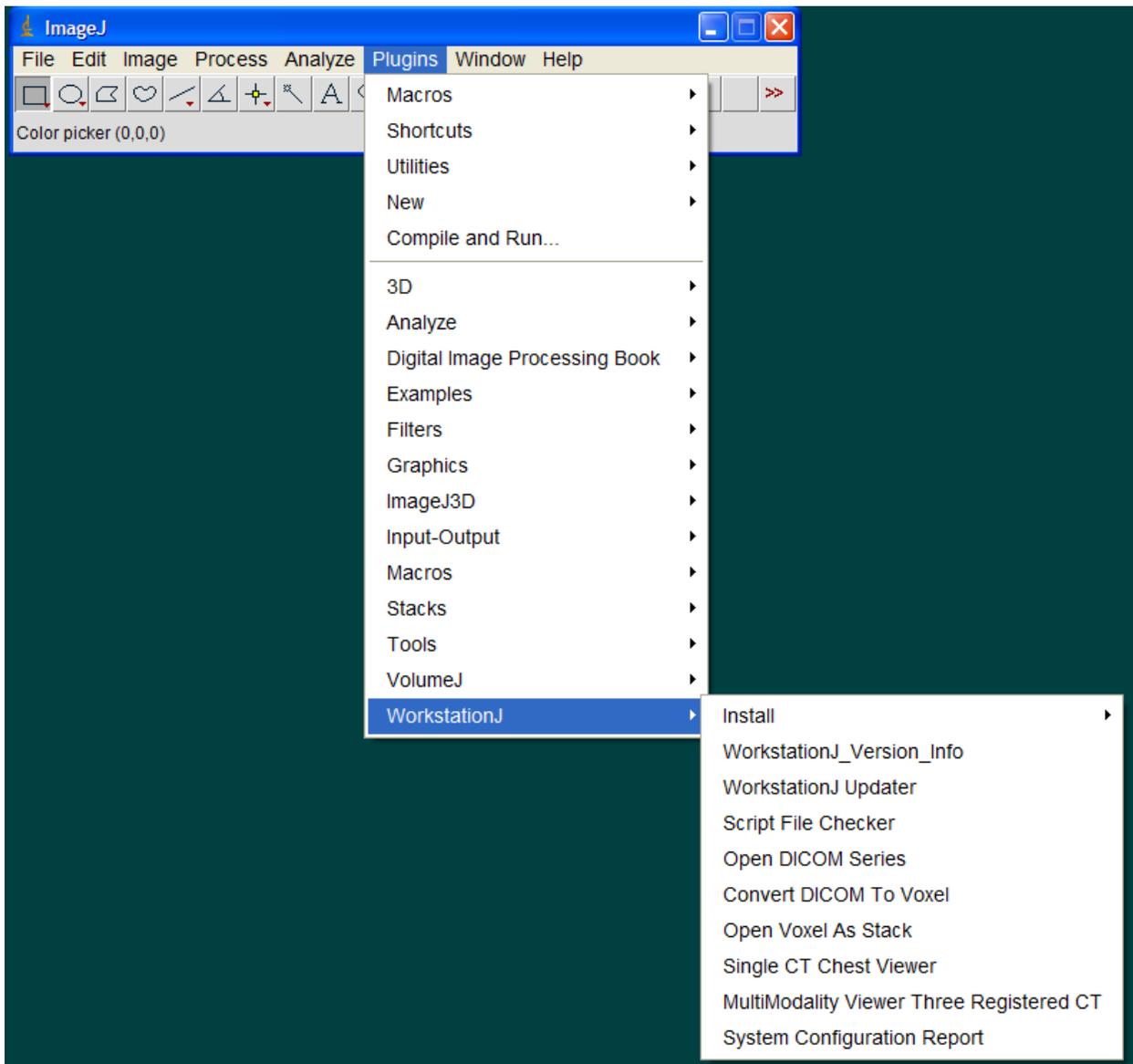


WorkstationJ Quick-start Guide

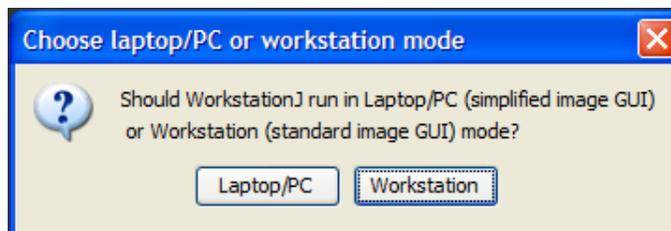
Single CT Chest Viewer Plugin Reviewer and Observer modes

WorkstationJ is now a series of plugins for *ImageJ* rather than a separate standalone application so it is necessary to first start *ImageJ*. ImageJ may be started from the desktop icon (a microscope) or from the Start menu (**Start > ImageJ > ImageJ**). After ImageJ starts, you will see the familiar ImageJ. From the Plugins Menu, select **Plugins > WorkstationJ > Single CT Chest Viewer** to launch the plugin that displays a single axial view of a CT:



When the plugin launches, a black background will cover the desktop. If you are running *WorkstationJ* on a system with a desktop smaller than 3072 x 2048 for the "MultiModality Viewer Three Registered CT" plugin or 1280 x 1024 for other plugins, a configuration dialog will

appear that asks you whether *WorkstationJ* should run in **Workstation** mode (appropriate for medical flat panels) or **Laptop/PC** mode (appropriate for most laptops and desktops). The Laptop/PC mode eliminates the portion of the GUI that display the absolute minimum, absolute maximum, relative minimum, and relative maximum values in the images. This makes the display windows smaller.



If the dialog appears, choose the resolution appropriate for your current setup. You will then be provided with a dialog to select the execution mode you wish to use.



