Center for Toxicology, Southwest Environmental Health Sciences Center (an NIEHS Center, ES06694)

Cellular Imaging Core Newsletter

October 2007 ***http://swehsc.pharmacy.arizona.edu/exppath/***

Arizona Research Labs - facility changes

Here is a quick synopsis of a number of changes that are occurring in the Arizona Research Labs imaging facilities.

Confocal - In collaboration with the SWEHSC, ARL has turned over the day-to-day management of the Zeiss LSM510 confocal microscope located in LSN 410 to Doug Cromey. Doug will now be the sole contact for training, technical support and questions regarding billing. Doug will continue to provide personalized support to members of the SWEHSC without additional assisted-use fees.

EM labs - The current manager of the AHSC Electron Microscopy facility, Peggy McCuskey, is retiring at the end of 2007. ARL is currently accepting applications for the position of manager for this facility. If you know someone with electron microscopy experience who might be interested in this position, direct them to job #39315 on the Human Resources website (http://www.uacareertrack.com/). Dr. Lantz is the chair of the user committee for this facility and has been working with others at the University to ensure that the transition in this facility goes as smoothly as possible.

The main campus Electron Microscopy facility has combined resources with Materials Sciences & Engineering, bringing some new capabilities to the facility. The combined facility is still located in the basement of the Marley building, but it is now called the **University Spectroscopy and Imaging Facilities**. See their re-designed website at: http://imaging.arl.arizona.edu/

Cytometry - Barb Carolus continues to manage the ARL/AZCC Flow Cytometry facility. New to the facility is Cytometry Specialist Paula Campbell. For more information, see: http://cytometry.arl.arizona.edu/index.php

For additional information about the facilities and instruments associated with the Cellular Imaging Core, see: http://swehsc.pharmacy.arizona.edu/exppath/core/equip/

Taking high-quality microscope images

As digital cameras become less expensive, a number of labs now have access to a light microscope with a digital camera. To capture the highest quality images, a small investment of time in properly setting up the microscope will pay off with much better looking images. Contact Doug Cromey for assistance with these suggestions.

Here are some things to consider:

Align - Every time you sit down to a microscope, you should know how to quickly check the alignment of the illumination light path with the imaging light path. For brightfield or transmitted light microscopy, this means going through the steps of aligning for Köeller illumination. A short handout describing how this is done can be found on at the Core's handouts page *(look for "Basic Microscope Alignment")*, found at: http://swehsc.pharmacy.arizona.edu/exppath/resources/handouts.html

If you are using phase contrast, the phase ring in the condenser needs to be matched to the phase ring of the objective lens. In addition, the phase rings need to be aligned to ensure that the highest-quality images.

Light - The best light for imaging is typically when the transmitted bulb is near full power. Many microscopes have a camera setting for the lamp or a 4500°K setting. These lamp settings ensure that the color temperature of the bulb gives white and not yellow-tinged light. If the lamp setting is too bright for your camera (and eyes), look for neutral density (ND) filters on your microscope that can be inserted into the light path to control the light. ND filters reduce the overall intensity of the light, without changing the color temperature. If your microscope doesn't have ND filters, they are not very expensive and are a worthwhile investment.

Clean - If your microscope is heavily used, having it cleaned every 1-2 years is an important way to improve image quality and protect the instrument. See the handouts page *(above)* for a list of Southern AZ vendor service contacts. To protect the microscope on a day-to-day basis, keep immersion oil away from dry objectives and cover the microscope after use (dust is the enemy!).

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