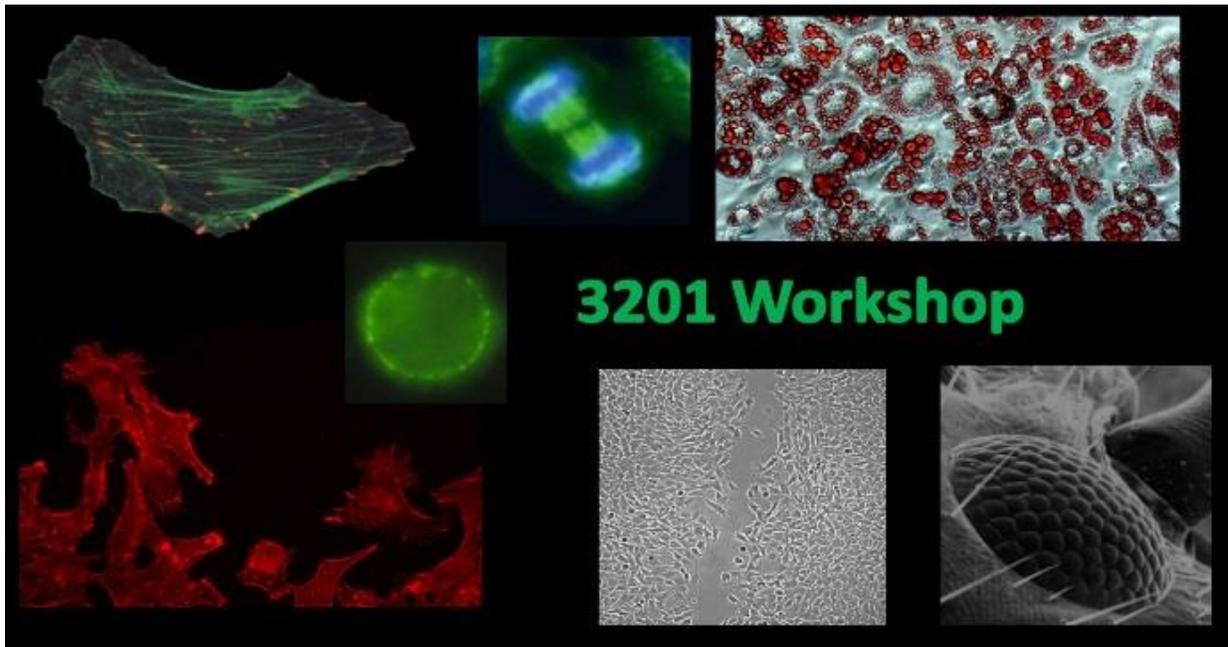


## 3201 Cell Biology Workshop



Why do you get sick? Do cells have a skeleton? Can you see it? What do chemotherapeutic drugs do to cells? How do scientists know? Why do pharmaceutical companies need so many cell biologists? Why will cell biologists SOLVE the current COVID-19 pandemic? ALL living creatures are composed of cells and an understanding of cellular processes and the methods, techniques, and equipment used to discover cellular processes is CENTRAL to all of biology. This is the focus of the Biology 3201 workshops.

We have worked very hard to create an exciting workshop experience for you this year with alternative learning activities, complimented by enhanced audio-visual presentations and on-line activities. Even though we are adopting a different delivery approach in these troubled times, you will STILL gain the valuable skills you need to succeed in your future endeavours. Workshop activities, assignments and assessments can be completed asynchronously allowing you to proceed at a pace (and at times) that work for your schedule. We have designed bi-weekly on-line lessons to take about 2-3 hours to complete giving you ample time to complete your lab reports.

### **Topics covered for 3201 include:**

Microscopy: comparing the SEM, TEM and the light microscope.

Receptor mediated endocytosis: using splenocytes and fluorescently labelled antibodies to examine the how B lymphocytes endocytose foreign antigens.

Microtubules and the mitotic index assay: how chemotherapy drugs can inhibit mitosis and disrupt the cell cycle

Microfilaments and motility: using the wound scratch assay to evaluate the effects of anti-metastatic drugs on the cytoskeleton and cell motility

Differentiation of 3T3-L1 cells: Can treating adipocytes with coffee alkaloids reverse the differentiation induced by the environmental obesogen BPA?

**Workshop objectives:**

-To understand the use of cell lines as model systems for studying biology and how cell culture is a cornerstone technique in modern cell biology laboratories.

-To explore and understand the benefits and limitations of specific pieces of equipment used to answer scientific questions relating to cell biology

-To explore and understand the benefits and limitations of common, important protocols used in cell biology laboratories

-To explore and understand the benefits and limitations of specific solutions/reagents used to answer scientific questions relating to cell biology