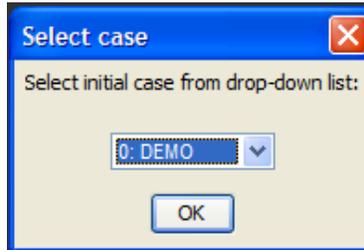
The **Reviewer** mode is used to simply view/review cases—there is no logging of the observer/display interactions, and no responses are collected. The **Observer** mode is used for data collection in research studies. In this mode, the observer/display interactions are logged and the observers can search for abnormalities in the images and make responses. The **Region Marking** mode is used by the experimenter to mark the abnormality boundaries for later scoring. Region Marking mode is described in a separate document.

If you select the Observer mode, you will be prompted to enter an identifier for the observer. This identifier is used in the names of the data and logging files that are generated by the program.



You will then be provided with a dialog used to select the script file (not shown in this guide). It works similarly to open-file dialogs in other programs in that you can navigate to particular drives and folders on your machine to select the desired file. If you downloaded and extracted the sample images, you would navigate to the "C:\WJ_Sample" folder and select the "Sample Single CT Script.txt" script file.

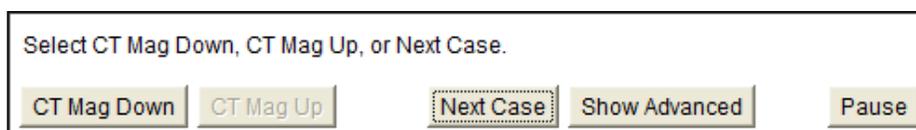
After the script file has been selected and processed, a dialog will appear that enables you to select the starting case for the session. The drop-down box is used to select the desired starting case.



