BioImaging Facility Reopening

The facility has reopened. Below are post COVID rules.

Post COVID 19 Rules

- Reserving equipment at http://bookit.hunter.cuny.edu prior to use is mandatory
- There is a 15 min buffer between bookings for any instrument
- Only one person at a time can use any instrument
- Masks must be used in the facility at all times
- Keep a 6ft distance from others while in the facility
- All users must complete the Hunter COVID screening checklist. http://hunter.cuny.edu/covidscreening prior to coming to the facility
- Users must wipe down the equipment with an ethanol cleaning solution after each use. Ethanol spray bottle and paper towels are available in the facility

Several instruments are too close to be booked at the same time
The machines listed below should not be reserved at the same time. To check bookings use the resource calendar on the booking website

- Imaris 8.41 Imaging Station and the Imaris 9.12 Imaging Station
- Seahorse, Odyssey and BioTek PowerWave Microplate Reader
- GloMax®-96 Microplate Luminometer, Typhoon 9410 and Autoquant Deconvolution Station

When using the systems listed below please use the curtains that separate the instruments

- Nikon Eclipse Ti Mosaic System
- Nikon Eclipse TE 200 Calcium Ratio
- Leica TCS Confocal
- Perkin Elmer Spinning Disk Confocal
Description of the Facility

Background Overview

The BioImaging Facility at Hunter College is centered in a multi-room facility of 1024 sq. ft. located in the Biological Sciences Department on the 8th Floor of Hunter North building. A satellite facility also includes a number of instruments on the 4th Floor of the Belfer Research building (at 69th Street and York Ave). Faculty and students have access to a broad spectrum of instruments, ranging from simple white light wide-field microscopes to fluorescent multidimensional super-resolution and confocal imaging systems. The Faculty supervisor and Scientific Director is Dr. Diana P. Bratu. Dr. Lloyd Williams is the Managing Director of the facility. The facility staff has expertise in many areas of microscopy including the laser scanning confocal microscopy, super-resolution microscopy, two-photon microscopy. They are also familiar with many image analysis software packages, including, Imaris, Volocity, Autoquant, MetaMorph, and NIS-Elements. Detailed descriptions of the equipment in the facility is given below. All equipment is located at Rm 826 HN or at the 4th floor of the Belfer Research Building where designated.

To book time on any of the instruments go to http://bookit.hunter.cuny.edu

Instruments

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Nikon Eclipse Ti, TIRF/SIM
The Nikon TIRF SIM microscope allows the users to do both Total Internal Reflection Microscopy and SIM super-resolution microscopy. The acquisition software is Nikon NIS-Elements.
This machine is in 826HN
The charge for this instrument is $20/hr.

Belfer Nikon A1 Confocal Microscope
The Nikon A1 Confocal microscope is Nikon's powerful fully-automated confocal imaging system, capable of capturing images of live and fixed specimens with high resolution.
The acquisition software is NIS-Elements. The system is located at Belfer Research Building.
The charge for this instrument is $20/hr.

Nikon Eclipse Ti Mosaic System
The Nikon Eclipse Ti scope is a wide-field fluorescent microscope. It is equipped with Andor iXon EMCCD camera and a DG5-4000 laser system, which allows for an Andor Mosaic/MicroPoint system for Optogenetics, Opto physiology, photobleaching/activation and uncaging applications.
This machine is in 826HN
The charge for this instrument is $15/hr.
Perkin Elmer UltraView ERS

The UltraView is a spinning disk confocal microscope equipped with five laser lines, which allow visualization of GFP, YFP, BFP, RFP, and Cy5. It is capable of high-speed, multiple-probe, time-lapse experiments; NIS-Elements software is used for image acquisition and analysis.

This machine is in 830HN

The charge for this machine is $20/hr

Leica Confocal TCS SP8 DLS

The Leica TCS SP8 DLS is a dual function fluorescence microscope that can be used as a conventional laser scanning confocal microscope (LSCM) or as a lightsheet fluorescence microscope (LSFM).

This machine is in 830HN

The charge for this instrument is $20/hr.

