3rd Scientific Workshop
THE HAEMATOLOGICAL TUMOUR MICROENVIRONMENT AND ITS THERAPEUTIC TARGETING
February 24-26, 2019
The Francis Crick Institute – London, United Kingdom
Chairs: Michael Andreeff, Dominique Bonnet, Daniela S. Krause, Simon Méndez-Ferrer

Sunday, February 24

15:00	**Welcome**	
SESSION I	**THE NORMAL HSC NICHES IN DEVELOPMENT, ADULTHOOD AND AGEING**	
Chairs: Marieke Essers and Laura Calvi		
15:15-15:40	**Keynote Lecture** Maladapted vascular niche induces the generation and expansion of tumour initiating cells	Shahin Rafii (New York)
15:40-15:45	*Discussion*	
15:45-16:05	Angiocrine signals regulate quiescence and therapy resistance in bone	Anjali Kusumbe (Oxford)
16:05-16:10	*Discussion*	
16:10-16:30	The HSC niche in aging	Hartmut Geiger (Ulm)
16:30-16:35	*Discussion*	
16:35-16:45	*Intrinsic and extrinsic regulation of hematopoietic aging*	*Simona Valletta (Oxford)*
16:45-16:50	*Discussion*	
16:50-17:00	*Hematopoietic stem cells in perisinusoidal niches are protected from aging*	*M. Carolina Florian (Barcelona)*
17:00-17:05	*Discussion*	
17:05-17:35	***Coffee Break***	
SESSION II	**METABOLISM IN THE TUMOUR MICROENVIRONMENT**	
Chairs: Simon Méndez-Ferrer and Nina Cabezas-Wallscheid		
17:35-17:55	Subversion of systemic glucose metabolism as a mechanism to support the growth of leukaemia cells	Haobin Ye (Aurora)
17:55-18:00	*Discussion*	
18:00-18:20	Mitochondrial trafficking in the tumour microenvironment	Stuart A. Rushworth (Norwich)
18:20-18:25	*Discussion*	
18:25-18:45	Fatty acid metabolism and bone marrow adipocytes in AML	Yoko Tabe (Tokyo)
18:45-18:50	*Discussion*	

18:50-19:00	*Quantitative full-bone imaging reveals combinatorial niche signatures of hematopoietic stem cells*	*Konstantinos Kokkaliaris (Boston)*
19:00-19:05	*Discussion*	
19:05-19:15	*Combined single-cell and spatial transcriptomics reveals fundamental principles of bone marrow niche organization*	*Simon Haas (Heidelberg)*
19:15-19:20	*Discussion*	
19:20-19:30	**ESH International Scholarship Fund** *Early-Career Scholarship Award Ceremony*	*Michael Hallek (Cologne)*

19:30 ***TUTORED POSTER WALKS AND WELCOME GET-TOGETHER RECEPTION***

- Poster Walk 1: Marieke Essers, Divij Verma
- Poster Walk 2: Nina Cabezas Wallscheid, Rahul Kumar
- Poster Walk 3: Rebekka Schneider, Diana Passaro
- Poster Walk 4: Elisa Laurenti, Syed Mian

Monday, February 25

07:30-08:30 **Meet the Experts sessions:**

- The microenvironment in myeloid malignancies	Michael Andreeff (Houston), Simon Méndez-Ferrer (Cambridge)
- The microenvironment in lymphoid neoplasms	Irene Ghobrial (Boston), Michael Hallek (Cologne)
- The HSC niches from development to ageing	Hartmut Geiger (Ulm), Shahin Rafii (New York)

SESSION III **INFLAMMATION AND CELL CYCLE PART 1**
Chairs: Iannis Aifantis and Elisa Laurenti

08:30-08:50	Impact of aged marrow macrophage on haematopoietic stem cells and their niche	Laura Calvi (Rochester)
08:50-08:55	*Discussion*	
08:55-09:15	HSCs and their BM niche under inflammatory stress	Marieke Essers (Heidelberg)
09:15-09:20	*Discussion*	
09:20-09:40	The bone marrow microenvironment in myeloproliferative neoplasms	Rebekka Schneider (Rotterdam)
09:40-09:45	*Discussion*	
09:45-09:55	*Repetitive exposure to inflammatory stress leads to irreversible HSC attrition and hematopoietic tissue failure during ageing*	*Ruzhica Bogeska (Heidelberg)*
09:55-10:00	*Discussion*	
10:00-10:10	*Secreted frizzled-related protein 1 (Sfrp1) regulates both maintenance of hematopoietic stem cells and LPS-induced myeloid stress responses*	*Rouzanna Istvanffy (Munich)*
10:10-10:15	*Discussion*	

10:15-10:35 ***Coffee Break***

SESSION IV INFLAMMATION AND CELL CYCLE PART 2
Chairs: Shahin Rafii and Michael Hallek

10:35-10:55	Regulation of dormant haematopoietic stem cells	Nina Cabezas-Wallscheid (Freiburg)
10:55-11:00	*Discussion*	
11:00-11:20	Molecular regulation and heterogeneity in quiescence exit of human haematopoietic stem cells	Elisa Laurenti (Cambridge)
11:20-11:25	*Discussion*	
11:25-11:35	*Mesenchymal stem cells support leukaemia stem cells in the bone marrow and endow them with antioxidant defence from chemotherapy*	*Dorian Forte (Cambridge)*
11:35-11:40	*Discussion*	
11:40-11:50	*Anti-apoptotic ARC protein modulates leukemia-microenvironment interactions and confers drug resistance by regulating an IL1beta/PGE2/Beta-catenin circuit in AML*	*Bing Z. Carter (Houston)*
11:50-11:55	*Discussion*	
11:55-14:00	***Lunch***	

