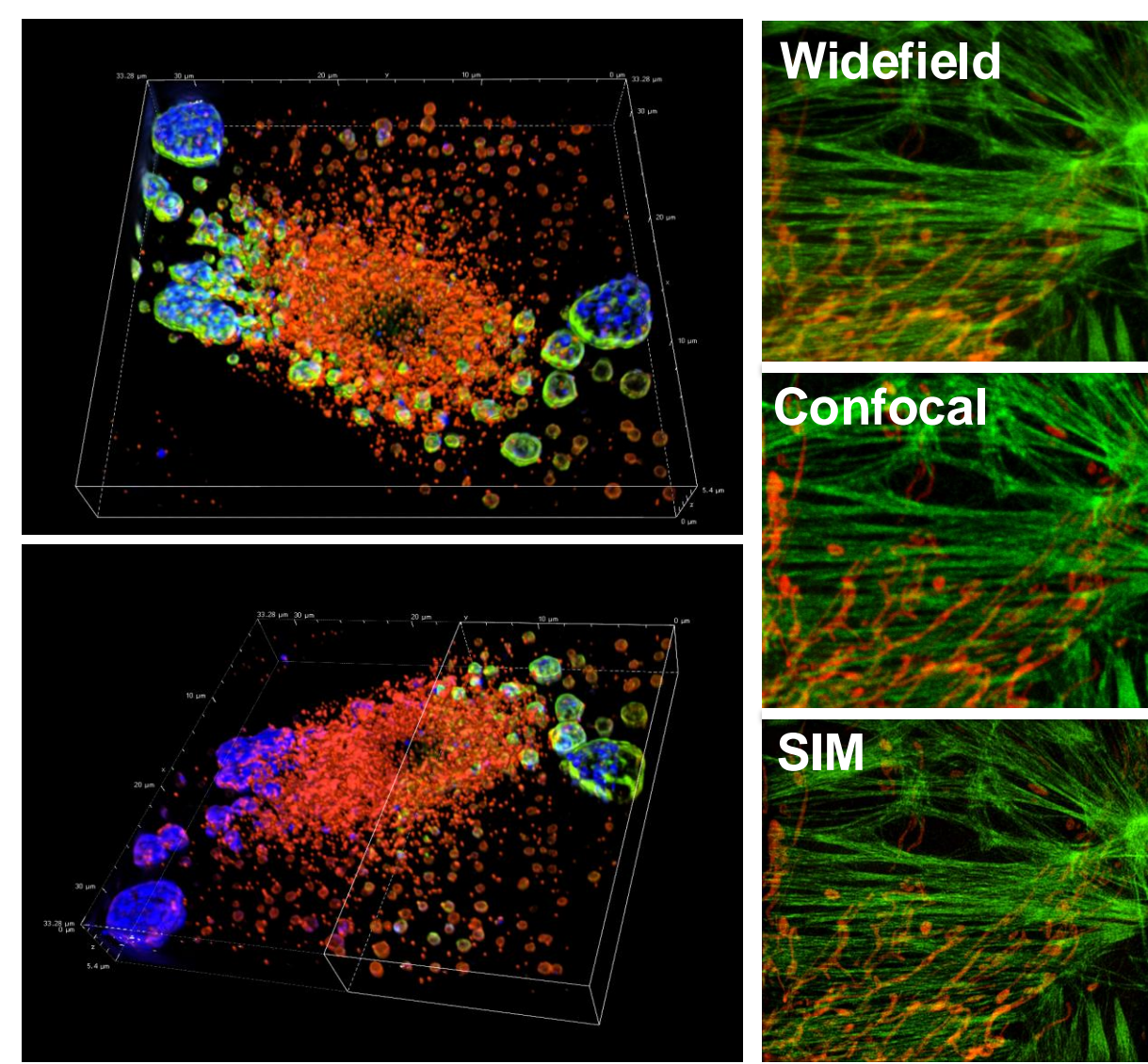
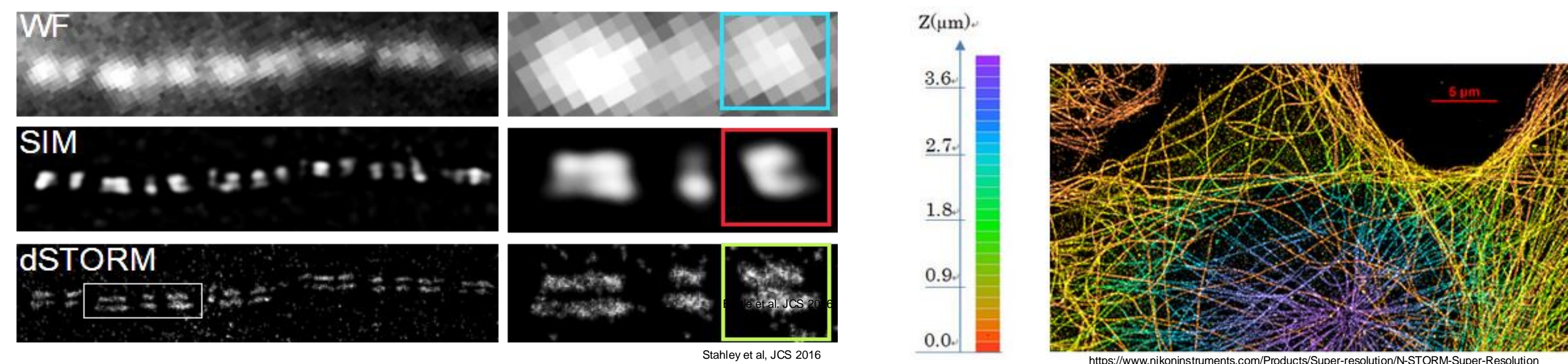


