

The Advanced Microscopy Core Facility (AMCF) at UNMC houses state-of-the-art imaging technologies ranging from super-resolution ($\sim 0.120 \mu\text{m}$ to $0.020 \mu\text{m}$) to microscopic ($\sim 0.250 \mu\text{m}$) to mesoscopic ($\sim 5 \mu\text{m}$) biomedical imaging instrumentation. The **Zeiss ELYRA PS.1** is an inverted microscope for super-resolution (SR) structured illumination microscopy (SIM) and single-molecule localization microscopy (SMLM) including, PhotoActivated Localization Microscopy (PALM) using photo-switchable/convertible fluorescent proteins, Total Internal Reflection Fluorescence (TIRF), and STochastic Optical Reconstruction Microscopy (STORM). The **Zeiss 800 CLSM with Airyscan** is an inverted microscope dramatically increasing conventional confocal image resolution to $\sim 180 \text{ nm}$ using Airyscan technology. The **Zeiss 710 LSM** is an inverted microscope supporting most basic imaging applications, multi-channel and spectral, co-localization, live cell, 3D, and time series imaging. The **Zeiss Celldiscoverer 7** is a widefield imaging system for automated, time-lapse imaging of live samples. The **Zeiss Axioscan 7** is a high-performance whole slide scanning system for fluorescence and transmitted light imaging allowing researchers to conduct cyclic immunofluorescence studies. The **Miltenyi Biotec Ultramicroscope II Light Sheet fluorescence microscope** (LSFM) extends fluorescent imaging into true 3D, large-scale volumetric imaging of intact tissues, and small organs. The AMCF also houses several high-end data analysis workstations with premier image analysis software including **HALO** (Indica Labs) and **IMARIS** (Oxford Instruments) facilitating data rendering, analyses, and presentation options for complex 2D, 3D, and 4D datasets.

[Contact the AMCF Director](#) for customized letters of support for grant applications and/or additional information.

Note this is not an all-inclusive list. Contact Director and/or Core staff (advancedmicroscopy@unmc.edu) to discuss individual imaging needs.

Additional instrument details are available on the Instruments and Services Page.

- Zeiss Elyra PS.1 Superresolution Microscope
- Zeiss LSM 800 w/ Airyscan for High Resolution Imaging
- Zeiss 710 Confocal Laser Scanning Microscope
- Zeiss Cell Discoverer 7 high Content Plate Reader
- Zeiss Axioscan 7 Whole Slide Imaging System
- UltraMicroscope II Light Sheet Fluorescence Microscope
- X Clarity Automated Tissue Clearing System
- HALO Image Analysis Workstation
- IMARIS Image Analysis Workstation x 2
- Multi-Channel Imaging in fixed or live cells (incubated stages)
- Dynamic Imaging: Time Series, FRAP, FRET, Spectral Imaging, 3D/Volumetric, High-Content Imaging
- Single Molecule Localization Microscopy (PALM, STORM), Structured Illumination Microscopy (SIM)
- Education: In person and on-line researcher resources
- Training: hands-on across imaging modalities
- Consultation: design, collection, analyses