How to run it and what to expect

Thursday, January 13, 2022 3:35 PM

How to run the code (going line by line down the code for things to change):

- Change the function whose return value is stored in 'ip'. This should be at the start and called "exp_YYYYMMDD_InitializeExp;"
- Change all channel information such as color, loading information, and data folders
- Change sample names
- Set random seed as desired (for when we select random spot locations)
- Set desired default minimum distance if there are no objects to which to find a minimum distance.
- Set desired radii for checking cluster fluorescence and radii for checking channel 2 spots.
- Again make sure segmentation folder is correct for cell masks
- Again make sure that the datafolder for peakdatas are correct
- Again make sure cluster mask folder and cluster fluorescence image folder are correct
- Within "InitializeClusterRecognitionParameters_c234" make sure the parameters are correct for this experiment (only used to load in the cluster fluor image stack)
- There is one commented out paragraph of code which allows you to visualize the overlap between the channel 1 spot and cluster masks. If this is uncommented, it would be wise to put a breakpoint here so many figures aren't left open.
- Check at the end of the code if this is where you want the data to be saved

What to expect as outputs:

As output a data set, distancelist_new, will be made and saved:

```
distancelist_new{1}{}(:,1) = LOW CLUSTER #
distancelist_new{1}{}(:,2) = CLOSEST DIST TO LOW CLUSTER BOUNDARY
distancelist_new{1}{}(:,3) = HIGH CLUSTER #
distancelist_new{1}{}(:,4) = CLOSEST DIST TO high CLUSTER BOUNDARY

distancelist_new{1}{}(:,5) = CELL #
distancelist_new{1}{}(:,6) = FRAME #
distancelist_new{1}{}(:,7) = SPOT #
distancelist_new{1}{}(:,8) = Cy3 spot intensity
distancelist_new{1}{}(:,9) = Total GFP intensity within rad2 #1
distancelist_new{1}{}(:,10) = Avg GFP int/pix within rad2 #1
distancelist_new{1}{}(:,11) = Total GFP intensity within rad2 #2
distancelist_new{1}{}(:,12) = Avg GFP int/pix within rad2 #2

distancelist_new{1}{}(:,13) = CLOSEST CY5 SPOT #
distancelist_new{1}{}(:,14) = DIST TO THAT CY5 SPOT
distancelist_new{1}{}(:,15) = INT OF THAT CY5 SPOT
distancelist_new{1}{}(:,16) = TOTAL # OF ALL CY5 SPOTS IN x RAD 1
distancelist_new{1}{}(:,17) = TOTAL INT OF ALL CY5 SPOTS IN x RAD 1
distancelist_new{1}{}(:,18) = TOTAL # OF ALL CY5 SPOTS IN x RAD 2
distancelist_new{1}{}(:,19) = TOTAL INT OF ALL CY5 SPOTS IN x RAD 2
distancelist_new{1}{}(:,20) = TOTAL # OF ALL CY5 SPOTS IN x RAD 3
distancelist_new{1}{}(:,21) = TOTAL INT OF ALL CY5 SPOTS IN x RAD 3
```

Ex. of one row of data

There should be 4 rows of data:

- Channel 1 real spots (labeled as Cy3 above)
- Channel 1 fake spots
- Channel 2 real spots (labeled as Cy5 above)
- Channel 2 fake spots

The columns of the data set will be the samples.

For each element in the data set (so for a particular channel and spot type, and for a particular sample) there should be 21 columns of data as seen above with each row corresponding to a spot.