SUPER RESOLUTION MICROSCOPY— SIM and STORM



Structured Illumination Microscopy (SIM)

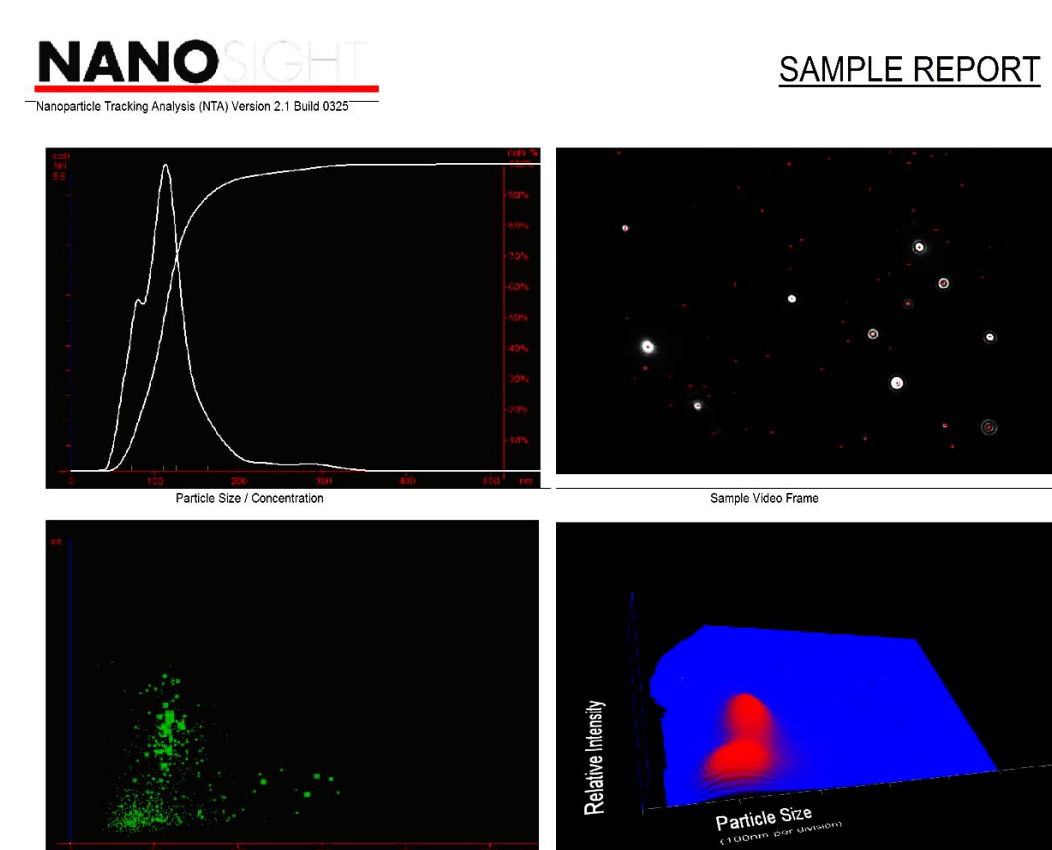
- Resolution:** Twice the diffraction limit (~115 nm lateral, ~269–300 nm axial).
- Capabilities:** Enables detailed 3D visualization of intracellular structures in fixed/live cells and tissues, with optical sectioning for higher spatial resolution.



