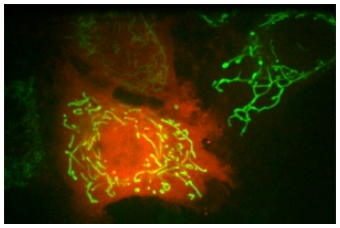
Cell Biology Laboratory

Honours Project Information 2010

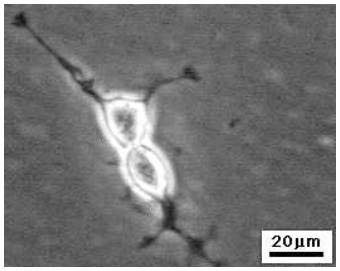
Dr Mark Hill (Wallace Wurth room G20)

e: m.hill@unsw.edu.au

The Cell Biology Laboratory offers a number of different projects for the upcoming Science honours program. The list below is a very brief introduction to some current projects. In all cases you should email me and organise a meeting to discuss the details of these projects. The laboratory has access to PC2 tissue culture, molecular/protein, microscopy and histology facilities. Clinical collaborators include both ophthalmology and geriatric medicine.



1. Neural Development - Study of living neurons during their growth and differentiation by tagging cellular components with fluorescent fusion proteins. To study the cell biology of living cells we require methods for identifying cellular structures using "tagging" techniques. This project will utilise the new medical faculty imaging centre to establish and study stably tagged cell lines.



2. Cell Biology of Disease - Transfection of fusion protein genes, induction of cellular stresses and the inhibition of gene expression through the use of antisense technology. It has been shown that cells under physiological stress (by a variety of stressors) respond by alterations in cell cytoskeleton and organelle distribution. This project will

3. Clinically related Projects - Two disorders studied in the lab are the eye disease glaucoma and mental retardation by Fragile X. We are currently attempting to establish a retinal ganglion model for glaucoma using either viral transformation of primary retinal neurons or retinal stem cells.

Techniques learned: Cell tissue culture, sterile technique, immunochemistry, microscopy, image analysis, transfection techniques, molecular techniques, protein and RNA analysis. Students would also need to complete appropriate OHS training and laboratory induction before commencing laboratory research.

Further information:

http://php.med.unsw.edu.au/cellbiology/index.php?title=Cell_Biology_Projects