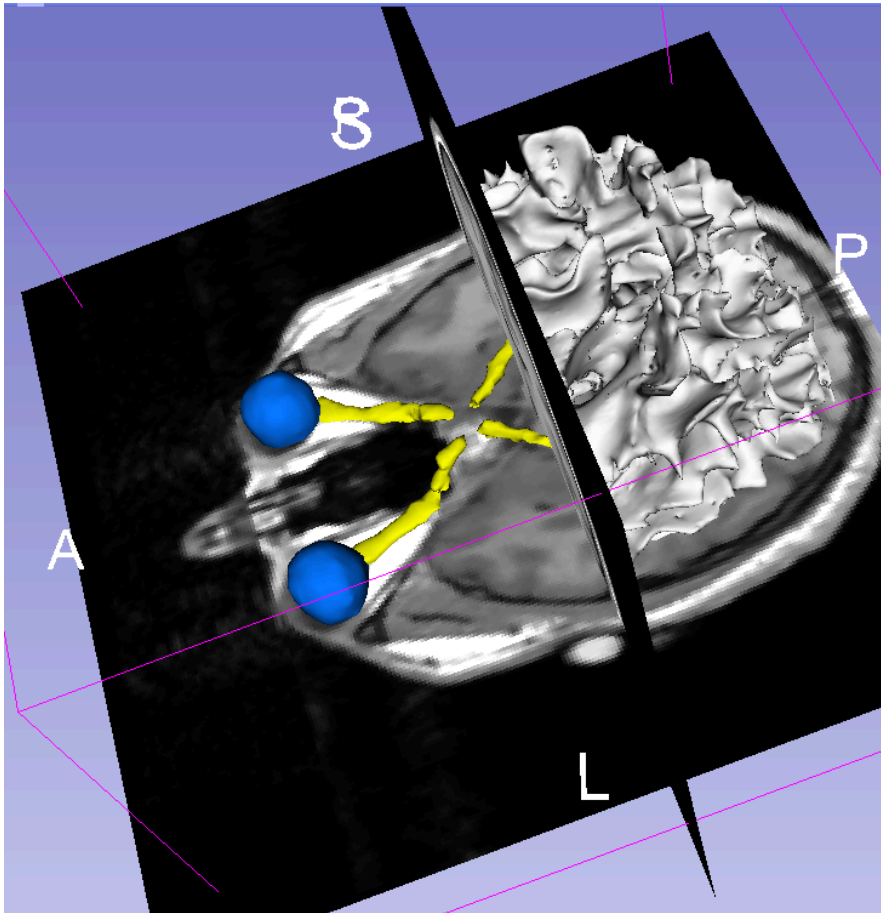
3D Visualization



3D Visualization



Slicer4 minute tutorial



This tutorial was a short introduction to the interactive 3D visualization functionalities of Slicer.

The Slicer4 training compendium contains a catalog of training materials on the software.