STochastic Optical Reconstruction Microscopy (STORM)

- Resolution:** Tenfold improvement (~20 nm lateral, ~50 nm axial).
- Capabilities:** Reconstructs super-resolution 3D images using precise fluorophore localization. Supports multi-color imaging for 2–3 proteins at the nanoscale.

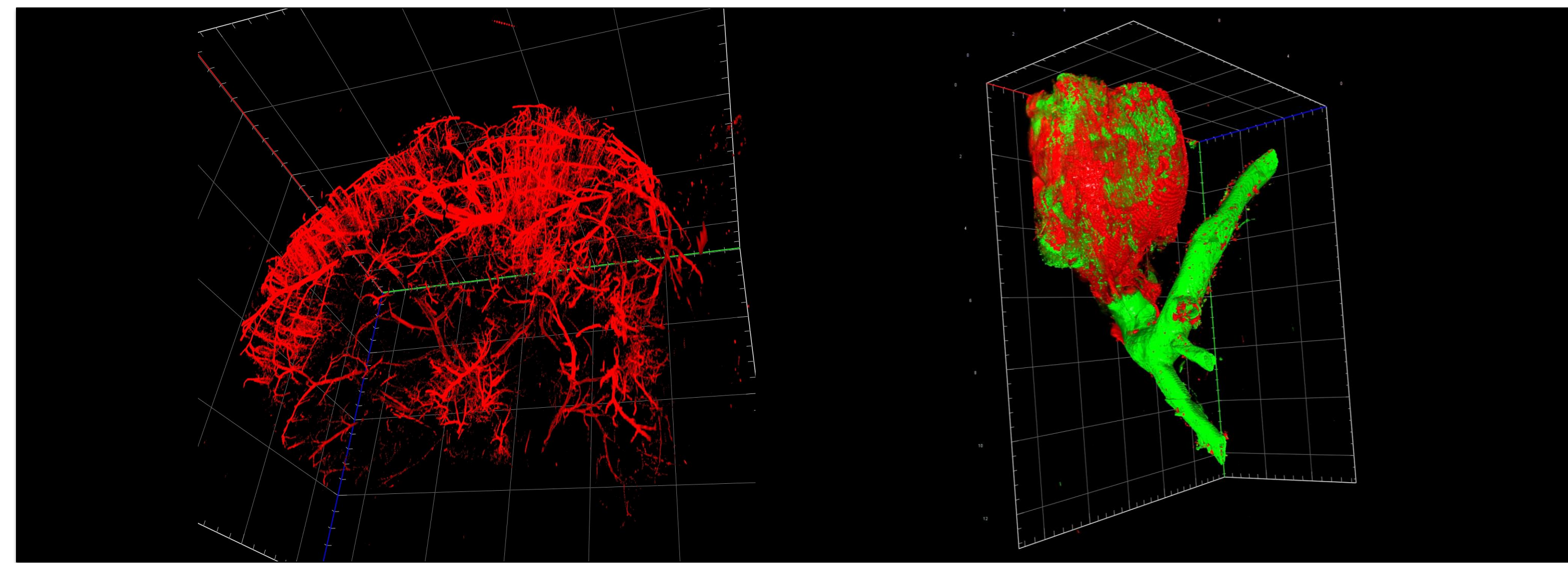
NANOPARTICLE IMAGING SYSTEM



NS300 Particle/Exosome Analysis System

- Capabilities:** Visualizes and measures particles (10–2000 nm) in suspension.
- Applications:** Protein aggregation, exosomes, drug delivery systems, nanomaterial characterization, and fluorescent particle analysis (488 nm excitation).

LIGHTSHEET MICROSCOPY



Mouse brain vasculature and mouse aorta imaged at HRIF core facility. Courtesy of Daniel Tyrrell Ph.D.

Zeiss Lightsheet 7 Microscope

- Purpose:** Fluorescent imaging of live or fixed-cleared whole organisms and organs.
- Capabilities:** Fast, gentle imaging of living models (e.g., zebrafish, organoids) over time and large cleared specimens with subcellular resolution. Adapts to various clearing methods with specialized optics and sample chambers.

