Managing Director
Dr. Lloyd Williams
Email: williams@genectr.hunter.cuny.edu
Office: 826B in the Hunter North Building
Phone: (212) 650 3872
Fax: (212) 650 3565
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.

Instruments
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.

The charge for this instrument is $20/hr.

To book time, use the SharePoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/TIRF%20SIM%20Calendar/calendar.aspx

Belfer Nikon A1 Confocal Microscope

The Nikon A1 Confocal microscope is Nikon's powerful fully-automated confocal imaging system, capable of capturing images of 3D structures with high resolution and enhanced sensitivity. The acquisition software is NIS-Elements. The system is located at Belfer Research Building.

The charge for this instrument is $20/hr.

To book time use the SharePoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Nikon%20A1%20confocal%20microscope%20Belfer%20Building/calendar.aspx

Nikon Eclipse Ti Mosaic System for FRAP

The Nikon Eclipse Ti scope is a wide-field fluorescent microscope. It is equipped with Andor iXon EMCCD camera and a DG5. It is also equipped with an Andor Mosaic/MicroPoint system for Optogenetics, Opto physiology, photobleaching/activation and uncaging applications.

The charge for this instrument is $15/hr.

To book time on this system use the Sharepoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Nikon%20Eclipse%20Ti%20With%20Ultima%20High%20Speed%20Wavelength/calendar.aspx
Perkin Elmer UltraView ERS
The UltraView is a spinning disk confocal microscope equipped with five laser lines, which allow visualization of GFP, RFP, or other fluorophores. It is ideal for high-speed, multiple-probe, time-lapse experiments; NIS-Elements software is used for image acquisition and analysis.
The charge for this instrument is $20/hr.
To book time on this system use the SharePoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Spinning%20Disk%20Calendar/calendar.aspx

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.
The charge for this instrument is $20/hr.
To book time on this system use the SharePoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Leica%20Confocal%20Calendar/calendar.aspx

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 DMR fluorescent microspectrophotometer, AORCA software for measurement of Ca2+ imaging software with Calcium & FRET plug-in. The system also is equipped with a Narishige micromanipulator system.
The charge for this instrument is $10/hr.
To book time on this system use the Calcium Imager SharePoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Calcium%20Imager%20Calendar/calendar.aspx
Bio-Imaging Facility - Biology
Last Updated Thursday, 20 September 2018 14:30

The Belfer Nikon Ti-S Fluorescence Microscope has a SOLA Light Engine solid state light source and a Nikon DigiSight camera. It has filter sets for DAPI, FITC, and RFP. The charge for this instrument is $5/hr.

The JEOL JEM-100C CX Transmission Electron Microscope is an advanced high-performance electron microscope. It is equipped with a 10M-pixel HAMAMATSU C4742-95 digital camera for high-resolution image acquisition.

The Nikon Eclipse E400 Color Image Analysis System consists of a Nikon Eclipse E400 upright microscope, and Nikon DXM 1200F high-resolution digital camera. It utilizes Nikon Imaging Software. The system also has Adobe Photoshop installed for image acquisition and manipulation.

The charge for this instrument is $5/hr.
Imaris 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. To book time on this system use the Imaris SharePoint Calendar at http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Imaris%20Calendar/calendar.aspx

NIS-Elements Imaging Station

This Imaging workstation 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. The charge for these instruments is $5/hr. To book time on these systems use the Bioimaging SharePoint Calendar at: http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/NIS%20Elements%20Calendar/calendar.aspx

Autoquant and NIS-Elements Imaging Analysis 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. The charge for this instrument is $10/hr. To book time on these systems use the Bioimaging SharePoint Calendar at: http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Drobo_PC%20NIS%20Elements%20Calendar/calendar.aspx
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.

Gemini EM Microplate Spectrofluorometer

The Molecular Devices SpectraMax Gemini EM Microplate Spectrofluorometer features top and bottom reading optics, dual detection, dual 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 both dark-field and bright-field fluorophores with the high-sensitivity of 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

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 fluorescence. It is equipped with two infrared channels (700 nm and 800 nm) and can thus probe two different targets in the same experiment. The charge for this instrument is $5/scan.

