



Slicer Welcome Tutorial

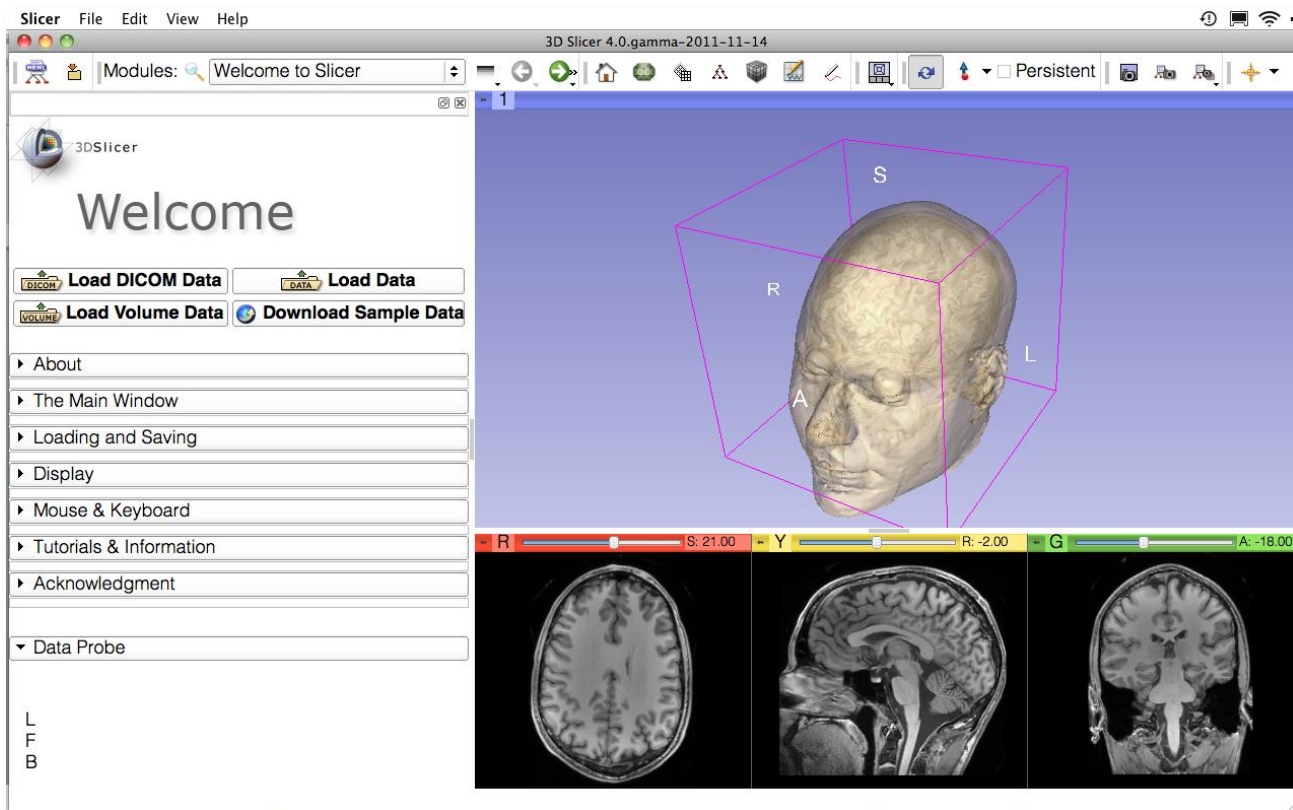
Sonia Pujol, Ph.D.

Brigham and Women's Hospital

Harvard Medical School

Goal

This tutorial is a short introduction to the Welcome module of the 3D Slicer open-source software.

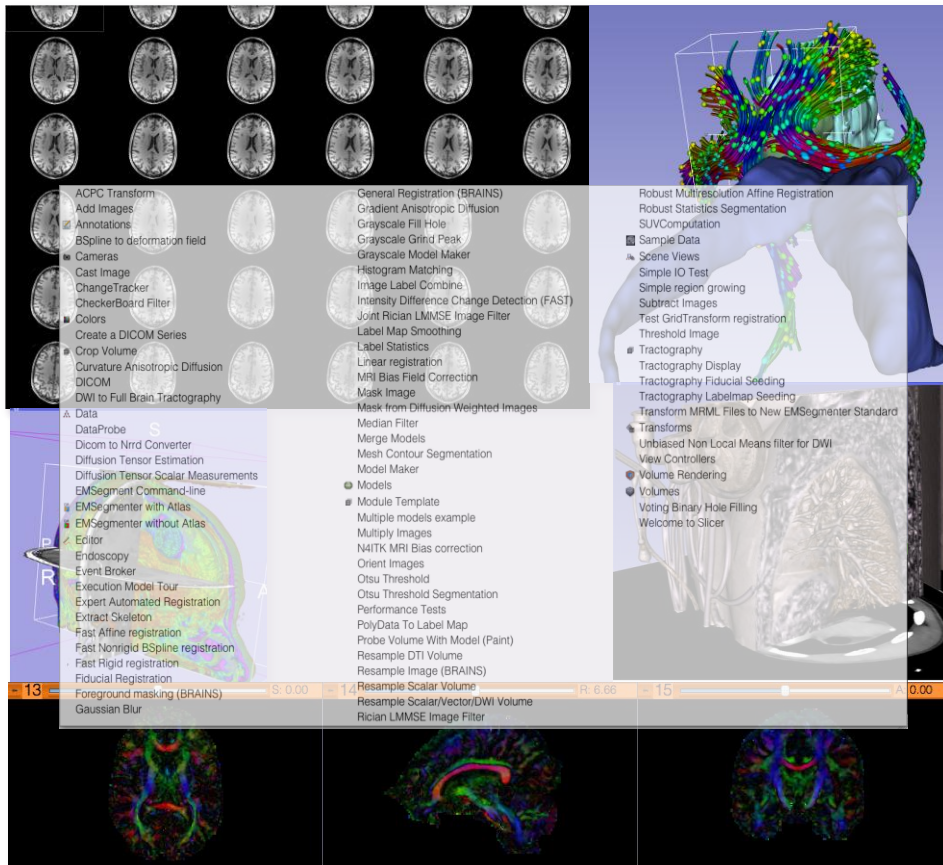




Slicer4 Basics

- Slicer is an open-source software for segmentation, registration and visualization of medical imaging data
- The platform is developed through a multi-institution effort of several NIH funded large-scale consortia
- Slicer is for medical research only, and is not FDA approved

Slicer4 Basics



Slicer4 contains 92 modules for image segmentation, registration and 3D visualization of medical imaging data.

