NA-MIC
National Alliance for Medical Image Computing
http://www.na-mic.org

Automatic LA Scar Detection

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NA-MIC Tutorial Contest: Summer 2012

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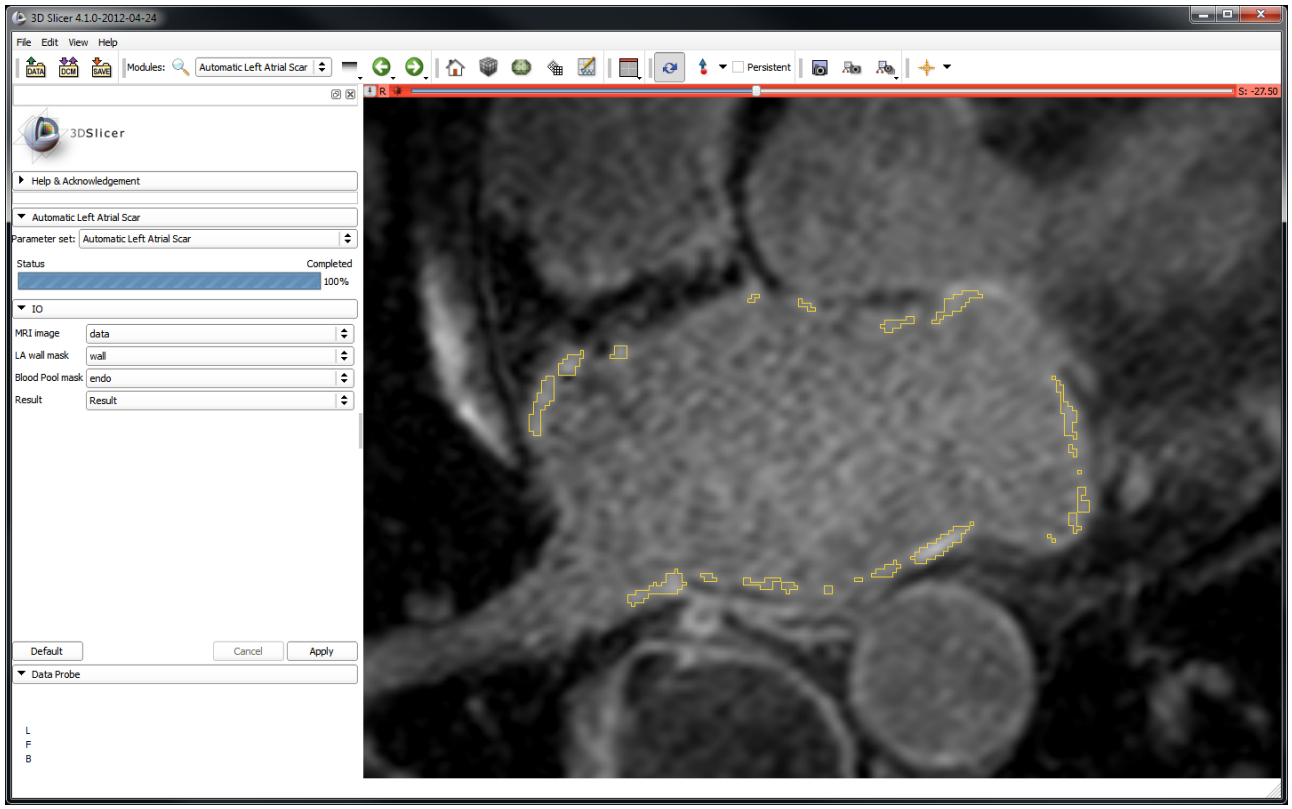
Learning Objective



Automatic left atrial (LA) scar detection in Slicer

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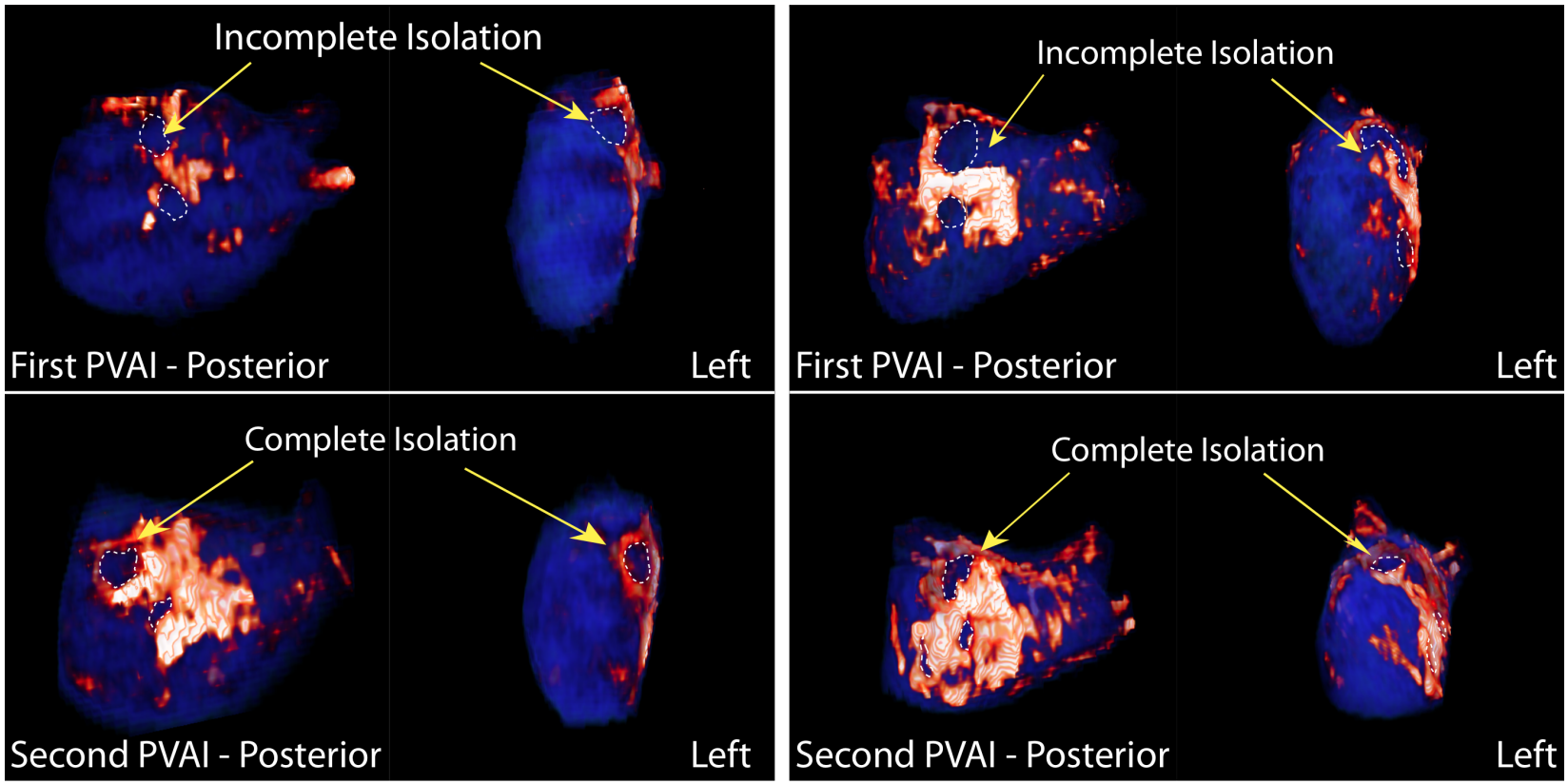
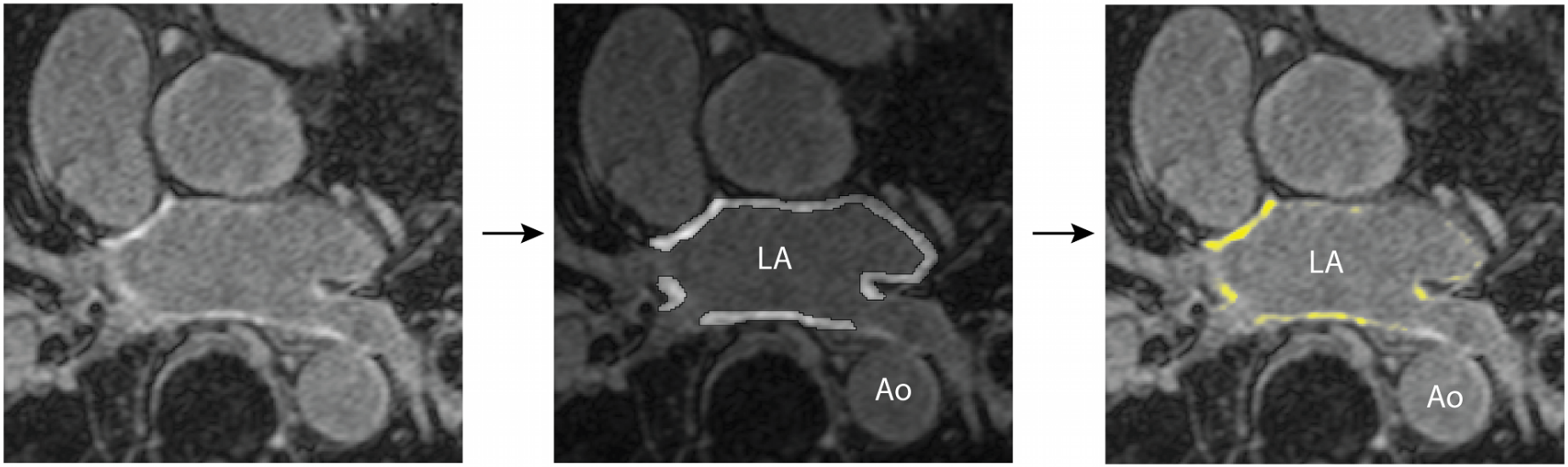
Background



McGann et al. JACC,52(15): 1263-1272, 2008

Current Workflow

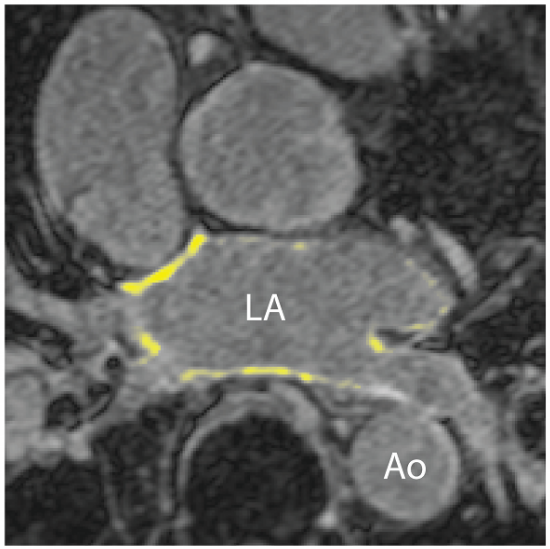


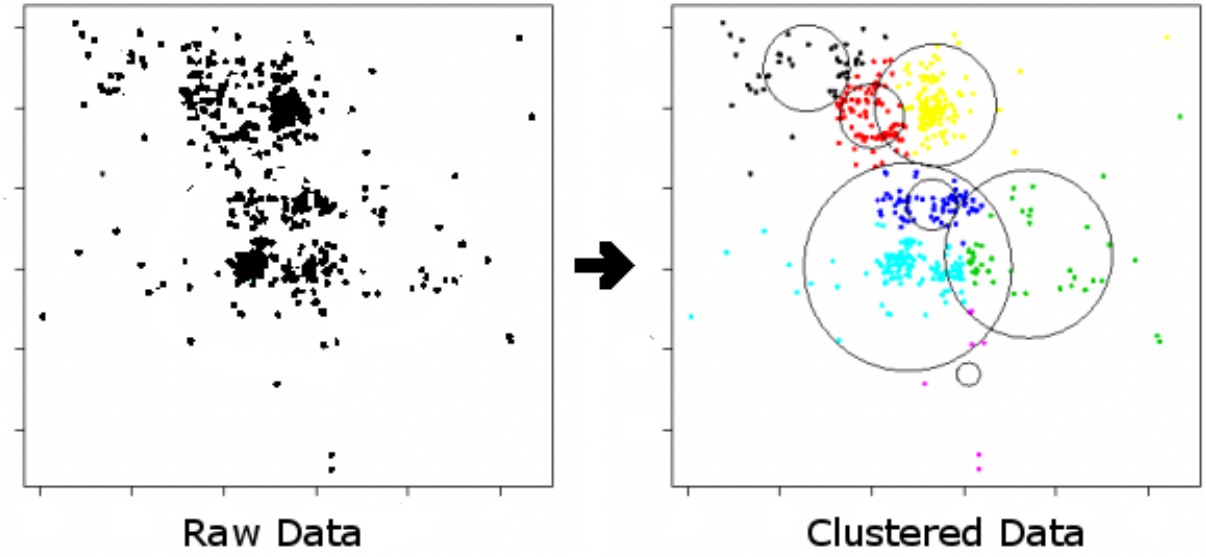
Acquire LGE-MRI

Manually segment LA wall

Manually segment scar

Current Workflow





Manually segment scar

Automatically segment scar

Perry et al. SPIE, Feb. 2012

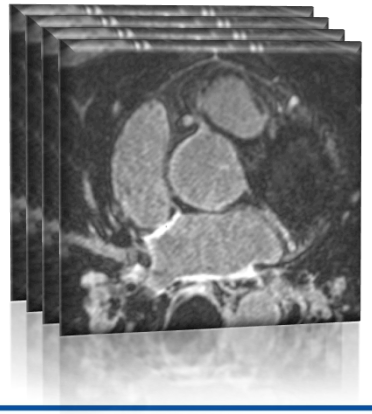
Required Materials

- **Slicer**: Release 4.1

http://www.slicer.org/pages/Downloads/

- **Data**: CARMA Left Atrial Scar

http://wiki.na-mic.org/Wiki/index.php/File:CARMA-LA-Scar_TutorialContestSummer2012.zip



