NeuroFlow User Manual

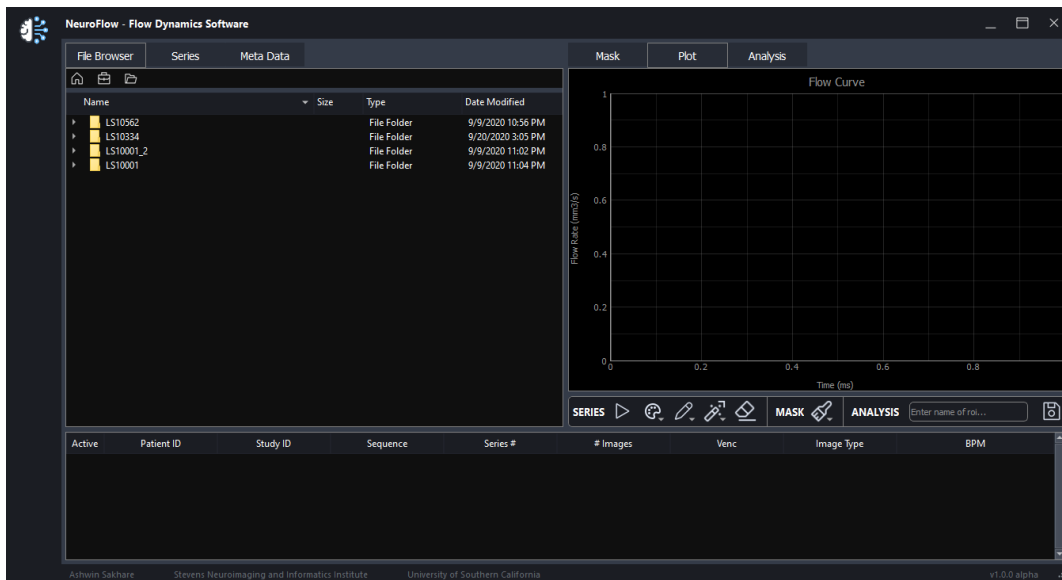**Ashwin Sakhare**

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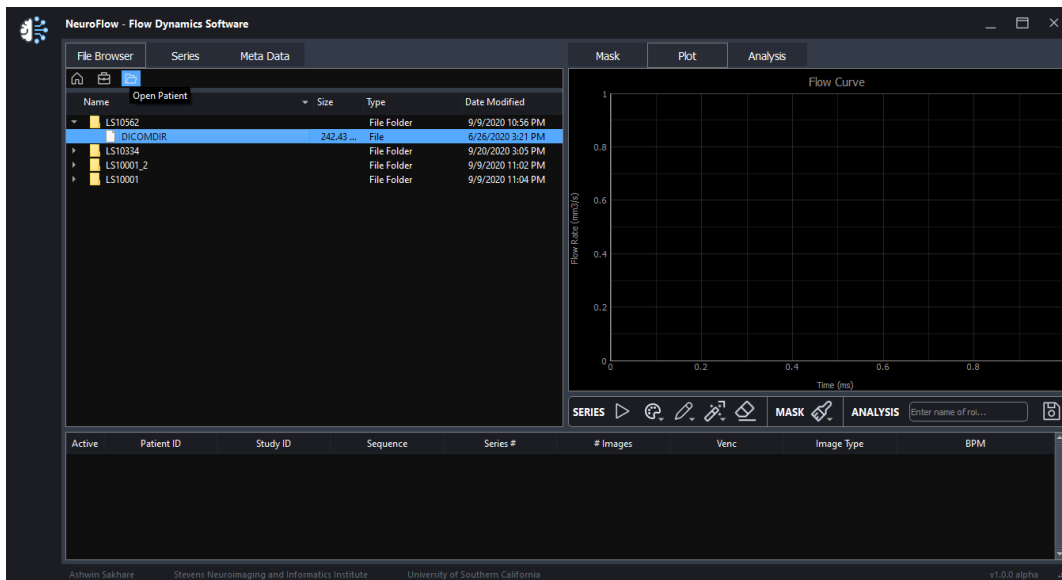
# I.   Loading Patient Data

1. Open NeuroFlow.

2. Select the <u>File Browser</u> tab. Select the DICOMDIR file associated with the patient to be analyzed. Select the icon to load the patient.

   Note: Patient can also be loaded by double clicking the highlighted selection.