Images courtesy of Ron Kikinis, MD

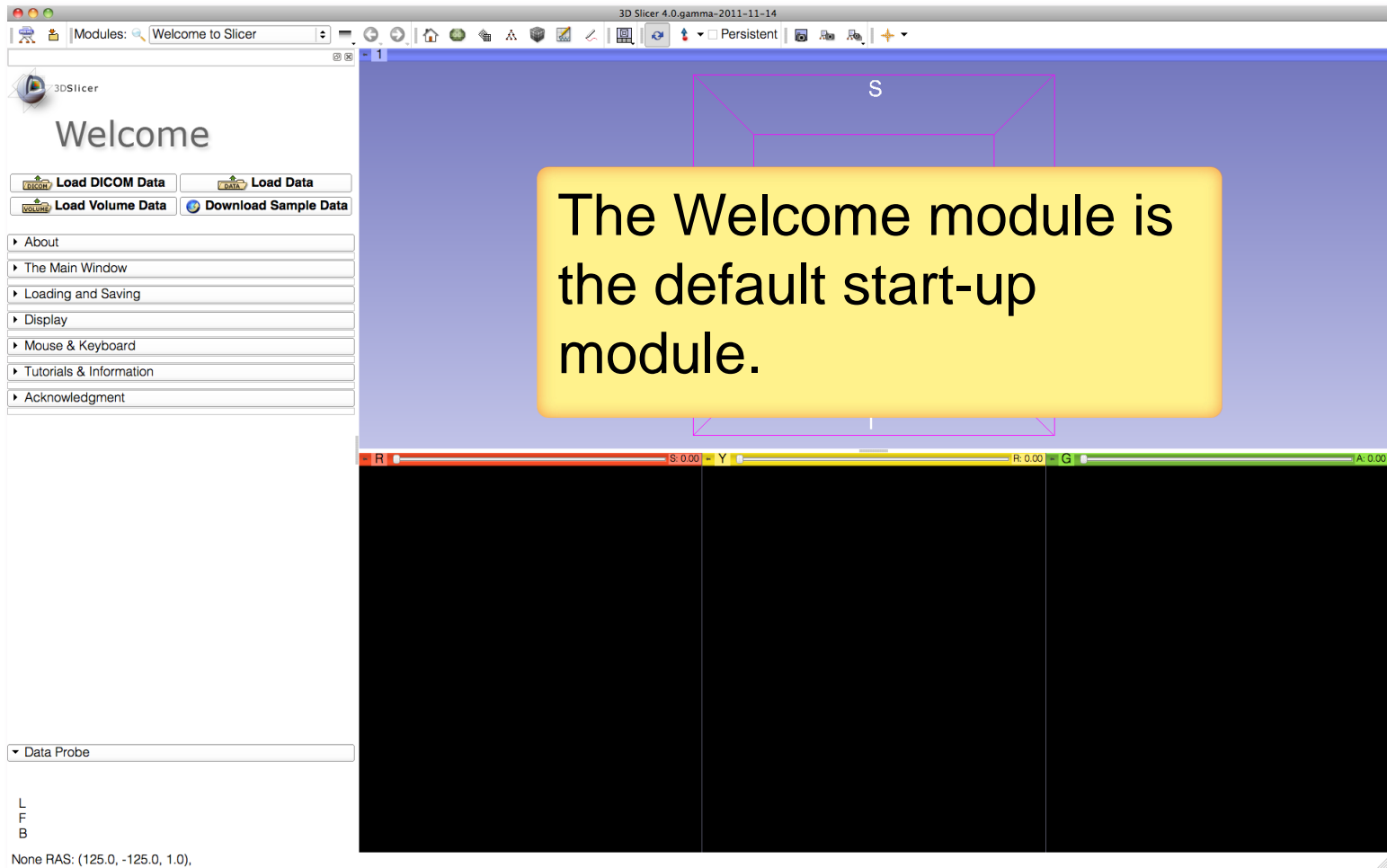


Supported Platforms

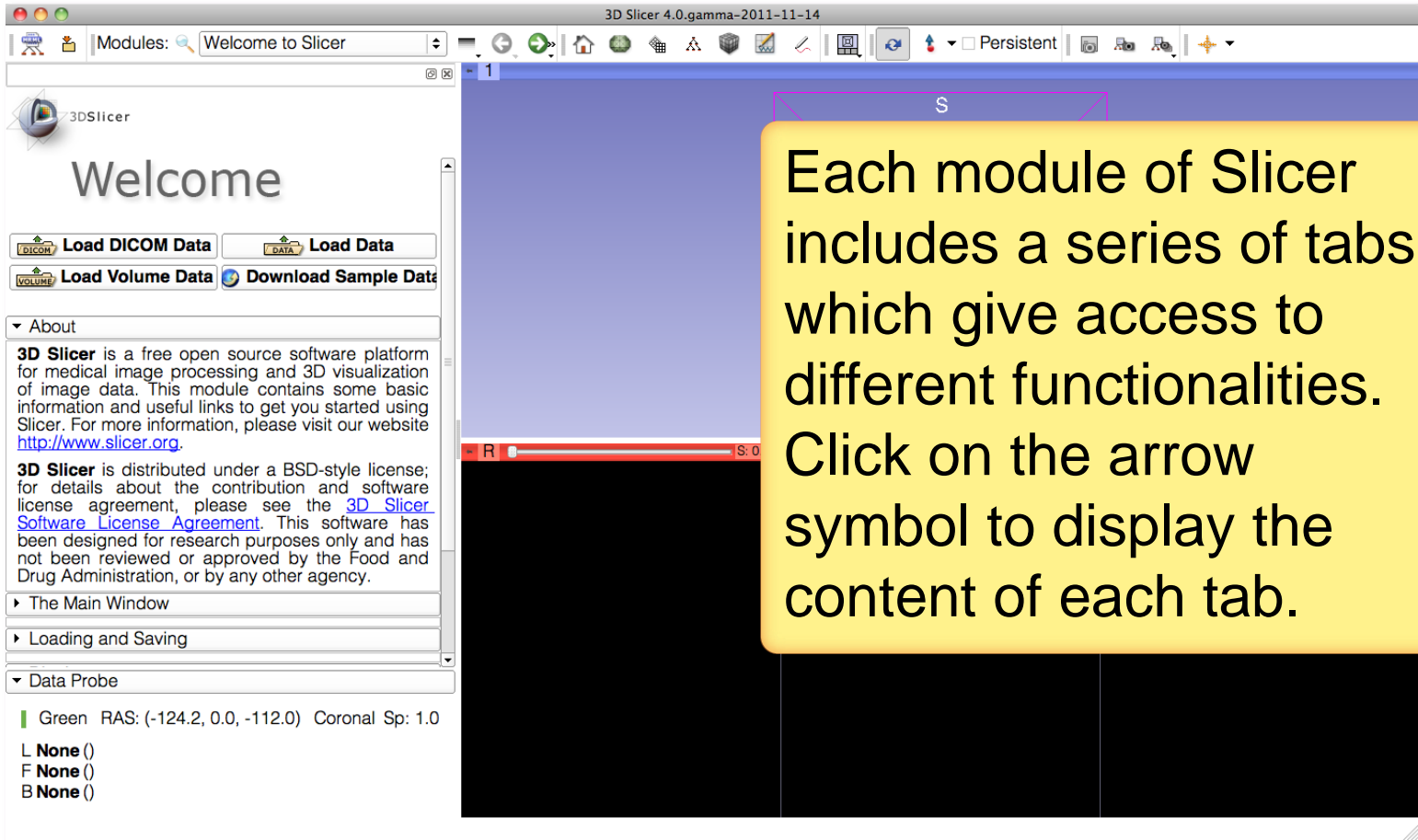
- Slicer is a multi-platform software developed and maintained on Mac OSX, Linux 64 & 32, and Windows 64 & 32.
- Slicer requires a minimum of 2 GB of RAM and a dedicated graphic accelerator with 64 MB of on-board graphic memory.



3DSlicer version 4.0



Welcome to Slicer



3D Slicer 4.0.gamma-2011-11-14

Modules: Welcome to Slicer

3DSlicer

Welcome

Load DICOM Data Load Data

Load Volume Data Download Sample Data

About

3D Slicer is a free open source software platform for medical image processing and 3D visualization of image data. This module contains some basic information and useful links to get you started using Slicer. For more information, please visit our website <http://www.slicer.org>.

3D Slicer is distributed under a BSD-style license; for details about the contribution and software license agreement, please see the [3D Slicer Software License Agreement](#). This software has been designed for research purposes only and has not been reviewed or approved by the Food and Drug Administration, or by any other agency.

The Main Window

Loading and Saving

Data Probe

Green RAS: (-124.2, 0.0, -112.0) Coronal Sp: 1.0

L None ()
F None ()
B None ()

