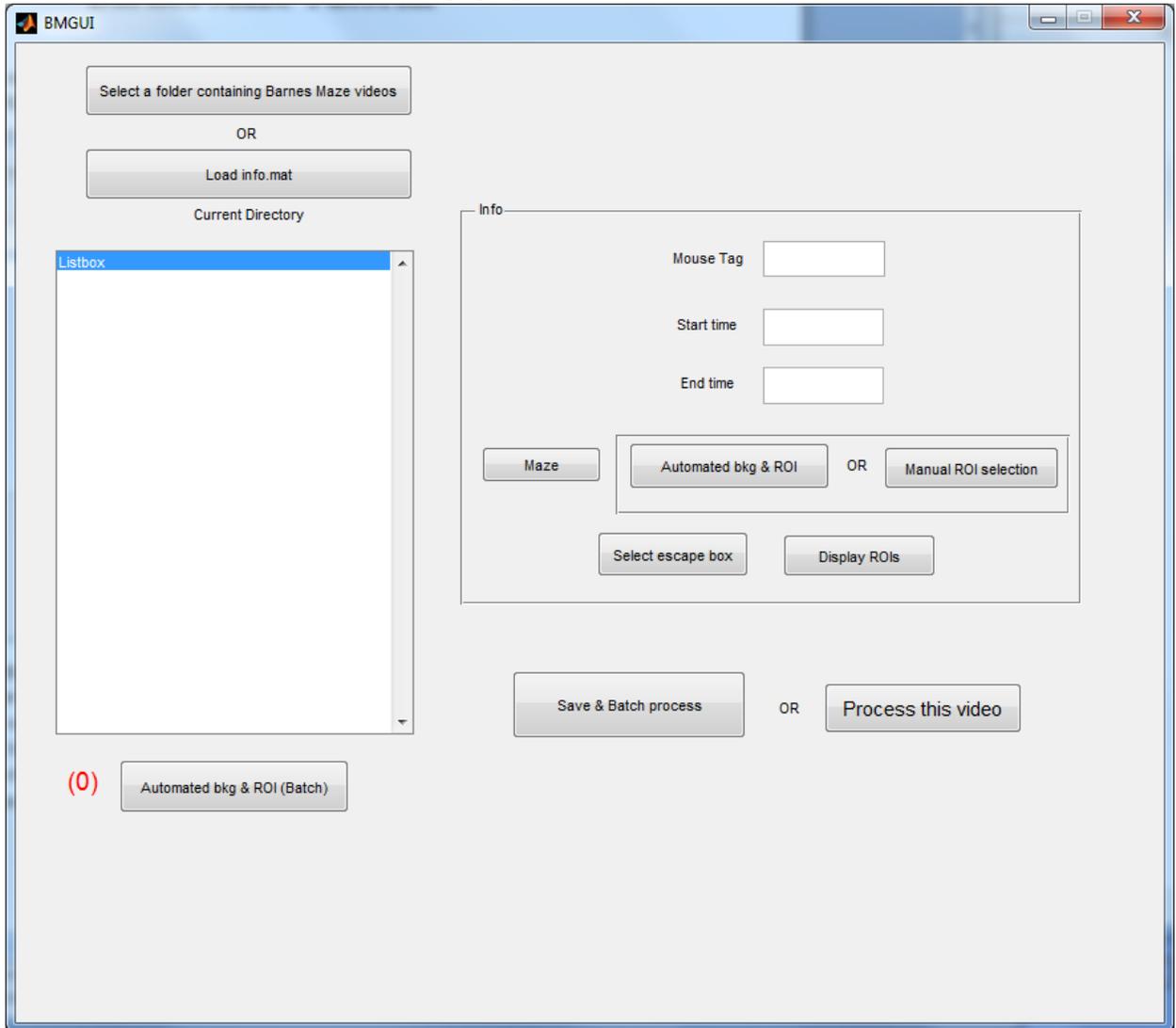
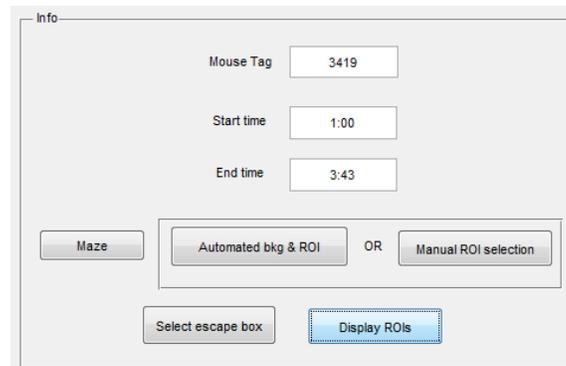


# Barnes Maze Tutorial

- 1) Navigate to autotyping/BarnesMaze and enter the command BMGUI at the command window in MATLAB. A screen should pop up that looks like the one below.

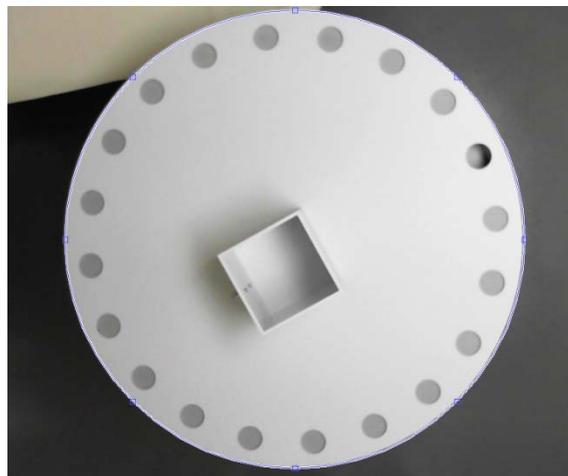


- 2) The first step is to load the videos. Click on the button that says “Select a folder containing Barnes Maze videos” and navigate to a folder containing barnes maze videos.. Each video name should appear on the left hand side in the listbox.
- 3) The next step is to fill out the video information like shown below.

