



# Annual Retreat Booklet

6-7 June 2024

CRUK-CI, JCBC & Garden



# Practical Information

## Registration

On Thursday, please register in the reception area of CRUK-CI.

Please note that your name badge will get you access to lunch and the social as well as the scientific sessions.

## Speakers

All speakers should bring their presentations on USB to be given to the tech team at the back of the lecture theatre. Please ensure your presentation is loaded and checked during the break prior to your talk. Speakers in each session should sit in the front row where designated seats are reserved for you.

## Poster Presenters

The poster session will take place on Thursday 6 June at 16:45 at the CRUK Gallery space. Please set up your posters upon registration on Thursday morning and take it down before the end of the retreat on Friday. Please note your poster number and display your poster on the correct board. Velcro will be provided.

## Closed Meeting

The Annual Retreat is a closed meeting. Please do not share any talk or poster content on any social media channels or by other means outside this event.

## Evening Social

On Thursday evening there will be a social event with food supplied by Boxed Events, as well as a bar. There will also be live music from The Squires.

## Prizes

On Friday at 12:55 we will be awarding prizes for posters, talks, Public Engagement and Research Culture and Integrity. **Please come to this session as you may be a winner!** After this session, lunch will be provided in the marquee on the JCBC / CRUK Lawn.

## Health & Safety

Seating is limited to 200 in the theatre - no sitting in the aisles is permitted at any time due to fire code.

We ask attendees ask that if you are feeling unwell or exhibiting symptoms of COVID-19 that you do not join the event. There will be a streaming link upon request for those unable to join.

## Wifi

There is Eduroam, UniofCam, and UniofCam-Guest wifi access in the CRUK lecture theatre and surrounding areas.

## Programme

Please find the programme details below, which will continue to be updated on the [webpage here](#) or via the QR code.





## Programme

# Thursday 6 June

10:00 **Registration opens** CRUK-CI

10:30 **Session 1**  
Chair: Bertie Göttgens

10:30 **Welcome & Annual Review** **Bertie Göttgens**

10:50 **Affiliate PI Talk** **Madeline Lancaster**  
*Using organoids to unravel cell fate*

11:25 **Postgrad & Postdoc Talks** **Ziqi Dong (PhD, Rawlins Group)**  
*Hypoxia regulates the fate of human fetal lung epithelial progenitors*

**Kazumasa Kanemaru (Postdoc, Teichmann Group)**  
*Spatially resolved multiomics of human cardiac niches*

11:45 **PI Talk** **Kostas Tzelepis**  
*Epitranscriptomic roles in stem cell homeostasis and disease*

12:15 **Lunch** JCBC Lawn

13:30 **Session 2**  
Chair: Maria Alcolea

13:30 **PI Talk** **Thorsten Boroviak**

**Giovanna Mantica (PhD, Laurenti Group)**  
*DNMT3A R882 mutation in human haematopoietic stem cells alters myeloid differentiation dynamics*

13:50 **Postgrad & Postdoc Talks** **Annabel Curle (Postdoc, Barker Group)**  
*Immune considerations of cell therapy for Parkinson's: a focus on the diseased brain.*

# Thursday 6 June

14:10 **PI Talk** **Sarah Teichmann**  
*Assembling the Human Cell Atlas: One Cell At a Time*

14:45 **Break** CRUK Atrium & Gallery

15:15 **Session 3 - Beyond the Bench: From Discovery to Impact**  
Chair: Sanjay Sinha

*This session will explore how scientific discoveries can become reality, and will bring in experts to share their stories. From research discoveries to commercial spin-outs, policy guidance to career development, this panel discussion will delve into each speaker's personal journey.*

15:15 **Steve Jackson** (CRUK-CI): How to be successful in both academia and industry