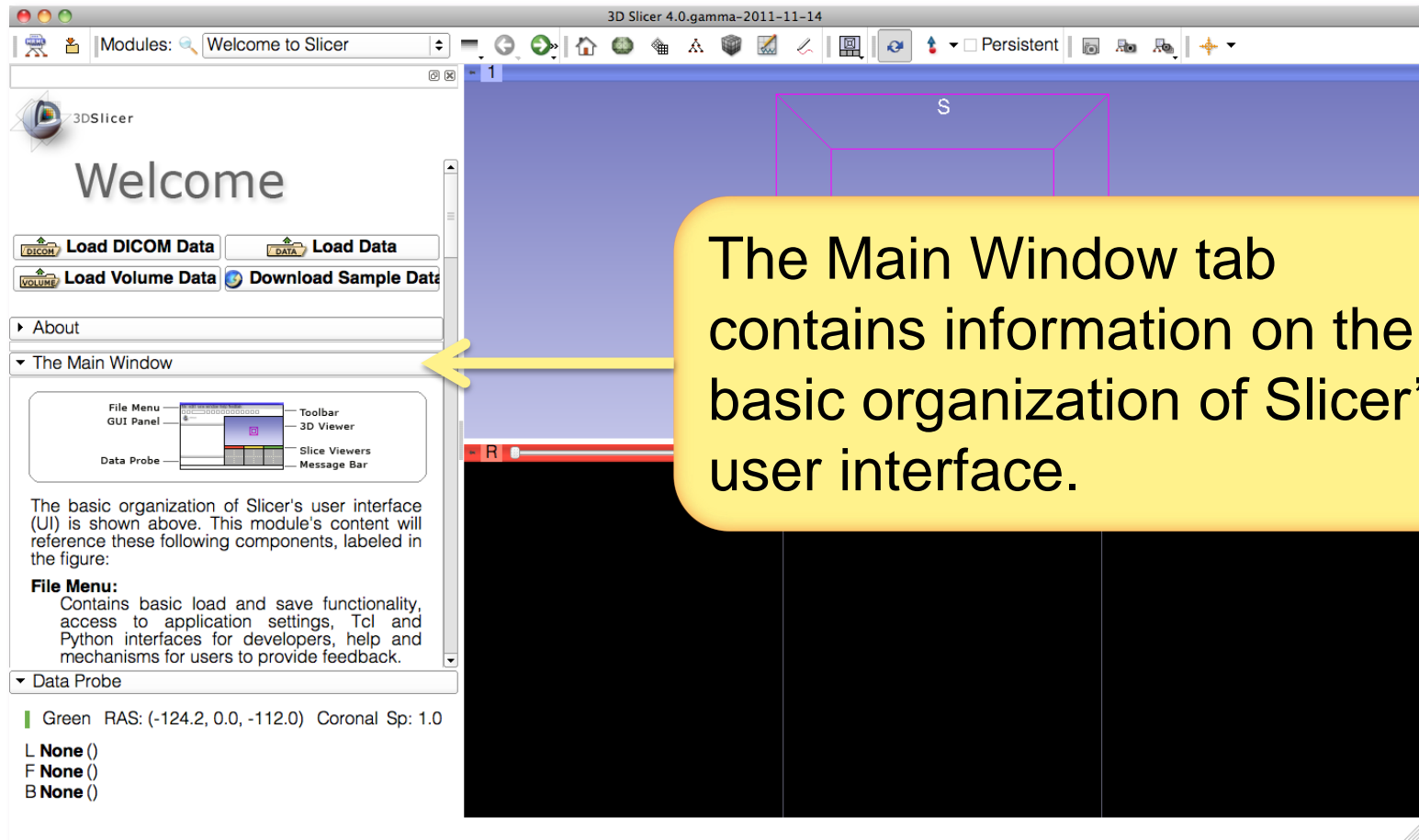
S

R S: 0

Persistent

Each module of Slicer includes a series of tabs, which give access to different functionalities. Click on the arrow symbol to display the content of each tab.

Slicer Welcome



3D Slicer 4.0.gamma-2011-11-14

Modules: Welcome to Slicer

3DSlicer

Welcome

Load DICOM Data Load Data

Load Volume Data Download Sample Data

About

The Main Window

File Menu GUI Panel Data Probe

Toolbar 3D Viewer

Slice Viewers Message Bar

The basic organization of Slicer's user interface (UI) is shown above. This module's content will reference these following components, labeled in the figure:

File Menu:
Contains basic load and save functionality, access to application settings, Tcl and Python interfaces for developers, help and mechanisms for users to provide feedback.

Data Probe

Green RAS: (-124.2, 0.0, -112.0) Coronal Sp: 1.0

L None ()
F None ()
B None ()

S

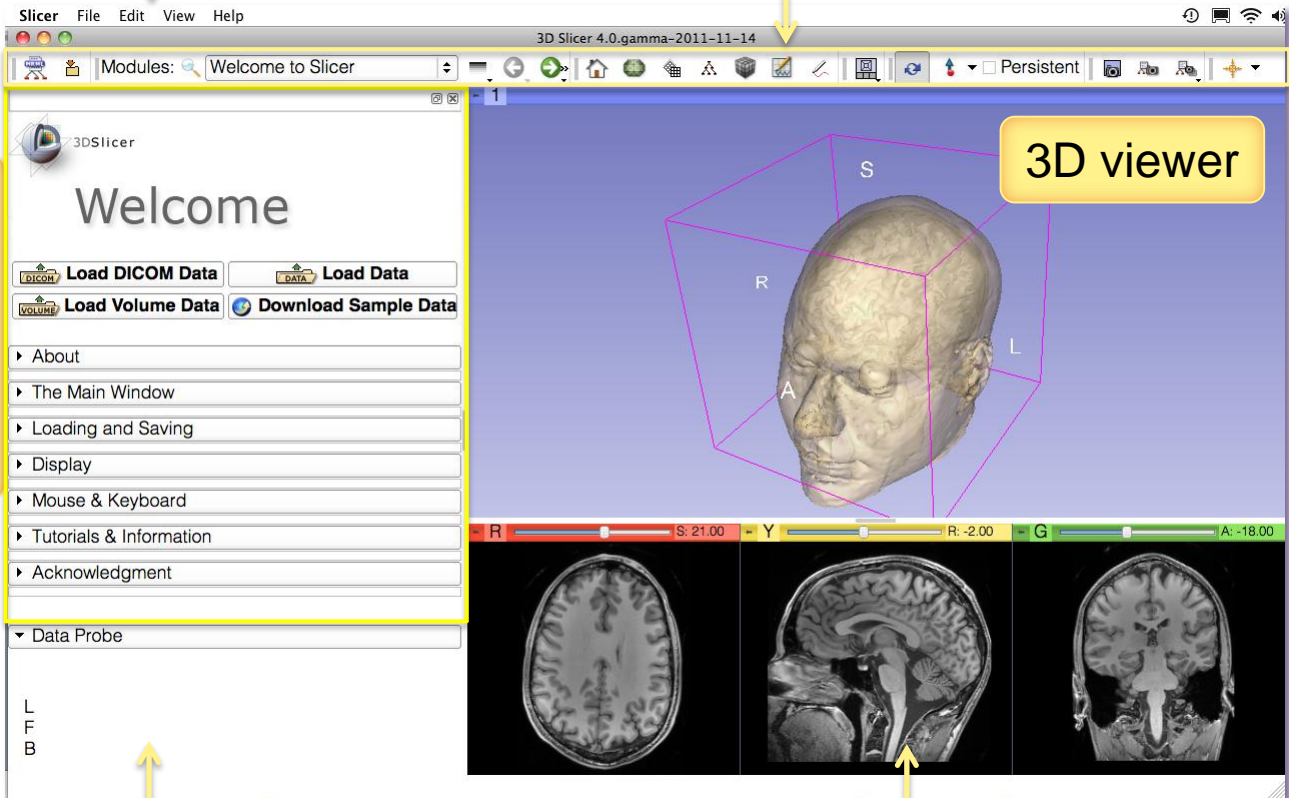
R

The Main Window tab contains information on the basic organization of Slicer's user interface.