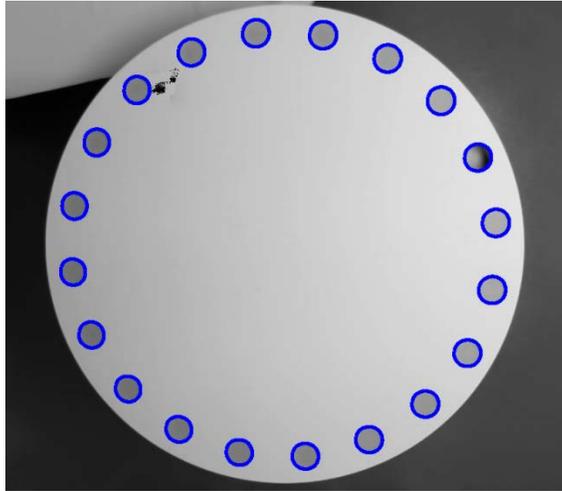


The screenshot shows a software interface titled "Info". It has three input fields: "Mouse Tag" with the value "3419", "Start time" with "1:00", and "End time" with "3:43". Below these fields is a group of buttons: "Maze", "Automated bkg & ROI", "OR", and "Manual ROI selection". At the bottom are two more buttons: "Select escape box" and "Display ROIs".

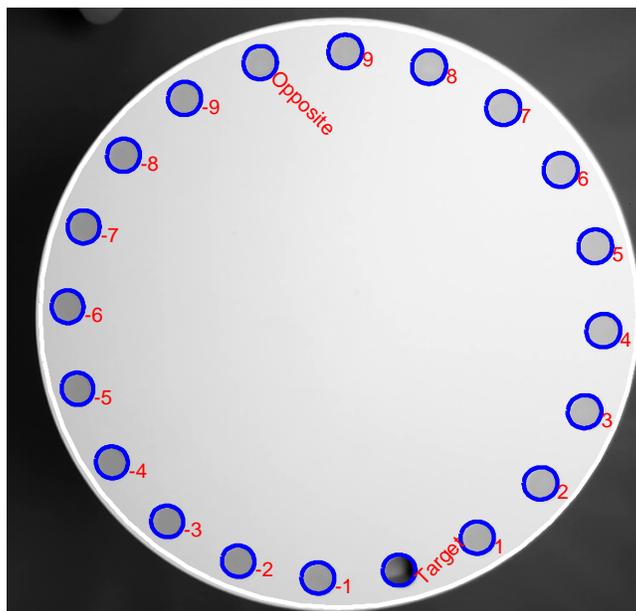
- 4) Mouse Tag is the mouse number.
- 5) Start time is the start of experiment when mouse is introduced and the experimenter is completely out of the way.
- 6) End time is the end of experiment.
- 7) At this point, you can either click “Automate background & ROI (batch)” to generate the background image for each video or proceed to initialize videos serially. The advantage of batch process is that you can walk away for a while and resume with rest of the initializations to save time.
- 8) Click the “Maze” button and draw the outline around the arena as shown below. Double click in the center in order to confirm the outline.



- 9) Then click the “Automated bkg & ROI” button and the picture like shown below should pop up. All the ROIs should be automatically detected. If not, click on “Manual ROI selection” and draw the ROIs.



- 10) The next step is to click “Select escape box” and this is where you would double click on the target hole.
- 11) In order to confirm that everything looks okay, you can click the “Display ROIs” button and a picture will come up that will show the holes with the target labels and the other holes. Note that the hole opposite the escape box is automatically labeled “opposite”, the escape box is labeled “Target” and the rest labeled as +1 to +9 and -1 to -9. This convention is used in the output txt file and figure.



- 12) At this point, you may click “Process this video” to see the tracking and scoring of Barnes Maze. The mouse’s nose is indicated by green circle and each nose poke will be highlighted in blue. Once satisfied, click Ctrl+C in the command window to stop the visualization.
- 13) Move onto the next video in the listbox.
- 14) Once you are finished initializing all videos, click “Save& Batch” button. An info.mat file will be generated in the experiment folder.
- 15) You may either start processing these videos in batch now or later. If you choose the later option, close the BMGUI portion
- 16) After clicking the “X” to close out, this box will come up to make sure everything was saved. In order to exit click “Yes”



- 17) Go back to the home screen for MatLab. It should still say Barnes Maze in the top bar.
- 18) Type: “edit Read\_Fnames” into the command window.
- 19) Paste the experiment folder name in the Read Fnames screen in single apostrophe. The file name should be something like ‘C:\Users\admin\Desktop\test Barnes Maze’
- 20) In the command window type: BarnesBatch
- 21) It should say “Busy” in the bottom left corner
- 22) The videos are now being analyzed and there will be a results folder made within each of the files. There should be an analysis.mat file generated at the end.
- 23) A summary image will be generated for each video in Barnes\_Results folder along with a text file that lists the duration of nose pokes for each ROI.