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Additional Sample Data

32 patients

MIDAS

http://www.insight-journal.org/midas/collection/view/197

Pre-requisite Tutorial

Surgical Planning Laboratory
Brigham and Women's Hospital
Boston, Massachusetts USA

a teaching affiliate of
Harvard Medical School

Data Loading and 3D Visualization

Sonia Pujol, Ph.D., Harvard Medical School
Director of Training, National Alliance for Medical Image Computing

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

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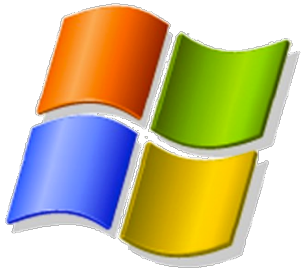
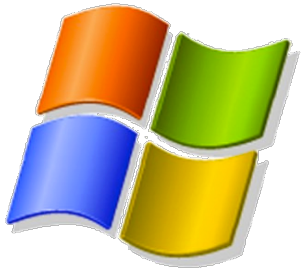
Platforms

Developed



Tested



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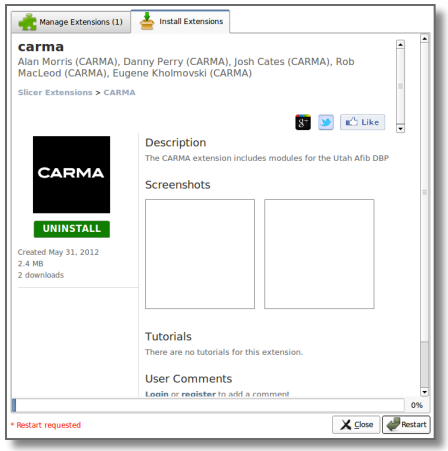
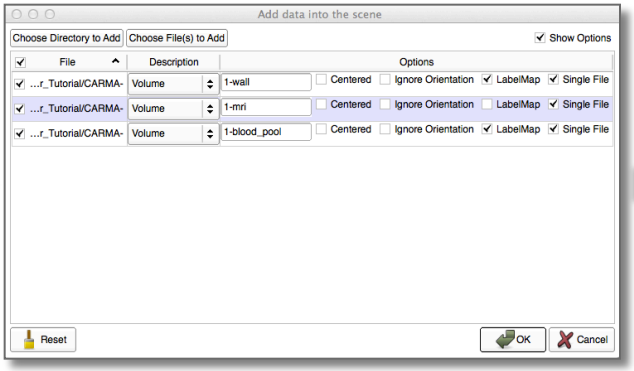
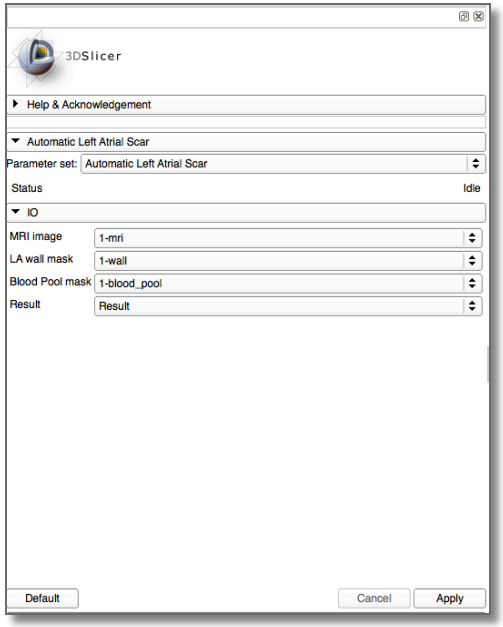
Overview







Load the module

Load the dataset

Automatic scar detection

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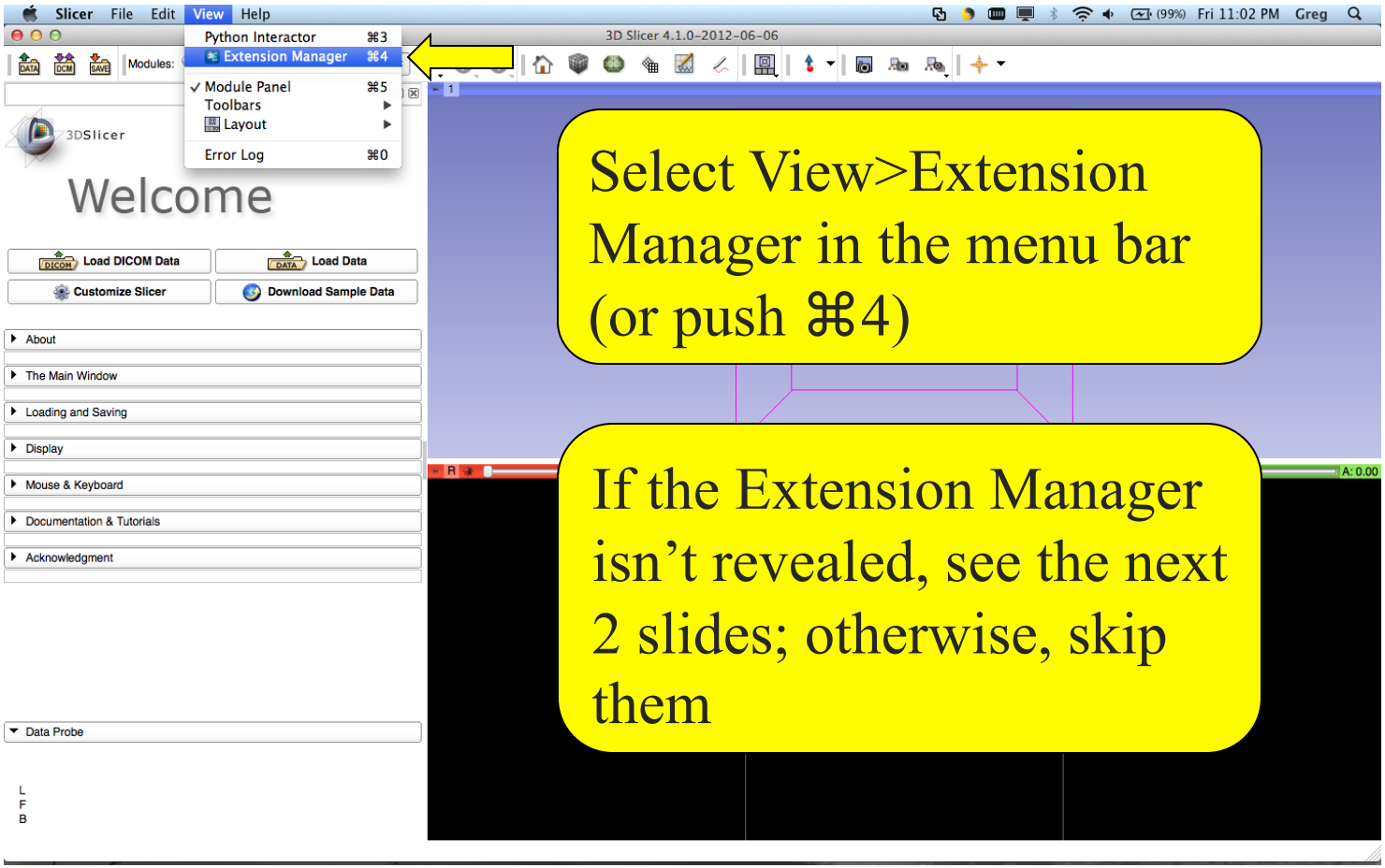
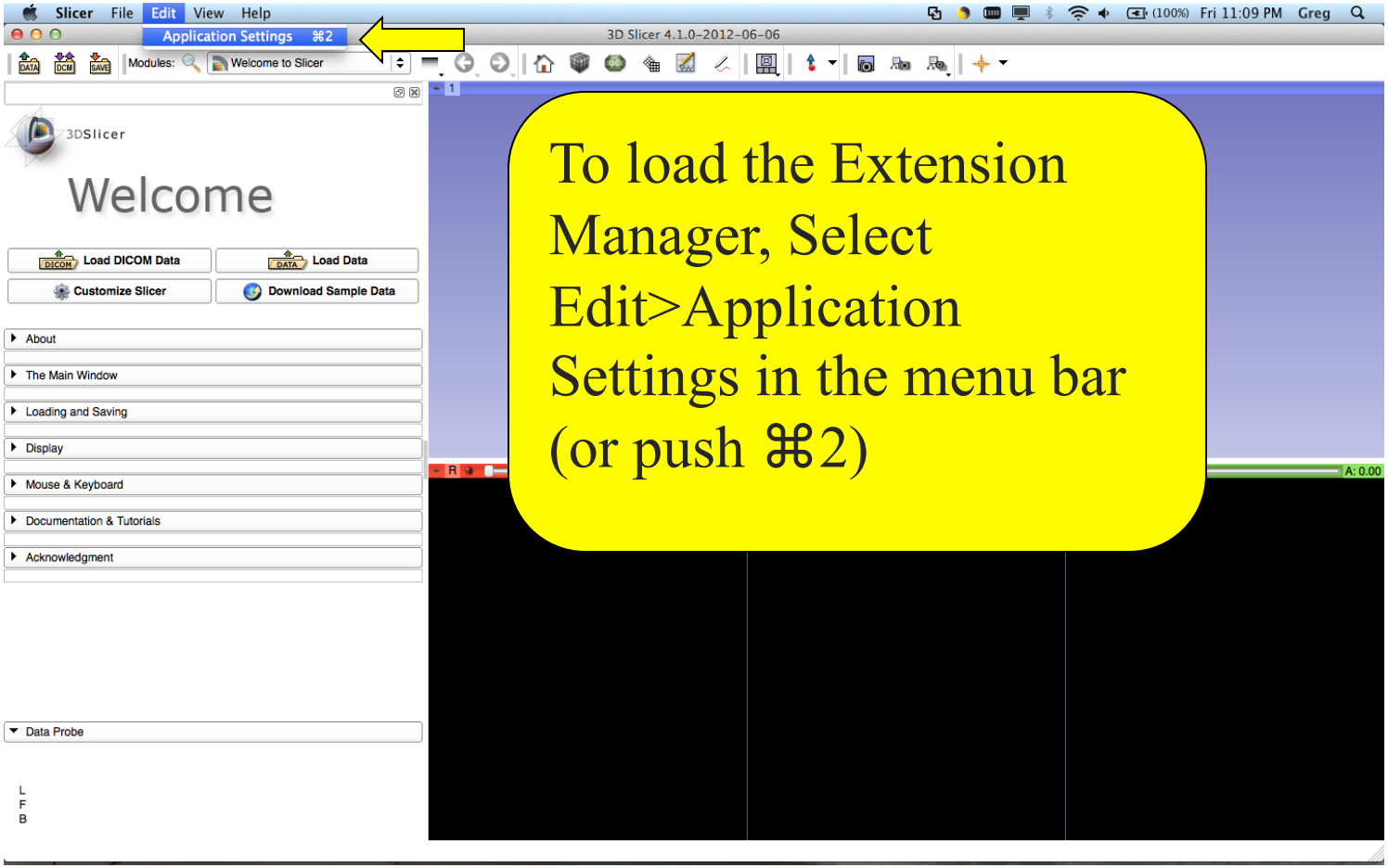
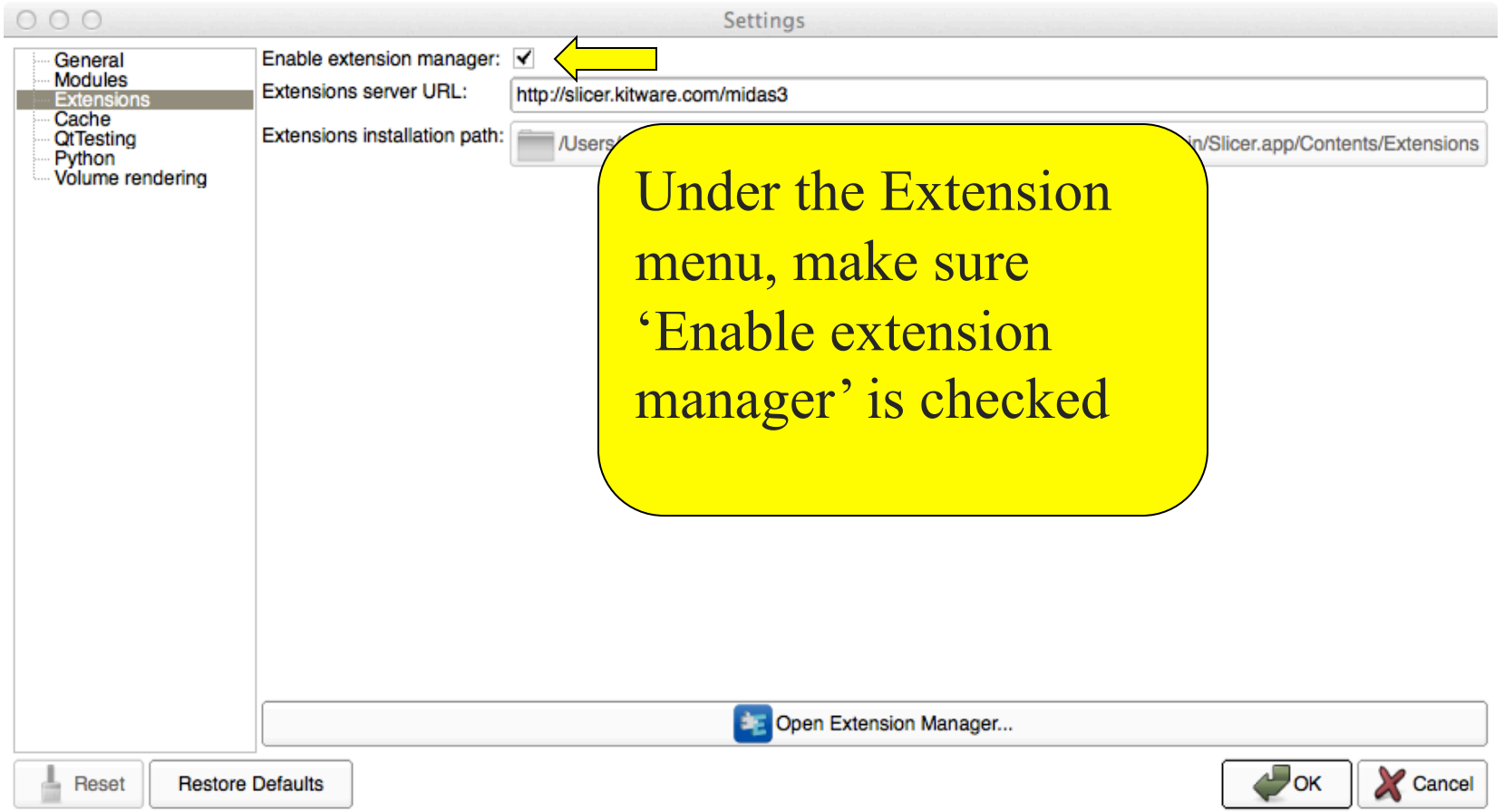
Loading the Module