Slicer User Interface

Main Menu

Toolbar



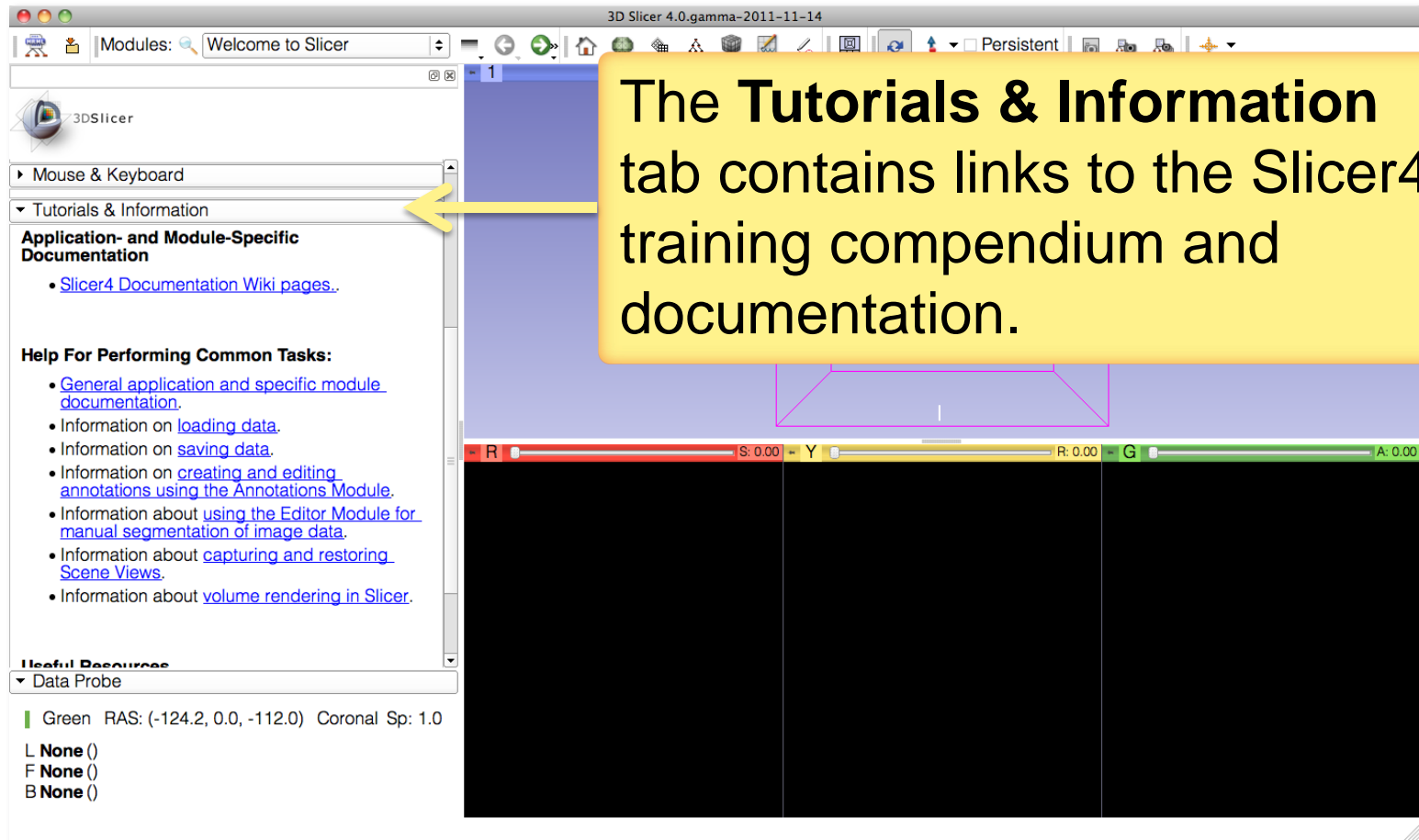
User Interface
(UI) panel
of the Slicer
Welcome
Module

3D viewer

Data Probe

2D anatomical viewers

Welcome Module



The Tutorials & Information tab contains links to the Slicer4 training compendium and documentation.

3D Slicer 4.0.gamma-2011-11-14

Modules: Welcome to Slicer

3DSlicer

Mouse & Keyboard

Tutorials & Information

Application- and Module-Specific Documentation

- [Slicer4 Documentation Wiki pages..](#)

Help For Performing Common Tasks:

- [General application and specific module documentation.](#)
- Information on [loading data.](#)
- Information on [saving data.](#)
- Information on [creating and editing annotations using the Annotations Module.](#)
- Information about [using the Editor Module for manual segmentation of image data.](#)
- Information about [capturing and restoring Scene Views.](#)
- Information about [volume rendering in Slicer.](#)

Useful Resources

Data Probe

Green RAS: (-124.2, 0.0, -112.0) Coronal Sp: 1.0

L None ()
F None ()
B None ()

R S: 0.00 Y R: 0.00 G A: 0.00



Slicer4.0 Documentation & Training

<http://www.slicer.org/slicerWiki/index.php/Documentation/4.0>

Documentation/4.0
Documentation/4.0
4.0 3.6 3.5 3.4 3.2 ALL VERSIONS

Slicer Application

- Main Application GUI (Wendy Plesniak)
- "Hot-keys" and Keyboard Shortcuts (Wendy Plesniak)
- Computer configurations (Steve Pieper)
- Loading or Saving data and listing of supported data formats. (Julien Finet)
- Setting up and using stereoscopic viewing (Curtis Lisle)

Mailing Lists

- Mailing list for users
- Mailing list for developers

Module Categories

- Core Modules
- Wizards
- Informatics
- Registration
- Segmentation
- Quantification
- Diffusion
- IGT
- Filtering
- Surface Mod
- Converters
- Endoscopy
- Developer T
- Legacy
- Utility

Miscellaneous

- Visual blog
- Set of screenshots showing Slicer in action.
- Training pages
- Information on how to use Slicer 4.0

3D Slicer

Training/4.0
Training/4.0

This is a place holder

CONTENTS [hide]

- 1 Introduction: Slicer 4.0 Tutorials
- 2 General Introduction
 - 2.1 Slicer4Minute Tutorial
 - 2.2 Slicer4Visualization tutorial
- 3 Specific Functions
- 4 Introduction for software developers

Introduction: Slicer 4.0 Tutorials

- This page contains "How to" tutorials with matched sample data sets. They demonstrate how to use the 3D Slicer environment (version 4.0 release) to accomplish certain tasks.
- For tutorials for other versions of Slicer, please visit the Slicer training portal.
- For "reference manual" style documentation, please visit the Slicer 4.0 documentation page
- For questions related to the Slicer3 Compendium, please send an e-mail to Sonia Pujol, Ph.D

General Introduction

SLICER4MINUTE TUTORIAL

- The Slicer4Minute tutorial is a brief introduction to the advanced 3D visualization capabilities of Slicer4.0.
- Audience: First time users who just want to get going.
- The Slicer4Minute dataset contains an MR scan of the brain and 3D reconstructions of the anatomy

SLICER4VISUALIZATION TUTORIAL

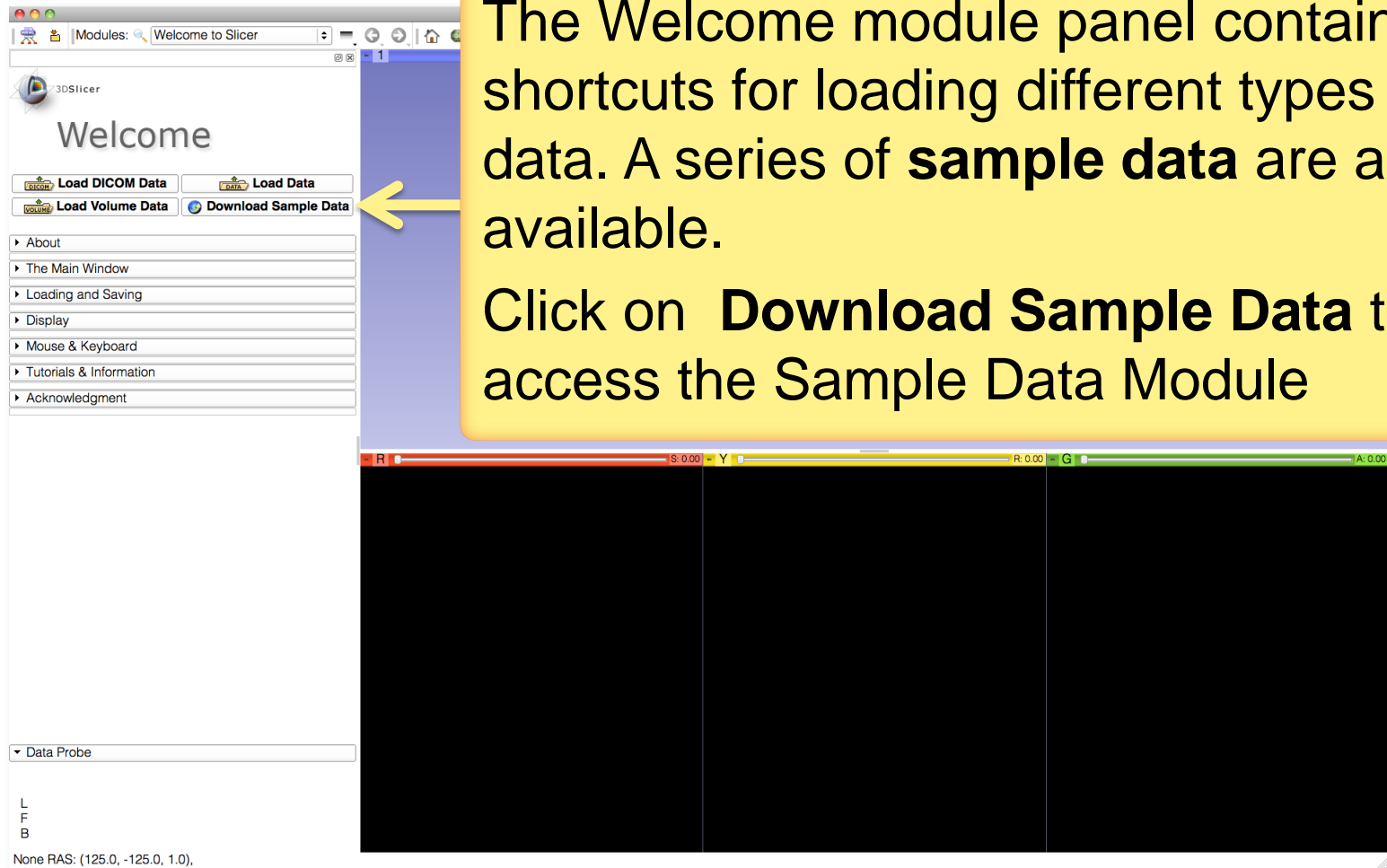
- The Slicer4Visualization tutorial guides through 3D data loading and visualization in Slicer3.6. It is an extended version of the Slicer4Minute tutorial
- Audience: Users of Slicer who need a more comprehensive overview over Slicer4 visualization capabilities.