HISTOLOGY & WIDEFIELD FLUORESCENCE

Lionheart FX Epifluorescence Microscope

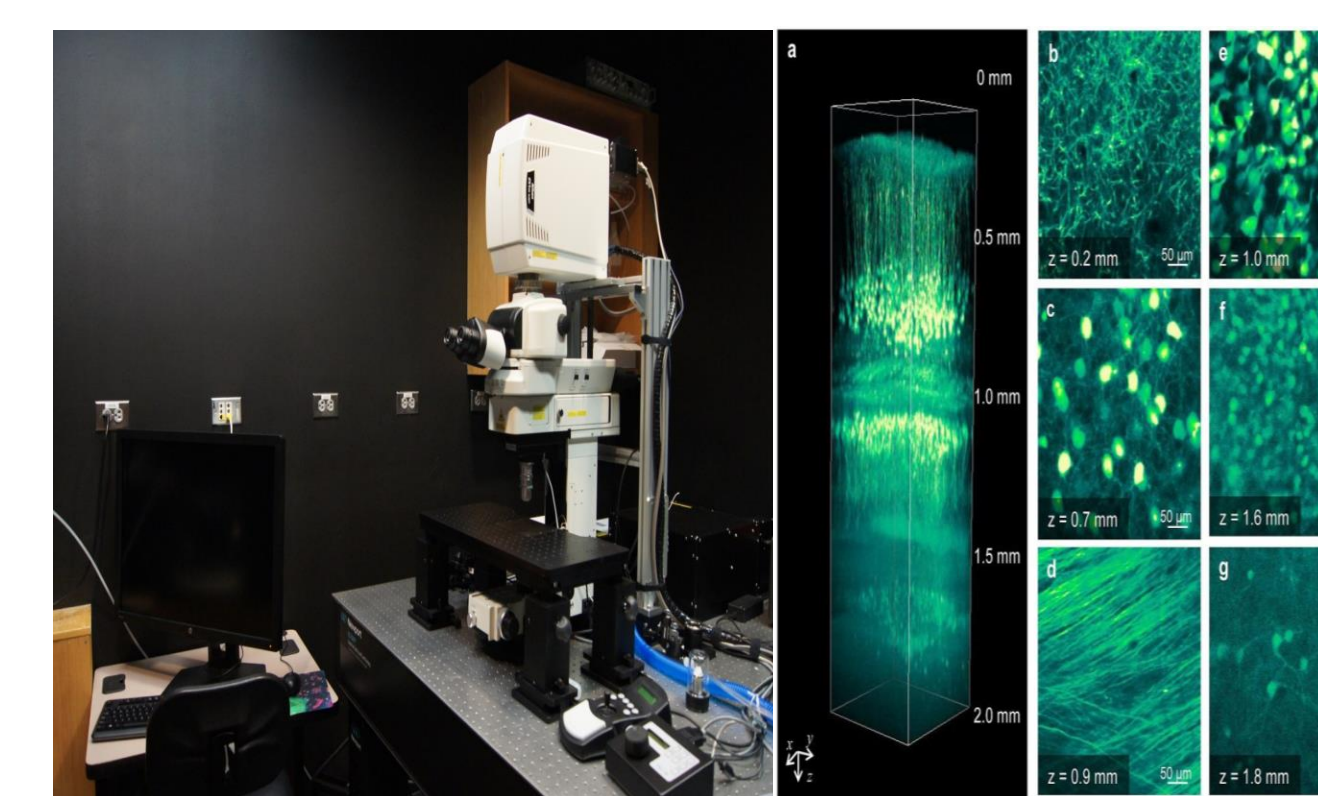
- Versatility:** Compact system supporting basic and advanced imaging techniques.
- Capabilities:** Live/fixed specimen imaging in chamber slides, dishes, and plates. Offers color/BW brightfield, fluorescence, and phase-contrast imaging.