Loading the Module

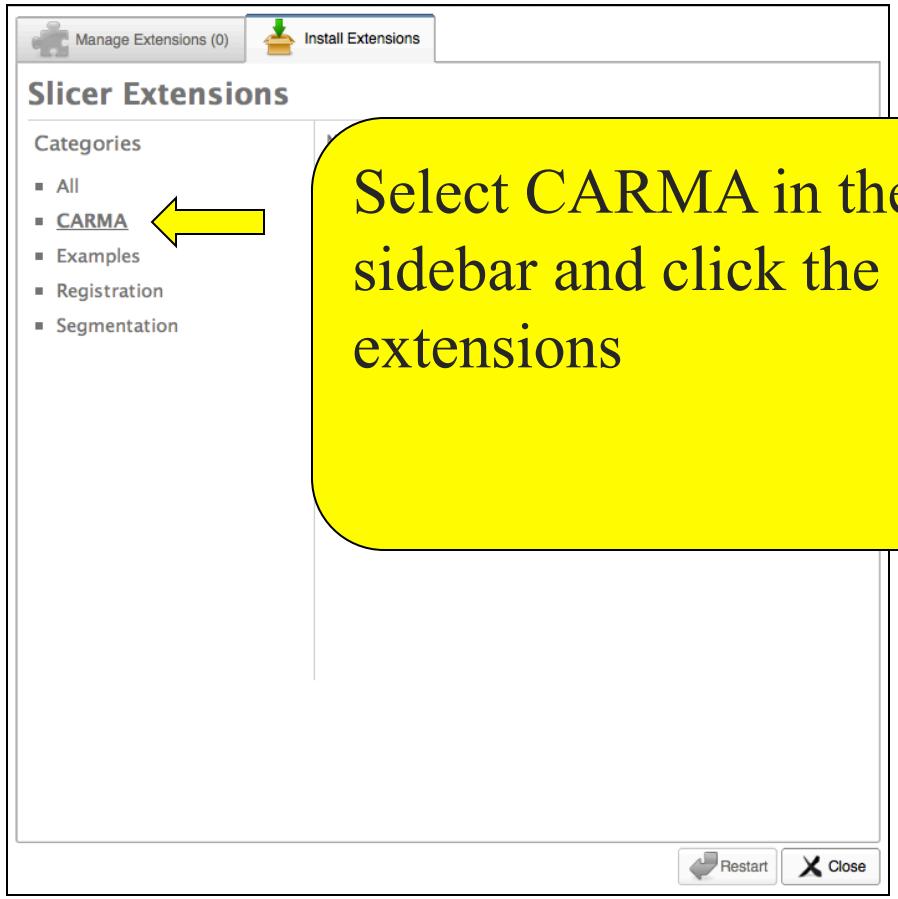


Loading the Module



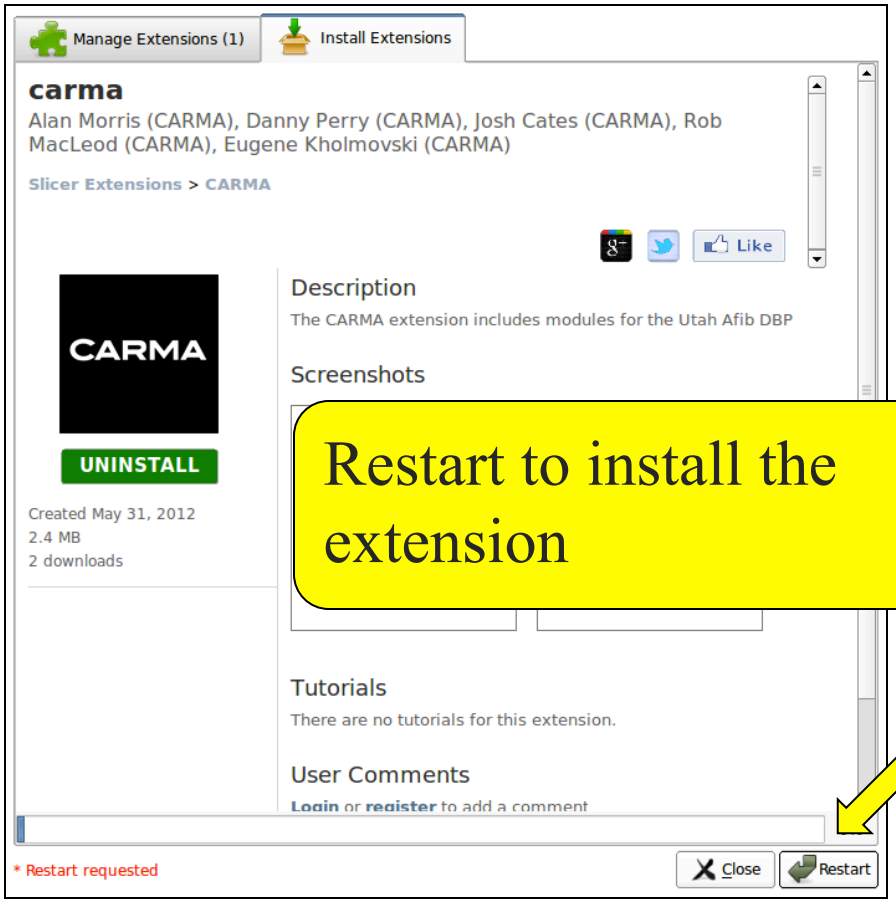
Under the Extension menu, make sure 'Enable extension manager' is checked