Leica Confocal Microscope TCS SP2

The TCS SP2 Laser Scanning Spectral Confocal Microscope can do measurements of transmitted light, fluorescence and laser scanning fluorescence imaging.

This machine is in 826HN

The charge for this instrument is $20/hr.
Nikon Eclipse TE 200 Calcium Ratio & Micro Injection

The calcium ratio imaging system consists of: a Nikon Eclipse TE 200 inverted epifluorescence microscope, Sutter Lambda imaging software with Calcium & FRET plug-in. The system also is equipped with a Narishige micromanipulator system.

This machine is in 826HN

The charge for this instrument is $10/hr.

Belfer Nikon Ti-S Fluorescence Microscope

The Nikon Ti-S microscope has a SOLA Light Engine solid state light source and a Nikon DigiSight digital camera. It has filter sets for DAPI FITC and RFP

The charge for this instrument is $5/hr.

JEOL JEM-100C/CX Transmission Electron Microscope

JEOL JEM-100CX II transmission electron microscope is an advanced high-performance electron microscope. A 10M-pixel HAMAMATSU C4742-95 digital camera is integrated into the system for high-resolution image acquisition.
Nikon Eclipse E 400  Color Image Analysis System

The Nikon Color Imaging system consists of a Nikon Eclipse E400 upright microscope, and Nikon DXM 1200F high-resolution camera. The system also has Adobe Photoshop installed for image acquisition and manipulation. The charge for this instrument is $5/hr.

Imaris 8.41 Imaging Station

The Imaris Imaging station is a high-power workstation with Bitplane's Imaris Imaging software installed. Imaris provides functionality for the visualization, segmentation, and interpretation of 3D and 4D microscopy datasets. The charge for this instrument is $10/hr.

Imaris 9.12 Imaging Station

Imaris 9.12 Imaging Station is a high-power workstation with Nikon's NIS-Elements Imaging software installed. NIS-Elements provides cutting-edge tools for image manipulation and data management. It also has Imaris 9.12 installed. The charge for these instruments is $5/hr for Elements and $10 per hour for Imaris.
Autoquant Deconvolution Station
This Imaging workstation has both AutoQuant and Nikon's NIS-Elements Imaging software installed. AutoQuant is used to deconvolve images acquired in the facility. This machine also has a floating license of Imaris 9.6. The charge for this instrument is $5/hr for NIS-Elements and $10 for Imaris.

Belfer NIS-Elements Analysis with Deconvolution
This Imaging workstation has Nikon's NIS-Elements Imaging software installed. Additionally, it has Element's deconvolution module installed. The charge for this instrument is $5/hr for NIS-Elements.

Gemini EM Microplate Spectrofluorometer
Molecular Devices SpectraMax Gemini EM Microplate Spectrofluorometer features top and bottom reading optics, dual excitation/emission wavelengths, multi-wavelength scanning, well scanning, auto PMT gain and is driven by Softmax Pro software on a Windows-based controller. The charge for this instrument is $5/scan.
Amersham Biosciences Typhoon 9410

Typhoon is a highly sensitive variable-mode gel imager. The Typhoon 9410 unites the ability to detect an extensive range of signal types in a single gel. It employs enhanced autoradiography technology and direct imaging of chemiluminescence. The typhoon can also be used to analyze microarrays.

The charge for this instrument is $5/scan.

Belfer GE FLA 7000 Typhoon FLA 7000

Typhoon FLA 7000 is a fast laser scanner for biomolecular imaging applications including sensitive and quantitative measurements of radioisotopic labels, chemifluorescent Western blots, and single fluorescence.

The charge for this instrument is $5/scan.

Odyssey Infrared Imager

The Odyssey replaces traditional methods of analyzing western blots, chemiluminescence, and fluorescent images with two infrared channels: 700 nm and 800 nm. This allows for the probing of two different targets in the same experiment.

The charge for this instrument is $5/scan.
**Biotek PowerWave Microplate Reader**

PowerWave HT is a multi-channel reader for maximum speed in both 96- and 384-well plate formats. The PowerWave HT offers absorbance, fluorescence, and kinetic scanning capabilities with Gen5 software for system control and data analysis. The charge for this instrument is $3/scan.

