

NANSLO: Remote Lab Activity – Identifying Mitosis

BRIEF REVIEW

The cell cycle is an orderly process that has two parts: interphase and cell division. We will be taking a brief look at the end stages of cell division using the Remote Web-Based Science Lab. Cell Division is called Mitosis which allows a cell to duplicate through several stages, to include: prophase, metaphase, anaphase, and telophase/cytokinesis. Mitosis is required to provide new cells in a developing embryo, fetus or child and replacement cells for adults. During mitosis the cell that divides is called the parent cell and the new cells are called daughter cells.

This is a brief introduction in remote microscopy. The original, comprehensive lab should have been received by all attending individuals.

PURPOSE

The purpose of this lab is to display the ability to use a remote microscope, perform various functions of this microscope, and capture (save) images to a computer.

METHOD

We will be viewing an Onion Root Tip and identifying the last three stages of mitosis: metaphase (where chromosomes are aligned at the equator, anaphase (where chromosomes separate and move to opposite side of the cell), and cytokinesis/telophase (where the daughter cells are forming and complete separation).

This is not a virtual lab. Participants will be adjusting a microscope located in the NANSLO lab in Denver, Colorado. Control of the microscope will be through the use of a computer or laptop. Participants will be asked to complete a task. Do not worry if you are not an expert in mitosis we will be helping to identify the cells. Here are the following activities to be performed:

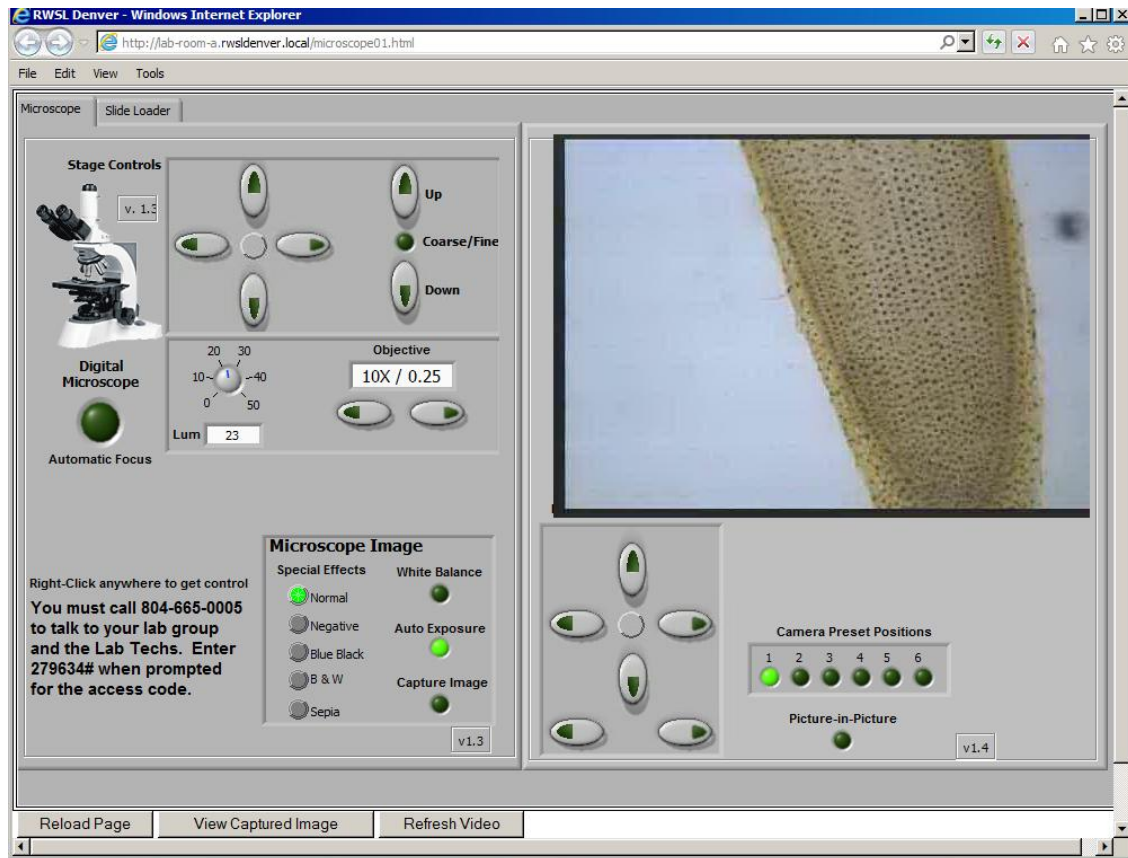
1. Use the "picture in picture" capability to see the actual lab in Denver. Select and show various lab views, feel free to zoom in and zoom out.
2. Move the "stage" of the microscope. This will allow you to see the complete specimen. Pick the area that has the most cells.
3. Use 10x magnification, click on the "auto focus" function. Once the specimen is in focus, click on "capture image", display it and then save it to your computer.
4. Use 20x, and follow the same procedures as #3.
5. Use 40x, and follow the same procedure as #3.
6. Use 60x, and follow the same procedure as #3.
7. Use color options to see how samples look by using different effects (i.e. black and white)

Participants will be asked to "request control of the microscope" in order to complete one of the above tasks. After the task is completed, the next participant will then acquire control through the moderator. Please see the specific steps detailed below.

