The mission of the UW Carbone Cancer Center Flow Cytometry Core Facility is to provide cost effective, cutting-edge instrumentation, technical expertise and flow cytometry education to UWCCC members and the University of Wisconsin – Madison at large.

The UWCCC Flow Lab, established in 1988, supports basic, translational and clinical research activities. The facility is currently providing services at two sites; the main laboratory at the Wisconsin Institute for Medical Research and a satellite facility at the McArdle Laboratory for Cancer Research. The facility is staffed 8:00 AM to 6:00 PM Monday through Friday, but the technologies are available to trained users at all times. Our facility provides instrument support, cell analysis, single cell sorting, education, consultation, standardized assay services and high-throughput and high-content imaging.
**New! Yellow/Green laser**

**BD FACSAria II**
- **Violet laser (405 nm):**
  - 405C 450/80
  - 405B 525/50 505 LP
  - 405A 585/42 560 LP
- **Red laser (635 nm):**
  - 633C 660/20
  - 633B 730/45 680 LP
  - 633A 780/60 755 LP
- **Blue laser (488 nm):**
  - 488B 530/30
  - 488A 695/40
- **UV laser (355 nm):**
  - 355B 450/50
  - 355A 530/30 505 LP
- **Yellow/Green laser (561 nm):**
  - 561E 582/15 570 LP
  - 561D 610/20 600 LP
  - 561C 670/30 635 LP
  - 561B 710/50 685 LP
  - 561A 780/60 733 LP

**MACSQuant® 10**
- **Violet laser (405 nm):**
  - V1: 450/50 nm (VioBlueR, Hoechst™, Pacific Blue™)
  - V2: 585/40 nm (Pacific Orange™)
- **Red laser (635 nm):**
  - R1: 655–730 nm (APC)
  - R2: 750 nm (APC-Cy7)
- **Blue laser (488 nm):**
  - B1: 525/50 nm (GFP, FITC)
  - B2: 641/50 nm (PE)
  - B3: 685–730 nm (PI, PE-Cy5.5, PerCP)
  - B4: 750 nm LP (PE-Cy7)

**Core Services**

**Data Analysis & Consultation**

Need help with data analysis or guidance to navigate in the myriad of new options in flow cytometry & imaging? Schedule a consultation and we would be happy to assist you with both interpretation of data and experimental design.

**Assay Services**

Our facility offers standardized assay services including everything from sample processing to data interpretation. Besides the assured Quality Control and high-throughput options, this service has been providing great value to laboratories without equipment or trained staff to perform flow cytometry & imaging. Contact us to see what we could offer to develop customized protocols for your experimental models.

**Training & Education**

To introduce new users to flow cytometry we offer a monthly lecture series titled “Introduction into Flow Cytometry”. We provide one-on-one, hands-on training sessions on all of the instruments. Assisted services are also available for unexperienced users, and experienced users with unfamiliar assays on schedule or upon request. Training sessions are customized to our users’ individual experimental needs.

**BD LSR II**
- **Violet laser (405 nm):**
  - 405C 450/50
  - 405B 525/50 505 LP
  - 405A 585/42 560 LP
- **Red laser (635 nm):**
  - 633C 660/20
  - 633B 730/45 680 LP
  - 633A 780/60 755 LP
- **Blue laser (488 nm):**
  - 488B 530/30
  - 488A 695/40
- **UV laser (355 nm):**
  - 355B 450/50
  - 355A 530/30 505 LP
- **Yellow/Green laser (561 nm):**
  - 561E 582/15 570 LP
  - 561D 610/20 600 LP
  - 561C 670/30 635 LP
  - 561B 710/50 685 LP
  - 561A 780/60 733 LP

**BD FACSCalibur**
- **Blue laser (488 nm):**
  - FL1: Green emission (530/30 nm)
  - FL2: Red/Orange emission (585/42 nm)
  - FL3: Red emission (650 LP)
- **Red laser (635 nm):**
  - FL4: Far Red emission (661 nm)

**Background**

In March, our LSRII cytometer was upgraded to 15 parameters with the addition of a yellow/green laser. This enables flow cytometry of a wide range of novel fluorescent proteins. Feel the tropical wave? You may literally go mBananas!:) or Alexa’s if you wish.