Loading the Module

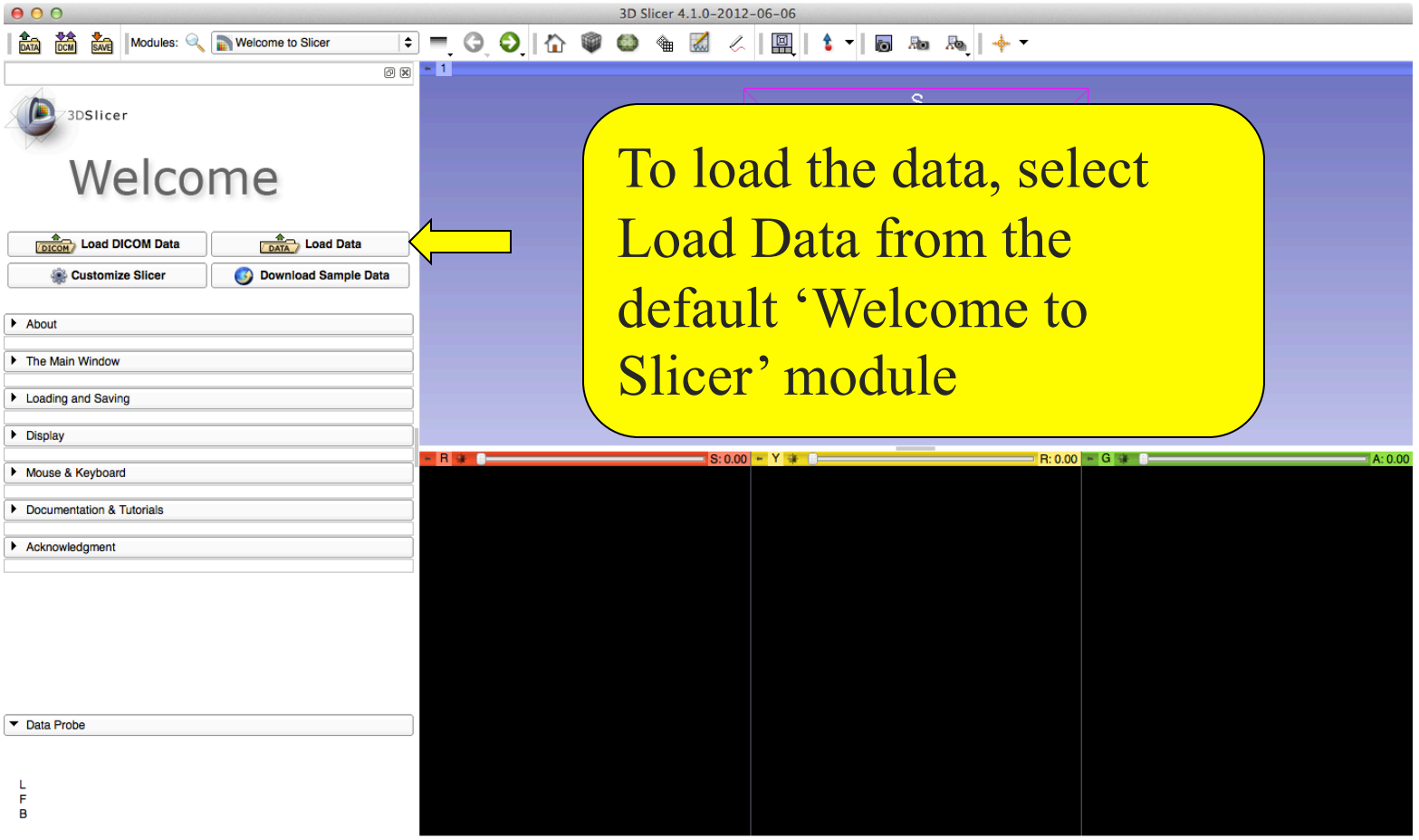


Select CARMA in the sidebar and click the extensions

Loading the Module



Loading the Data



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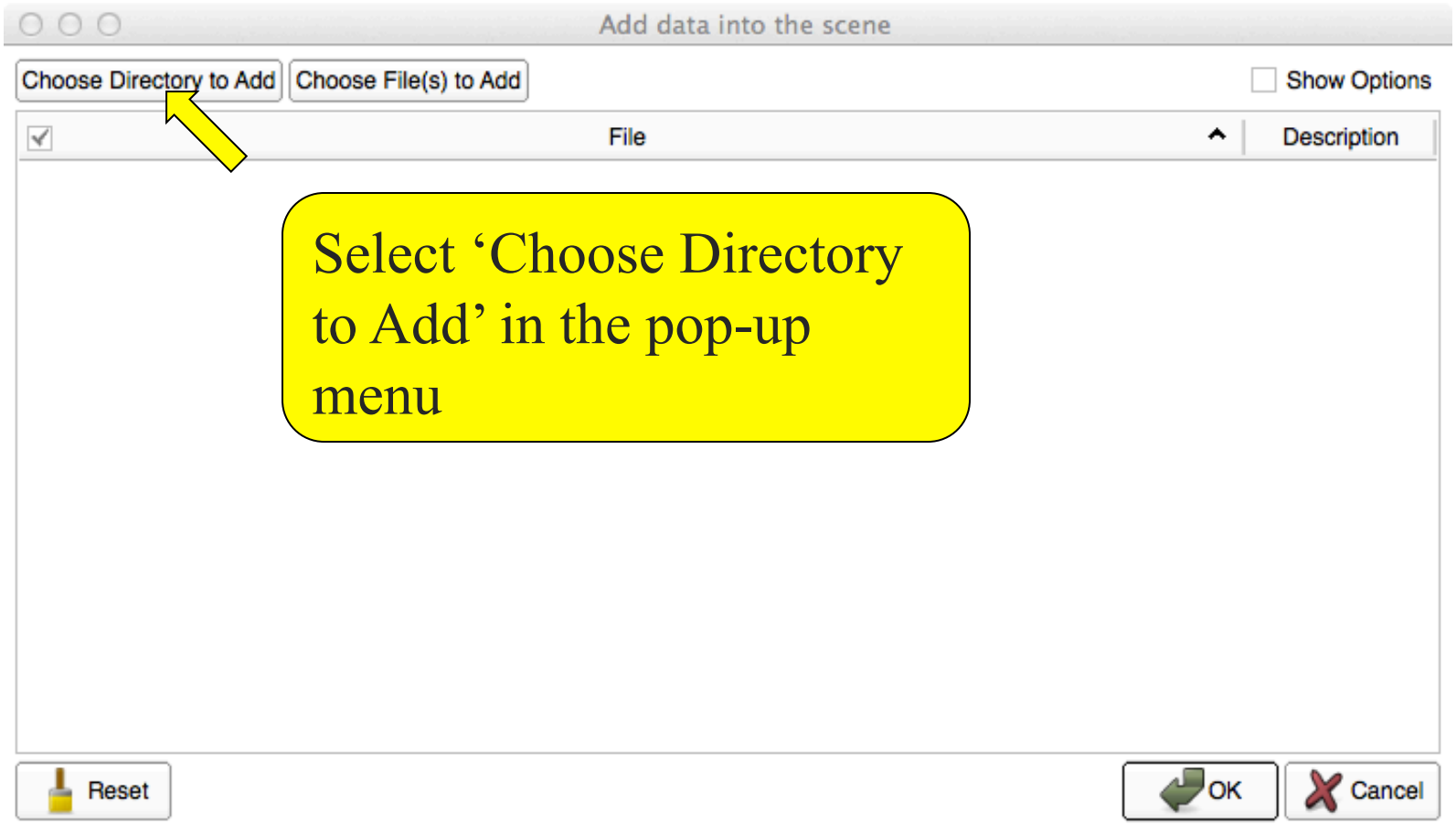

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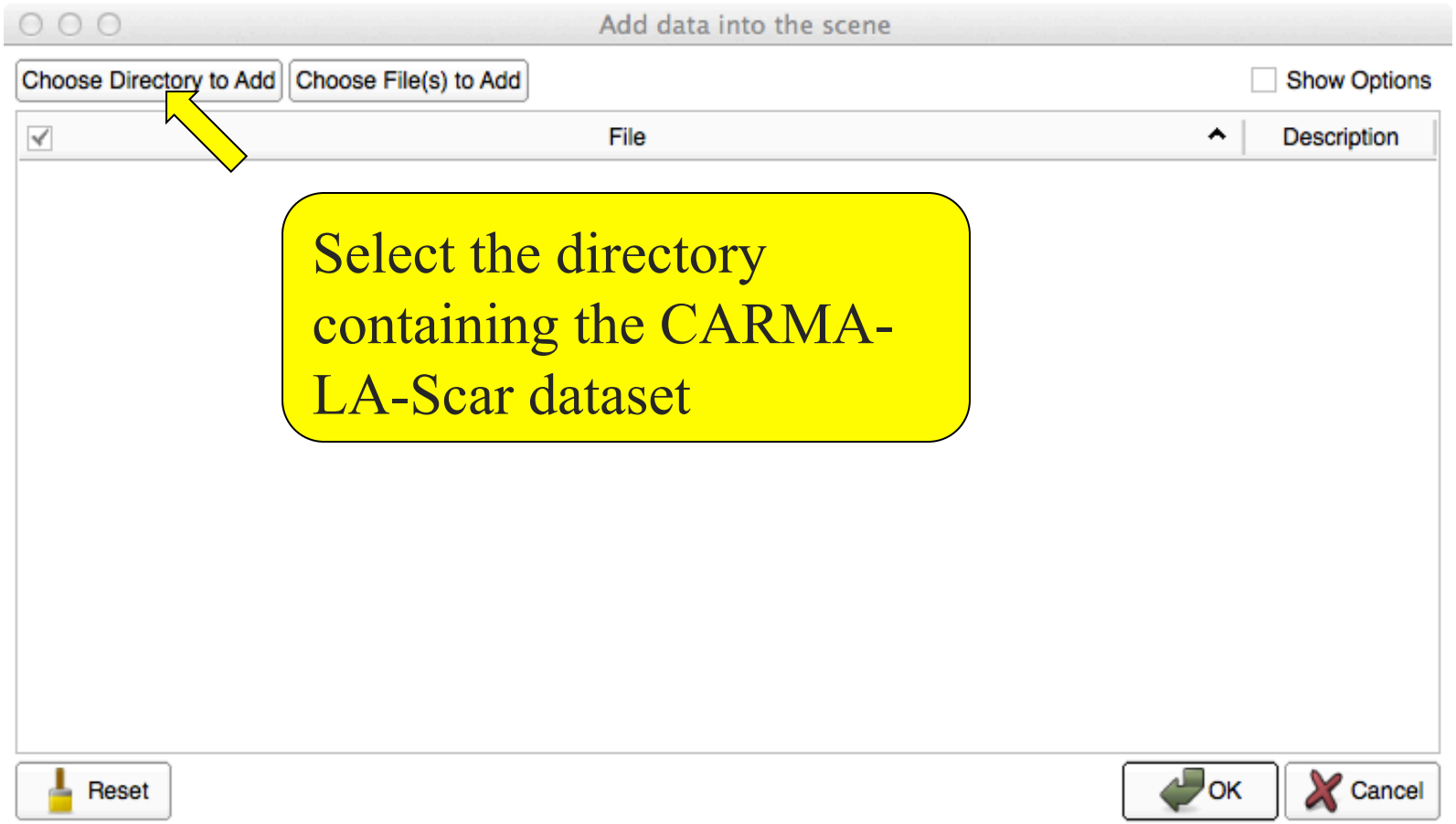

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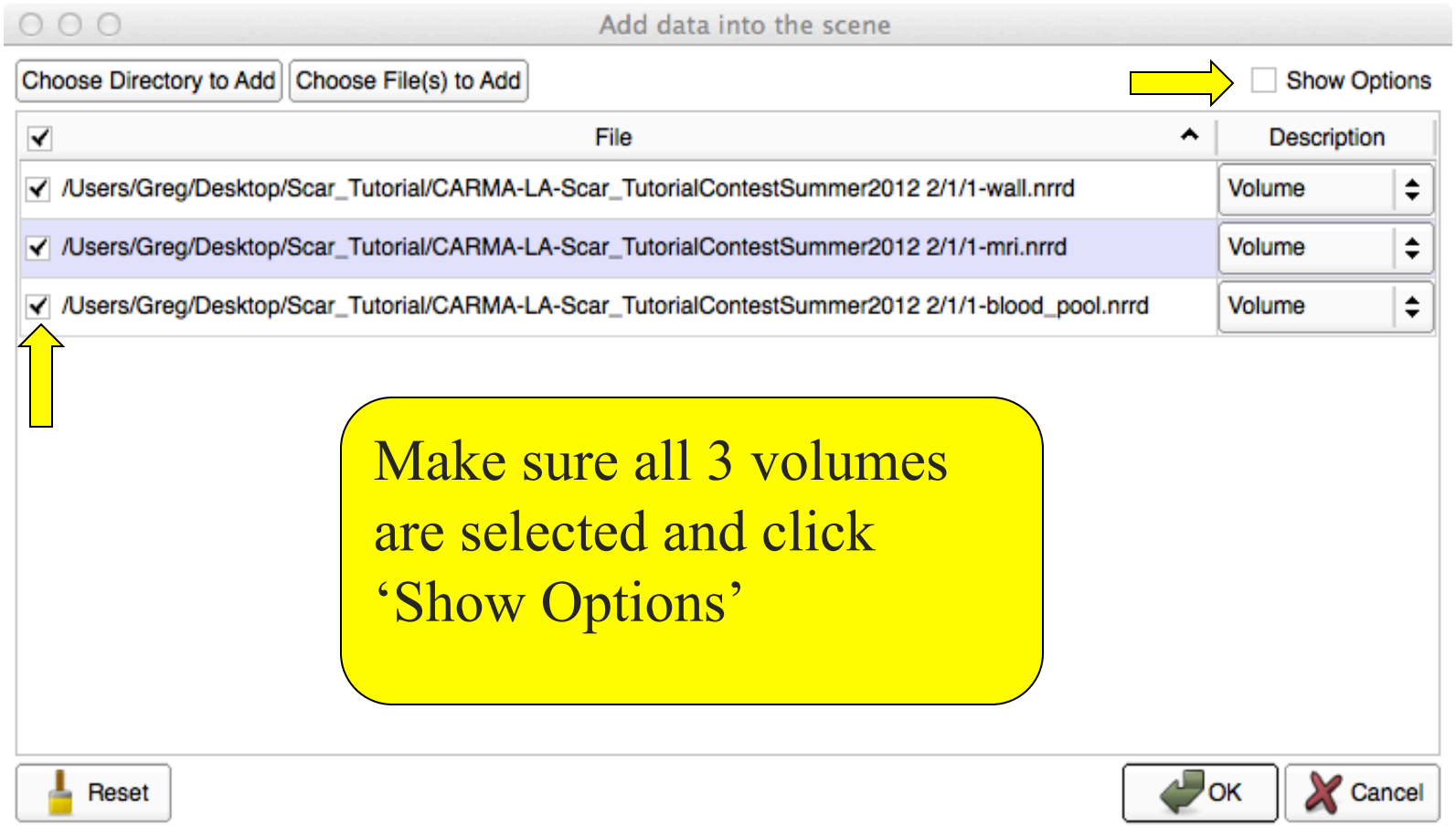

