



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

Experimental Pathology Service Core

R. Clark Lantz, Ph.D.	Core Director	626-6716	LSN 447	clark-lantz@ns.arizona.edu
Douglas W. Cromey, M.S.	Core Manager	626-2824	AHSC 4212A	doug-cromey@ns.arizona.edu
Claire M. Payne, Ph.D.		626-2870	AHSC 6111	claire-payne@ns.arizona.edu

Department of Cell Biology & Anatomy, Arizona Health Sciences Center, 1501 N. Campbell Ave., Tucson, AZ 85724-5044

http://www.pharmacy.arizona.edu/exp_path.html

New Scanning Electron Microscope coming to the Imaging facility:

- Dr. McCuskey received notice that the NIH will fund his shared instrumentation grant for a new scanning electron microscope. The proposal included an instrument with secondary and back-scattered electron detectors. The microscope should have the ability to capture images on film or digitally. The plan is to have the new instrument installed sometime this summer. Dr. McCuskey is a member of the Experimental Pathology Service Core advisory committee.

The second Image Analysis Workstation is on order:

- Our second Compix image analysis workstation is currently on order. We have a tentative delivery date of late March 2000.
- We are currently evaluating software options for adding deconvolution to this system. Deconvolution uses information about the optics of a microscope system to digitally deblur epifluorescence images. The computed images are fairly comparable to those generated with the confocal. Deconvolution systems can be used with samples that emit low levels of fluorescence or on live samples that might be damaged by the confocal's laser.

Color Hardcopy information:

- Interested in comparing the quality of different types of color printers? Last spring Doug Cromey ran a test print through more than a dozen different types of printers (*color laser, color inkjet, dye-sublimation, photographic*). Contact Doug to look at the different prints and see for yourself what print options are available.
- Since the University is no longer routing Appletalk we were concerned that Macintosh users would not be able to print their Illustrator or Powerpoint files to the Codonics dye-sublimation printer. Codonics has sent along information for configuring the Laserwriter 8 driver so that we should be able to print these non-bitmapped files across the network. Contact Doug for more information about configuring your Macintosh.

Appropriate Tissue Preservation:

- Recent submissions of tissue for the histology lab have brought up the importance of properly preserving your tissues. Poorly preserved tissues typically give poor results for both routine histology and immunocytochemistry.
- For fresh frozen tissue this usually means small pieces of tissue frozen using the isopentane/liquid nitrogen snap freezing technique. Frozen tissues should be stored well wrapped inside a sealable bag (*to prevent desiccation*) at -80°C until they can be sectioned in a cryostat.
- For fixed samples, the tissue is usually fixed for at least 1-2 hours (*depending on tissue size & the fixative used*) in 10% neutral buffered formalin (*a.k.a. 4% formaldehyde*) or Bouin's fixative (yellow in color due to picric acid). The piece of tissue cannot be too large in size or the deeper parts of the tissue begin to autolyse before the fixative can preserve them. A good rule of thumb is that at least one dimension of the tissue cannot exceed 5 mm in thickness to ensure the best fixation. Long term storage in fixatives is not recommended. Specimens are typically changed to 70% ethanol (aq) and brought to the histology lab for processing and embedding.
- Tissues will be better preserved if the fixative is fresh. We do not recommend the use of stock 37% formaldehyde solutions that are older than 6 months. It's much easier (*and fairly inexpensive*) to purchase premade 10% neutral buffered formalin from a vendor. If you plan to do immunocytochemistry you may want to stick with freshly made solutions only (*this avoids the formation of methanol, which forms fairly rapidly in formaldehyde solutions*).
- Contact Andrea Grantham (626-4415 or <histo@u.arizona.edu>) of the Cell Biology & Anatomy Histology Lab to review your tissue preservation procedures.