**Jason Mellad** (Start Codon): Entrepreneurship – what it means and how you do it.

**Rachel Atfield** (Cambridge Enterprise): Achieving impact through innovation and partnership

16:40 **Day 1 Closing Comments**  
Bertie Göttgens

16:45 **Postgrad & Postdoc Poster Session**

16:45 **Poster Session & Drinks Reception**

18:00 **Dinner & Social**

20:30 **Day 1 Concludes**

## Friday 7 June

09:00	Welcome Coffee	CRUK Lobby
09:30	<b>Session 4</b> Chair: Elisa Laurenti	
09:30	<b>Welcome</b>	<b>Bertie Göttgens</b> <i>DRP Launch</i>
09:35	<b>IRC Talk</b>	<b>Róisín Owens</b> <i>Bioelectronic tools to study the gut-brain-axis</i>
10:00	<b>Postgrad &amp; Postdoc Talks</b>	<b>Bea Waller (MPhil, Sinha Group)</b> <i>The early sprouts of the heart – Modelling human endocardium derived coronary plexus formation in organoid models</i>
10:20	<b>Plenary Speaker</b>	<b>Matthew Williams (Postdoc, Green Group)</b> <i>Maintenance of haematopoietic stem cells by tyrosine-unphosphorylated STAT5 and JAK inhibition</i>
10:55	<b>Equity &amp; Diversity / Research Culture &amp; Integrity Update</b>	<b>Timm Schroeder</b> <i>Long-term single-cell quantification: New tools for old questions</i>
11:05	<b>Break</b>	Nicola Wilson
11:35	<b>Session 5</b> Chair: Matthias Zilbauer	Marquee - JCBC Lawn

# Friday 7 June

11:35	<b>PI Talk</b>	<b>Mekayla Storer</b>
		<b>Devina Shah (PhD, Hendrich/Laue Group)</b> <i>The dynamic role of the NuRD complex in pluripotency transitions</i>
12:00	<b>Postgrad &amp; Postdoc Talks</b>	<b>Stavros Vagionitis (Postdoc, Karadottir Group)</b> <i>Neuronal Activity bidirectionally regulates myelin plasticity</i>
		<b>Aram Gurzadyan</b> <i>Stem cell feedback from the inner stem: de novo vascular differentiation and organogenesis</i>
12:20	<b>IRC Small Grants Presentations</b>	<b>Theresa Gross-Thebing</b> <i>Tracing human germline specification back to cell cycle state</i>
12:30	<b>Open Access Update</b>	<b>Debbie Hansen</b>
12:40	<b>Knowledge Exchange Update</b>	<b>Alice Sorrell</b>
12:45	<b>JCBC Green Impact Update</b>	<b>Undine-Sophie Deumer</b>
12:50	<b>Public Engagement Update &amp; Patient Reps</b>	<b>Greg Palmer</b>
12:55	<b>Prizes &amp; Closing Remarks</b>	<b>Bertie Göttgens</b>
13:05	<b>Lunch by Aromi &amp; End of Retreat</b>	Marquee - JCBC Lawn



## Poster Session

# Poster Session Thursday 6 June 16:45

<b>1</b>	<b>Helen Reynolds</b> Lab Manager Sampaziotis Group	Gene Therapy for MNGIE during Machine Perfusion
<b>2</b>	<b>Sebastian Timmler</b> Postdoc Káradóttir Group	Region-specific myelin changes along the mouse lifespan
<b>3</b>	<b>Deep Adhya</b> Postdoc Basu Group	FOXG1 controls cellular function and tissue architecture in 2D neural rosettes and 3D cerebral organoid models of epilepsy
<b>4</b>	<b>Sarah Horton</b> Postdoc Huntly Group	OXPHOS is a metabolic dependency in Crebbp <sup>-/-</sup> DLBCL
<b>5</b>	<b>Ana-Maria Cujba</b> Postdoc Teichmann Group	An organotypic atlas of human vascular cells
<b>6</b>	<b>Ioannis Sarropoulos</b> Postdoc Teichmann Group	Dissecting the immune reconstitution after allogeneic thymus transplantation one cell at a time
<b>7</b>	<b>Eliza Yankova</b> Postdoc Tzelepis Group	Pharmacological inhibition of the tRNA enzyme METTL1 impacts cancer stem cell homeostasis
<b>8</b>	<b>Noemie Combemorel</b> Postdoc Tyser Group	Defining and recreating human cardiac progenitor populations in vitro
<b>9</b>	<b>Maria Eleftheriou</b> Postdoc Tzelepis Group	m <sup>6</sup> A loss: a promising therapeutic avenue for H3.3-G34-mutant paediatric gliomas
<b>10</b>	<b>Wenjuan Ma</b> Postdoc Laurenti Group	Impact of purinergic metabolic fluxes on human haematopoietic stem cell function ex vivo
<b>11</b>	<b>Laura Magnani</b> PhD Student Laurenti Group	Effects of the thyroid hormone pathway on human haematopoietic stem and progenitor cells' lineage commitment
<b>12</b>	<b>Hannah Baker</b> PhD Student Khaled Group	Exploring potential chromosomal aberrations in the human mammary gland during lactation
<b>13</b>	<b>Alex Kingston</b> PhD Student Basu/Lakatos Group	Modelling tissue mechanics in vitro: The mechanobiology of cortical development and neurodegeneration
<b>14</b>	<b>Rajini Chandrasegaram</b> PhD Student van den Ameele Group	In situ visualisation of heteroplasmic MTDNA variants in the developing drosophila brain