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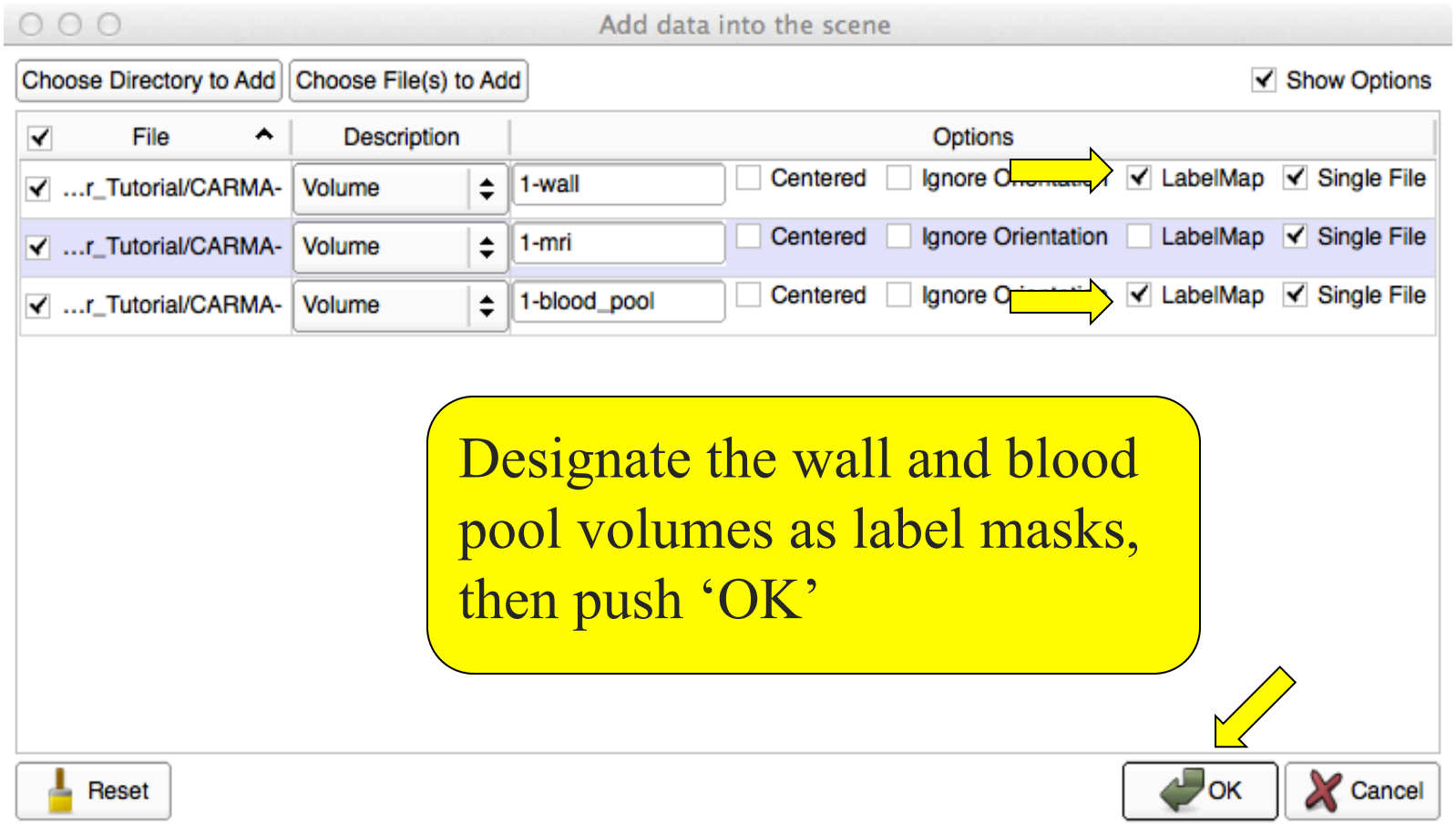
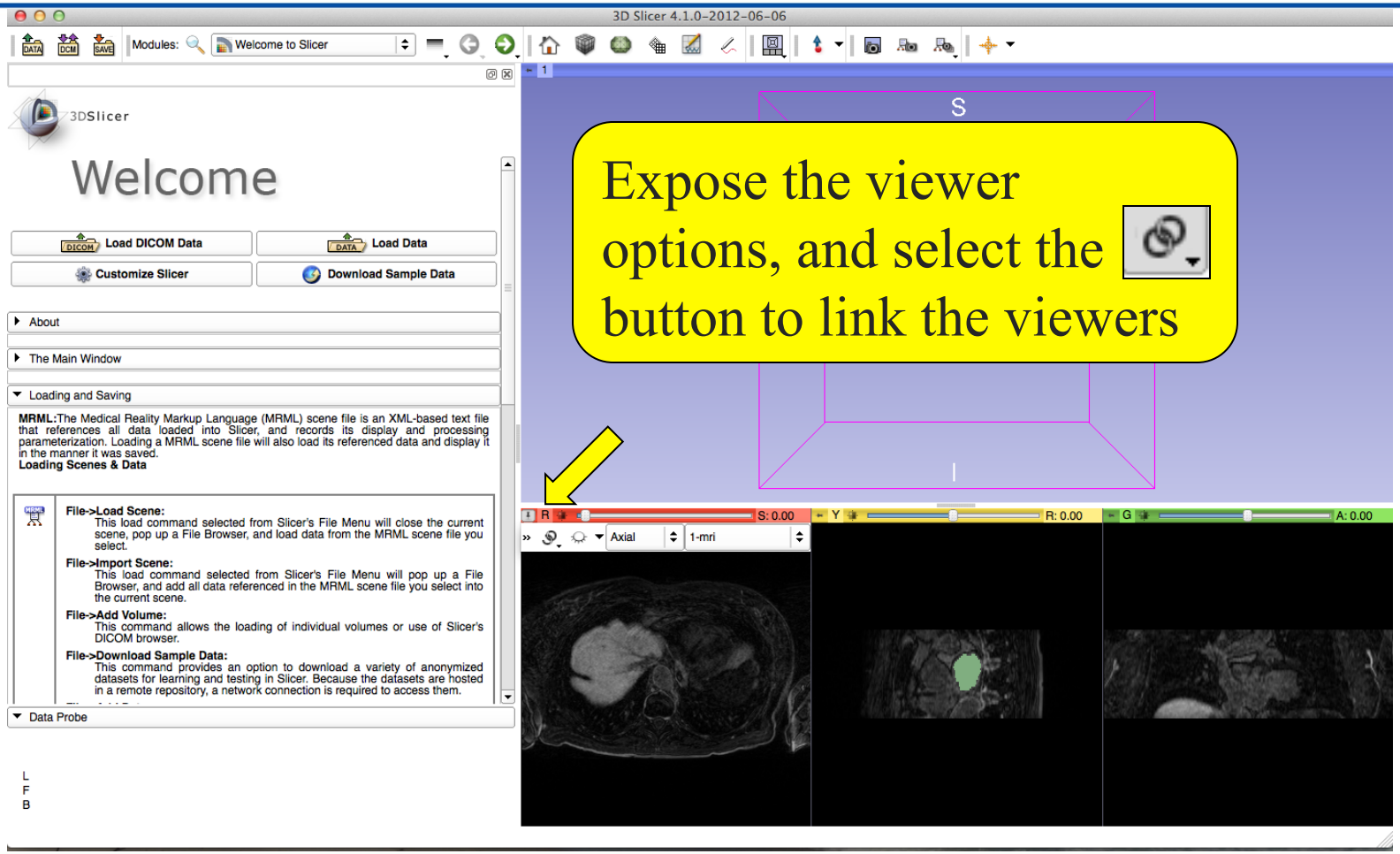
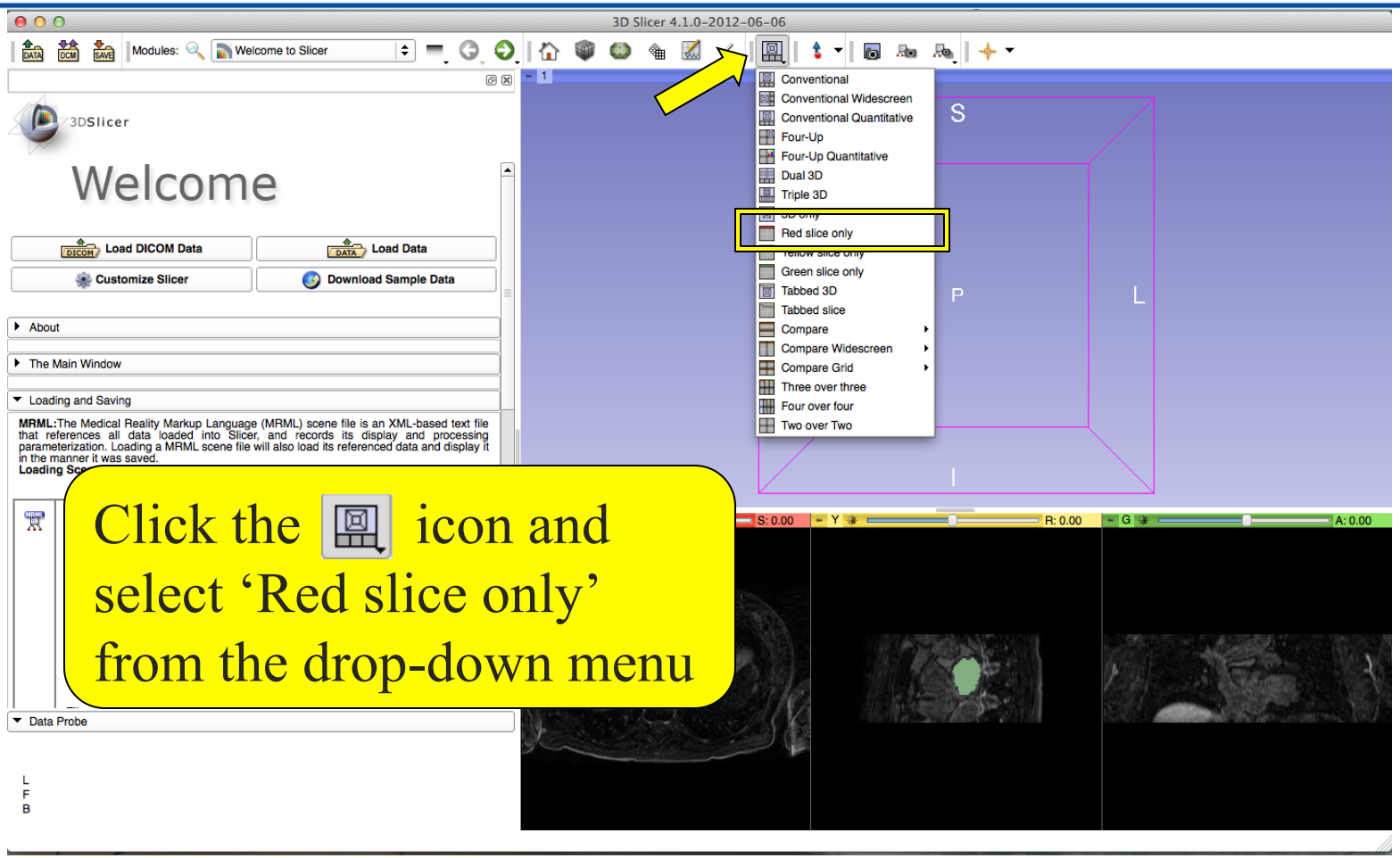