3. Click inside the toggle box associated with the Series you would like to load. The toggle boxes for each available series are in the left most column of the patient table.
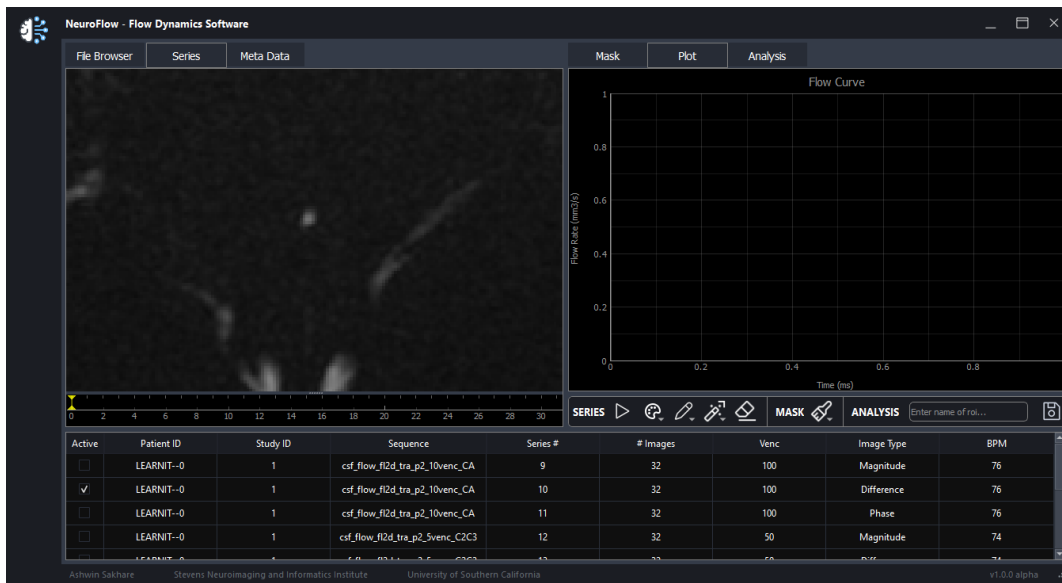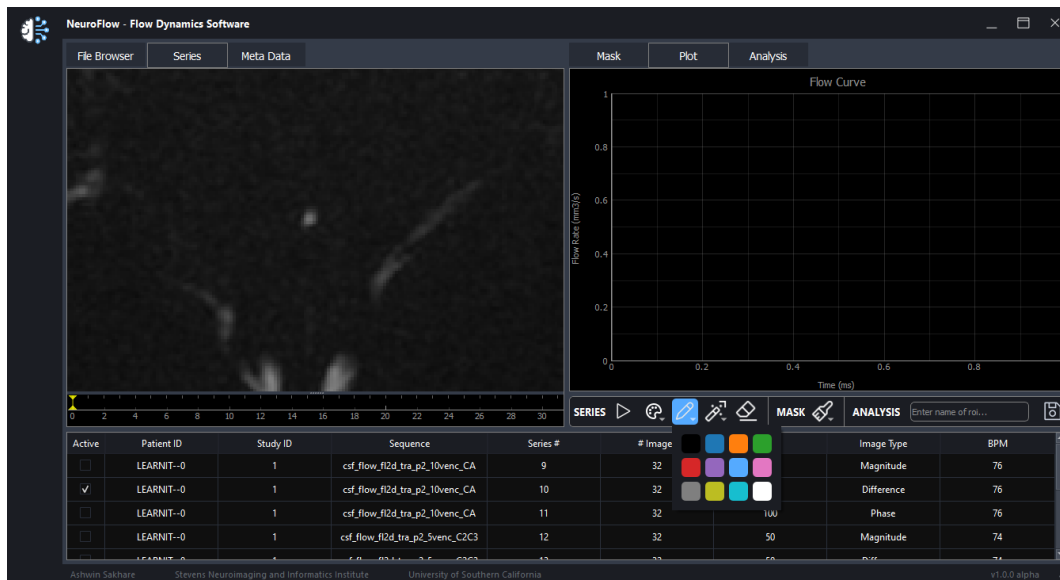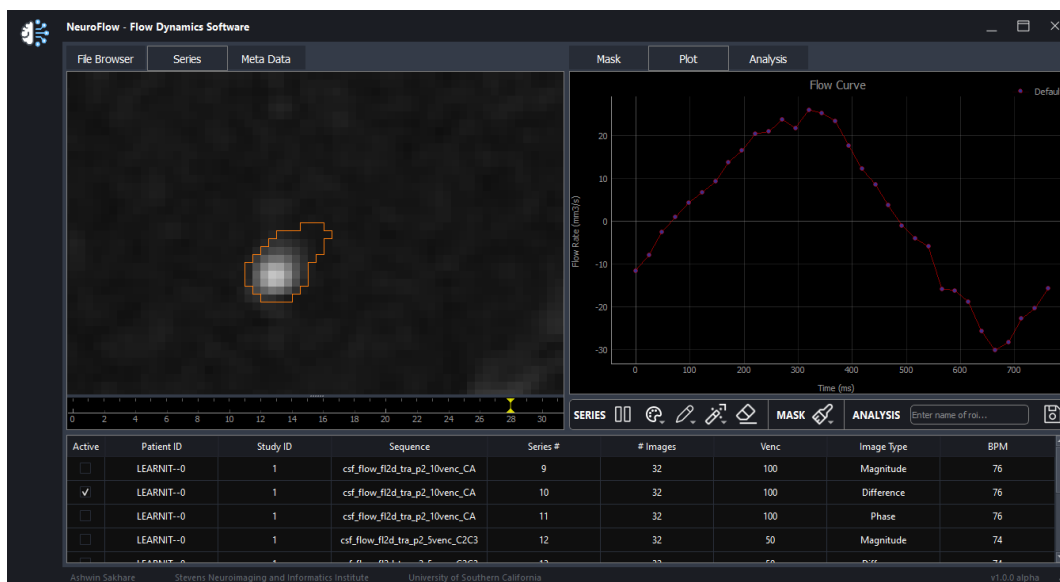
II.   Segmenting ROI

1. Select the <u>Series</u> tab. Click anywhere inside the left view panel.

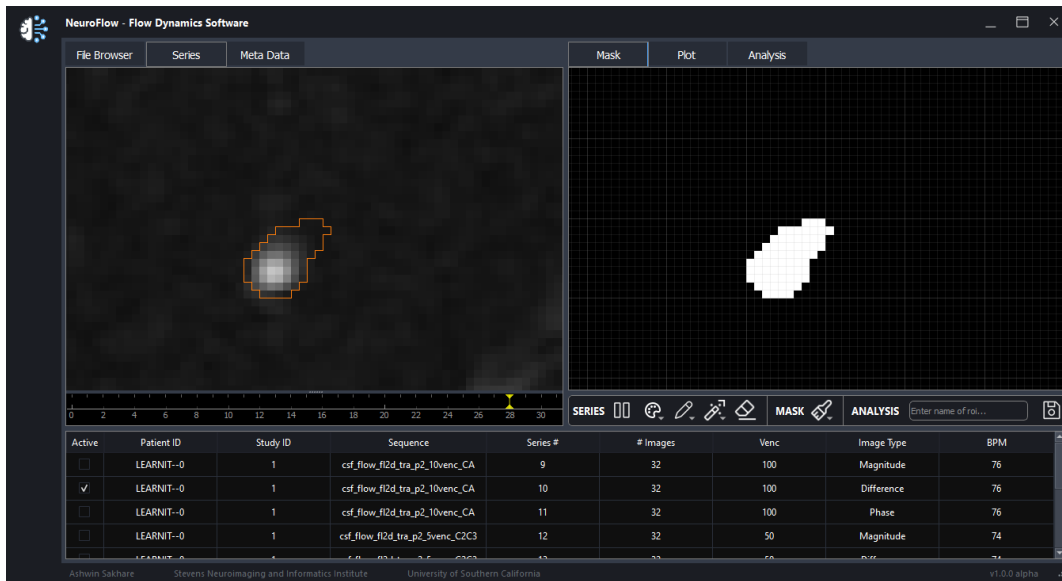   Note: See *View Options* section for options regarding manipulating series and mask views.

