Managing Director
Dr. Lloyd Williams
Email: williams@genectr.hunter.cuny.edu
Office: 826B in the Hunter North Building
Phone: (212) 650 3872
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 high-resolution images. 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
The Nikon Eclipse Ti scope is a wide-field fluorescent microscope. It is equipped with Andor iXon EMCCD camera and a DG5 pulsed laser to allow 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.

The UltraView is a spinning disk confocal microscope equipped with five laser lines, which allow visualization of GFP, RFP, and other fluorescent proteins used in live cell imaging. The UltraView is useful 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.

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). 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/SP8%20Calendar/calendar.aspx.
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](http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Leica%20Confocal%20Calendar/calendar.aspx).

The calcium ratio imaging system consists of: a Nikon Eclipse TE 200 inverted epifluorescence microscope, Sutter Lambda 10-2 micromanipulation system, and Calcium & FRET software. 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](http://biosharepoint.hunter.cuny.edu/Bio-Imaging/Lists/Calcium%20Imager%20Calendar/calendar.aspx).

The Nikon Ti-S 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.
JEOL JEM-100CX II Transmission Electron Microscope

JEOL JEM-100CX II transmission electron microscope is an advanced high-performance electron microscope. It is highly stable and allows for high-quality imaging up to 60,000X. 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, a Nikon DXM 1200F high-resolution camera, and Nikon's 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-performance 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:

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 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 traditionalAutoradiography 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.
Odyssey Infrared Imager

The Odyssey replaces traditional methods of analyzing western blots, chemiluminescence, and fluorescence detection, equipped with two infrared channels at 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 PowerWave HT can perform kinetic and spectral scanning mode. Powerful Gen5 PC-based software is used for system control and data analysis. The charge for this instrument is $3/scan.

Belfer BioTek 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. The charge for this instrument is $3/scan.
The max specimen size is 55 X 70 mm and can cool samples down to -50°C.

If you come 30 minutes late, you will lose your reservation. You will need a "Gene Center" network account to access the site.

E. When using the Cryostat, you must be trained by the facility managers. Once you have been trained, you can log on to the computers that control the equipment. Your use of the machine will then be automatically logged, and you will be charged according to the fee schedule below.

- 1-2 hours $10/hour
- 3-4 hours $15/hour
- 5-6 hours $20/hour
- 7-8 hours $25/hour
- 9-10 hours $30/hour

F. If you encounter problems with the facility, email the facility director Lloyd Williams at labs@genectr.hunter.cuny.edu.

- PowerWave HT Plate Reader:
  - Warranty: 1 year
  - Endpoints/kinetics
  - Luminescence
  - 96-well plate

- GloMax®-96 Microplate Luminometer:
  - Warranty: 1 year
  - Luminescence
  - 96-well plate
  - Stopping point
  - Stopped
  - Unstopped
  - Discontinuous
  - Continuous
  - Sensitivity
  - Accuracy
  - Linearity

- Leica Sp2 Confocal:
  - Warranty: 1 year
  - Luminescence
  - Fluorescence
  - 96 to 384-well plate
  - Endpoint
  - Kinetics
  - Luminescence

- PerkinElmer Spinning Disk Microscope:
  - Warranty: 1 year
  - Luminescence
  - Fluorescence
  - Plate/Gel/Blot
  - 96-well plate

- TIRF Module:
  - Warranty: 1 year
  - Luminescence
  - Fluorescence
  - Western blot sample

- Melles Griot Solid State Laser:
  - Warranty: 1 year
  - 458, 476, 488, 514 nm

- M. Clean oil off the microscope objective lenses after use.

- N. Sign the logbook.

- A confirmation email will be sent before the experiment date. A WebEx meeting link will be provided to remote users to solve on-site experimental issues. Please check the following link for PVX operations:

- WebEx-based remote control microscope system has fast scanning speed, it is ideal for cellular dynamic studies. Please check the following link for Perkin Elmer spinning disk microscope system:

- Now a new service is ready for our remote users to get remote access to our advanced confocal microscopes for their own imaging purpose. The approach for this remote instrumentation task is to combine the powers of WebEx and PVX: WebEx to setup remote desktop sharing for microscope control. Please check the following link for Perkin Elmer spinning disk microscope system:

- (v) Cell staining protocol: a simple cell staining protocol is posted here as an example:

- (iv) PVX video conferencing for real-time consultation: during imaging experiment, PVX and remote users to solve on-site experimental issues.