# Poster Session Thursday 6 June 16:45

<b>15</b>	<b>Andrea Koulle</b> PhD Student Hendrich Group	Unveiling the Context-Dependent Roles of ChAHP in Chromatin and Transcriptional Regulation
<b>16</b>	<b>Ilias Moutsopoulos</b> Postdoc Hodson Group	Tracking Lymphoma Progression From a Drop of Blood
<b>17</b>	<b>Sophie Wilson</b> PhD Student Rowitch Group	Sonic hedgehog agonist (SAG) acutely targets astrocytes to preserve vascular integrity in neonatal hypoxic-ischemic injury via inhibiting Sema3c and Angptl4 secretion.
<b>18</b>	<b>Franklin Lo</b> PhD Student Sinha Group	Aortic disease-in-a-dish: Lineage-Specific Phenotypic Abnormalities in iPSC-derived Smooth Muscle Cells from Loey-Dietz Syndrome
<b>19</b>	<b>Matthew McLoughlin</b> PhD Student Vassiliou Group	Telomere attrition becomes an instrument for somatic clonal selection in old age
<b>20</b>	<b>Sophie Field</b> PhD Student Barker Group	Transposable elements in Huntington's Disease - Do they have a role?
<b>21</b>	<b>Charlotte Tolley and Jakub Chudziak</b> Research Assistants Duque-Correa and Lee Group	Dynamics of alveolar regeneration upon lung damage by hookworm infection
<b>22</b>	<b>Yuxi Ding</b> PhD Student Boroviak Group	Functional investigation of hypoblast lineage specification and differentiation
<b>23</b>	<b>Athena Stamper</b> PhD Student Bulstrode/Barker Group	Developing an Adaptable Dopamine Cell Therapy for Parkinson's Disease
<b>24</b>	<b>Mert Ucel</b> PhD Student Káradóttir Group	Spatiotemporal Dynamics of Lifelong Oligodendrogenesis
<b>25</b>	<b>Jethro Lundie-Brown</b> PhD Student Philpott Group	Competence for Ascl1-directed neuronal differentiation changes with exit from pluripotency
<b>26</b>	<b>Lauren Connolly</b> PhD Student Storer Group	Investigating the Differential Responses of Lymphatic Microvasculature to Regeneration and Fibrosis
<b>27</b>	<b>James Russell</b> PhD Student Tzelepis Group	Wobble Uridine (U34)-tRNA Modifying Enzymes in Acute Myeloid Leukaemia: Epitranscriptomic Insights and Therapeutic Potential
<b>28</b>	<b>Giorgi Melia</b> Research Assistant Khaled Group	Examining the impact of tumour suppressor on the aberrant differentiation of mammary luminal progenitors
<b>29</b>	<b>Qin Wu</b> PhD Student Green Group	Roles of STAT1 in Haematopoietic Stem Cells



**Speakers**



## **Dr Rachel Atfield**

Associate Commercialisation Director, Cambridge Enterprise

Rachel joined Cambridge Enterprise in 2006 as a Commercialisation Associate becoming Commercialisation Manager in 2011 and specialising in developing and commercialising Life Sciences technologies. Responsibilities include evaluating new inventions, managing IP protection, developing commercially viable assets and commercialisation strategies including company formation, licensing and collaborations. Rachel has a BSc in Biology from Imperial College London and a PhD in Virology from the University of Cambridge.



## **Dr Jason Mellad**

CEO & Founder, Start Codon

Jason is a scientist and entrepreneur, passionate about translating innovative technologies into better patient outcomes.

As CEO and Co-Founder of Start Codon, a UK-based accelerator, he aims to discover the most disruptive life science, BioTech and healthcare founders and help them translate their innovations into successful ventures. This is achieved through a combination of seed funding and a bespoke venture-building programme, which taps into the exceptional

resources of the Cambridge cluster as well as the global network and knowledge of Jason and the Start Codon team.

Previously, he was CEO of Cambridge Epigenetix (now Biomodal) and Business Development Manager for Horizon Discovery's diagnostics division. He also served as an associate for Cambridge Enterprise, the technology transfer office of the University of Cambridge.

Originally from Louisiana, Jason was awarded a Marshall Scholarship to complete his PhD in Medicine at the University of Cambridge (Clare College) after graduating Summa Cum Laude from Tulane University with a BSc in Molecular Biology and Chemistry. He is also a visiting Fellow at Jesus College, Cambridge, and lives in Cambridge with his husband and sons.