2. Select the ✏️ icon to display a color palette of available segmentation pens. Select a color.
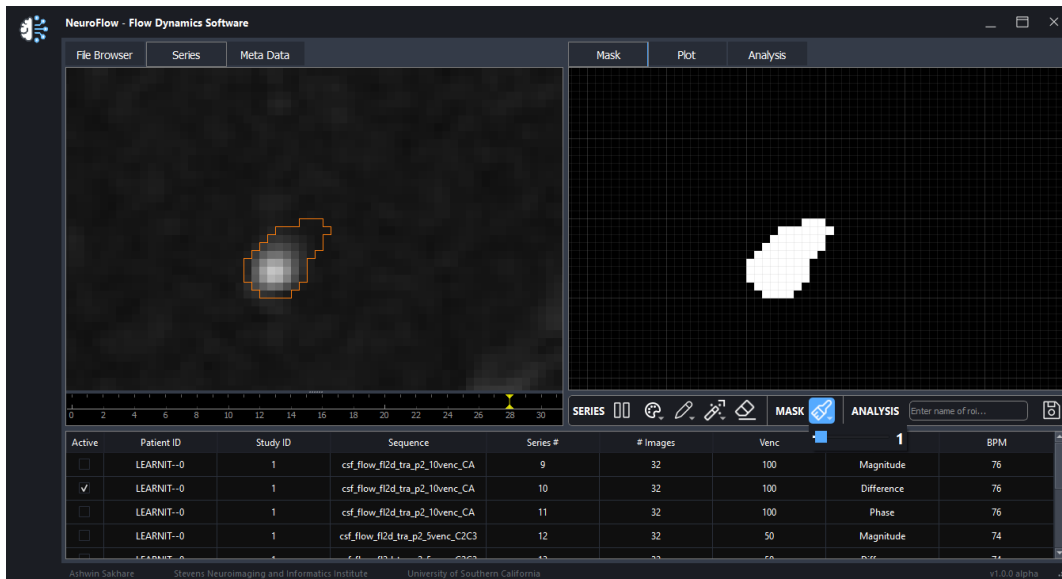

3. Press and drag the left mouse to draw a contour around the ROI.

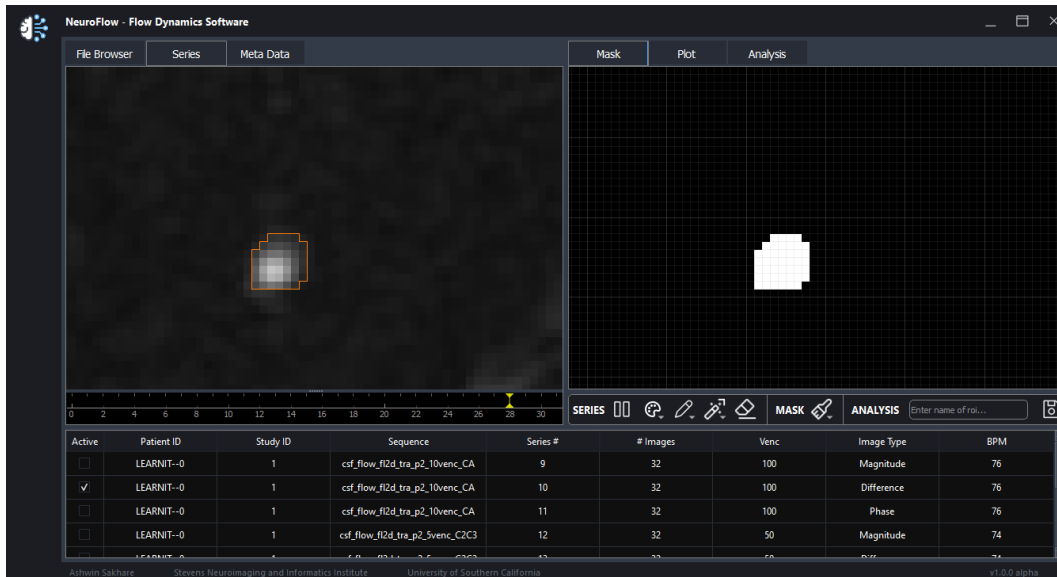4. To make fine adjustments to the segmentation, select the Mask tab.

