This tutorial contains navigation buttons that enable you to move throughout the tutorial.

Please use the navigation buttons and not the page up/page down or arrow keys to navigate through the tutorials.

This is the 'Next' button. It takes you to the next frame or stop point.

This is the 'Previous' button. It takes you to the previous frame or stop point.

This is the 'Go to frame' button. It takes you to a specified frame.

This is the 'Go to URL' button. It takes you to a website link.

Press the 'Next' button below to start this tutorial.
## Data Selection Panel

<table>
<thead>
<tr>
<th>Name of Image Matrix</th>
<th>Name of Variable Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Data</td>
<td>Select Variables</td>
</tr>
</tbody>
</table>

This tutorial will cover how to import data into the imagegui.

Data can be imported from the workspace or from iontof .bif and .bif6 files.
To import existing data from the workspace choose 'Data Pre Processing' -> 'Import Data' -> 'Import From Workspace'
Data Selection Panel

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Press the 'Get Variables' button to import a list of existing variables from the Matlab workspace. This will show a list of all variables in the active workspace even if they are not applicable to the imagegui.

MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Close Panel
Data Selection Panel

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

Raw Data

Add to Image List

Add to Variable List

Add to Image Overlay List

MVA Data

Add to PCA Scores List

Add to PCA Loadings List

Select a variable and then press the corresponding button on the right of the panel.

Here we select an image matrix so we will add it to the image list.
Data Selection Panel

Name of Image Matrix  Name of Variable Matrix
Select Data          Select Variables

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

Data

Add to Image List
Add to Variable List
Add to Image Overlay List

MVA Data

Add to PCA Scores List
Add to PCA Loadings List
Add to PCA Variance List
Add to MAF Scores List
Add to MAF Loadings List
Add to MAF Variance List

After selecting the variable name that contains the image data, press the 'Add to Image List' button to add the image to the image list.
Data Selection Panel

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Please fill in the information below

Name of Total counts matrix
- totalcounts_DAN01

Name of sum of selected matrix
- sumofselected_DAN01

I do not need Total or Sum Images

When you add an image it will ask you to select the 'Total counts' and 'Sum of selected peaks' images that correspond with the image you are loading.

You only need to do this if you are going to use them for normalization later.

If you do not wish to load these matrices, simply check the 'I do not need Total or Sum Images' box.
Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Please fill in the information below

Name of Total counts matrix
- totalcounts_DAN01

Name of sum of selected matrix
- sumofselected_DAN01

I do not need Total or Sum Images

After making your selections, press the 'Close' button to close the pop-up window.

Add to Image List
Add to Variable List
Add to Image Overlay List
Add to PCA Scores List
Add to MAF Loadings List
Add to MAF Variance List
Data Selection Panel

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

NOTE: A variable list has to be imported before you can add variables to the image overlay list. This is because the names of images for overlay are appended to the variable list in the image overlay list.
Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

So, let's import a variable list by selecting it from the available variables.
Data Selection Panel

Import Data From Workspace
Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF_mafloads
- MAF_maiscors
- MAF_mafvar
- PCA_d
- PCA_g
- PCA_h
- PCA_pcaloads
- PCA_pcscores
- PCA_pcavar
- PeaksincludedIn_one
- PeaksincludedIn_three
- PeaksincludedIn_two
- compositeimage
- exactmass_dan01
- headerinfo_dan01
- imagedata_dan01
- one
- sumofselected_dan01
- three
- totalcounts_dan01
- two

Raw Data
- Add to Image List
- Add to Variable List
- Add to Image Overlay List

MVA Data
- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

Press the 'Add to Variable List' button to add it to the Variable list.

Close Panel
Choose the imported list from the 'Variable Matrix' drop down menu.
Data Selection Panel

Name of Image Matrix | Name of Variable Matrix
--- | ---
Select Data | exactmass_dan01 ...

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

- MAF_mafloads
- MAF_maiscores
- MAF_mafvar
- PCA_d
- PCA_g
- PCA_h
- PCA_pcaloads
- PCA_pcmascroses
- PCA_pcavar
- Peaksincludedln_one
- Peaksincludedln_three
- Peaksincludedln_two
- compositeimage
- exactmass_dan01
- headerinfo_dan01
- imagedata_dan01
- one
- sumoselected_dan01
- three
- totalcounts_dan01
- two

Raw Data

- Add to Image List
- Add to Variable List
- Add to Image Overlay List

MVA Data

- Add to PCA Scores List
- Add to PCA Loadings List
- Add to PCA Variance List
- Add to MAF Scores List
- Add to MAF Loadings List
- Add to MAF Variance List

The 'Add to Image Overlay List' button becomes active.
Data Selection Panel

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

We can now select an image to add to the overlay list.

Valid images must be unfolded, n x m images.
Data Selection Panel

Name of Image Matrix  Name of Variable Matrix
Select Data  exactmass_dan01 ...