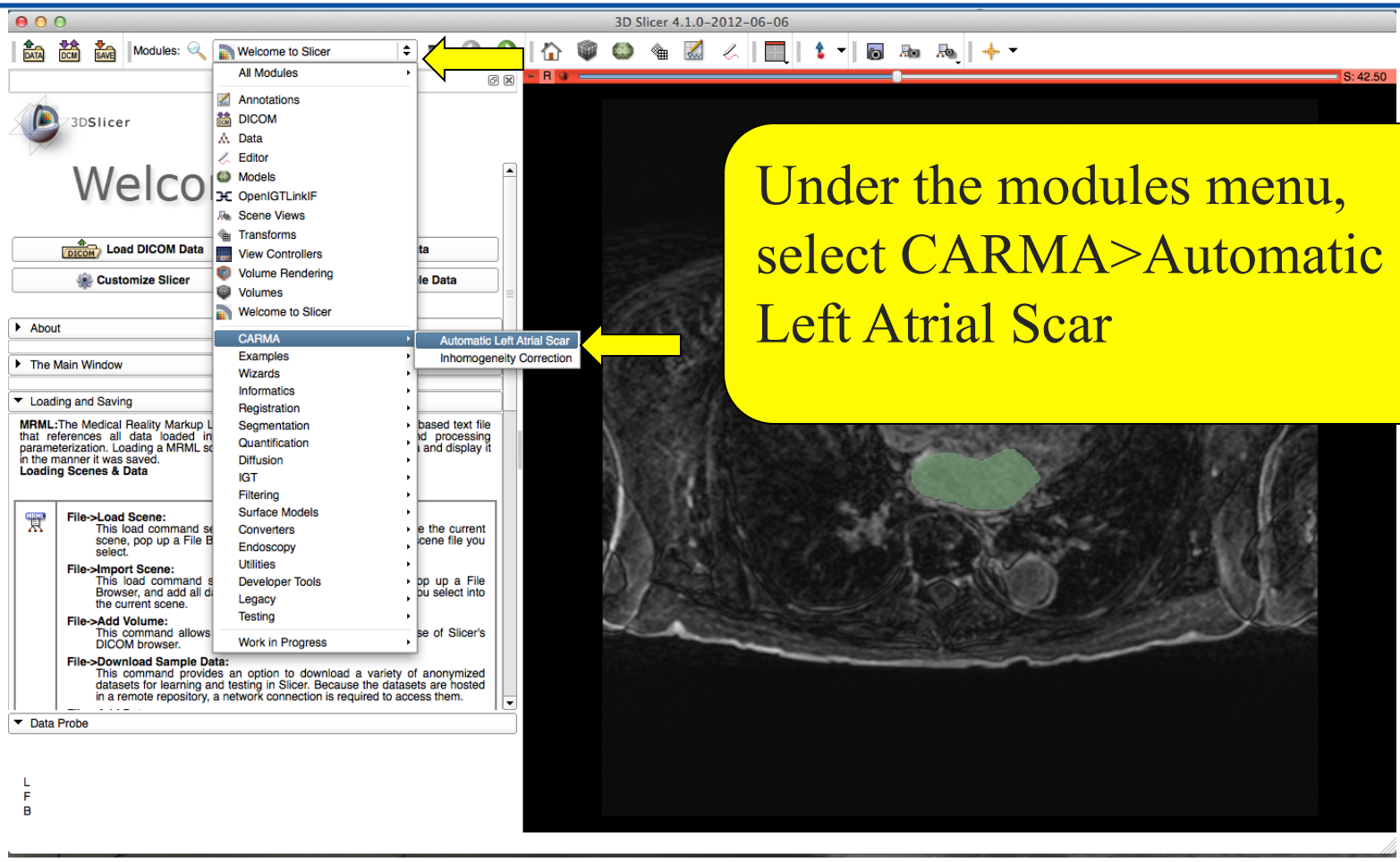
Adjusting the Viewer



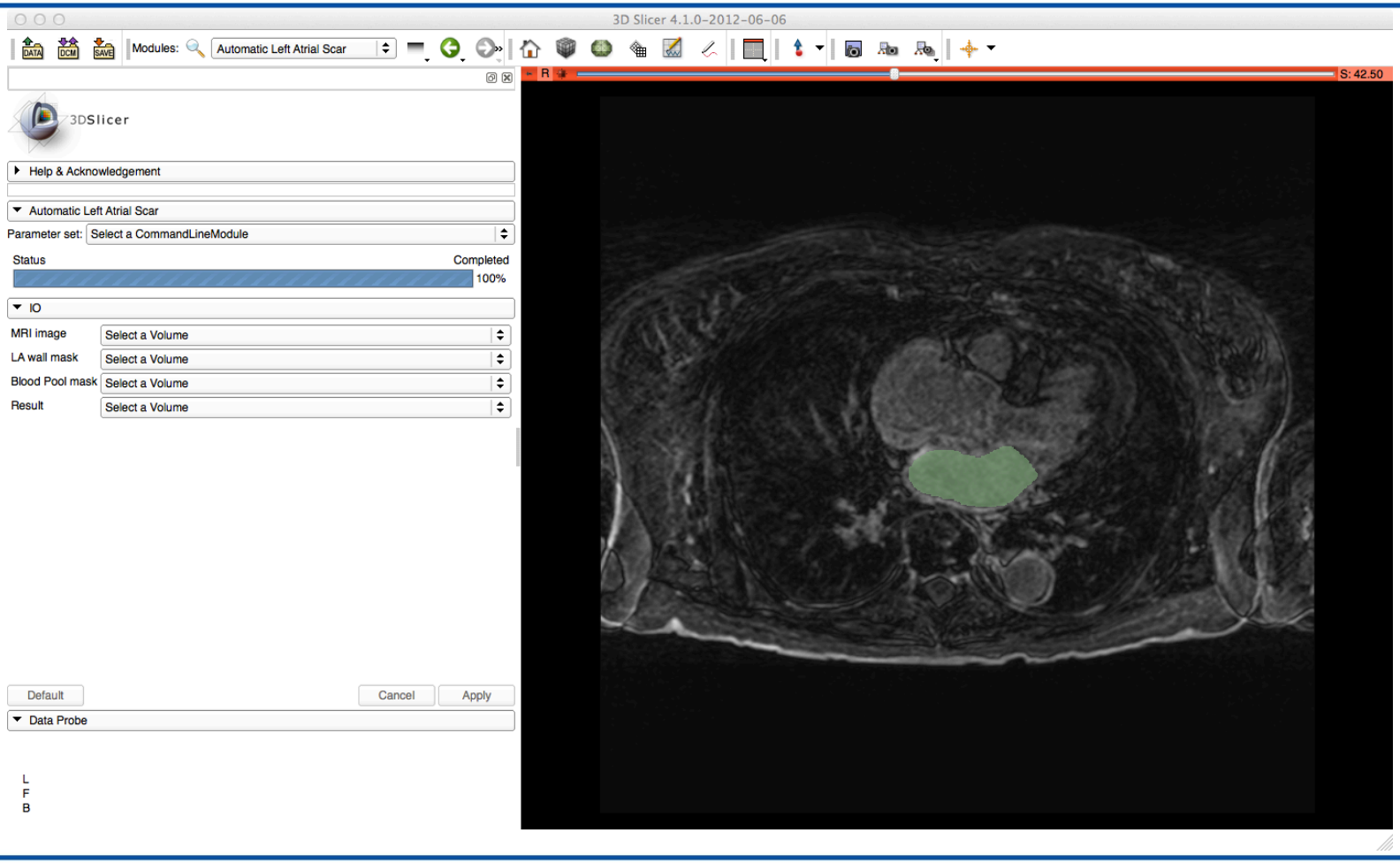
Adjusting the Viewer



Automatic Scar Detection



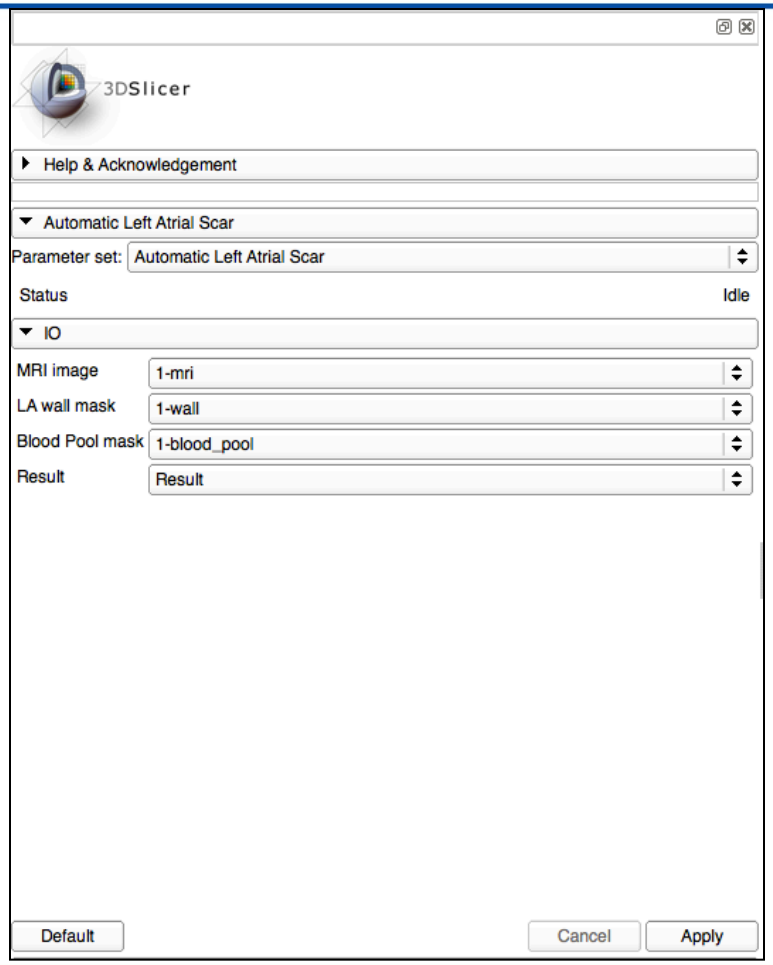
Automatic Scar Detection



Automatic Scar Detection

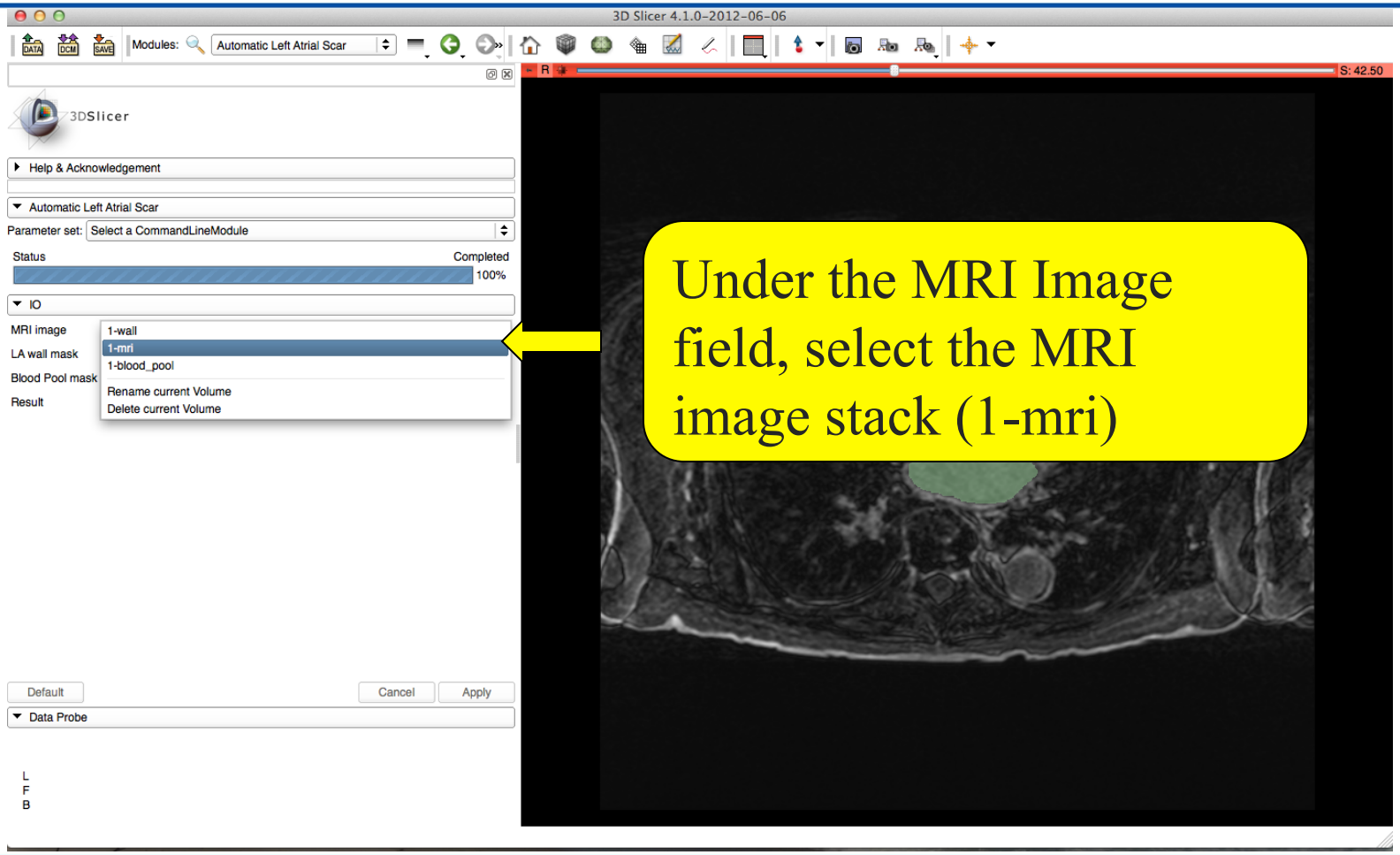
Input volumes

Output volume

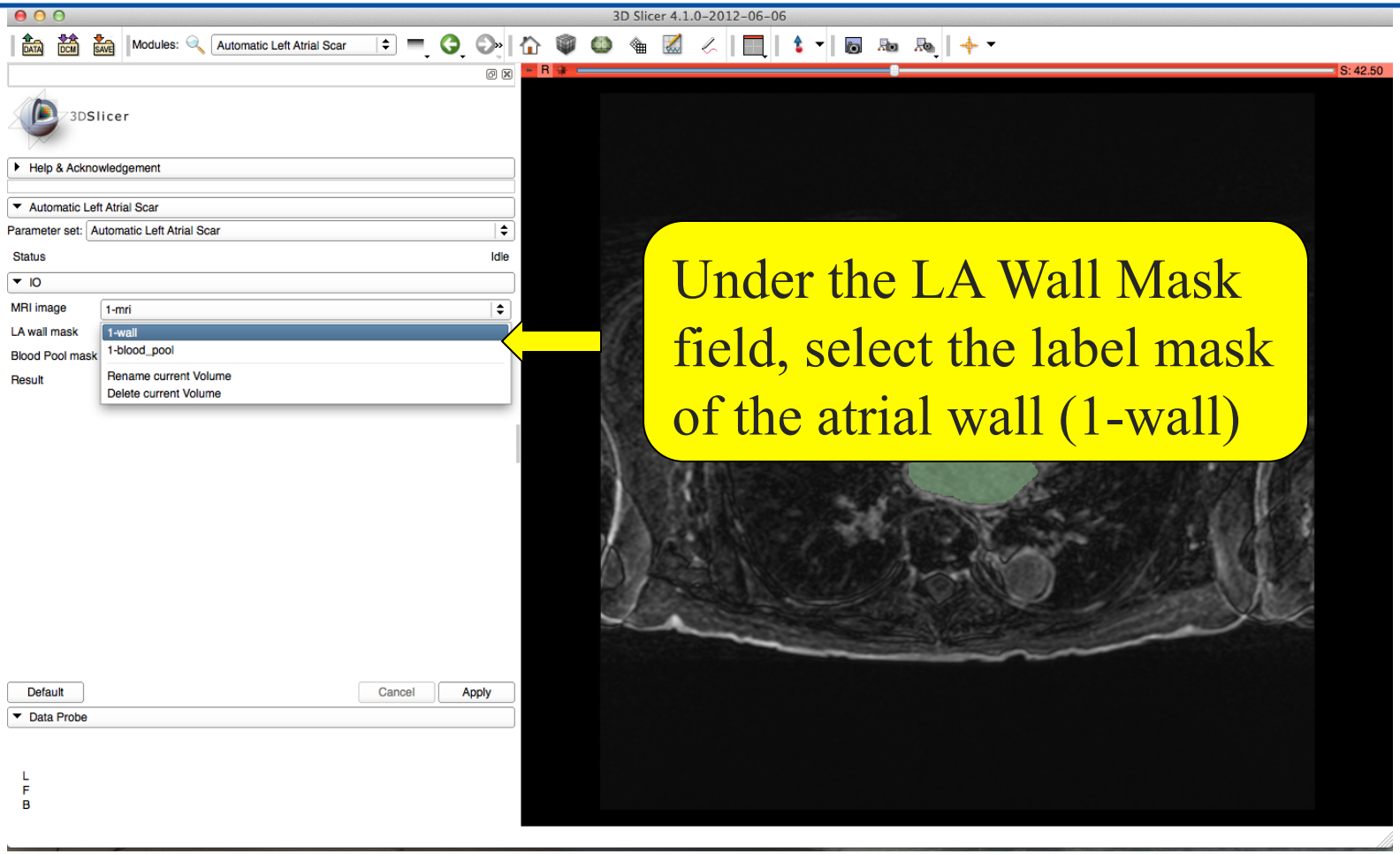


Parameter Sets

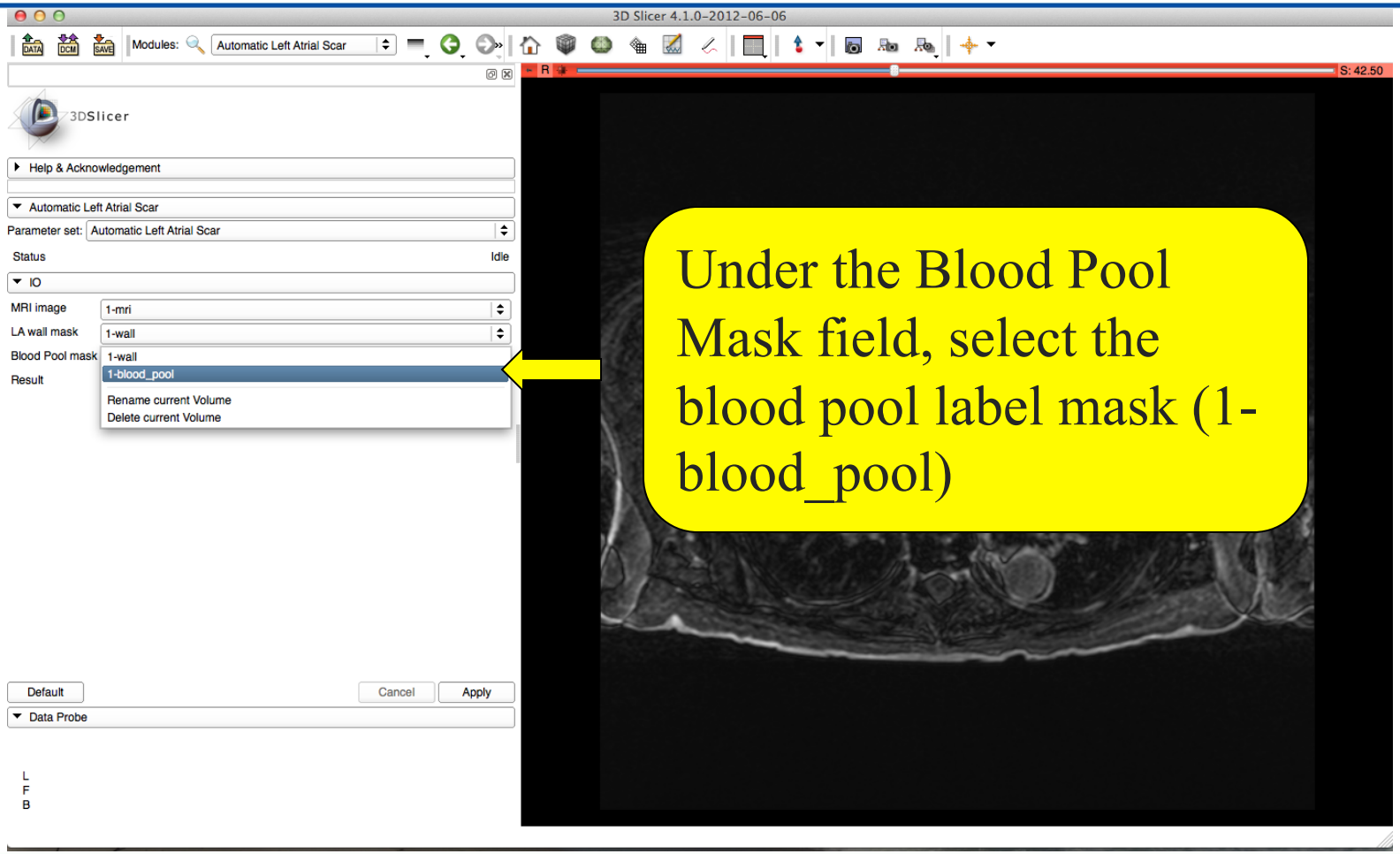