5. Select the [icon] icon to display a slider of available stamp sizes. Select a size.

6. Click the left mouse over the desired square pixel on the mask view to add/remove a mask.

   Note: adjusting the Mask view will reset the colors in the Series view and any named ROI's will reset to "Default".
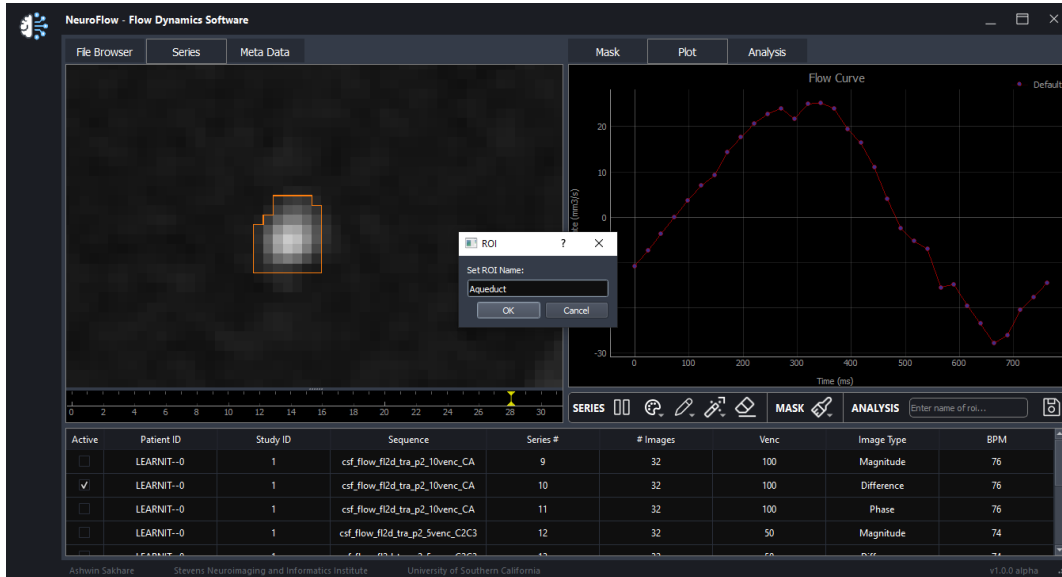

7. Hover the cursor over the segmentation contour in the Series view. Right click and select Rename ROI (Current: Default)
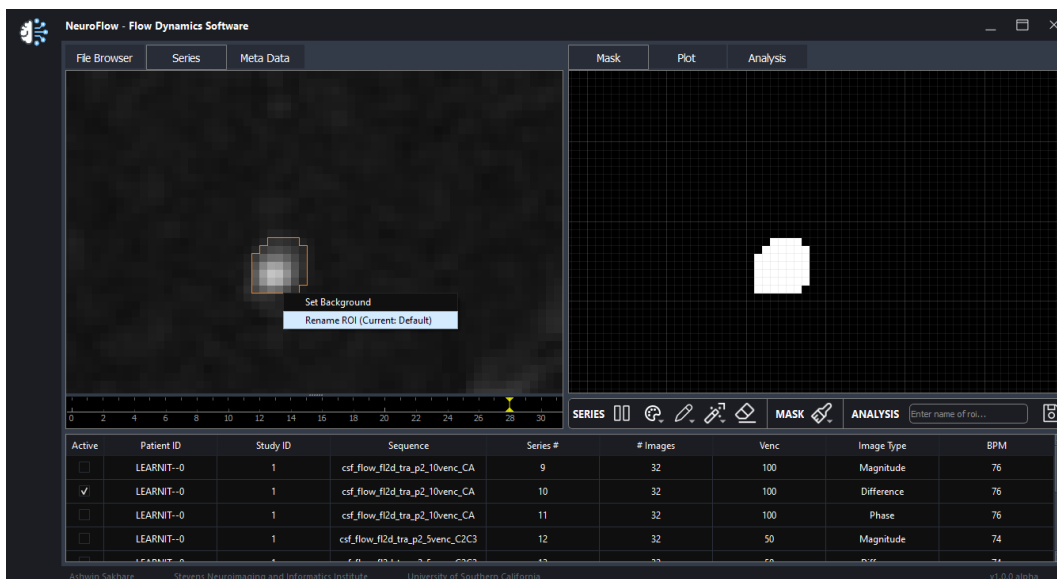
8. Enter a name for the ROI and select <u>Ok</u>.

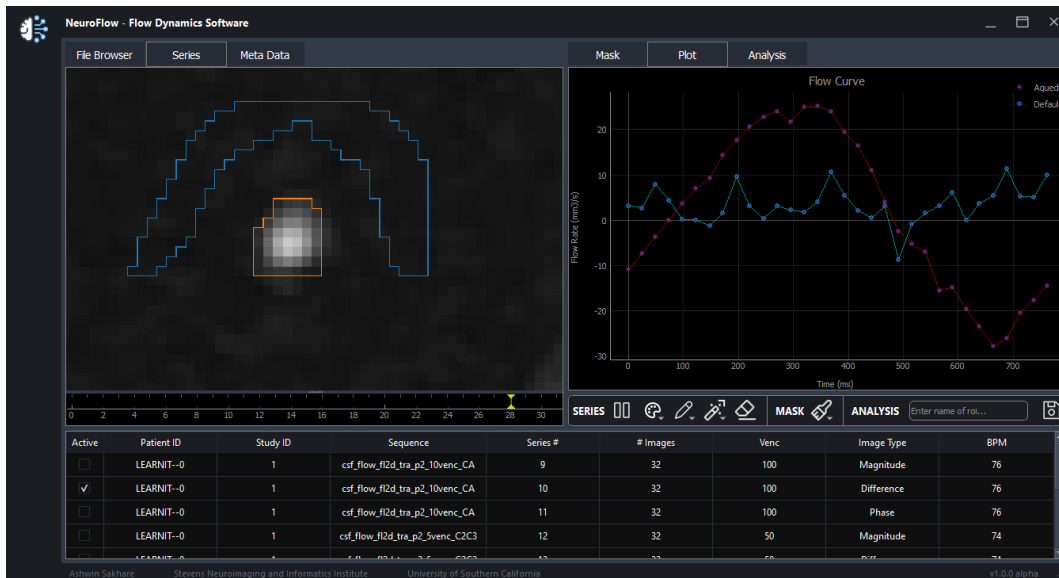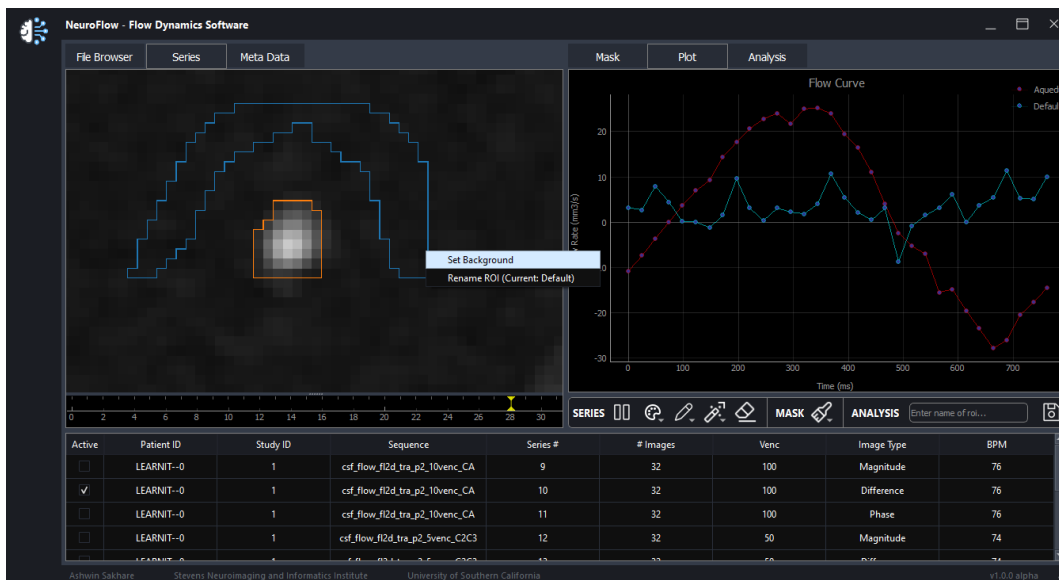   Note: Naming the ROI isn't necessary. A name of "Default" is used if no name is specified.