### Professor Steve Jackson

Senior Group Leader CRUK-CI

Sir Stephen (Steve) Jackson is the University of Cambridge Frederick James Quick Professor of Biology and Senior Group Leader at the Cancer Research UK (CRUK) Cambridge Institute. His research has identified key principles by which cells respond to and repair DNA damage and helped define how their dysfunction yields cancer and other age-related diseases. Steve is a fellow of the Royal Society, the UK Academy of Medical Sciences, The European Academy of Cancer Sciences, and

EMBO. He has received various national and international prizes, and in 2023 was awarded a knighthood for his services to innovation and research.

In 1997, Steve founded the drug-discovery company KuDOS Pharmaceuticals, serving as its part-time Chief Scientific Officer (CSO) until and after its acquisition by AstraZeneca. KuDOS developed and took into first patients the PARP inhibitor drug olaparib (Lynparza™), now marketed worldwide for certain ovarian, breast, pancreatic and prostate cancers. In 2010, Steve founded Mission Therapeutics to exploit advances in protein ubiquitylation and deubiquitylation to derive new medicines and served as its part-time CSO until 2018 (he is now a Board member and chairs the Mission SAB). In 2018, Steve conceived of and co-founded Adrestia Therapeutics, served as its interim CEO and then its CSO. Following the 2023 acquisition of Adrestia by Insmed Inc., Steve is part-time Chief Research Officer for Insmed Innovation UK.

Steve's academic laboratory (<https://www.stevejacksonlab.org>) in the CRUK Cambridge Institute is further defining mechanisms by which cells detect, signal the presence of and repair DNA damage, and exploring how this knowledge could lead to better cancer treatments.

# Guest Speakers



## Dr Timm Schroeder

Department of Biosystems Science and Engineering, ETH Zurich, Basel, Switzerland

*Long-term single-cell quantification: New tools for old questions*

**Session 4, Friday 7 June, 10:20**

Timm Schroeder investigates the molecular control of mammalian stem and progenitor cell fates at the interface of biology, medicine, informatics, and engineering. He pioneered bio-imaging approaches for live long-term single cell quantification, and combines molecular cell biology, imaging, software development and hardware engineering.

Timm studied Biology, PhD work in Munich, Germany and Kyoto, Japan and completed his postdoc in Munich and Kobe, Japan. He became Principal Investigator at Helmholtz Center in Munich in late 2004, was tenured in 2008, and was appointed Director of the research unit in Stem Cell Dynamics in 2011. Since 2013 Timm has been full professor at ETH Zurich, Department of Biosystems Science and Engineering (and deputy/department head 2015-19) in Basel, Switzerland.

### **Abstract:**

Surprisingly many long-standing questions in (stem) cell research remain disputed. One major reason is the fact that we usually analyze only populations of cells - rather than individual cells - and at very few time points of an experiment - rather than continuously. We therefore develop imaging approaches and software to image, segment, and track cells, and to quantify e.g. divisional history, position, interaction, and protein expression or activity of all individual cells over many days and generations. Live-cell imaging is complemented by novel large-volume multi-color 3D imaging with up to single-molecule sensitivity. Dedicated software, machine learning and computational modeling enable data acquisition, curation, and analysis. Custom-made microfluidics and other hardware devices improve single-cell observation, dynamic manipulation, molecular analysis, and the high-dimensional snapshot 'omics' quantification of individual cells with known history, kinship and dynamics. The resulting continuous single-cell data is used for analyzing the dynamics, interplay, and functions of signaling pathway and transcription factor networks in controlling the fate decisions of hematopoietic, pluripotent, neural stem and intestinal stem and progenitor cells.

# Institute & Affiliate Speakers

**Dr. Thorsten Boroviak**

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**Dr. Annabel Curle**

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**Prof. Bertie Göttgens**

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**Prof. Madeline Lancaster**

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**Dr Matthew Williams**

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**Dr. Nicola Wilson**

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# Thanks & Recognition

## **The Isabelle Bouhon Trust**

The Isabelle Bouhon Trust generously support the Cambridge Stem Cell Institute Annual Retreat, and we are pleased to name our poster prize this year as the 'Isabelle Bouhon Early Career Poster Prize'. Isabelle Bouhon was a researcher in Cambridge who tragically died, aged 36, in an accident in 2005. Isabelle was a dedicated scientist whose contribution to the development of defined conditions for neural differentiation from ES cells will endure and have lasting impact. Isabelle is fondly remembered as a loyal and wonderfully exuberant colleague, and we thank the Trust for their support in her memory.

## **Organising Committee**

Thank you to everyone who has been involved in this year's Retreat and especially to Alice Sorrell, Mekayla Storer, Jacqui Davidson and Chloe Annison who have worked hard on the finer details of the programme.

## **Cover image and panels throughout:**

Detail from painting by Victoria Morten: *'Let the eye be substituted for the sun'*  
Photo credit: Patrick Jameson



**Thank you for joining!**