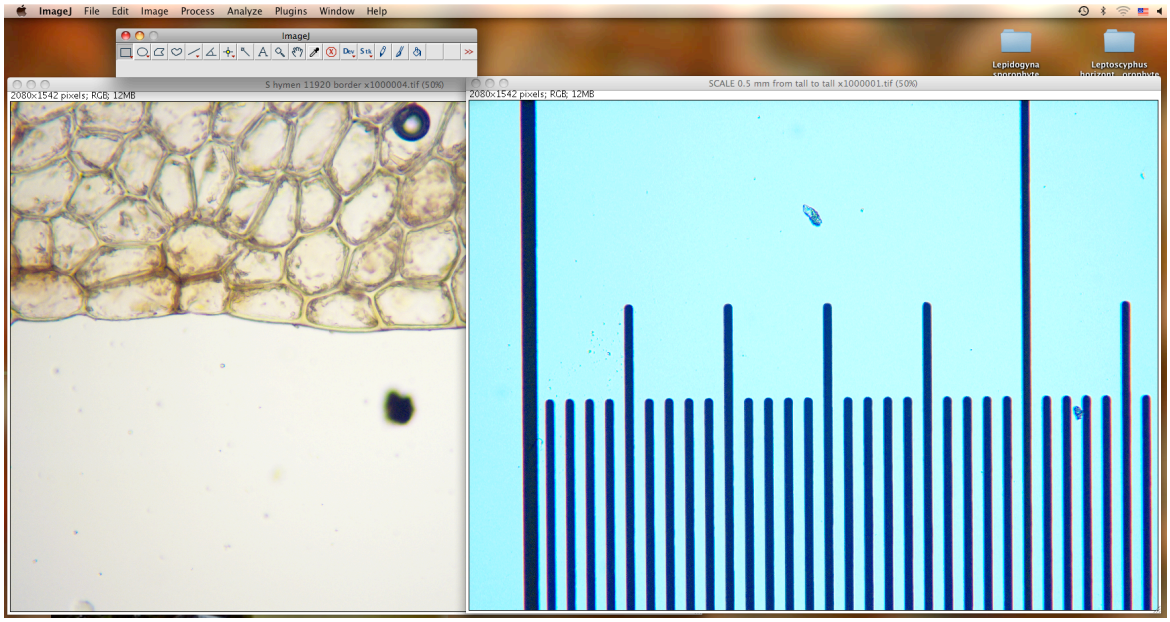
Image J for Students: How to set a scale and do basic measurements

ImageJ is a freely available program developed by NIH, for the purpose of making data from images easily measurable. This has given the scientific community a way of creating measurements easily replicable and comparable across diverse fields. From measuring astronomical data to analyzing gel electrophoresis to measuring cell sizes to creating 3D models, ImageJ streamlines the process of turning an image into a set of numerical data. This data, in turn, can easily be analyzed and compared to other data sets.

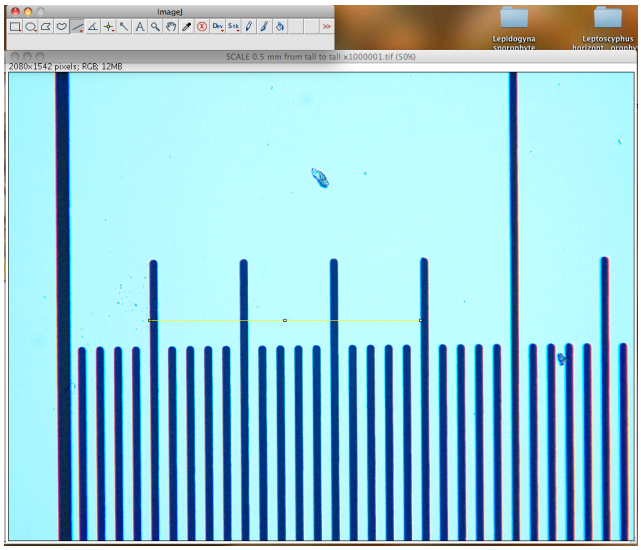
Image J is therefore used in a vast array of the sciences, including medical and biological sciences.