Slicer3Visualization Data

- The Slicer3Visualization dataset contains two MR scans of the brain, a pre-computed labelmap and 3D reconstructions of the anatomy.

<http://www.slicer.org/slicerWiki/index.php/Documentation/4.0/Training>

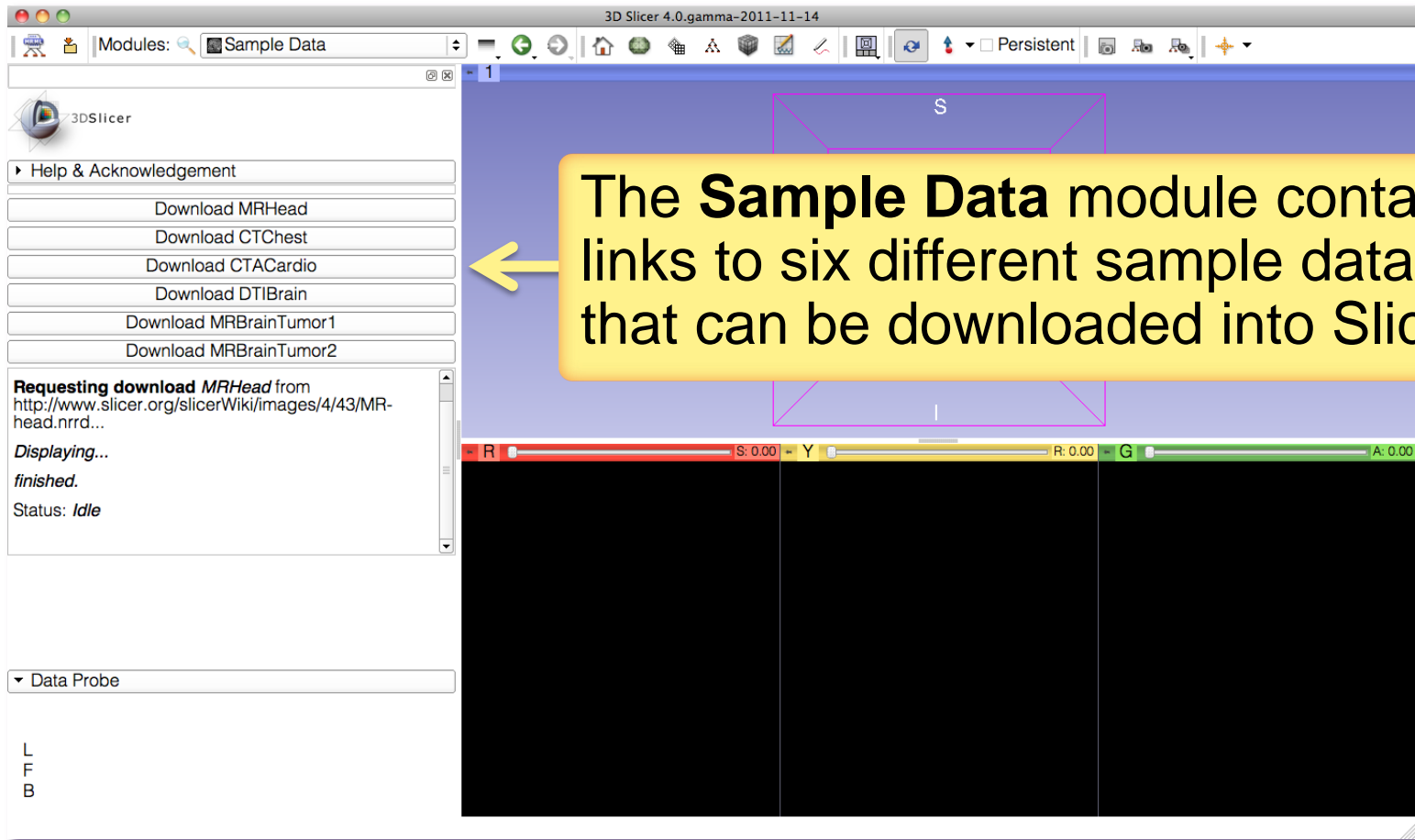
Welcome Module



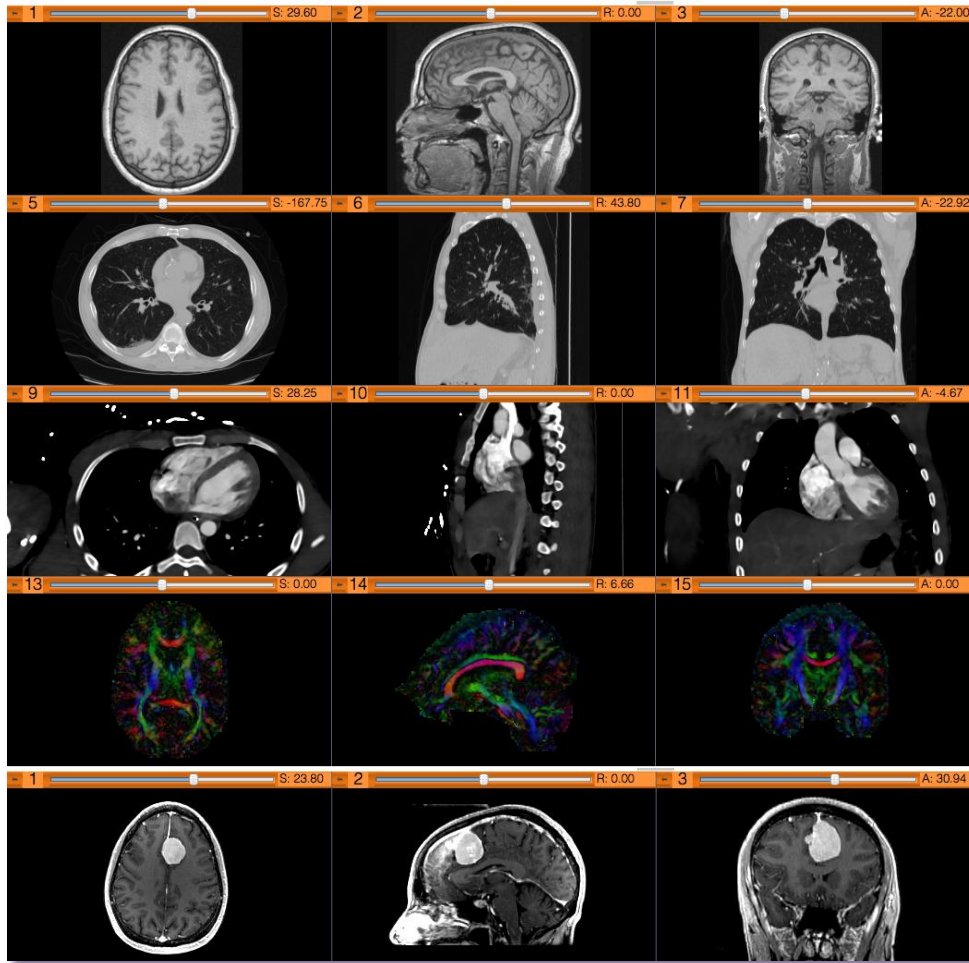
The Welcome module panel contains shortcuts for loading different types of data. A series of **sample data** are also available.