III. Defining Background

1. Follow steps 1-6 in the *Segmenting ROI* section to add a new ROI to the Series view.


2. Hover the cursor over the new segmentation contour in the Series view. Right click and select Set Background.

IV.   Viewing Flow Plots

1. Select the <u>Plot</u> tab. A plot for each unique ROI will be displayed. Each named ROI is a unique ROI. If no ROI's are named, they are all named "Default". All ROI's with the same name is represented by one flow curve. Any ROI that is set to Background is named "Background" and has a unique curve.

   Note: See *View Options* section for options regarding manipulating the plot view.
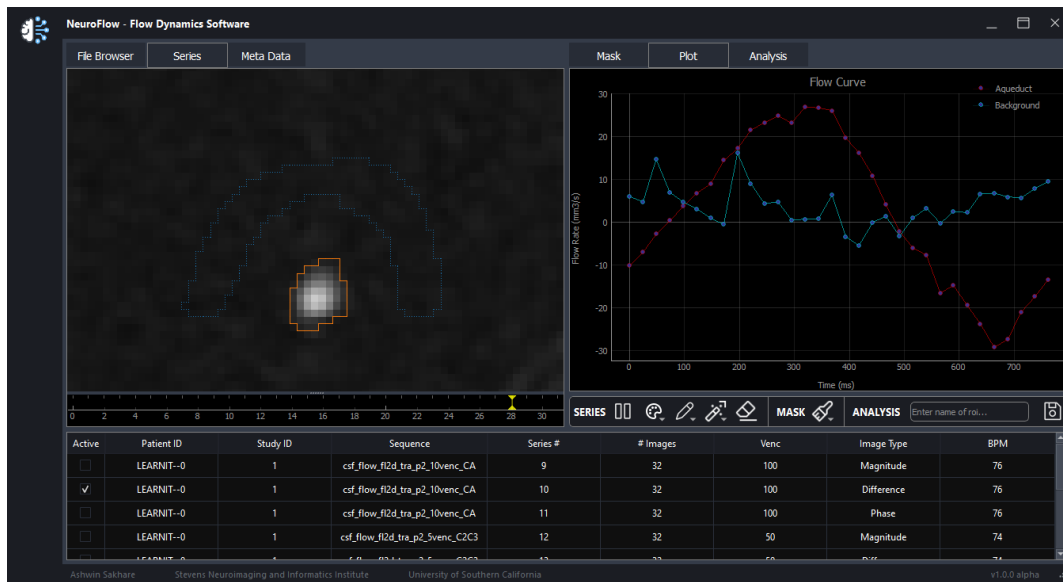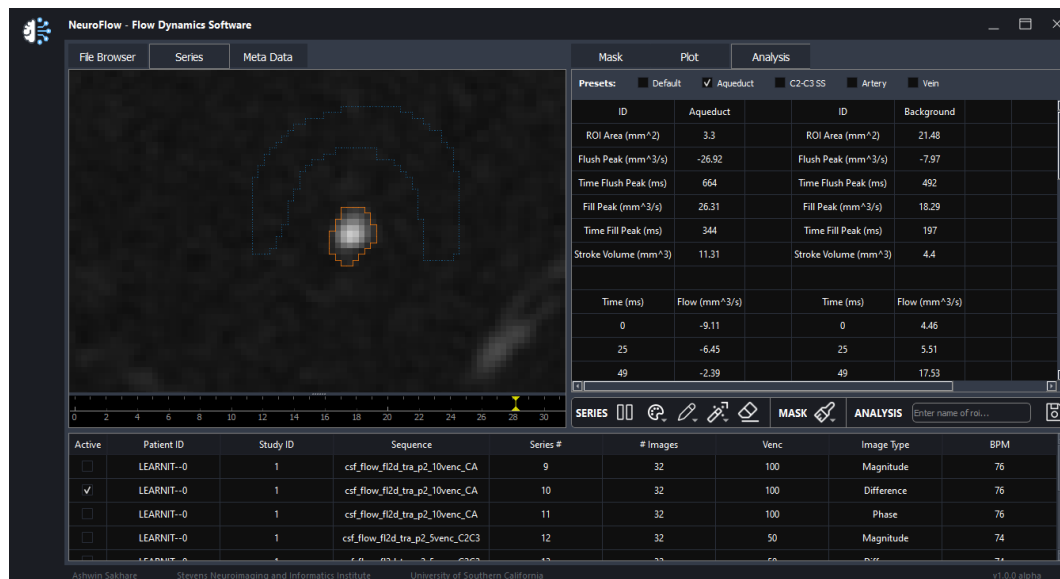
v. Viewing Flow Analysis