SATELLITE LECTURES:

12:15-12:45 **CITESeq - Simultaneous Proteomics & Transcriptomics: TotalSeq™ and The Future of Single Cell Analysis -** Miguel Tam
This educational lecture is organized and funded by BioLegend

12:45-13:15 **Resolving the tumour micro-environment with a multi-omic approach** - Stephen Hague
This educational lecture is organized and funded by 10x Genomics

13:15-13:45 - **Introduction to Fluidigm Technology** - Roberto Spada
- **Deep phenotypic analysis of the peripheral blood immune cell compartment in diffuse large B cell lymphoma (DLBCL)** - Edward Truelove
This educational lecture is organized and funded by Fluidigm

SESSION V INTERACTION OF TUMOUR CELLS WITH THEIR MICROENVIRONMENT
Chairs: Dominique Bonnet and Ingo Ringshausen

14:00-14:20	Mapping the bone marrow microenvironment …in sickness and in health…	Iannis Aifantis (New York)
14:20-14:25	*Discussion*	
14:25-14:45	Targeting the micro environment in smouldering myeloma	Irene Ghobrial (Boston)
14:45-14:50	*Discussion*	
14:50-15:10	Investigating mechanisms regulating myeloma growth and dissemination using in vivo BM imaging	David Fooksman (New York)
15:10-15:15	*Discussion*	
15:15-15:25	*Lasting DNA damage in residual long-term HSC after in vivo exposure to AML derived extracellular vesicles*	*Peter Kurre (Philadelphia)*
15:25-15:30	*Discussion*	

15:30-15:40	*Prospective isolation of AML subclones to study subclone-specific bone marrow niche interactions*	*Bauke de Boer (Groningen)*
15:40-15:45	*Discussion*	
15:45-16:15	***Coffee break***	

SESSION VI THE TUMOUR MICROENVIRONMENT IN CLL, PLASMA CELL MYELOMA, MDS
Chairs: John Gribben and Irene Ghobrial

16:15-16:35	Understanding and targeting tumour-microenvironment interactions in B cell malignancies	Ingo Ringshausen (Cambridge)
16:35-16:40	*Discussion*	
16:40-17:00	The biological and clinical role of the microenvironment in chronic lymphocytic leukaemia	Michael Hallek (Cologne)
17:00-17:05	*Discussion*	
17:05-17:25	Pre-clinical modelling of myelodysplastic syndromes (MDS) in murine xenograft models	Daniel Nowak (Mannheim)
17:25-17:30	*Discussion*	
17:30-17:40	*Mass cytometry identifies PD1/LAG3 immune checkpoints as promising targets for dual immunotherapy in the treatment of chronic lymphocytic leukemia*	*Etienne Moussay (Luxembourg)*
17:40-17:45	*Discussion*	
17:45-17:55	*Myelodysplastic syndrome (MDS) bone marrow cells are highly dependent on their niche(s) but also can play an instructive role in modelling their micro-environment*	*Syed Mian (London)*
17:55-18:00	*Discussion*	
18:00-18:30	***Panel discussion***	

18:30 ***TUTORED POSTER WALKS***
- Poster Walk 1: Anjali Kusumbe, Daniel Nowak
- Poster Walk 2: Ingo Ringshausen, Simon Haas
- Poster Walk 3: Rasoul Pourebrahimabadi, Konstantinos Kokkaliaris
- Poster Walk 4: Laura Calvi, Carolina Florian

Tuesday, February 26

08:00-09:00 Meet The Experts Sessions:

- Clinical implications of the bone marrow microenvironment in haematological malignancies	John Gribben (London), Amnon Peled (Jerusalem)
- Metabolism and inflammation in the bone marrow microenvironment	Nina Cabezas-Wallscheid (Freiburg), Marieke Essers (Heidelberg)
- Dissecting niche dependencies during leukaemogenesis	Iannis Aifantis (New York), Dominique Bonnet (London)

SESSION VII **TARGETING OF THE TUMOUR MICROENVIRONMENT – CLINICAL**

This session is organised thanks to support from Cancer Research UK

Chairs: Marina Konopleva and Daniela Krause

09:00-09:20	Targeting the tumour microenvironment in B cell lymphomas	John Gribben (London)
09:20-09:25	*Discussion*	
09:25-09:45	Engineering T cells to overcome the immunosuppressive tumour microenvironment	Stephen Gottschalk (Memphis)
09:45-09:50	*Discussion*	
09:50-10:00	*Specific and targetable interactions with the bone marrow microenvironment govern outcome in imatinib-resistant chronic myeloid leukemia*	*Rahul Kumar (Frankfurt am Main)*
10:00-10:05	*Discussion*	
10:05-10:15	*Vascular niche e-selectin plays a key role in leukaemia chemo-resistance via its receptors CD44 and CD162*	*Johanna Erbani (Brisbane)*
10:15-10:20	*Discussion*	
10:20-10:50	***Coffee Break***	
10:50-11:10	Targeting altered metabolism in leukaemia microenvironment	Marina Konopleva (Houston)
11:10-11:15	*Discussion*	
11:15-11:35	Interferon in Myeloproliferative Neoplasms	Jean-Jacques Kiladjian (Paris)
11:35-11:40	*Discussion*	
11:40-12:00	CXCR4 inhibitors	Amnon Peled (Jerusalem)
12:00-12:05	*Discussion*	
12:05-12:35	***Panel discussion***	
12:35-13:05	**Keynote Lecture** New Insights into the early-stage bone colonization of disseminated cancer cells	Xiang H.F. Zhang (Houston)
13:05-13:10	*Discussion*	
13:20	***Meeting Closure***	