Using this program, you can easily gather measurements from an image using real values (µm, cm, etc.). The process involves calibrating a single image against known values, then applying that calibrated image to your unknown image. In order to accomplish this, both images must be the same magnification. Here's an example.

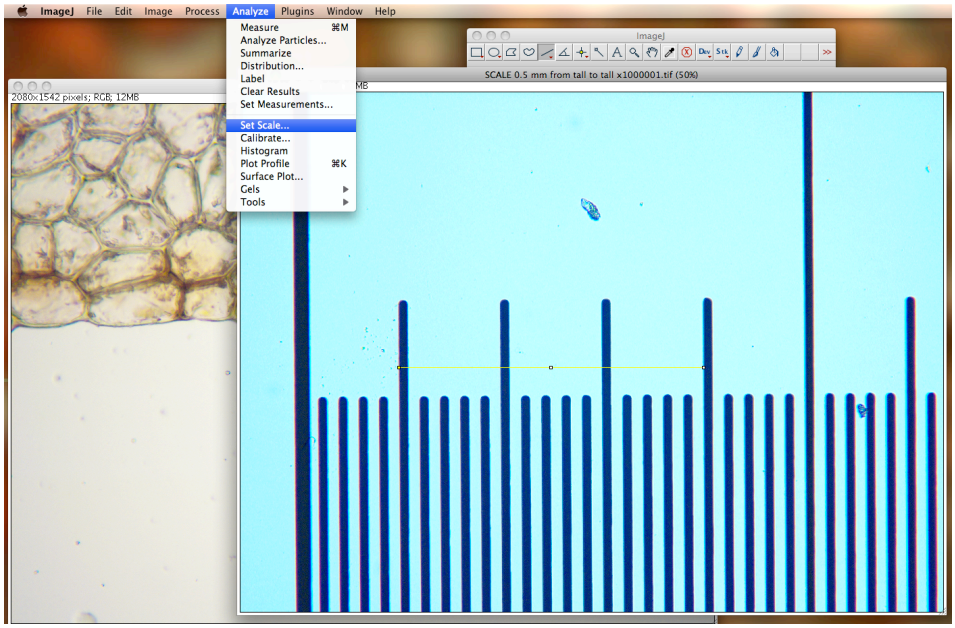
1) Open your image as well as a calibrated image in ImageJ. This can be done by dragging your images over the ImageJ icon and dropping them.



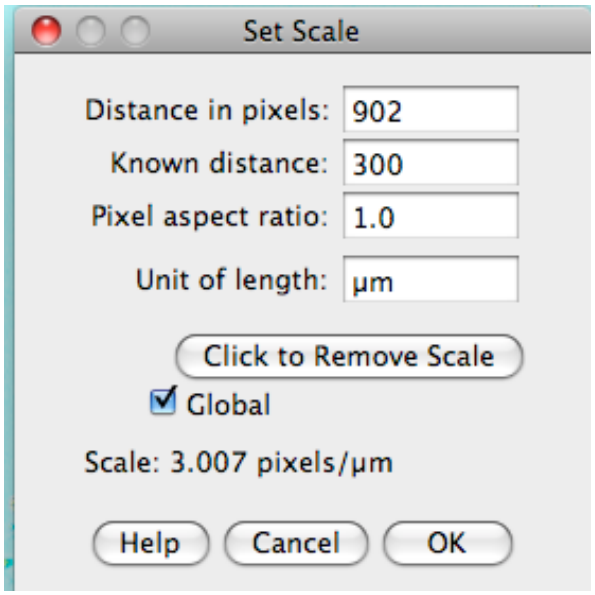
2) Use the line selection tool to draw a selection a known length. Here we have drawn a 300µm line



3) With the selection line, select “Set Scale from the Analyze menu…



4) …which will bring up the dialog box. Fill in the known distance you measured and the unit of length. Checking “global” will apply this scale to all open windows.



4) Now you are ready to measure! Use the line tool to draw the desired length/width to be measured, hit command+m or go to “Analyze” menu and select “Measure”. Your measurement will appear in units you chose previously in a new box, under “Length”.