1. Select the Analysis tab. Flow measures for each ROI are displayed in the table.
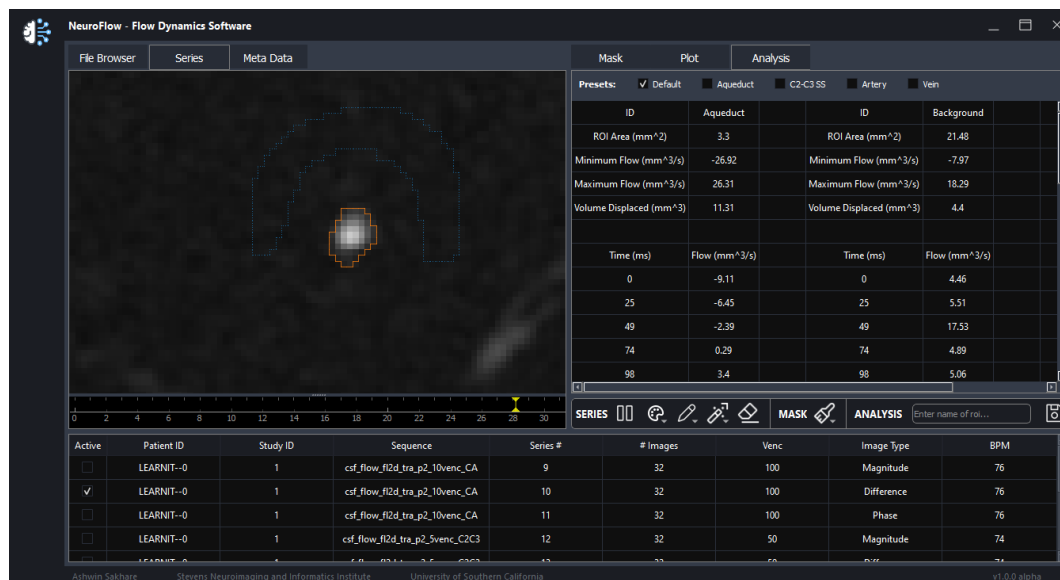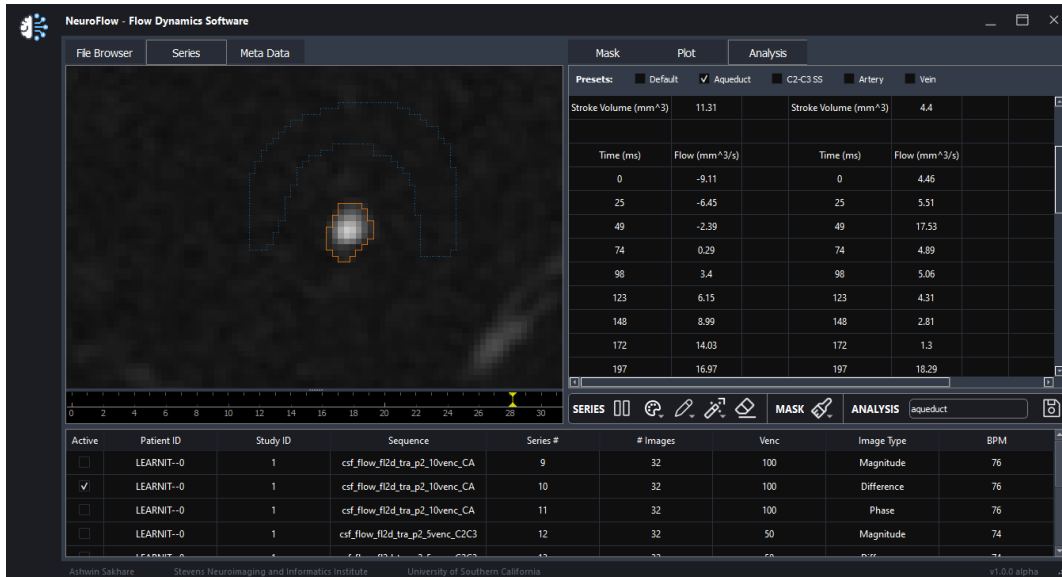

There are 5 preset options for flow measures. They are default, aqueduct, c2-c3 ss, artery, and vein. Each preset displays a different set of flow measures. As an example, the aqueduct displays the following:

VI. Saving Flow Measures

1. Enter an ROI name into the `Enter name of roi...` input box in the toolbar.
Note: This field is used to set the filename prefix for the saved data.
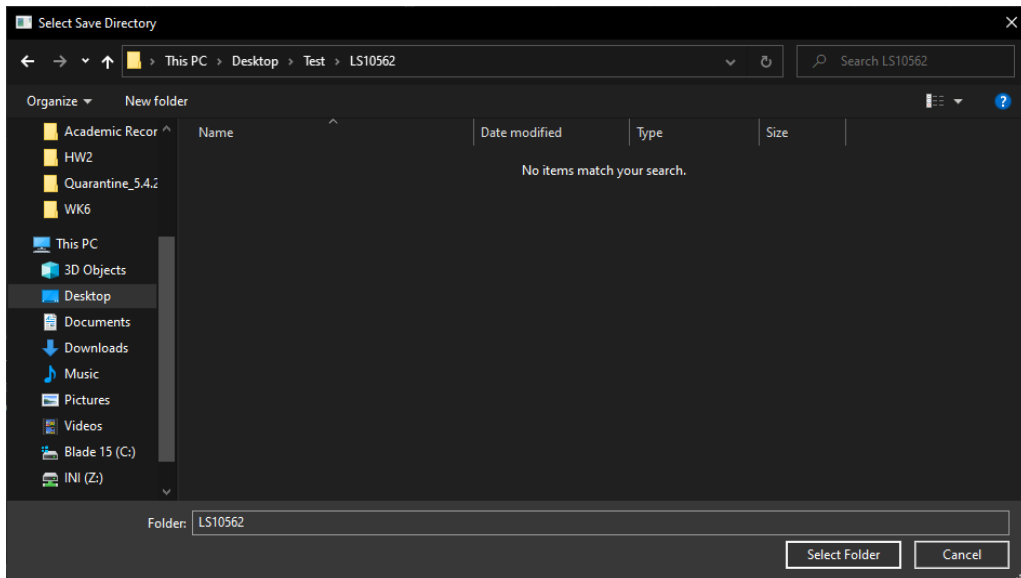