PowerWave HT Microplate Spectrophotometer

PowerWave HT is a multi-channel reader for maximum speed in both 96- and 384-well plate formats. The powerful Gen5 PC-based software is used for system control and data analysis. The charge for this instrument is $3/scan.
Bio-Imaging Facility - Biology
Last Updated Thursday, 20 September 2018 14:30

The max specimen size is 55 X 70 mm and can cool samples down to -50°C.

Contact Zhong Wang (zwang@genectr.hunter.cuny.edu) in advance for applying this policy.

**Application Summary for Different Readers in Bio-Imaging Facility**

1. **PVX video conferencing for real-time consultation**: During imaging experiments, the PVX video conferencing system is used for real-time conversations between microscope operators. This system has fast scanning speed, making it ideal for cellular dynamic studies. Please sign the logbook.

2. **Leica SP2 confocal microscope**: This microscope is ideal for regular 2D & 3D scanning of slides. It is equipped with a multi-line laser and high resolution detectors. The facility charges $5 per hour for use of this microscope. There is a $15 minimum charge, and fractions of an hour count as whole hours. For long time duration experiments, we have a $15 minimum charge, and fractions of an hour count as whole hours.

3. **Imaris Analysis Workstation**: This workstation is used for image analysis and processing. The facility charges $10 per hour for use of this image analysis system. Please sign the logbook.

4. **GloMax®-96 Microplate Luminometer**: This luminometer is a state-of-the-art Microplate Luminometer, making: absorbance, fluorescence, luminescence and bioluminescence applications. The facility charges $5 per hour for use of this instrument. Please sign the logbook.

5. **PowerWave HT Plate Reader**: This plate reader is used for making absorbance, fluorescence, and luminescence measurements on 6- to 384-well microplates. The facility charges $5 per hour for use of this plate reader. Please sign the logbook.

6. **Belfer Bio Tek Synergy HTX Microplate Reader**: This reader is used for making absorbance, fluorescence, luminescence, and AlphaScreen/AlphaLISA measurements on 6- to 384-well microplates. The facility charges $20 per hour for use of this instrument. Please sign the logbook.

Rules of Operations

- **Equipment availability**: Equipment is available on a first come first serve basis. You can book 4 hours slots on the computer attached to the machines.
- **Room cleaning**: The Leica CM 3050S Cryostat features motorized sectioning and programmable defrost cycles. The cryostat can cut sections in the range 0.5 to 300 µm. To book time on this system use the Cryostat SharePoint Calendar at [calendar.aspx](http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Leica%20CM3050S%20Cryostat/calendar.aspx).
- **Cryostat maintenance**: Email Zhong Wang (zwang@genectr.hunter.cuny.edu) in advance for applying this policy.
- **Cryostat maintenance**: There is a $15 minimum charge, and fractions of an hour count as whole hours. For long time duration experiments, we have a $15 minimum charge, and fractions of an hour count as whole hours.

**Equipment List**

- **Solid State Laser**: 532 nm, 405 nm, 640 nm
- **Nikon Inverted Fluorescence Microscope**: 4x/0.13, 10x/0.45, 20x/0.75, 100x/1.4
- **Biotek PowerWave**: 250-850 nm
- **LI-COR Odyssey**: 700-1000 nm
- **TIRF Module**: 458, 476, 488, 514 nm
- **Gemini EM**: 561 nm, 640 nm
- **532 nm Solid State Laser**

**Applications for Various Instruments**

- **Cell Viability, Proliferation, and Cytotoxicity Enzyme Assays**
- **Protein Quantitation**
- **RNA quantitation**
- **ELISA Enzyme Kinetics**
- **In-cell Western Assay**
- **Microwestern**
- **Reporter Gene Assays**
- **Quantitative Phorimaging ECL Plus Westerns**
- **Multi-Fluorimaging Applications**