MULTIPHOTON MICROSCOPY

Upright Multiphoton Microscope

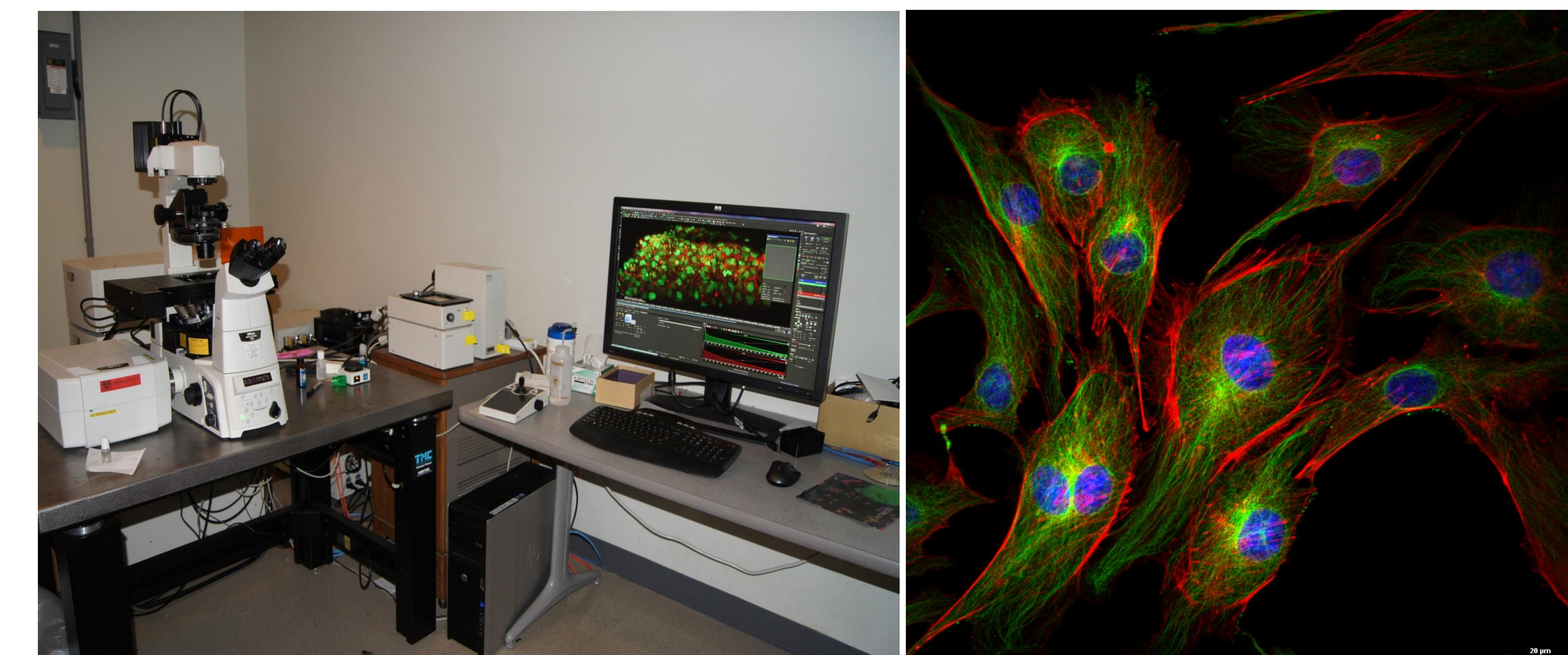
- Capabilities:** Imaging cells, organs, and live animals with deep tissue penetration and minimal photobleaching.
- Features:** Excitation (680–1020 nm), fluorescence, second harmonic generation (e.g., collagen), high-speed resonance scanning, and long-working distance 10x/25x objectives.



CONFOCAL MICROSCOPY

Leica Stellaris 5 Confocal Microscope

- System:** Advanced imaging on a DMI8 base with LAS X Software.
- Capabilities:**
 - **Detectors & Lasers:** 4 Power HyD® S detectors, tunable White Light Laser (485–790 nm), extended detection to 850 nm, AOBs®.
 - **TauSense®:** FLIM-based photon counting technology.
 - **Imaging:** DIC, fluorescence, color brightfield, and large-scale image stitching with LAS X Navigator.



HRIF Laser Scanning Confocal Microscopes

- Systems:** Three confocal microscopes for fixed/live cell and tissue imaging.
- Capabilities:** 4-channel imaging (405/488/561/647 lasers), high-speed resonance scanning (up to 420 fps), perfect focus for timelapse, live cell chamber (CO2/temp control), spectral detection/unmixing, FRAP, FRET, photoactivation, 2D/3D imaging, calcium imaging, colocalization, GaAsP detectors.