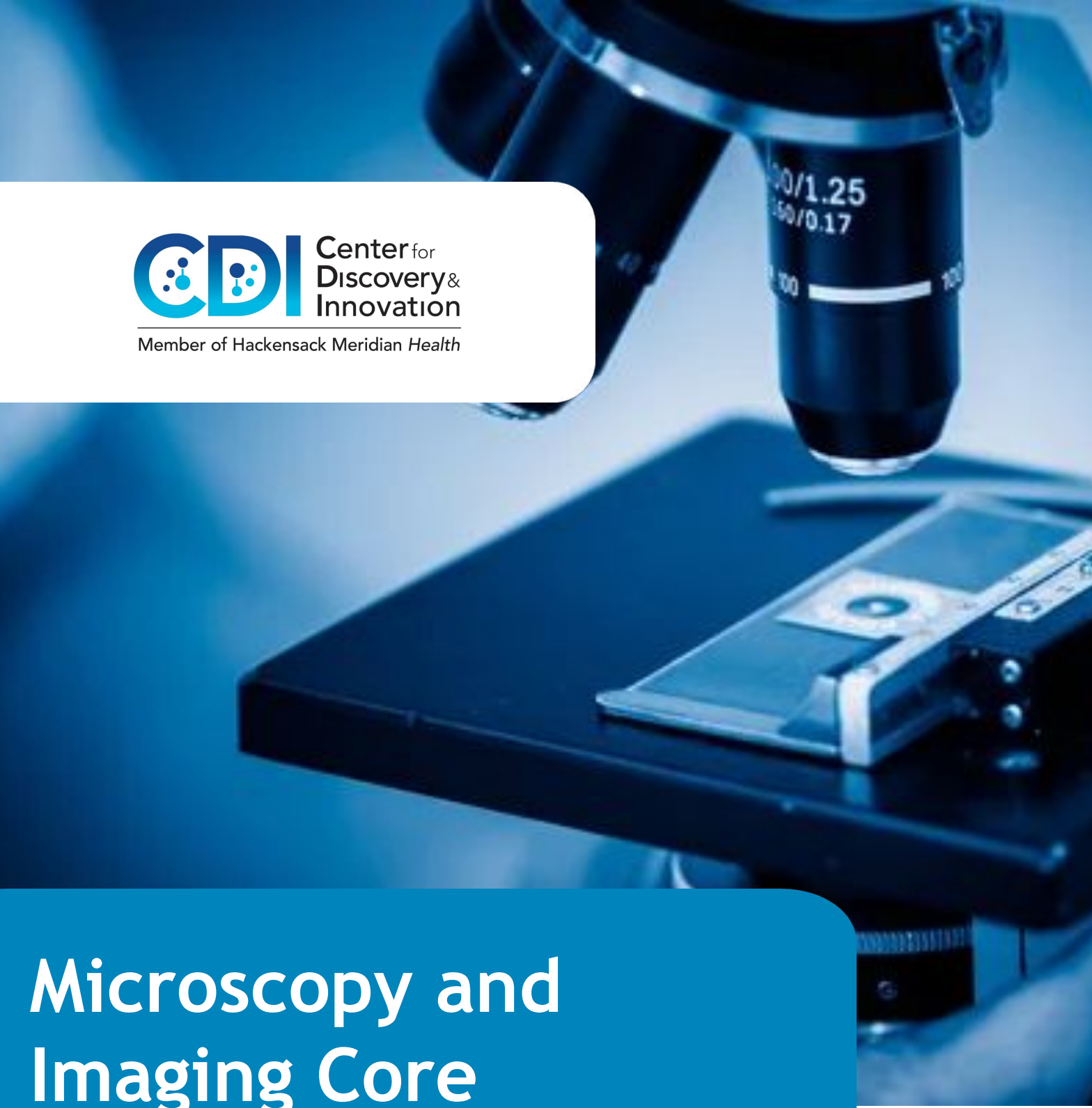

Center for Discovery & Innovation

Member of Hackensack Meridian *Health*

Microscopy and Imaging Core

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Overview

The CDI Microscopy & Imaging core provides access to a wide array of state-of-the-art instrumentation for light and confocal microscopy and other image analysis platforms. Imaging modalities supported range from conventional brightfield, to wide-field fluorescence and confocal. The MI core supports the imaging of fixed samples and live cell and tissue preparations, with automated image acquisition over long time courses in various culture ware, on systems equipped with environmental chambers.

