ROSWELL PARK CANCER INSTITUTE
FLOW AND IMAGE CYTOMETRY FACILITY
NEWSLETTER, April-June 2013

What's New?

- In accordance with the Institute's Core Facility Management, a **3% price increase** to the Flow and Image Cytometry services will be in effect on April 1, 2013 to compensate for the annual indexed increase of operational costs. We were able to defer the increase last year so this is the first increase in 2 years.

- **eBioscience** offers a **30% discount on flow cytometry reagents** to participating members (RPCI is) of the Translational Research Cancer Centers Consortium (TRCCC). For more information contact eBioscience.

- **Orla Maguire** is now **"Mommy Maguire"!** Orla delivered a healthy baby boy on February 12th: **Daithi** (pronounce day-he, it's an Irish thing!), 7 lbs 7 ounces.

- **Paul Wallace** presented at **PennFlow 2013** (April 10). PennFlow is an annual flow cytometry meeting organized at the University of Pennsylvania. This year's theme was "Measuring the Life and Death of a Cell".

- Our facility completed the fourth **luminex external proficiency test** conducted by the External Quality Assurance Program Oversight Laboratory (EQAPOL). EQAPOL analysis of the raw data generated in the lab resulted in an **accuracy score of 97 out of 100** corresponding with an excellent performance score (the **highest attainable score**).

- **Paul Wallace** organized a **CD4 workshop** from April 22-26, on behalf of the **American Society for Clinical Pathology** in support of the Centers for Disease Control funded HIV/AIDS activities in Ukraine under the **President's Emergency Plan for AIDS Relief.**

- **Hans Minderman** presented at the **annual ImageStream user group meeting,** held at Cincinnati Children's Hospital Medical Center , April 18, 2013. This workshop has been organized annually between RPCI and the universities of Rochester and Pittsburgh. With the 5th annual edition of the workshop Cincinnati is now replacing Pittsburgh in the rotation. The workshop was a great success with over 100 attendees.

- In our continuing efforts to provide our users with the most up to date cytometry equipment and software, a **new Fortessa cytometer is on its way**. The Fortessa purchase was made possible with Institute support and will be placed in the flow cytometry user room where it will replace a Calibur 2

Recent Publications / Grant Funding

- Down-regulation of signal transducer and activator of transcription 3 improves human acute myeloid leukemia-derived dendritic cell function. Brady MT, Miller A, Sait SN, Ford LA, **Minderman H**, Wang ES, Lee KP, Baumann H, Wetzler M. Leuk Res. 2013 Apr 27. doi:pii: S0145-2126(13)00110-0. 10.1016/j.leukres.2013.04.002. [Epub ahead of print]
- Pretreatment levels of circulating Th1 and Th2 cytokines, and their ratios, are associated with ER-negative and triple negative breast cancers. Hong CC, Yao S, McCann SE, **Dolnick RY**, **Wallace PK**, Gong Z, Quan L, Lee KP, Evans SS, Repasky EA, Edge SB, Ambrosone CB. Breast Cancer Res Treat. 2013 Apr 30. [Epub ahead of print]
- **Orla Maguire** submitted a new investigator grant application to **the Leukemia Research Foundation** on Feb 18 on "detection of residual cytogenetic abnormality in AML during clinical remission" for the 2013-2014 funding cycle.
- **Hans Minderman** submitted an S10 shared instrument grant application to the NIH on March 15 for an imaging cytometer.

Courses / Presentations / Meetings

- **CYTO 2013** May 19-22, San Diego, CA. The annual CYTO meeting is the premier cytometry meeting organized by the International Society for the Advancement of Cytometry **(ISAC)**. Our facility will be well represented at this meeting with oral presentations by **Joe Tario** and **Orla Maguire**, poster presentations by Joe, Orla and **Kah Teong Soh** a workshop organized by **Hans Minderman** and **Paul Wallace will present a Proliferation Tutorial and chair a scientific session**. For more information and to see the complete program visit the website www.isac-net.org.

