

## Guide to Creating the Polygon Region of Interest (ROI)

The polygon ROI supports the following interactivity, including keyboard shortcuts. Notes especially important to the `musc_thresh_ptoa.m` program are **highlighted** or **color-coded**.

Behavior	Keyboard Shortcut
Finish Drawing (Close) the ROI	<ul style="list-style-type: none"> <li>❖ Position the pointer over the first vertex and <b>click</b>.</li> <li>❖ <b>Double-click</b>. Adds a new vertex at the pointer position and draws a line to the first vertex to close the polygon.</li> <li>❖ Press <b>Enter</b>. Adds a new vertex at the pointer position and draws a line to the first vertex to close the polygon.</li> <li>❖ <b>Right-click</b>. Does not add a new vertex but closes the polygon from the previous vertex.</li> </ul>
Add a New Vertex to the ROI	<ul style="list-style-type: none"> <li>❖ Position the pointer over the edge of the ROI, right-click, and select <b>Add Vertex</b> from the context menu.</li> <li>❖ Position the pointer over the edge of the ROI and double-click. (<b>WILL ALSO FINISH DRAWING THE ROI</b>)</li> </ul>
Remove the Most Recently Added Vertex but Keep Drawing	<ul style="list-style-type: none"> <li>❖ Press <b>Backspace</b>. The function redraws the line from the previous vertex to the current position of the pointer. You can only back up to the first vertex you drew.</li> </ul>
Resize (Reshape) the ROI <b>CAN ONLY DO THIS ONCE THE POLYGON IS CLOSED!</b>	<ul style="list-style-type: none"> <li>❖ Position the pointer over a vertex and then click and drag.</li> <li>❖ Add a new vertex to the polygon and then click and drag.</li> <li>❖ Remove a vertex. The ROI redraws the line connecting the two neighboring vertices.</li> </ul>
Cancel Drawing the ROI <b>PLEASE DO NOT DO THIS!</b>	<ul style="list-style-type: none"> <li>❖ Press <b>Esc</b>. The function returns a valid ROI object with an empty Position field.</li> </ul> <p><b>You will have to start the program over! Please do NOT press Esc!</b></p>
Delete the ROI <b>PLEASE DO NOT DO THIS!</b>	<ul style="list-style-type: none"> <li>❖ Position the pointer on the ROI, right-click, and choose <b>Delete Polygon</b> from the context menu.</li> </ul> <p><b>You will have to start the program over! Please do NOT delete the ROI!</b></p>

For further help, look at *help images.roi.Polygon* or *help drawpolygon* on MATLAB or online at <https://www.mathworks.com/help/images/ref/images.roi.polygon.html>

### Notes:

1. The cursor changes to a circle near a vertex to allow for repositioning or deleting that vertex.
2. A right click brings up a menu for adding/deleting vertices (and the ROI).