2. Select the 🖫 icon.

3. Select a save directory and select <u>Save Folder</u>.

   Note: The default save directory is set to the same directory as the currently loaded DICOMDIR.

4. Files are saved to a folder named "nf_output" located in the specified save directory. Three output files are generated: flow plots, ROI image with segmentation overlay, and flow analysis.

   Note: There is no overwrite warning so be sure the save directory doesn't contain an existing "nf_output" folder.
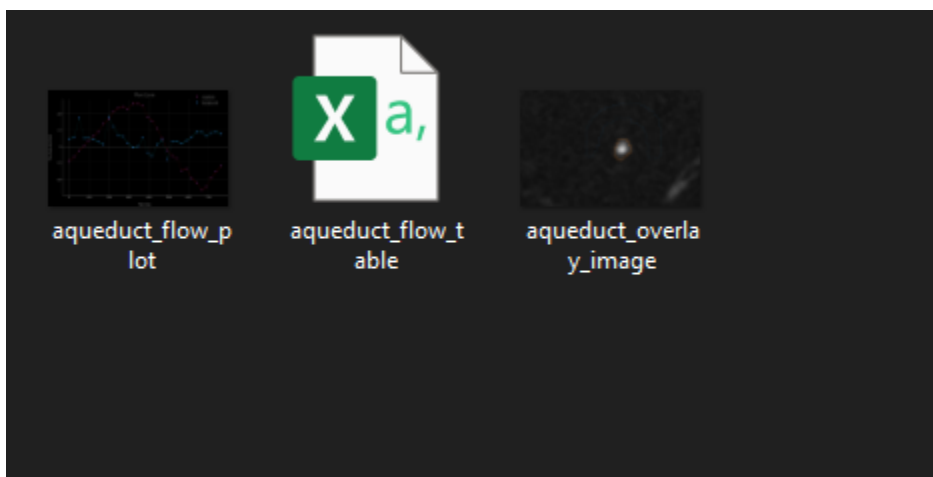
VII. Viewing Meta Data

1. Select the <u>Meta Data</u> tab. All meta data for the active series is displayed in the table.

VIII. Toolbar Options

A. Select the ▷ icon to automatically play the <u>Series</u> view frame-by-frame.

B. Select the 🎨 icon to specify a color map for the <u>Series</u> view.
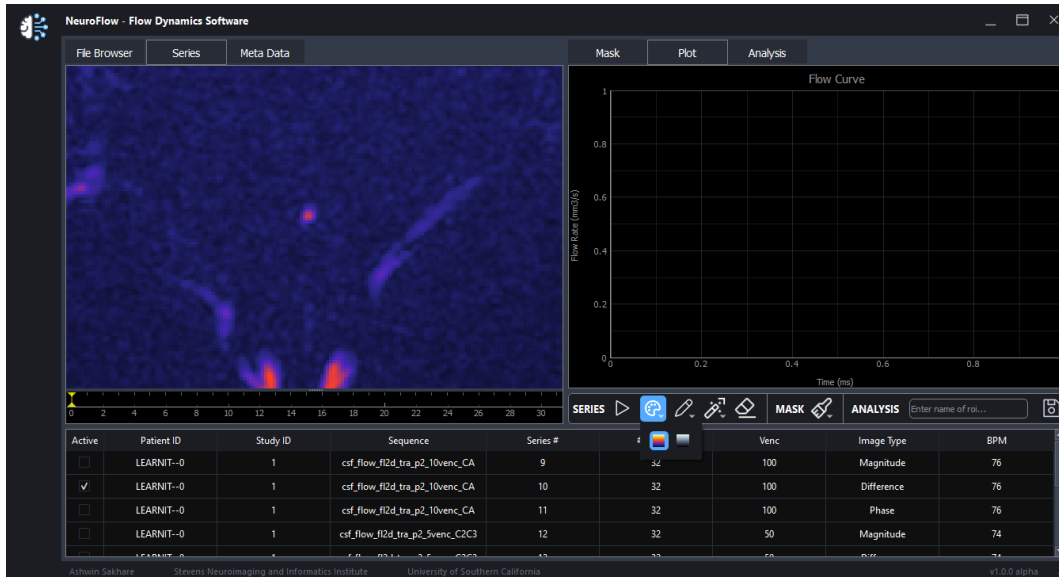
C. Select the 🪄 icon to auto segment an ROI.