**BD Pathway 855**

**Imaging Spectrum 340-750 nm with 16 excitation filters**

Fluorescent microscope with both confocal and wide-field imaging abilities. Highly automated with both laser and camera auto-focus, highly sensitive x, y, z positioning of the objective and provides a temperature and CO₂ controlled chamber for live cell imaging, with reagent delivery capabilities for up to 384-well optical plates. The spinning disk technology incorporates 16 filters into two wheels allowing for a wide range of excitation wavelengths. Applications include: fluorescence intensity measurements, kinetic imaging, morphological analysis, sub cellular imaging, co-localization, cell-cell interactions, Ca²⁺-flux, and chemo attraction among others.
MACSQuant® Analyzer 10
Introducing our newest flow cytometer

It’s hard to miss the bright orange and green flow cytometer with the glowing reagent bottles across from the FACSCalibur in the Flow Lab at WIMR. This is the latest addition to our benchtop flow cytometer analyzers, from Miltenyi Biotech. This instrument has 3 lasers and 8 fluorescence channels in addition to forward and side scatter detection, and can read a single sample tube up to a 96-well plate’s worth of samples! The sample injection can be programmed directly from the cell culture wells preventing loss from transferring samples to running tubes. The MACSQuant can be programmed to automatically compensate samples, enrich rare cell populations via the MACS Cell Enrichment Unit (a magnetic bead-based column technology), and automatically label/stain samples with the fluorescently conjugated antibodies of your choice! The startup, cleaning cycles and shutdown procedures are also fully automated, leaving you more time to analyze the data. We have the MACSQuantify analysis software available on 2 of the data analysis computers in the lab, or the files can be converted to the usual FCS format and analyzed in FlowJo or other flow cytometry data analysis programs.

Please contact Faye Bruggink at 608.263.0313 or fbruggink@wisc.edu to schedule a time to train and use the new MACSQuant Analyzer.

See specifications on Page 2
Meet

the Flow Core Staff

Have a question about flow cytometry, imaging or our core services? contact us!

Dagna Sheerar
Education, Consultation, Administration, Communication, Outreach, BD Pathway
In April of 2011 Dagna was promoted to manager of the facility. In addition to her managerial responsibilities, she has been instrumental in building the clinical research program for clinicians without lab space or technical staff. Dagna presents the monthly lecture series “Introduction to Flow Cytometry” and consults with researchers to assist in experimental design, assay development, data analysis and new user training.

Karen Ersland
Cell Sorting, Daily Quality Control, Assay Services, Hands-on Training, Data Analysis
Karen has a solid background in working with small-animal models and in studying the immune system. She has years of experience with highly complex multi-color flow cytometry, data analysis and experimental design. She is involved in hands-on training of new users, introduction into analysis software, and is happy to assist with flow cytometry troubleshooting and data analysis.

Faye Bruggink
Online schedule, Protocol Development, MACSQuant
Faye has extensive experience in Good Laboratory Practices and Good Management Practices from her background in private research industry. She is instrumental to the development of our novel Comprehensive Assay Services program. Faye is also the primary contact for MACSQuant training.

Erika Heninger
Cell Sorting, BioSafety, Consultation, FlowJo Site License, Data Analysis
Erika has expertise in immunology and years of experience in both flow cytometry and imaging. She had worked with small-animal models and various cellular experimental models including human PBMCs. She has extensive experience in multi-color flow cytometry, sample processing and flow cytometry of highly complex tissue (ie. brain, skin, lung), approaches to rare-event flow cytometry, data analysis and experimental design.

Want reduce cost for FlowJo? get FlowJo Site License!
We are excited to introduce a new opportunity to greatly reduce your cost on FlowJo analysis software. The University of Wisconsin-Madison has acquired a site license, which enables the whole community to access the most recent versions of the analysis software without the need of a dongle. Any internet connection will work, and the computer does not need to be located on campus. Individual FlowJo dongles may be returned for site license credit through our office. There will be no need for investing more in dongle-upgrades, and the newest versions of FlowJo will be readily available with the license. To obtain a serial number, go to our website and follow instructions. The annual cost via the site license is expected to be around $250 this fiscal year, but we hope we may reduce this price further with recruitment of more users to this shared program.

On a Special Note ...
Jamie Boyd is taking on a new adventure and is leaving our facility. If you have sorted here before, you know Jamie. Her expertise and dedication has been instrumental in the recent history of our facility. Thank you for the great work! You will be greatly missed by the Lab!

“Introduction to Flow Cytometry” Lecture Series
Spring/Summer schedule
May 21, 23, 25
June 25, 27, 29
July 23, 25, 27

The Translational Science BioCore and Flow Core Service are investigating the potential value of added flow cytometry service for translational investigators utilizing biospecimens. Please take our survey!
https://uwmadison.qualtrics.com/WBQ?l=1&V=egyYhL5cHy&_=1

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