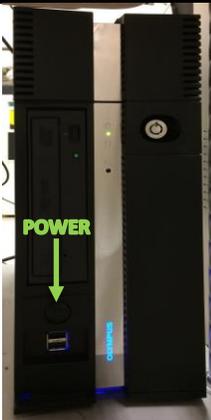


Number: 10

**WORK INSTRUCTION BREAKDOWN SHEET**

Operation: Laser Scanning Confocal Microscope (LSCM) **Startup/Shutdown**  
 Instrument: Olympus Fluoview FV10i

| IMPORTANT STEPS  | KEY POINTS  | REASONS WHY   |
|--|---|---|
| <p><b>A logical segment of the operation when something happens to advance the work.</b></p> | <p><b>Anything in a step that might:</b></p> <ol style="list-style-type: none"> <li><b>1. Make or break the job</b></li> <li><b>2. Injure the worker</b></li> <li><b>3. Be a Cultural Consideration</b></li> <li><b>4. Make the work easier to do (i.e., “knack”, “trick”, special timing, or bit of special information).</b></li> </ol>   | <p><b>Reasons for each key point.</b></p>   |
| <b>Startup</b>   |   |   |
| <p>Turn on the microscope.</p>   | <ul style="list-style-type: none"> <li>• Press the power button, located <i>below</i> the metallic “Hood Open” button.</li> <li>• The green light will blink and the orange light will be constant.</li> <li>• After a few minutes both lights will be constant indicating the microscope is ready for use.</li> <li>• NOTE: when the software is running (addressed later in Operations SOP), the orange light will blink; this is normal behavior.</li> </ul> | <p>When powered on for first time, microscope takes about 10 minutes to warm to its operating temperature.</p>  |
| <p>Turn on the computer/CPU and monitor.</p>   | <ul style="list-style-type: none"> <li>• Press the power button on the black computer tower beneath the desk (the Olympus logo will illuminate blue when powered on).</li> <li>• Press the power button on the monitor.</li> </ul>  |    |
| <p>Log in to the computer.</p>   | <ul style="list-style-type: none"> <li>• Username: fluoview</li> <li>• Password: fluoview</li> </ul>  |    |
| <b>Proceed to “Confocal Microscope Operations” Work Instructions (See Number: 11)</b>        |   |   |

<sup>1</sup> Adapted from Graupp, P. & Wrona, R. (2006) The TWI Workbook: Essential Skills for Supervisors. New York, NY. Productivity Press.

| <b>Shutdown</b>   |   |  |
|---|---|--|
| <p>After Operator’s confocal microscopy session is over, wipe parts of the confocal microscope clean and prepare it for shutdown.</p>         | <p><b><u>After oil immersion session:</u></b></p> <ul style="list-style-type: none"> <li>• Put on clean disposable gloves.</li> <li>• With one hand placed on top of the confocal microscope hood, push the “Hood Open” button with a finger of other hand to gently open the hood.</li> <li>• Remove sample and sample holder from confocal microscope.</li> <li>• Use a tissue wiper to remove any residual oil where sample holder used to be.</li> <li>• Clean sample with tissue wiper and put sample away.</li> <li>• Clean objective lens with liquid lens cleaner solution and <b>lens paper</b>.</li> <li>• Using two hands on the upper front corners of the hood, gently and completely close hood.</li> <li>• Remove disposable gloves.</li> <li>• Click on “60x” above vertical Zoom bar to return objective lens to 10x.</li> </ul> <p><b><u>After any other session (i.e., non-oil):</u></b></p> <ul style="list-style-type: none"> <li>• Put on clean disposable gloves.</li> <li>• With one hand placed on top of the confocal microscope hood, push the “Hood Open” button with a finger on other hand to gently open the hood.</li> <li>• Remove sample and sample holder from confocal microscope and put sample away.</li> <li>• Using two hands on the upper front corners of the hood, gently and completely close hood.</li> <li>• Remove disposable gloves.</li> </ul> | <p><b><u>After oil immersion session:</u></b><br/>Removing sample and sample holder prior to switching objective lens from 60x to 10x reduces the risk of spreading oil inside the confocal microscope.</p> <p><b><u>Using two hands to close the hood:</u></b><br/>This is done to insure that the lid latches completely closed on both sides, to avoid incidental contact with its lasers.</p> <p><b><u>Removing gloves after oil cleanup:</u></b><br/>Remove gloves after oil cleanup to avoid contaminating the computer equipment with lens oil.</p> |
| <p>Close the confocal microscope software.</p> <p>Software may remain active if Operator is changing samples during a microscopy session.</p> | <ul style="list-style-type: none"> <li>• Verify data are satisfactorily saved to appropriate directory.</li> <li>• Click on the black “Exit” button located at the right end on the top toolbar of the FV10i-SW.exe software window and confirm the exit command.</li> </ul>  | <p>As the software is designed to keep certain windows on top of all other windows, shutdown may necessitate finding prompts underneath other program windows.</p>   |
| <p>Turn off the computer/CPU.</p>   | <p>Shut down Windows Vista; monitor should sleep automatically.</p>   |  |
| <p>Turn off the confocal microscope.</p>  | <p>Press and hold the power button for 3 seconds (located below the “Hood Open” button).</p>  |  |

<sup>1</sup> Adapted from Graupp, P. & Wrona, R. (2006) The TWI Workbook: Essential Skills for Supervisors. New York, NY. Productivity Press.