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

Raw Data
Add to Image List
Add to Variable List
Add to Image Overlay List

MVA Data
Add to PCA Scores List
Add to PCA Loadings List
Add to PCA Variance List
Add to MAF Scores List
Add to MAF Loadings List
Add to MAF Variance List

Press the 'Add to Image Overlay List' button to add the image to the list.
Data Selection Panel

Name of Image Matrix  Name of Variable Matrix
Select Data  exactmass_dan01 ...

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

MAF_mafloads  MAF_mafscors  MAF_mafvar  PCA_d  PCA_g  PCA_h  PCA_pcaloads  PCA_pcascores  PCA_pcavar  PeaksincludedIn_one  PeaksincludedIn_three  PeaksincludedIn_two  compositeimage  exactmass_dan01  headernfo_dan01  imagedata_dan01  one  sumofselected_dan01  three  totalcounts_dan01  two

Raw Data

Add to Image List  Add to Variable List  Add to Image Overlay List

MVA Data

Add to PCA Scores List  Add to PCA Loadings List  Add to PCA Variance List  Add to MAF Scores List  Add to MAF Loadings List  Add to MAF Variance List

Close Panel

You can continue to select variables and add them to their respective list until all of the desired data is loaded.
Data Selection Panel

Name of Image Matrix
Select Data

Name of Variable Matrix
exactmass_dan01 ...

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

MAF_mapload
MAF_mascor
MAF_mafvar
PCA_d
PCA_g
PCA_h
PCA_pcaold
PCA_pcascore
PCA_pcavar
PeaksincludedIn_one
PeaksincludedIn_three
PeaksincludedIn_two
compositeimage
exactmass_dan01
headerinfo_dan01
imagedata_dan01
one
sumofselected_dan01
three
totalcounts_dan01
two

Raw Data

Add to Image List
Add to Variable List
Add to Image Overlay List

MVA Data

Add to PCA Scores List
Add to PCA Loadings List
Add to PCA Variance List
Add to MAF Scores List
Add to MAF Loadings List
Add to MAF Variance List

Once all the data has been loaded, close the panel by pressing the 'Close' button.
### Data Selection Panel

<table>
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<tr>
<th>Name of Image Matrix</th>
<th>Name of Variable Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Data</td>
<td></td>
</tr>
<tr>
<td>Select Data</td>
<td></td>
</tr>
<tr>
<td>imagedata_dan01</td>
<td></td>
</tr>
</tbody>
</table>

The data is now loaded and ready to use.
Let's verify that the data was properly loaded into the image overlay panel.
Data Selection Panel

Name of Image Matrix
Select Data

Name of Variable Matrix
Select Variables

Import Data From Workspace

Press the "Get Variables" button to see a list of all variables in the workspace. Then select a variable and then press the appropriate button to load it into the proper list menu in the "Data Selection Panel".

Get Variables

Raw Data

Add to Image List

Add to Variable List

Add to Image Overlay List

MVA Data

Add to PCA Scores List

Add to PCA Loadings List

Add to PCA Variance List

Add to MAF Scores List

Add to MAF Loadings List

Add to MAF Variance List

You can also load data from MVA by selecting the correct variable from the list and pressing the corresponding button under the 'MVA Data' heading.

Close Panel
You can verify that the data was loaded in the proper lists for plotting the MVA results by selecting the data you want to work with.
Here we loaded data from PCA. The data shows up in the correct menus.
All of the data was loaded properly.
All of the data was loaded properly.
Data Selection Panel

Name of Image Matrix
imagedata_dan... 

Name of Variable Matrix
exactmass_dan01 ...

Now let's import data from a .bif file.

Importing a .bif works the same as importing a .bif6 file, so here we only show importing a .bif file.
Choose 'Import Bif File' from the 'Data Pre Processing' -> 'Import Data' menu.

The 'Import Bif6 File' panel works the same way.
## Data Selection Panel

<table>
<thead>
<tr>
<th>Name of Image Matrix</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Select Data</td>
<td>Select Variables</td>
</tr>
</tbody>
</table>

Press the 'Load Bif File' button.
Select the file you want to load and press the 'Open' button.
And the data is loaded into the workspace and placed in the proper menus within the imagegui.
And the data is loaded into the workspace and placed in the proper menus within the imagegui.
Data Selection Panel

Name of Image Matrix: Select Data
Name of Variable Matrix: Select Variables

Load Bif File
Close

Close the panel.
The data is loaded into the Matlab workspace.

The files loaded are:
- `exactmass` - a list of the peak masses included in the .bif file
- `headerinfo` - the header from the .bif file
- `imagedata` - the image data matrix
- `sumofselected` - an image of the sum of all peaks in the .bif file
- `totalcounts` - the total counts image from the .bif file.

The extension on each of these variables corresponds with the name of the file loaded.
That ends this tutorial. Press the button on the left to go back to the previous step. Press the button on the right to start the tutorial over.