Click on **Download Sample Data** to access the Sample Data Module

Sample Data



Sample Data



Brain MRI

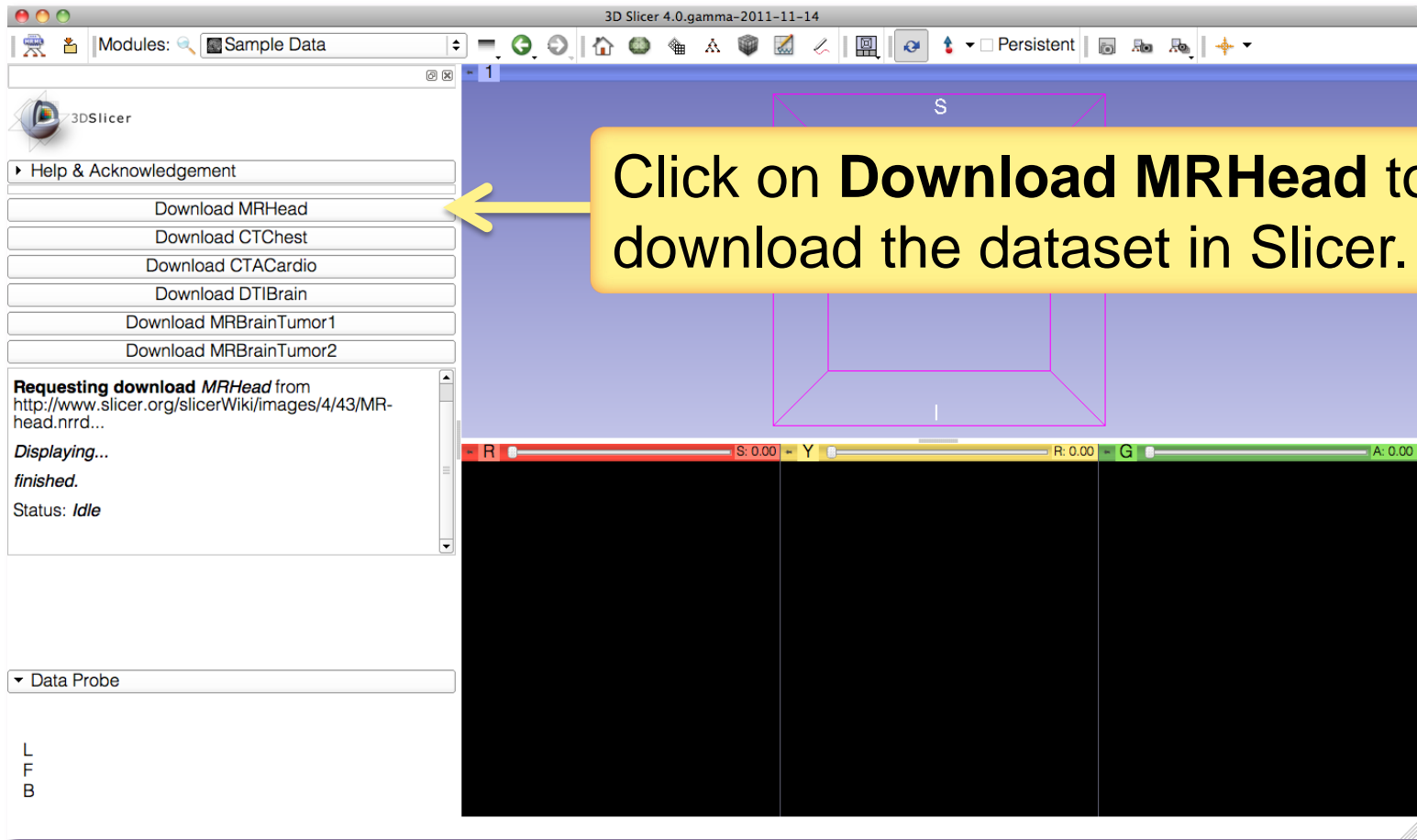
Chest CT

Cardiac CT

Diffusion Tensor
Imaging (DTI) Dataset

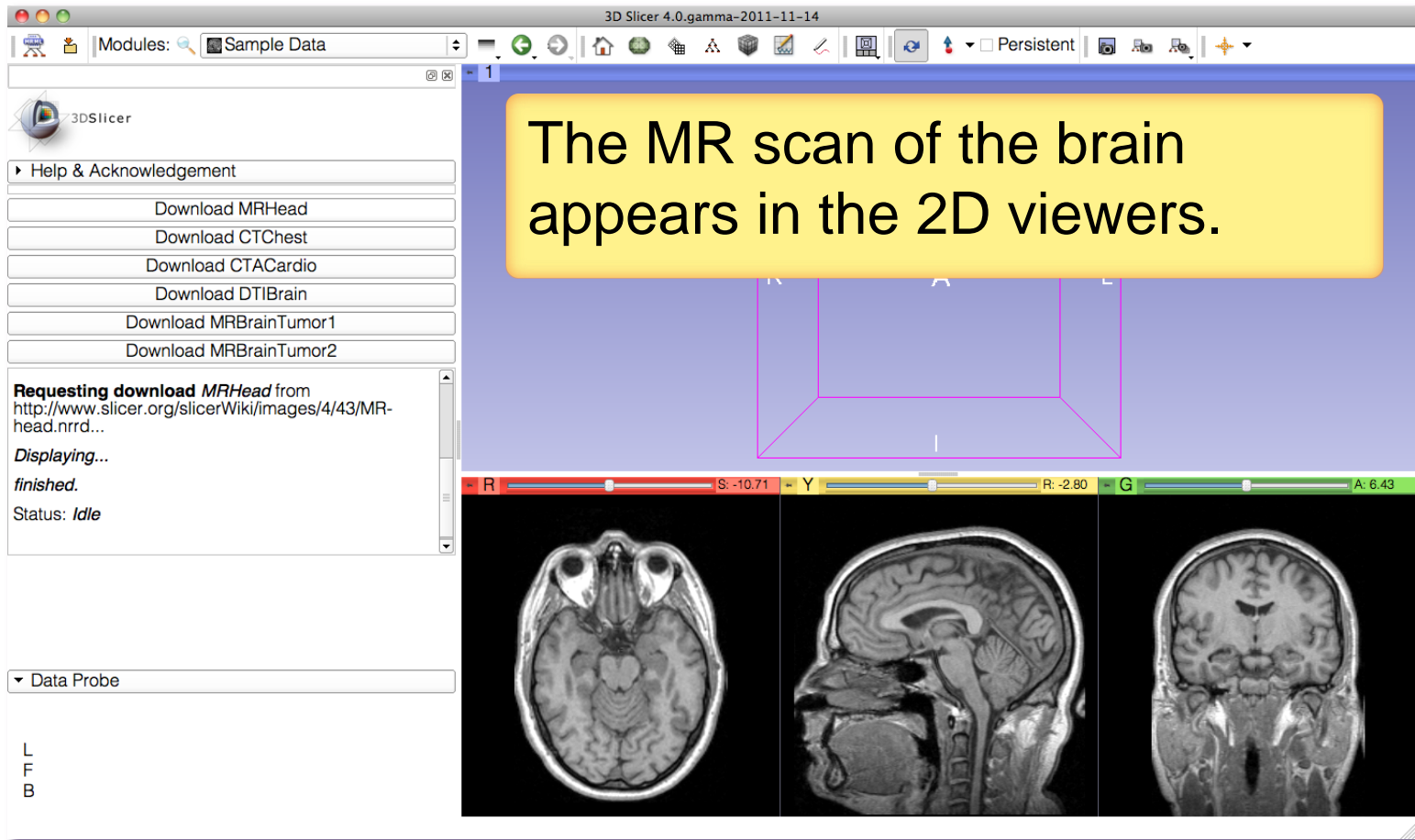
Brain MRI
(tumor patient)

