



# Flow Cytometry and Confocal Microscopy Facility

University of Connecticut, Biotechnology•Bioservices Center  
Biology/Physics Building, Rooms 302/303  
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*The Flow Cytometry and Confocal Microscopy Facility has a new*

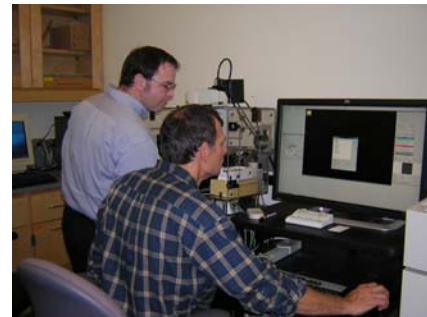
## Nikon A1R Spectral Confocal Microscope!

The Flow Cytometry and Confocal Microscopy (FCCM) Facility recently held an "Introduction to the Nikon A1R Spectral Confocal Microscope" to introduce their newly acquired microscopy system to the UConn research community. Mr. Brad Coyle of Nikon Instruments Inc. began the program with a brief presentation about the capabilities of the A1R confocal. Dr. David Knecht, Facility Co-head and recipient of the VPR's Major Equipment Competition award for the purchase of the new system, provided a research presentation entitled "Live Cell Imaging with the A1R: 6D Imaging, FRAP Analysis and Photocoverable Probes." Dr. Carol Norris, Facility Scientist, presented an overview of instrumentation and services available through the FCCM Facility. Features of the new Nikon A1R microscopy system include:

- Excitation wavelengths: 405, 457, 476, 488, 514, 561, 640 nm;
- High efficiency detectors;
- 32 channel spectral detector for separation of overlapping signals;
- FRET, FRAP, photoactivation, photoconversion;
- Computer-controlled x-y stage;
- Incubation chamber for control of temperature and CO<sub>2</sub>.

Interested users should contact Facility Scientist Carol Norris at (860) 486-3080 or carol.norris@uconn.edu. Consultations are free but prospective users must schedule an appointment.

**MARK YOUR CALENDARS!** Dr. Gary Laevsky, a Senior BioSystems Applications Manager from Nikon Instruments Inc., will be providing a talk entitled "Imaging Beyond the Diffraction Limit" on Friday, March 18, at 2:30 p.m. in Room 130 of the Biology•Physics Building. Refreshments will be served. Stay tuned for more details at [www.biotech.uconn.edu](http://www.biotech.uconn.edu).

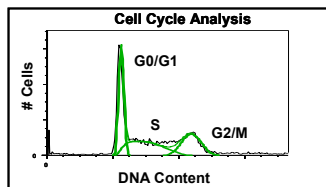


Facility Co-head Dr. David Knecht and Nikon Instruments representative Mr. Brad Coyle demonstrate the use of the Nikon A1R for live cell confocal imaging.

## Other Available FCCM Facility Instrumentation

### FLOW CYTOMETRY

- **BD Biosciences FACSAria II Fluorescence-activated Cell Sorter**
  - Three lasers provide excitation at 407, 488, and 633 nm for analysis of up to 10 fluorescence channels plus forward and side scatter
  - Digital electronics
  - Sort up to four populations simultaneously
- **BD FACSCalibur Flow Cytometer**
  - Two lasers provide excitation at 488 and 633nm for analysis in four fluorescence channels plus forward and side scatter
  - Straightforward operation allows independent use by researchers
  - Offline computer with FlowJo analysis software
- **FlowJo Analysis Workstation**
  - Post-acquisition compensation to correct cross-talk between fluorescence channels
  - Multiple graphing options
  - Algorithms for analysis of cell cycle and cell proliferation data



An example of cell cycle analysis performed in FlowJo. Nuclear DNA of fixed cells was stained with propidium iodide. Flow cytometry data was acquired on the FACSCalibur.

### IMAGING

- **Andor Confocal & TIRF Microscope**
  - High speed 4D confocal imaging or TIRF microscopy with EMCCD camera
  - Incubation chamber maintains live cells at 37°C and 5-10% CO<sub>2</sub>
  - Four lasers for excitation at 405, 488, 561, and 633 nm
  - Nikon Perfect Focus system
- **Zeiss LSM 5 Multiphoton Confocal** (Contact Facility Co-head Joseph LoTurco)
  - System configured for intravital imaging of fluorescently labeled cells
  - Zeiss Axoskop 2 FS upright scope with Sutter mechanical stage to accommodate most small animal preparations
  - Chameleon Ultra II pulsed laser for multiphoton excitation of eGFP or mRFP
- **Leica TCS SP2 Laser Scanning Confocal**
  - Excitation wavelengths: 458, 476, 488, 543, 633 nm
  - Three fluorescence detectors plus transmitted light
  - Reflection mode, xzy imaging, wavelength scanning, time lapse, FRET
- **Zeiss Axiovert Widefield Microscope**
  - Filter sets for: DAPI, FITC, TRITC, GFP, Cy5, CFP-YFP, FRET, Texas Red
  - Computer-controlled operation for complex time lapse imaging
  - High sensitivity Hamamatsu CCD camera and Q Imaging color camera

## Costs for Services

Costs for services can be found at <http://www.biotech.uconn.edu/fccmf>. All current rates are subject to periodic review and change.

Visit us online at <http://www.biotech.uconn.edu/fccmf>



*"The mission of the Flow Cytometry and Confocal Microscopy Facility is to train and assist research personnel in the use of sophisticated instruments designed to detect, image, and/or quantify fluorescent and visible light in a wide variety of samples."*