

# Training Policy

## (Leica SP8/STED/FLIM confocal system)

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Instrument management and reservations and usage tracking is done via the iLab software and therefore all users need to be registered in iLab. Detailed instructions for the user and the Principal Investigator/Advisor are provided after the training request is initiated.

Since the microscope is located in a BL-2 laboratory, only approved and trained users can use the room and the microscope. A separate document (“How to Gain Access to the MIC BSL-2 Room 1117”) lists the steps that the Principal investigator and the end user need to take. This ensures safety for the users and compliance with Biosafety rules.

Besides the required biosafety training mentioned in the document mentioned above, all users of the laser scanning confocal microscope **MUST** take the online Laser Safety course. It is located at: <https://ehsdtraining.tamu.edu>. **After taking the Laser Safety course, save the confirmation email/training certificate to a file. You will be asked to upload the training confirmation when you request training. The laser safety training is valid for two years.**

The basic training is done in two sessions, 2-3hr each. In the first session MIC supplies the specimen. Users are encouraged to bring their own specimen for the second session. At that point, The MIC should have received from the Principal Investigator a copy of the relevant documents regarding the IBC Amendment, the relevant operating procedures, as well as the agent/organisms.

**Session 1:** Start-up and Shut-Down procedures; visual inspection of samples, Kohler illumination, setting up confocal imaging parameters, multi-channel fluorescence imaging, adjusting spectral detectors, sequential scanning, pixel size and resolution, z-stacks.

**Session 2:** Practice skills from session 1; using water and oil immersion objectives; time lapse imaging, ROI and line scanning, Suppressing short-lifetime signal using gated detection. Working in the resonant Scanner mode; Dealing with noise and weak signals. The effect of pinhole size on resolution and signal strength. Optimization of imaging parameters for user-supplied samples.

When the basic confocal training is completed, you may use the microscope independently during normal business hours. Once you gain proficiency in using the instrument, you will undergo a practical check-out test to demonstrate that you can operate the microscope without endangering yourself or the microscope. After successful checkout, you will get access to the online scheduling system, and get building access using your university ID card.

**User can receive additional training based on user requirements:**

- STED superresolution imaging,
- Fluorescence lifetime imaging (FLIM)
- LasX Navigator and Image Stitching.

*Even after the training is completed, the MIC will provide help, troubleshooting and guidance and suggestions how to optimize imaging and improve image quality. This advice is typically free of charge, unless extensive consultation is required.*