Sample Data



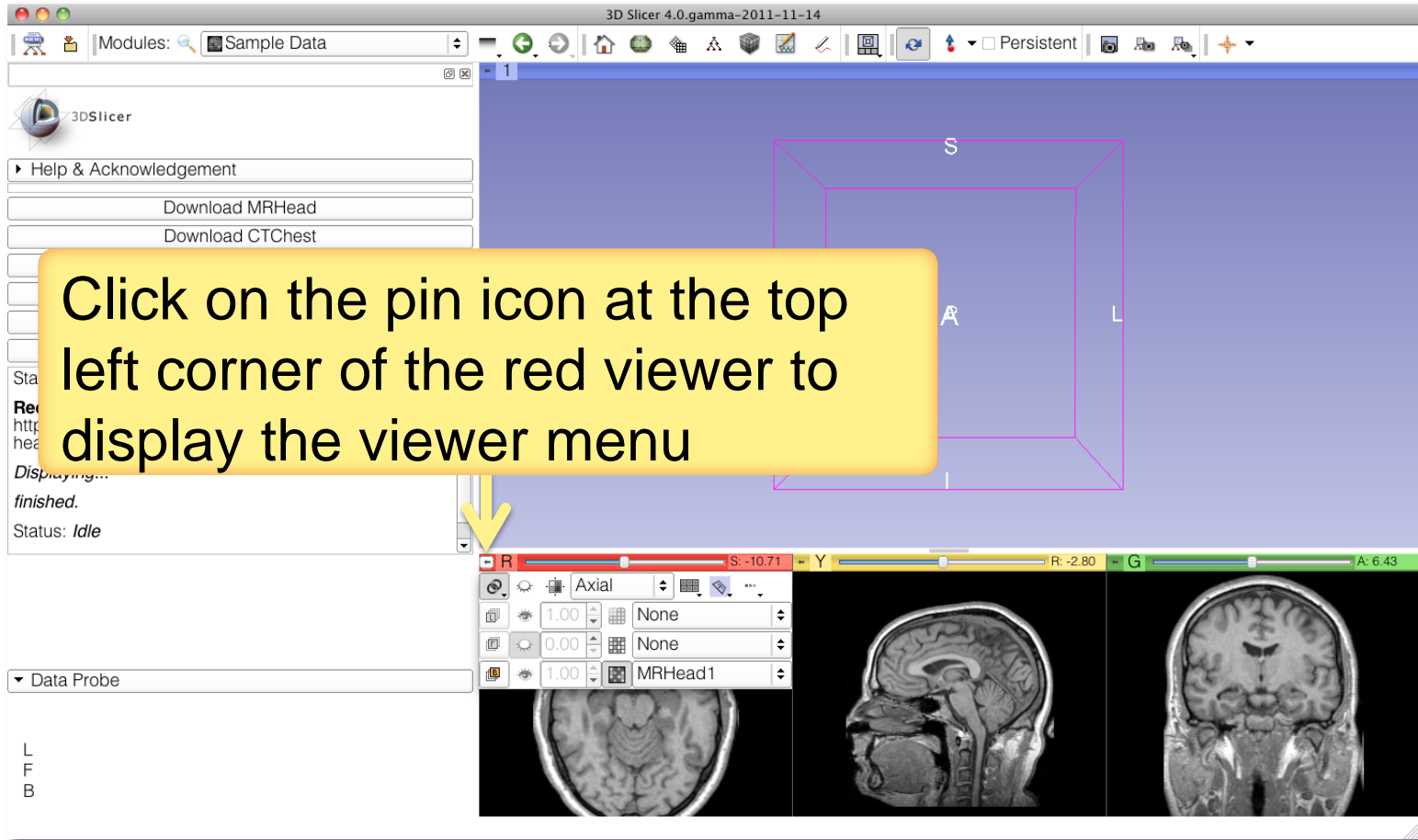
The screenshot shows the 3D Slicer 4.0 interface. The top toolbar includes a 'Sample Data' module button. The left sidebar contains a 'Help & Acknowledgement' section with several 'Download' buttons: 'Download MRHead', 'Download CT Chest', 'Download CTACardio', 'Download DTIBrain', 'Download MRBrainTumor1', and 'Download MRBrainTumor2'. A yellow arrow points to the 'Download MRHead' button. A yellow callout box contains the text: 'Click on **Download MRHead** to download the dataset in Slicer.' Below the sidebar, a window titled 'Requesting download MRHead from http://www.slicer.org/slicerWiki/images/4/43/MR-head.nrrd...' is visible, showing 'Displaying... finished.' and 'Status: Idle'. The main 3D view area is currently empty, with a purple wireframe box and a red 'S' label. The bottom status bar shows 'R: 0.00', 'Y: 0.00', 'G: 0.00', and 'A: 0.00'.