The MISR staff provide advice on the optimal imaging approaches to achieving the desired research outcomes, assistance with experimental design, initial training and ongoing supervision with the equipment as needed, and help with image analysis and data interpretation.

Instruments and key features

MISR Instruments and Key Features

Nikon Ti2 with Hamamatsu Digital CameraNikon Ti2 A1R LSM Confocal Microscope (NJ):
The Nikon Ti2 microscope equipped with an A1R LSM confocal unit and a Tokai Hit incubation chamber is ideal for imaging both fixed and live cell samples. The instrument has laser lines for DAPI, FITC, TRITC, Alexa-647 (405, 445, 488, 514, 561, 640nm) and a range of objectives (4x, 10x/0.45 A, 20x/0.75 A, 40x/0.95 A, 40x/1.3 O, 60x/1.4 O).

Nikon Ti2 widefield Epi-Fluorescence microscope (NJ):

The Nikon Ti2 epi-fluorescent microscope is equipped with a range of objectives (4x, 10x, 20x, 40x, 60x O, 100x O), and filters for DAPI, FITC, TRITC, Cy5, CFP, YFP, mCherry, and a Tokai Hit incubation chamber. The system is ideal for brightfield and widefield fluorescent imaging of fixed and live-cell specimens with images captured with a Hamamatsu camera.

Nikon Ti2R with DS-Qi2 CameraNikon Ti2R with DS-Qi2 color camera (NJ): The Nikon Ti2R epi-fluorescent platform is equipped with a range of objectives (4x, 10x, 20X, 40x, 100x O), and filters for DAPI, FITC, TRITC, and Cy5. The color Ds-Qi2 camera makes this platform ideal for brightfield and fluorescent imaging of a range of samples.

Image Analysis Workstations

Nikon C2A stand-alone image-processing workstation is available. The workstation is equipped with NIS-Elements and Flowjo.

Other imaging instrumentation available:

Nikon C2 confocal microscope. (Butler laboratory). The Nikon C2's high-speed galvano scanners operate at rates of up to 100 fps. The system also provides simultaneous acquisition of three fluorescent channels plus DIC in a single scan.

Leica Laser Capture Dissection (LMD6 _ LMD7)Leica laser-capture microdissection microscope (LMD6 and 7 models). See Mass Spectrometry Core for details and access.

Typhoon multimode imager (Amersham/GE Healthcare): a "four-instruments-in-one" imager that can image gels, membranes, multi-well plates, dishes, and tissue sections, and offers precise quantitation of fluorescent, color-stained, and radiolabeled biomolecules like proteins and nucleic acids. Access is available via Idea Elan Infinity scheduling.

Nexcelom Celigo high content imaging cytometer (Perlin Laboratory). The Nexcelom Celigo is a plate-based benchtop brightfield and fluorescent imaging system designed for whole-well live-cell analysis and cell sample characterization. Celigo images and analyzes cells in various types of vessels including 6 – 1536 well plates, T25, T75 flasks, 10 cm dishes, and glass slides without disturbing their natural state.

Perkin Elmer IVIS In Vivo Multispectral (MS) Lumina X5 imager with x-ray, bioluminescence, fluorescence, and radioisotopic imaging capabilities.

VisualSonics VEVO 3100 Small Animal Ultrasound Imaging System

Perkin Elmer IVIS X5 multimode imaging system (Xray, bioluminescence, fluorescence and isotopes)

PIXImus small animal Densitometer. Measure Bone densitometry and body composition measurement using dual-energy x-ray absorptiometry (DEXA). See Animal Facility Core for details and access.

CDI is part of the National Cancer Institute-designated Georgetown Lombardi Comprehensive Cancer Center, and additional microscopy and imaging resources are available and can be accessed here.

Fees and Scheduling
Investigators, once they have completed the mandatory initial training for a given instrument, are then free to book time on the instrument through the Idea Elan portal.

Billing
Users are billed for the time that they actually spend using the instruments. Training and extended assistance is also billed on an hourly basis. Please contact Wenshan for current fees.

Contact Information
Investigators should contact Wenshan Tsao to schedule initial training, or for more information.
Room# A424