Automatic Scar Detection



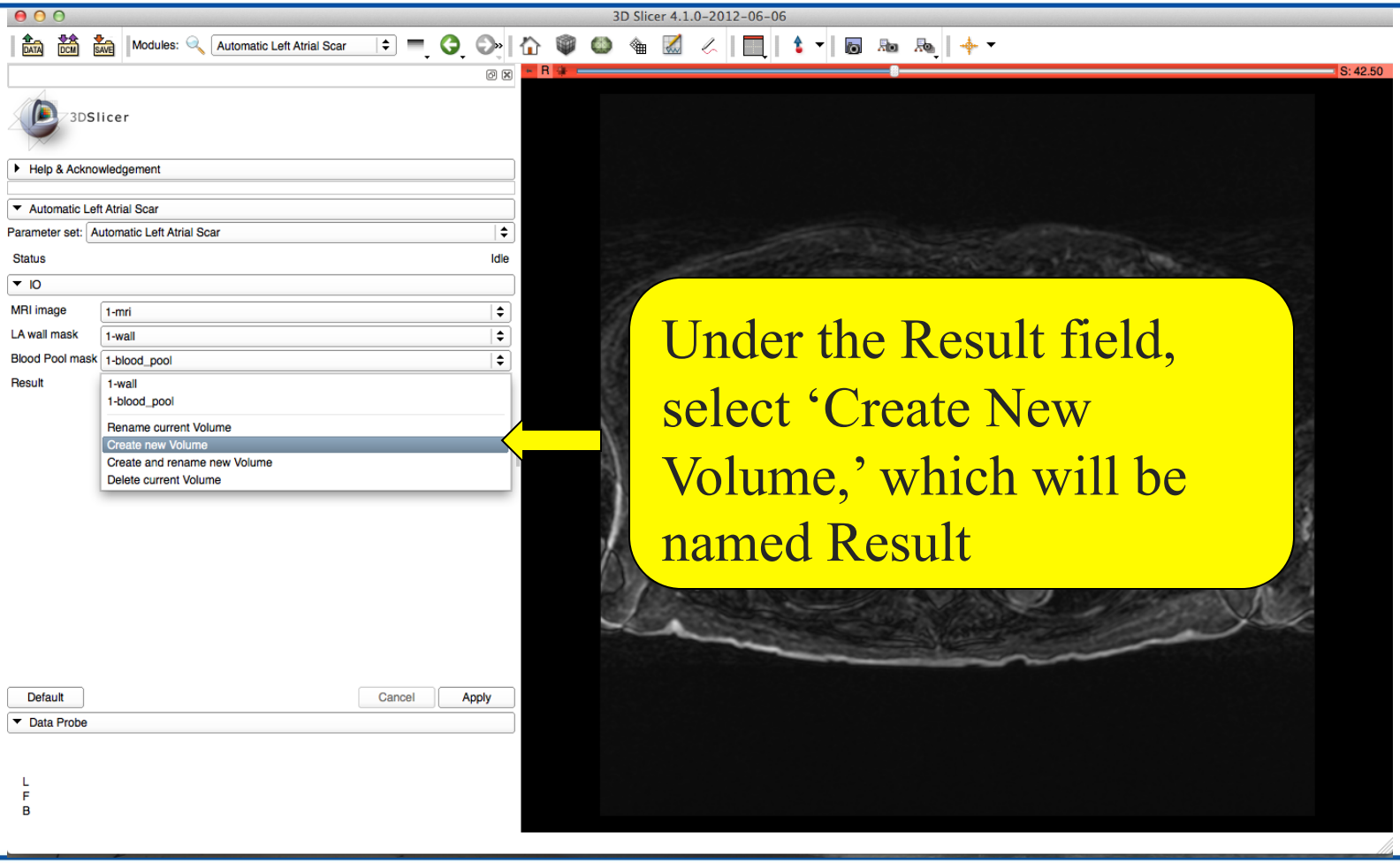
Automatic Scar Detection



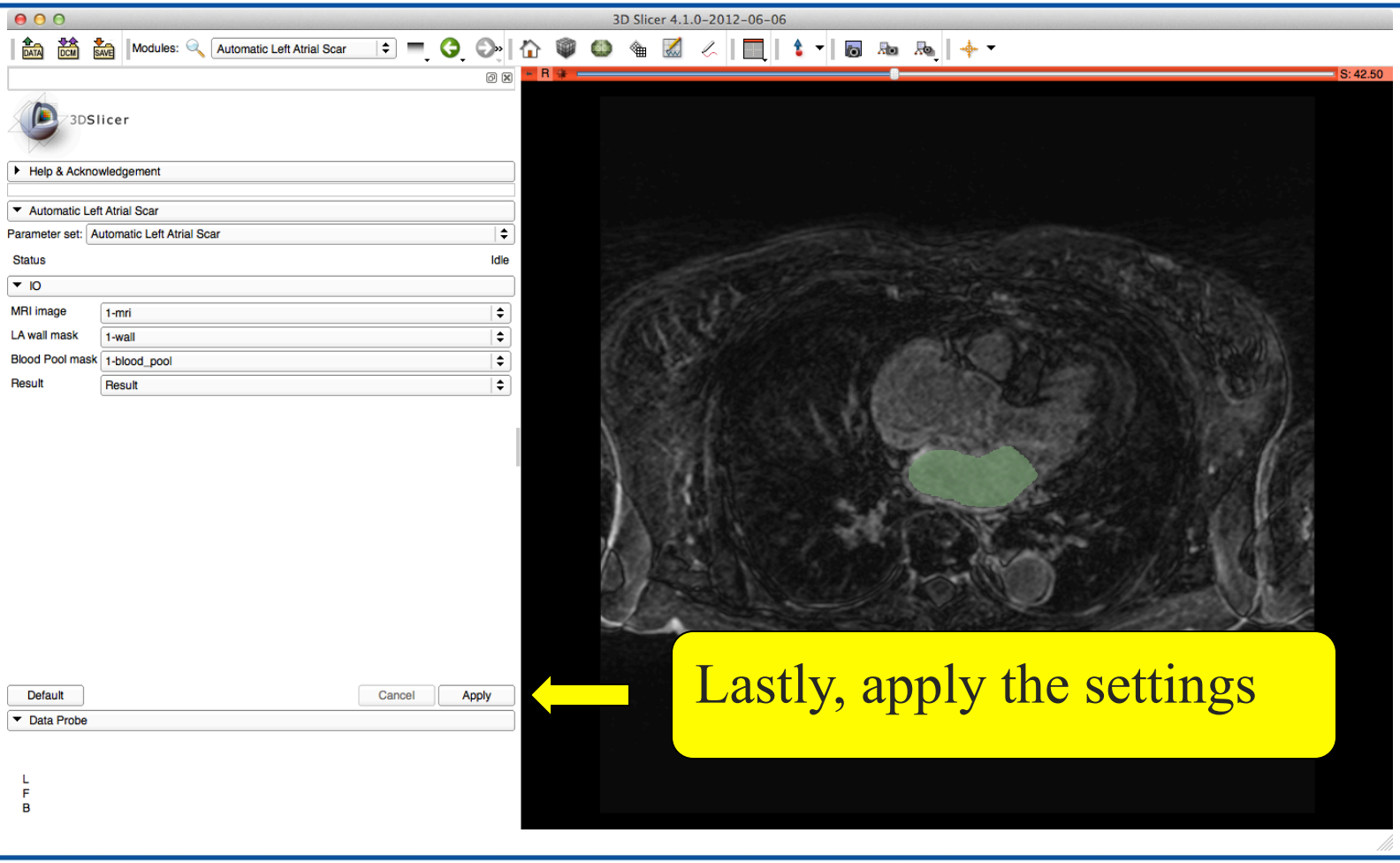
Automatic Scar Detection



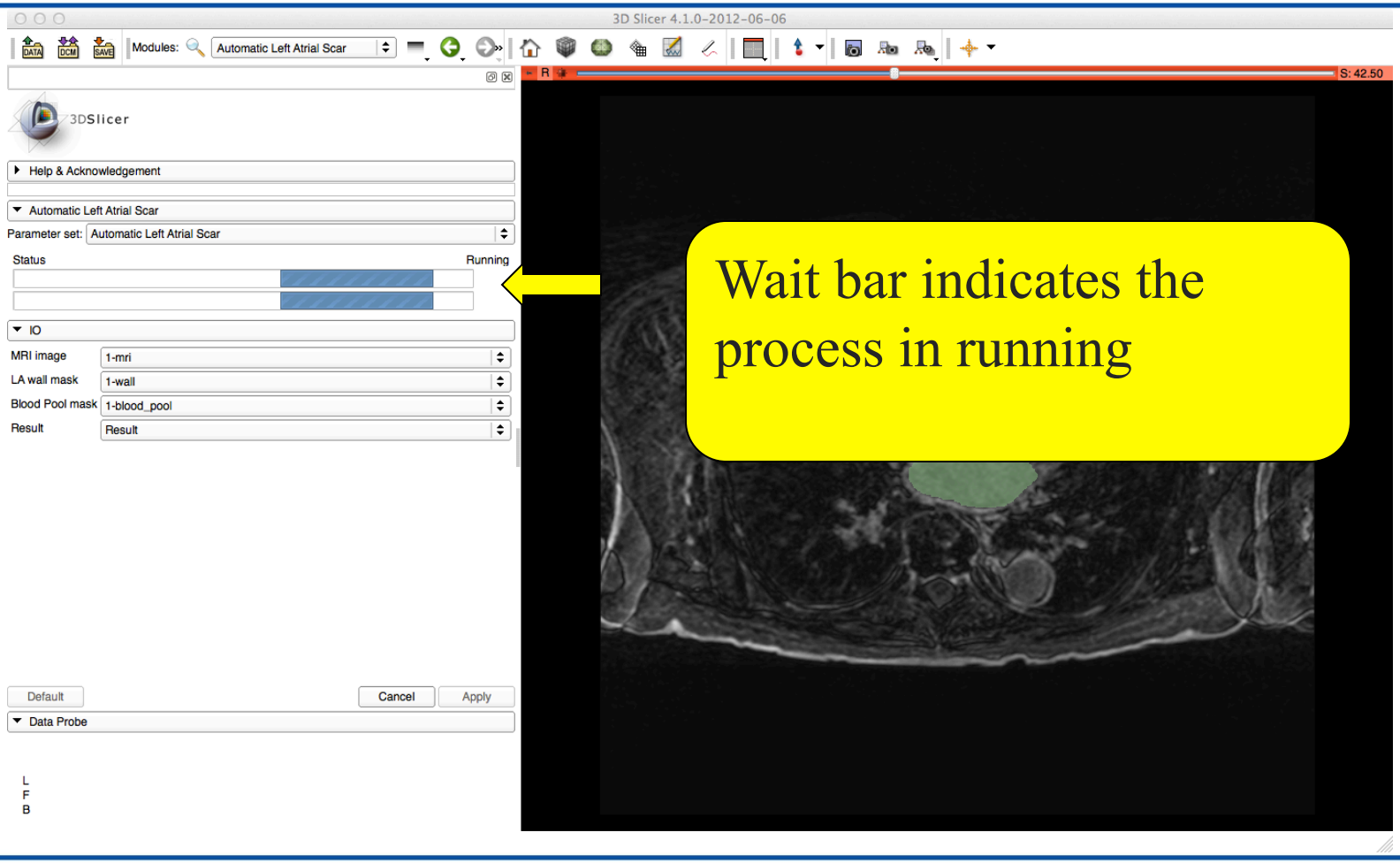
Automatic Scar Detection



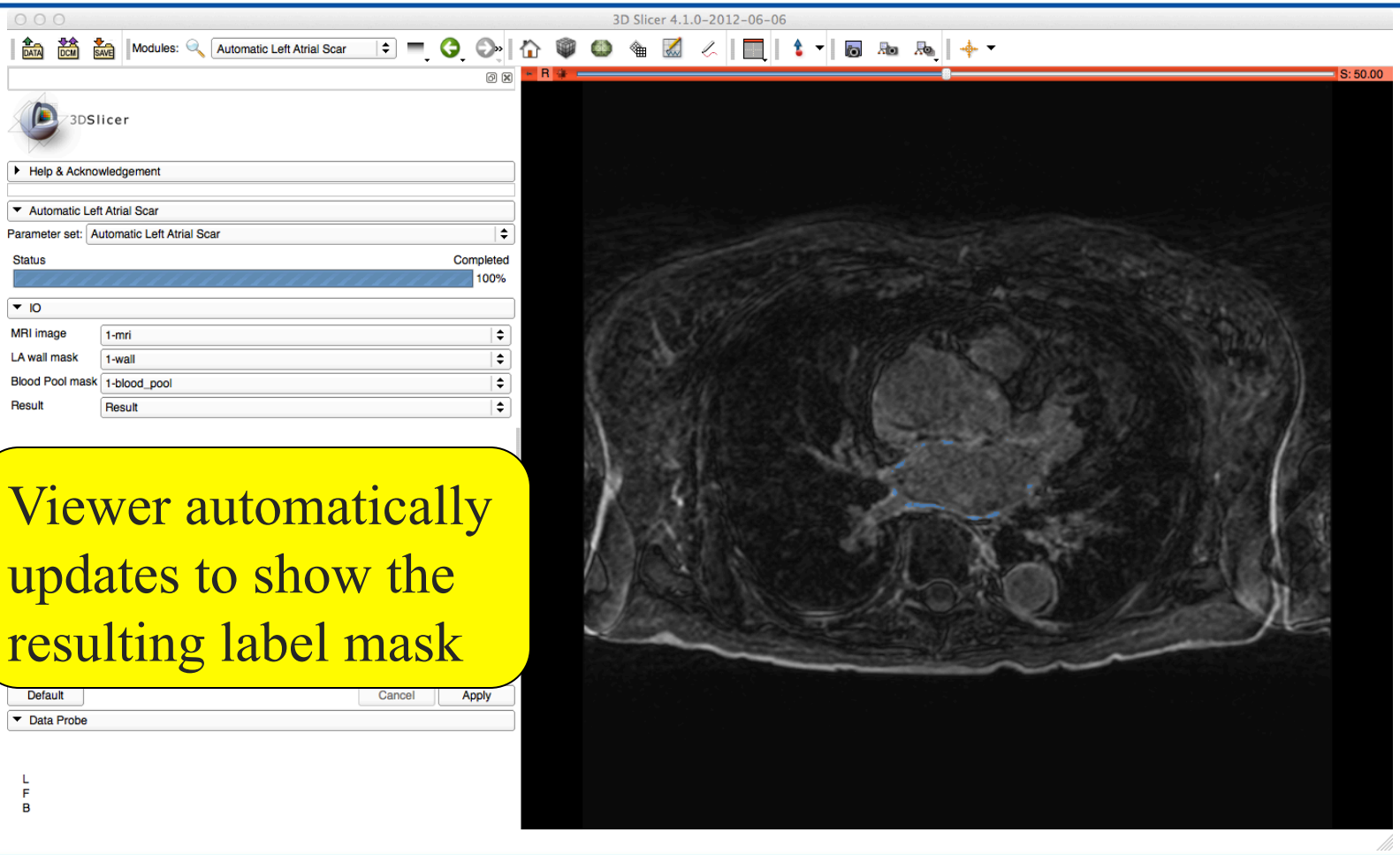
Automatic Scar Detection



Automatic Scar Detection

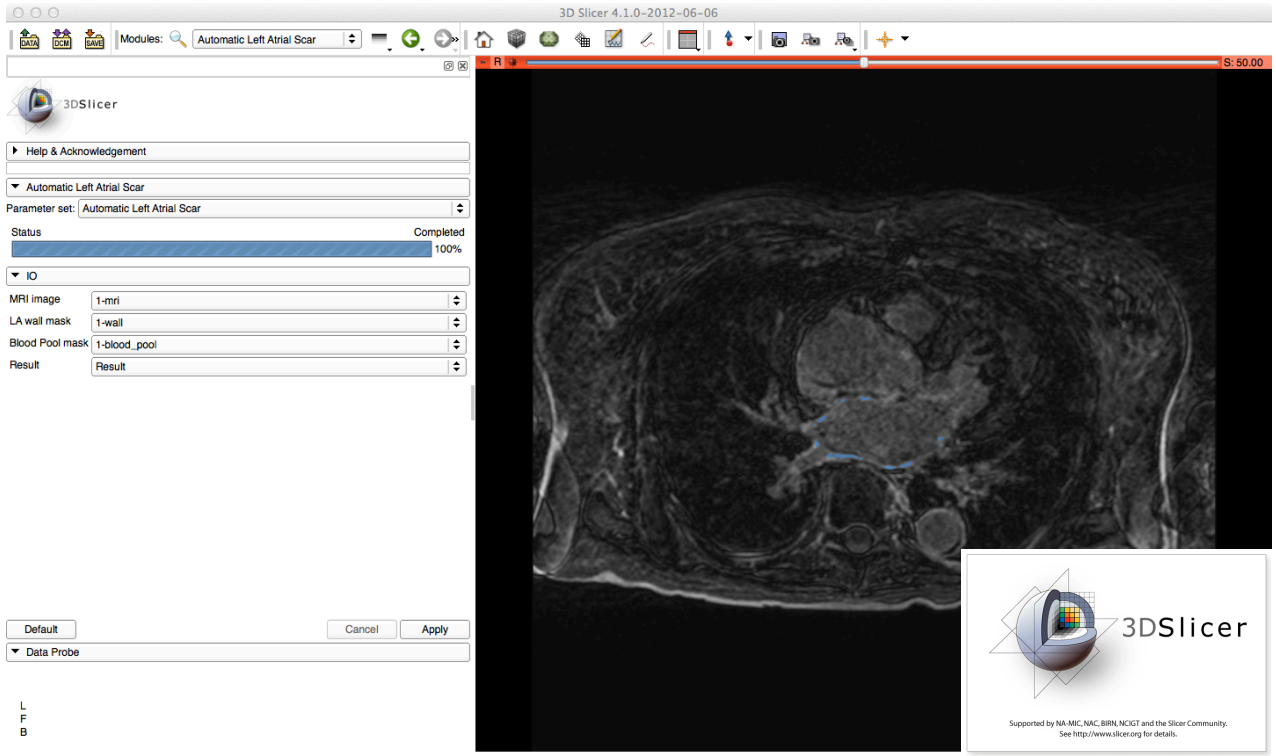


Automatic Scar Detection



Viewer automatically updates to show the resulting label mask

Conclusion



Student can use the module to automatically detect LA scar in Slicer 4.1

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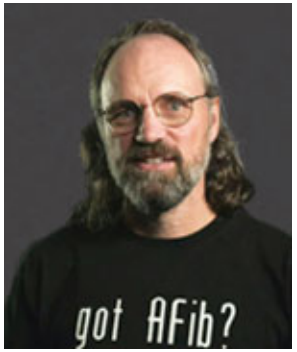
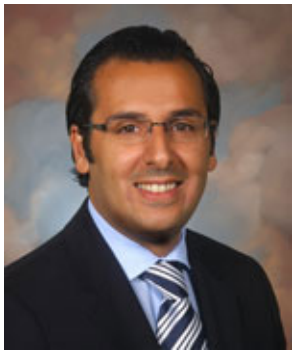
Acknowledgments

National Alliance for Medical Image Computing

NIH U54EB005149





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