**Belfer Bio Tek Synergy HTX Microplate Reader**

Synergy HTX is a Multi-Mode Microplate Reader for making: absorbance, fluorescence, luminescence, and AlphaScreen/AlphaLISA measurements on 6- to 384-well microplates. This instrument is located in room BB 453. The charge for this instrument is $3/scan.

**GloMax®-96 Microplate Luminometer**

The GloMax®-96 Microplate Luminometer is a state-of-the-art Microplate Luminometer with high sensitivity and broad dynamic range, suitable for making absorbance, fluorescence, luminescence, and bioluminescent assays. It eliminates the need to dilute samples or manage detector-driven gain changes. The charge for this instrument is $5/scan.
The Bio-Imaging Facility - Biology provides various equipment and services for researchers:

### Equipment
- **Leica CM 3050S Cryostat**
  - Features motorized sectioning and programmable defrost cycles.
  - Cuts sections in the range 0.5 to 300 μm.
  - Charge: $5/hr.

- **IMARIS**
  - 3D/4D Visualization & Analysis Software.
  - Techniques in IMARIS.

- **IMARIS for Core Facilities**
  - IBM Power System.

### Services
- **PowerWave HT Plate Reader**
- **Gemini Spectrophotometer, Typhoon 9410 Imager**
- **All Other Nikon Upright & Inverted Microscopes**
- **Leica Sp8 Confocal**
- **Nikon Eclipse Ti With Ultra High-Speed Wavelength Source**
- **Leica Sp5 Confocal**
- **Nikon TIRF/SIM Room 826 HN**
- **Amersham Biosciences Typhoon 9410 Room 826 HN**

### Fee Schedule
- **Cryostat**: $10 per hour, $20 per scan
- **Confocal**: $5 per hour, $20 per scan
- **PowerWave HT Plate Reader**: $5 per hour
- **Gemini Spectrophotometer, Typhoon 9410 Imager**: $10 per hour
- **All Other Nikon Upright & Inverted Microscopes**: $5 per hour
- **Leica Sp8 Confocal**: $5 per hour
- **Nikon Eclipse Ti With Ultra High-Speed Wavelength Source**: $5 per hour
- **Leica Sp5 Confocal**: $5 per hour
- **Nikon TIRF/SIM Room 826 HN**: $5 per hour
- **Amersham Biosciences Typhoon 9410 Room 826 HN**: $5 per hour

### Guidelines for Using the Facility
1. **Safety**
   - Do not leave your samples in the facility.
   - Do not wear latex gloves in the facility.
   - If you encounter problems with the facility, email the facility director Lloyd Williams at lloyd.williams@genectr.hunter.cuny.edu.

2. **Equipment**
   - **Microscopes**
     - Perkin Elmer spinning disk microscope: ideal for regular 2D & 3D scanning for fixed slide samples. Check the following link for Perkin Elmer spinning disk microscope system:
     - Leica SP2 confocal microscope: ideal for regular 2D & 3D scanning for fixed slide samples. Check the following link for Leica SP2 system:
     - Nikon TIRF/SIM: must be trained by the facility managers. Once training is complete, your account will be activated for the microscope.

3. **Samples Handling**
   - Temperature control: samples can cool down to -50°C. The max specimen size is 55 X 70 mm.
   - Fluorescence Spectrometer, Luminometer, etc.

4. **Conferencing System**
   - A video conferencing system is used for real-time conversations between microscope operator and remote users to solve on-site experimental issues. Check the following link for PVX real-time conferencing:

5. **Contact Information**
   - Email Lloyd Williams (williams@genectr.hunter.cuny.edu) in advance for applying this policy.

### Additional Information
- **Laser Wavelength Specifications**
- **Detection Modes**
- **Lens/Systems**
- **Detection Techniques**
- **Technical Assistance**
- **Equipment Reservations**
- **Accident Reporting**
- **Equipment Availability**

Bio-Imaging Facility - Biology

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