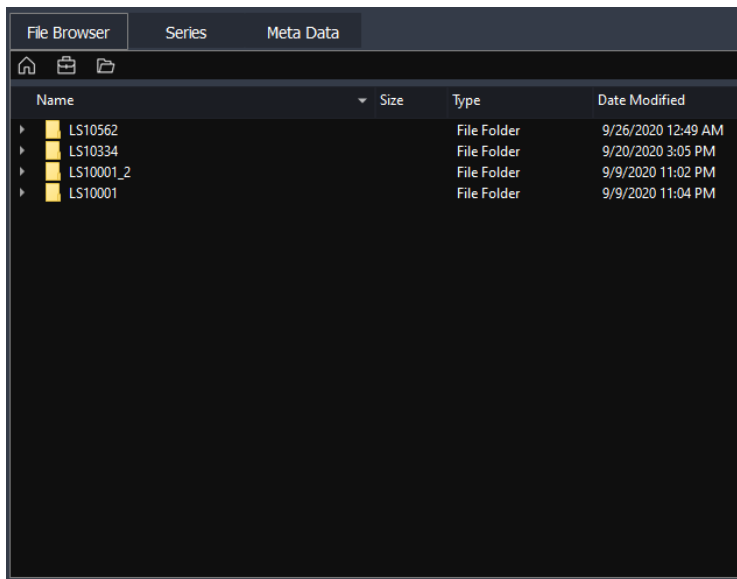   Note: To improve the accuracy of auto-segmentation, zoom in on the <u>Series</u> view until the ROI occupies as much of view box as possible. This prevents the auto-segmentation routine from searching for pixels outside the immediate ROI area.
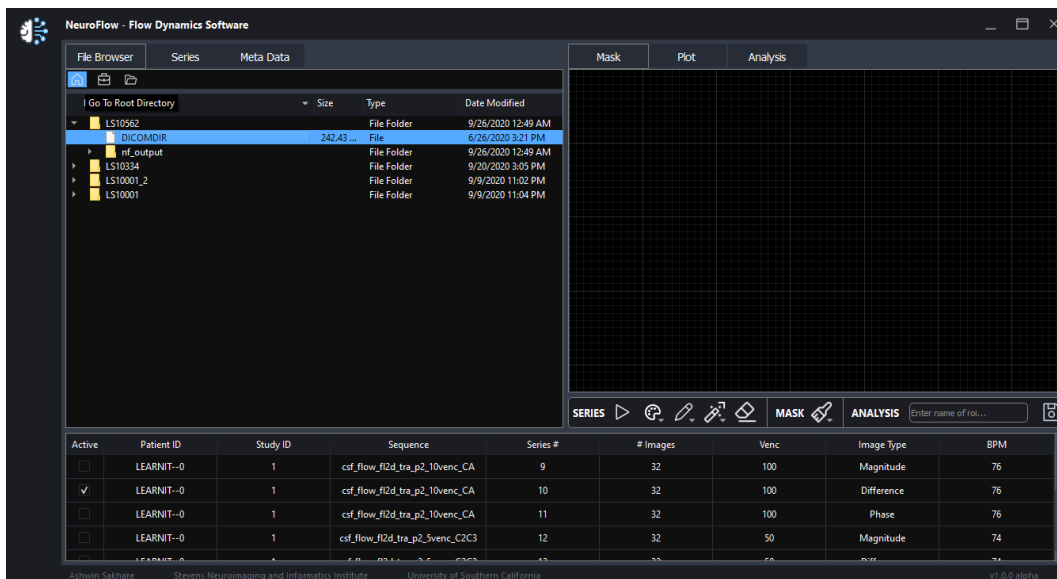
D. Select the ⬱ icon to erase all drawn segmentations and masks in the <u>Series</u> and <u>Mask</u> views, respectively.

IX. File Browser Options

A. Select the ⌂ icon to set the working directory to the file system's root directory.

Note: This change will persist even after the app is closed for convenience.
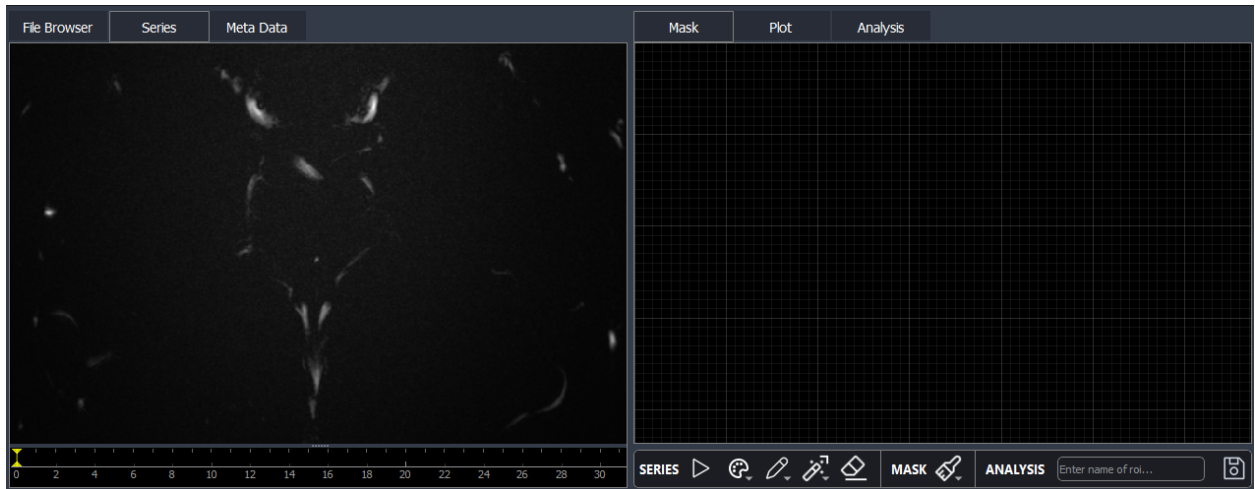

B. Select the 🗄 icon to set the working directory to the selected directory.

Note: This change will persist even after the app is closed for convenience.

C. Select the 📂 icon to open the selected DICOMDIR file.

X. View Options

1. The <u>Series</u> and <u>Mask</u> graphics views can be changed to accommodate the user's preferences. The options are shown in the table below.

Mouse Button	Action	Response
Left	Press and Drag	Pan Left/Right/Up/Down
Right	Press and Drag	Zoom In/Out
Middle	Press and Drag	Pan Left/Right/Up/Down
Wheel	Scroll	Zoom In/Out