Blackboard Collaborate Session Instructions

Requesting Control of the Microscope Lab Interface Through Blackboard Collaborate

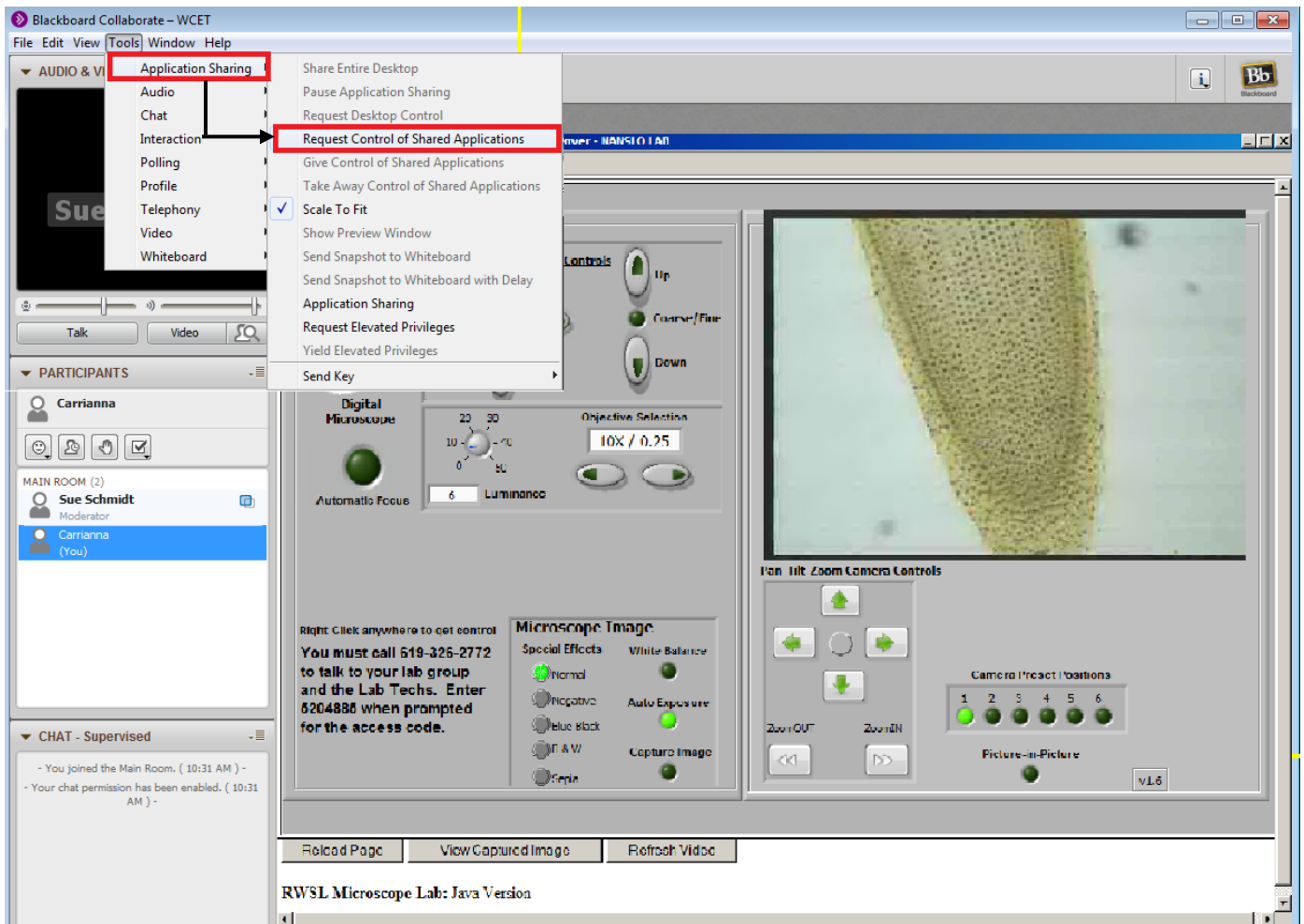
During this webinar, you will have the opportunity to use the microscope control panel to perform one of the activities discussed above.



MICROSCOPE CONTROL PANEL

Dan Branan will be sharing with you this application through Blackboard Collaborate. Once he shares this application, you will need to do the following in Blackboard Collaborate to gain control of the software.

Step 1: Select Tools/Application Sharing/Request Control of Shared Application.



Step 2: A message is sent to Dan requesting that you be given permission to control the application being shared. Once approved (takes just a second,) you will be able use the capabilities on the NANSLO lab interface shown below with your mouse.

Step 3: Dan will remove your permission when you have completed your portion of the lab activity.

NOTE: Your mouse movement will be slower than usual and you may at times see a dot rather than a cursor. Also, the response to the actions when using the application through Blackboard Collaborate is much slower than when logged into the NANSLO control panel software directly.