Stereo1 Quick Start Guide

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First and foremost: be mindful of what you are doing at all times. The microscopes are delicate and must be treated as such.

SAMPLE CLEANING AND PREPARATION

- Make sure your sample container (e.g. your Petri dish) is *scrupulously* clean and dry before placing it on the microscope stage.
- Use a sample container sized appropriately to your sample; a 1cm or smaller embryo can be contained in a 35mm Petri dish. This will help to minimize spills.
- Do not fill sample containers to overflowing, as the microscope must be kept dry.

STARTUP

- Check the microscope and table to be sure they are clean before doing anything else.
- Set the zoom wheel to the lowest setting (7x).
- Check the eyepieces to be sure that they are a comfortable distance apart.
- If you will be doing reflected light imaging, make sure that the plastic stage insert is in place and that the black or white side is facing up (as per your needs).
- If you will be using transmitted or oblique illumination, ensure that the glass stage insert is in place and that it is scrupulously clean.
- Ensure that the clear plastic cover is in place over the stage (yes, you **must** use this).
- Push the eyepiece/camera rod all the way in to send the light to the eyepieces.
- Log in to the computer. Log in to *AD* rather than *IMBPC* or *LAB-STEREO1*.
- Follow the instructions that pop up in the *Windows Script Host* dialog box, and the click *OK*, thus closing the dialog box.
- Place your sample on the stage and centre it below the objective.

LIGHT PATH

- Turn on one of the lights.
  - For reflected light you have a choice of two lights:
    - the ring light offers a more even and featureless light, and is mounted to the objective;
    - the dual-head fibre optic light produces directional lighting that can be used to accentuate the shape of your sample.
    - Both lamp houses are located behind the microscope.
  - For brightfield, oblique, or darkfield illumination, turn on the lamp in the microscope base.
  - To set up brightfield imaging
    - Ensure that the LBD filter rod on the right-hand side of the microscope is pushed in and that the brightness control knob at the rear of the right-hand side is set to produce a neutral light.
    - Adjust the brightness of the light using the ND (neutral density) filters on the right-hand side of the microscope.
    - Turn the switch at the front of the right-hand side of the microscope to the rear position.

        - Push the rod on the front of the microscope all the way in and turn it fully clockwise.
    - If you wish to use oblique or darkfield illumination
        - Adjust the width of the aperture by turning the end of the rod on the front of the microscope stand.
        - Adjust the position of the aperture by drawing the rod in and out.
        - Adjust the angle of illumination using the switch on the front of the right-hand side of the microscope base.
- Carefully bring your sample into focus, and adjust the magnifying power of the microscope using the zoom wheel.

IMAGE CAPTURE

- Pull the eyepiece/camera rod all the way out to send the light to the camera.
- Start *DP Manager*.
- Go to *Menu > Image Capture > AutoSave Options…* and check to be sure that your images will not be saved to someone else's folder. You may set up your own auto-save settings.
- Start *DP Controller* and press the *Preview* button.
- Select an *Image Size* of 1,360 × 1,024. This is fine for documentation and publication. Select a larger size if you want an image for a poster.
- Make sure the *Sensitivity* is set to *ISO 200*.
- Set the *Exposure* to *Auto*. If you want more control over exposure, you can set *Exposure* to *Manual* and control the exposure time with the slider on the left of the *Capture* menu.
- If you want a scale bar, select the magnification you will be using from the *Objective* drop-down menu.
- To set the *White Balance*, go to the *Color* tab and use the tools found there.
- The *Scale* tab has tools to set the appearance of the scale bar. The *Burn Scale in Image* box must be ticked to save the scale bar in your image.
- If you'd like to capture greyscale images rather than colour images, click the greyscale button in the tools at the top of the DP Controller window.
- Bring the image into focus on the screen.
- Click the *Capture* button to capture an image.
- Save the image by going to *Menu > File > Save* in DP Manager. Save your files to a local folder and transfer them to network storage at the end of your session.

WHEN YOU ARE DONE

- Clean up **all** spills in the working area. This is an OH&S issue with which all personnel **must** comply.
- Turn off all lamps whether you used them or not.
- Log out of the computer.

Finally, please remember that the optics on these microscopes are **very** delicate. Please treat the microscopes gently and with respect. Think of them not as pieces of lab equipment, but as **very, very expensive** lenses for very special cameras. A really nice lens for up-close work for your camera can run about $2,000 and you wouldn't grind pieces of glass into that, would you? Microscope lenses can cost much more than that, so why would you grind slides into them or leave oil on them?