From the Director, Stan Riddell

One of the primary aims of the IIRC is to grow research in basic immune mechanisms with translational endpoints, and over the past year, we focused on building capacity in single cell RNA sequencing (scRNA-seq). Below are details about the IIRC’s scRNA-seq data analysis workshop, offered in collaboration with the Hutch Data Commonwealth (HDC) and fredhutch.io, as well as a recent IIRC pilot grant competition supporting researchers using this technology.

Education is an expanding area for the IIRC – we are supporting a post-doctoral fellow in computational biology and immunotherapy, and we have opened the second competition for an immunotherapy clinical research fellow – details to follow.

Looking ahead the IIRC Administration team is preparing for our 2nd Annual Faculty Retreat in January, as well as our well-received, ongoing Seminar Series and monthly junior faculty lunch program. I hope to see you at some of these upcoming events.

IIRC Single Cell RNA Sequencing Pilot Grant, Phase II Award

Congratulations to Anthony Rongvaux, who was awarded a single cell RNA sequencing pilot (Phase II) for his work on the role of macrophages in metastatic melanoma. This work is a collaboration with the Bielas Lab (10X Genomics technology) and Gottardo lab (data analysis). The team’s project focuses on a type of immune cell called macrophages that work has shown – counterintuitively – to help tumors become metastatic.

This effort to increase use of single cell techniques kicked off in February 2017 with the Phase I award of 5 exploratory grants ($25,000/each). The IIRC funded the Moens, Kiem, Rongvaux, Chapuis, and Clurman labs for exploratory projects. Labs that concluded these projects competed in September 2017 for the larger pilot award.

Thanks go to the Bielas lab for technical and scientific support of both the Phase I exploratory projects and Dr. Rongvaux’s Phase II pilot award.
FROM THE DIRECTOR, CONTINUED

Data Analysis of Single Cell RNA Sequencing Workshop Series

In collaboration with the Hutch Data Commonwealth (HDC) and Fredhutch.io, the IIRC is pleased to offer courses in Data Analysis of Single Cell RNA Sequencing (scRNA-seq) to all scientific staff at the Center. The advanced hands-on workshop and its prerequisite course, “Intro to R,” are oversubscribed; however, space is available for the two introductory courses listed below.

Course 1: Introduction to scRNA sequencing
Lecture and discussion will cover the basics of experimental design, controlling for batch effects, basic data organization and analysis techniques. Course will prepare laboratory-based investigators for successful scRNA sequencing experiments and prevent common pitfalls. Open to all.

November 20, 2017; 10am – 12pm
Behnke Suites, M1-A305/307
Instructors: Raphael Gottardo, Greg Finak

Course 2: Introduction to Cell Ranger
Cell Ranger is a set of analysis pipelines of scRNA sequencing done on the 10x Genomics platform. It performs alignment, de-duplication and filtering, and generates gene-cell matrices as well as gene expression analysis. All results are easily visualized and analyzed using the user-friendly Loupe Cell Browser. Lectures and discussion will prepare investigators for completing basic analysis of 10X Genomics data. Open to all.

December 14, 2017; 10am – 11:30am
Pelton Auditorium
Instructors: Raphael Gottardo, Valentin Voillet

Please click here to register or contact Sheila Charles at scharles@fredhutch.org.

SHARED RESOURCES

Flow Cytometry: New Instrumentation & Upcoming Seminar

Shared Resources is pleased to announce the installation of new Symphony A5 instruments. Thanks to this technology, there no longer are access limitations for high-parameter analysis. Shared Resources now offers 2 individual A5 instruments and a lower capability Celesta (3 lasers and 12-color detection), replacing the aging BD LSRII and Canto. For more information, please contact flowcytometry@fredhutch.org.

To learn more about how to use the FACSymphony platform for high-dimensional cytometry, the Prlic lab and the Flow Cytometry Shared Resource would like to invite you to a seminar on panel design in polychromatic flow cytometry.

PANEL DESIGN – A PRACTICAL GUIDE
Thursday, November 9, 2017 | 2:00-3:15pm
Pelton Auditorium

For more information, contact Dr. Florian Mair, fmair@fredhutch.org
EXPANDING THE IIRC

**Post-Doctoral Researcher, Computational Biology & Immunotherapy**

We are pleased to introduce Robert Amezquita, who will join Fred Hutch in January 2018 as post-doctoral researcher in computational biology and immunotherapy after finishing his doctoral thesis in Immunobiology at Yale University. Robert is an experienced data scientist who has focused on transcriptional regulation and epigenetic reprogramming of CD8+ T cells in the context of viral infection.

Robert will have a primary home in the Gottardo lab, where he will develop his interests in immunological data through potential collaborations within the IIRC. Please join us in welcoming Robert to the Center.

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**PROGRAMS AND EVENTS**

**IIRC Seminar Series**

“Metabolic Barriers to Antitumor Immunity”

**Greg Delgoffe, PhD**, Assistant Professor of Immunology  
Tumor Microenvironment Center  
University of Pittsburgh Cancer Institute

Thursday, November 2, 2017  
2:00-3:00pm  
Pelton Auditorium, Fred Hutch Campus  
Refreshments provided

All Fred Hutch faculty and staff are invited. For more information, please contact Jen Casserd at jcasserd@fredhutch.org.

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**2018 Faculty Retreat at Bell Harbor Conference Center**

Please mark your calendars for the annual IIRC Faculty Retreat on January 12th, featuring Nick Haining, MD of Dana-Farber Cancer Institute as the Keynote Speaker.

**Nick Haining**, based at the Dana-Farber Cancer Institute and the Broad Institute of Harvard and MIT, studies the mechanisms that regulate T cell function in humans. His laboratory uses a range of approaches including cellular immunology, functional genomics, epigenetics, and single cell profiling to understand why protective T cell memory fails to occur in cancer and chronic viral infection.

We will feature a Post-Doctoral Poster Session at the Retreat, and we’ve invited post-docs to submit a 300 word abstract online here by Wednesday, December 13th. From the abstracts, 3-4 Post Docs will be selected to give a 10-minute presentation during the retreat. Presenters will be notified by Friday, December 22nd.

Friday, January 12, 2018  
Program & Luncheon: 9:00am – 5:00pm  
Reception: 5:00pm – 7:00pm

For more information about the retreat and poster session, please contact Jen Casserd, jcasserd@fredhutch.org.