About Us

The Michael Hooker Microscopy Facility is a research light microscopy facility providing advanced digital light microscopy, image processing and analysis resources to users from the UNC Chapel Hill campus.

We offer instrumentation and instruction to enable users to acquire, process and analyze images from a wide variety of sample types.

Techniques

★ Laser Scanning Confocal Microscopy (2 systems)
- 4-color fluorescence + DIC = 6 channel imaging
- Fluorescence Recovery After Photobleaching (FRAP)
- Fluorescence Resonance Energy Transfer (FRET)
- Fast X-Z scanning
- 3D and 4D image acquisition
- Spectral imaging – dye unmixing
- Co-localization
- Time lapse

★ Live Cell Imaging
- 3-color Spinning-disk Confocal (FITC, Texas Red, & Cy5 like dyes)
- Computerized control
- Simultaneous fluorescence and transmitted light (DIC)
- Heated stages
- Temperature and environmental control

★ Advanced and Standard Widefield microscopy
- Ratio imaging on an inverted microscope, e.g., Ca²⁺ Fura-2
- Dual camera imaging
- Phase contrast and DIC/Nomarski
- Time-lapse (fluorescence and transmitted light)
- Intensified CCD camera for high sensitivity
- Fluorescence dissecting microscope/macroscopic (motorized)

★ Laser micro-dissection system (Leica AS-LMD)
- Isolation of subcellular and tissue regions for DNA/RNA amplification or mass spectroscopy

★ Color brightfield imaging (high resolution)
- Nikon DXM 1200 pixel shift color camera (12 MegaPixels)

★ Image Processing and Analysis
- Co-localization
- Particle tracking
- 3-D image rendering
- Fluorescence quantification
- Denstometry
- Area measurements

Support

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CT Surgery, Dentistry, Dermatology, Drug Delivery & Disposition, EPA, Epidemiology, Genetics, Medicine (multiple divisions), Molecular Pharmacology, Neuroscience, Biology, Nutrition, Epidemiology, Pathology, Pediatrics, Periodontology, Pharmaceutical Sciences, Pharmacology, Pharmacy, Radiation Oncology, and Radiology, Preclinical, Surgery, and others.

Administrators: Dede Convin, Pam Morrison, Annabelle Stein, Karen Stone, Debbi Windham.