Welcome Module



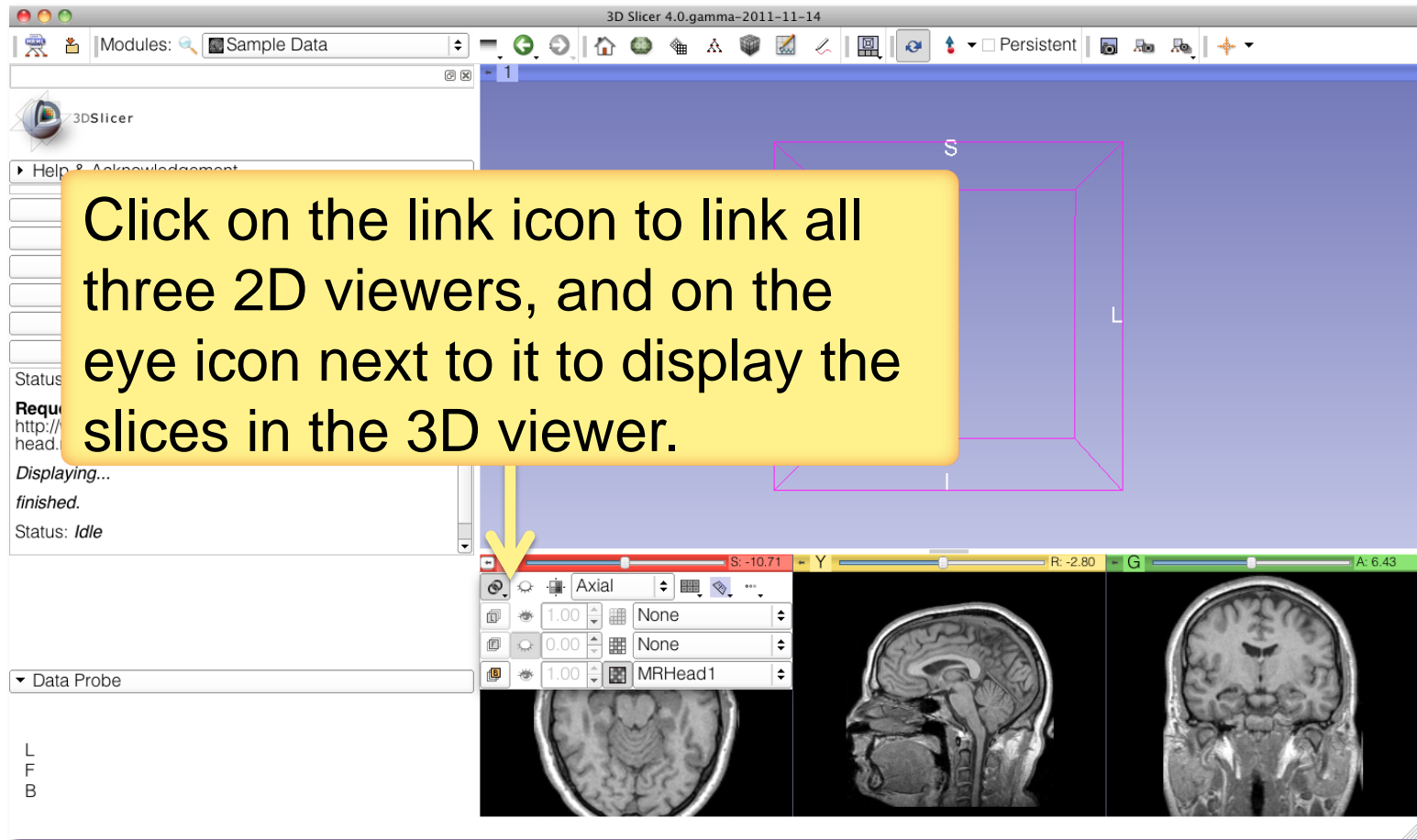


MR Brain Sample Dataset

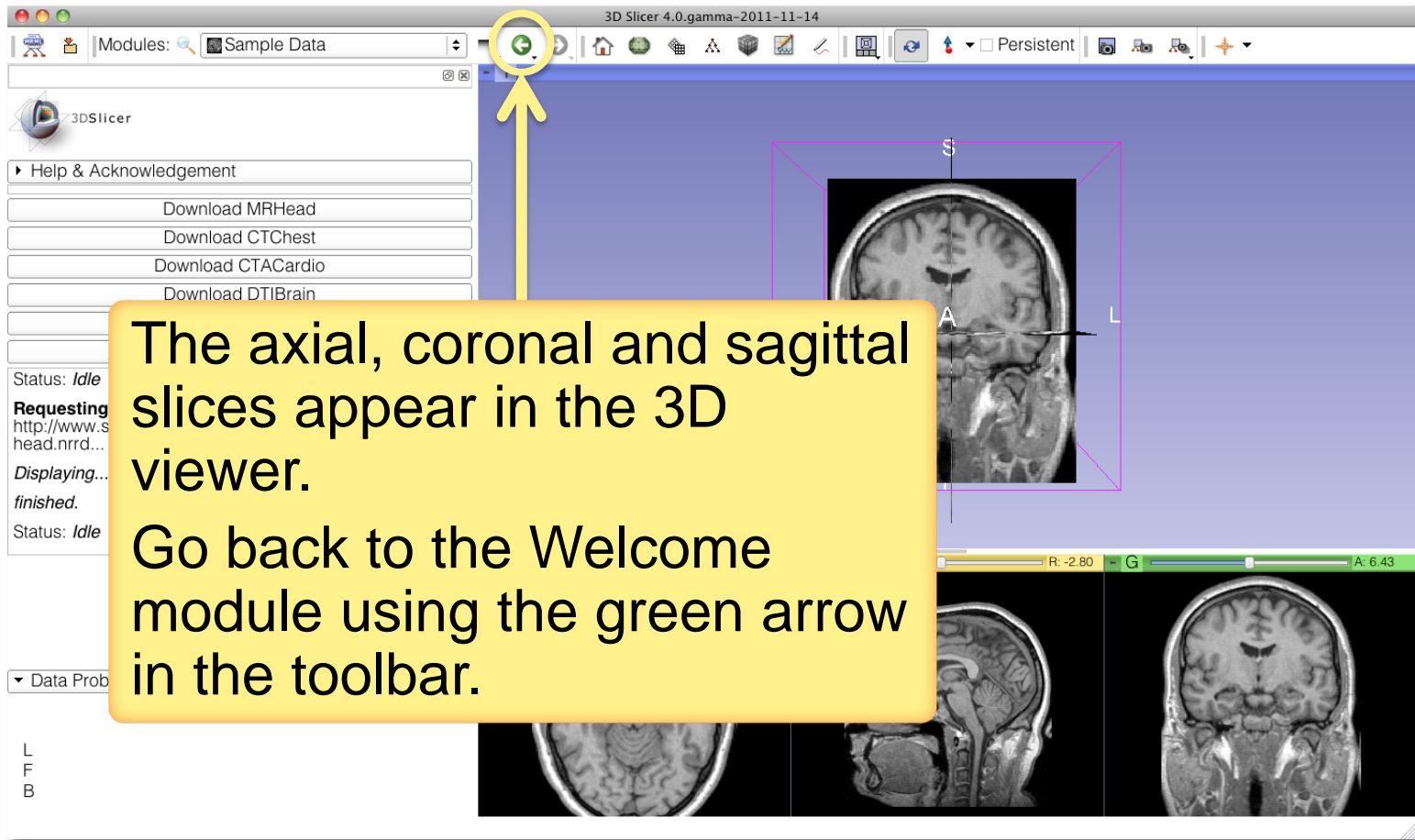




MR Brain Sample Dataset



MR Brain Sample Dataset



The axial, coronal and sagittal slices appear in the 3D viewer.

Go back to the Welcome module using the green arrow in the toolbar.

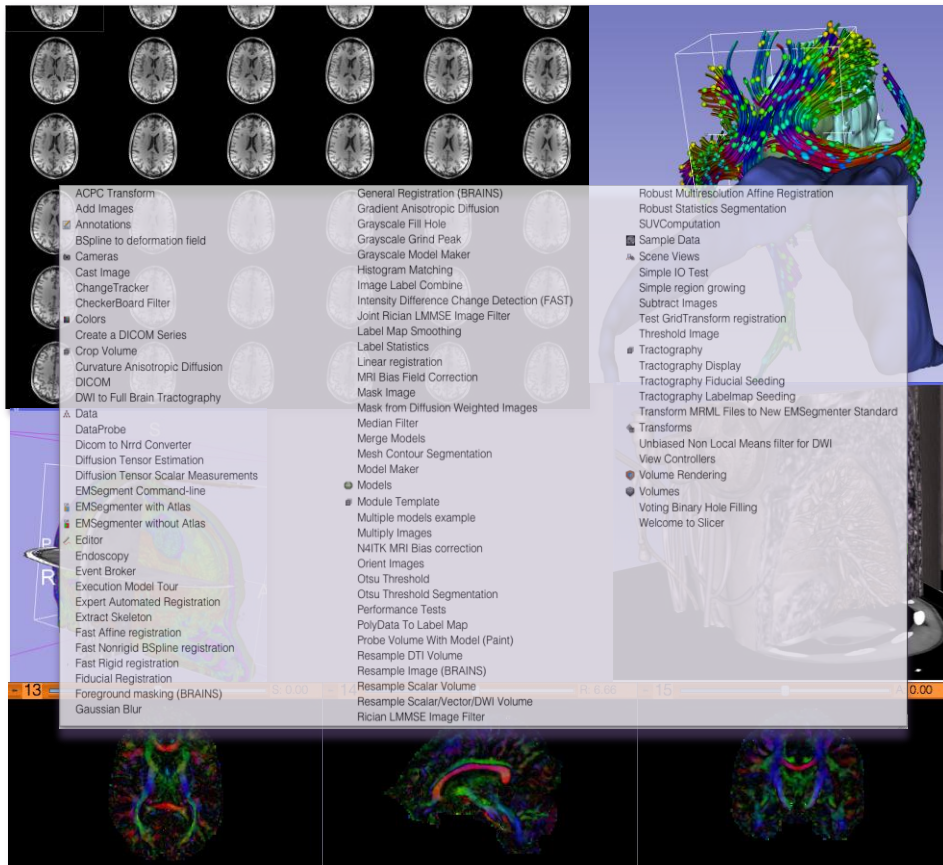


MR Brain Sample Dataset

The screenshot shows the 3D Slicer 4.0 interface. On the left, the 'Mouse & Keyboard' help panel is expanded, showing instructions for using a mouse to adjust window and level, and for selecting and manipulating objects. A yellow arrow points from the 'Mouse & Keyboard' tab in the help panel to a yellow callout box. The main window displays a 3D brain model with a semi-transparent volume rendering. Below the main view are three 2D slice viewers (axial, sagittal, and coronal) and a color calibration bar with sliders for Red, Yellow, Green, and Blue channels.

Click on the tab **Mouse & Keyboard** to learn the different mouse actions to rotate the images and zoom in and out.

Going Further



To learn more about Slicer and its different functionalities, visit the Slicer4.0 training compendium.

<http://www.slicer.org/slicerWiki/index.php/Documentation/4.0/Training>

Acknowledgments



National Alliance for Medical
Image Computing
NIH U54EB005149



Neuroimage Analysis Center
NIH P41RR013218