- **10th annual western New York Flow Cytometry Users Group Meeting.** University of Rochester, Rochester NY 7/17/2013. For more information visit the website www.urmc.rochester.edu/flow-core/wnyfug/meeting.cfm.

- The Great Lakes International Imaging and Flow Cytometry Association (**GLIIFCA)** will hold their **22nd annual meeting at the Detroit Marriott Hotel, Detroit MI, from sept 27-29**. For more information visit the website www.gliifca.org.

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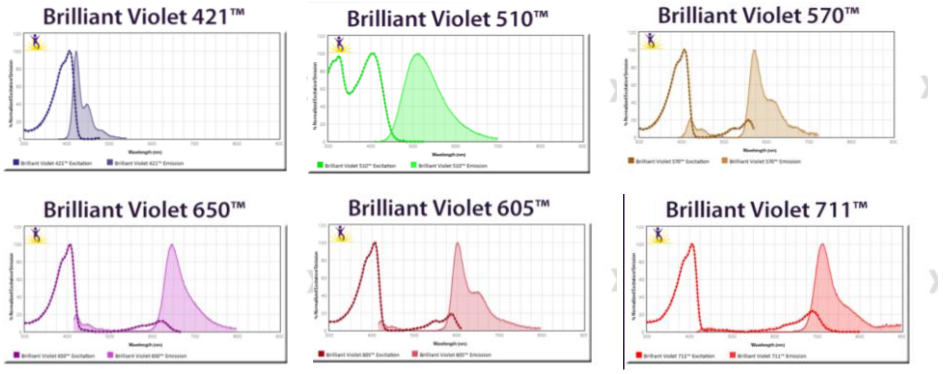
Service / Application Highlights

BRILLIANT VIOLET DYES

Background:

In the early 2000's a new class fluorophores were introduced: the brilliant violet dyes. These 405 nm excitable dyes brought dramatic improvements in brightness and signal-to-noise over the previous available choices for dyes excitable by the violet laser. Because of their brightness, stability to fixation and versatility in multicolor panels, the brilliant violet dyes are gaining widespread application in flow cytometry. **These dyes are bright!** For example, BV421 is brighter than PE, previously our brightest fluorochrome.



Excitation and emission spectra of the brilliant violet dyes from:www.biolegend.com/brilliantviolet

To help our users determine which detectors should be used for which brilliant violet dyes we list in the table below, the detector equivalents, filters and mirrors for the brilliant violet dyes for the configurations for the LSRII and Fortessa flow cytometers.

Caution:
Unlike the BV421 and BV510 dyes, the **brilliant violet dyes above 510 are tandem conjugates**. When using these dyes be careful to consider direct excitation of the acceptor dye in these tandem conjugates by lasers other than the 405. For example, BV605 combines BV421 (donor) with CY3.5 (acceptor). Direct excitation of CY3.5 with a 561 nm laser will result in significant spillover into the relevant detectors off the 561 laser.

The BV dyes will be added to the configurations the next time the baselines are done on the LSRs and the Fortessa.

Brilliant Violet™ antibody conjugates excited by 405nm laser
Specifications found at http://www.biolegend.com/brilliantviolet
Conversion from noted Violet detector parameter description to Brilliant Violet fluorochrome

Brilliant Violet Fluorochrome	LSRII/ Fortessa Detector Equivalent	Bandpass Filter	Mirror
BV421	Pacific Blue	450/50	N/A
BV510	AmCyan	525/50	505LP
*BV570	Qdot 585	585/42	570LP
* May notice detection sensitivity reduced by instruments equipped with a 561nm laser			
BV605	Qdot 605	605/40 or 610/20	595LP
BV650	Qdot 655	660/20 or 660/40	630LP
BV711	Qdot 705	705/70 or 710/50	670LP
BV785	Qdot 800	780/60	755LP

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