If the case loads successfully, the images specified in the script file will load and your screen should look something like:



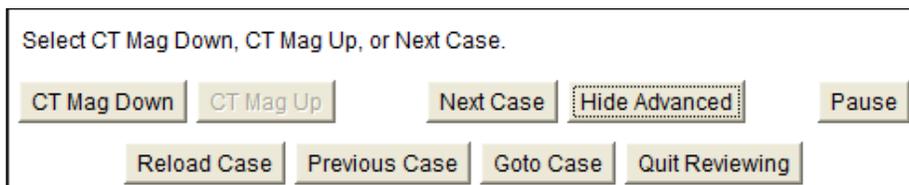
A case navigation dialog will appear at the bottom of the screen.



The **CT Mag Up/Down** buttons are used to increase/decrease the magnification of the image. The **Next Case** Button is used to close the current case and load the next case. The **Show Advanced** button is used to display additional navigation buttons. The **Pause** button is used to pause the current data collection. During a pause, the images are hidden and the **Pause** button changes to a **Resume** button. If you press **Show Advanced**, an authorization dialog will appear requesting you to enter a code in order to display the advanced options.



The default authorization code is "0000" unless you specified a different code in the script file. It is also possible to eliminate the need to enter a code to get advanced options by modifying the script file. Script file contents are described in a separate document.



The **Reload Case** button is used to reload the current case. The **Previous Case** button will close the current case and load the previous case. The **Goto Case** button will close the current case and present a dialog to prompt for the desired case to load (similar to the initial case selection dialog described previously). The **Quit Reviewing** button will close the current case, close the plugin, and close *ImageJ*. The **Hide Advanced** button will hide the advanced options and restore the dialog to its original state.

In Observer mode, the observer in a detection experiment can make response to indicate the presence of an abnormality in the image. To make an abnormality response, the observer uses the mouse to right-click on the area of the image displaying the abnormality. A response dialog will appear (shown below). In the first panel of the dialog, the observer clicks a radio button to indicate whether this is a response to indicate a new, clinically significant abnormality, or if the response is intended to cancel or replace a prior response in this location. If this is a new report of an abnormality, the observer will then provide a brief description of the abnormality in the text box provided (e.g., "lung nodule"). The observer then rates his or her confidence using one of the four provided categories. Following this categorical confidence rating, the observer will then rate his or her percent confidence in the range of 10% (low confidence) to 100% (high confidence). Clicking OK saves the response. Clicking Cancel discards the response. If OK was pressed, the details of the response are written to the data file and to the log file that are saved in the "C:\WJ_Data" folder.

If this response is to cancel a prior response, the observer will select the cancel option in the first panel and the "Cancel a prior response" option in the second panel.

Confidence in Reported Abnormality

This is a clinically significant abnormality.
 Cancel or replace a previous report of a clinically significant abnormality.

Replace a prior response
 Cancel a prior response

Please provide a brief description of the abnormality:
 lung nodule

Please indicate your rated and percent confidence in abnormality.

Rated Confidence:

- Definite abnormality
- Probable abnormality
- Possible abnormality
- Probably not abnormality but some suspicion.

Percent Confidence:

- 100%
- 90%
- 80%
- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%

OK Cancel

In Observer mode, *WorkstationJ* records time-stamped observer-display interactions to a text log file that is stored in the "C:\WJ_Data" folder. The interactions that are logged include slice navigation (for CT images), window/level adjustment, and magnification adjustment. The inspection time for each computed radiograph image is logged. For CT images, the inspection time for each slice is recorded as well as the inspection time for the CT as a whole. This observer-display interaction recording is not performed in Reviewer or Region Marking mode. In the current version of *WorkstationJ*, there are also "raw" events that are logged. These are written to "C:\WJ_Raw_Logs". These raw log entries are generated by the GUI components and are a debugging tool—they are not intended for end-user use. The user should occasionally delete the files in this folder because numerous entries are generated during the course of a study. Future versions of *WorkstationJ* will provide the user with the option of whether to generate these files.

After the last case is displayed, an information dialog appears to inform the observer that the last case has been displayed. Following this, the authorization dialog appears in which the experimenter must enter the authorization code to exit the plugin.